



**ALMA MATER STUDIORUM – UNIVERSITÀ DI BOLOGNA
DIPARTIMENTO DI ECONOMIA E INGEGNERIA AGRARIE**

**FEASIBILITY STUDY ON THE SETTING UP OF A
PLATFORM FOR DATA & INFORMATION EXCHANGE FOR
THE EUROPEAN FRUIT & VEGETABLE MARKET**

**EUROPEAN COMMISSION
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This study was requested by the European Commission – D.G. Agriculture and Rural Development (Tender N° AGRI / 2008-G4-01) and executed by:

- Università di Bologna - Dipartimento di Economia e Ingegneria Agrarie (DEIAGRA).
 - Luigi Vannini (DEIAGRA): scientific coordinator of the study;
 - Giulio Sgarbanti (DEIAGRA): scientific coordinator for the juridical matters;
 - Maurizio Aragrande (DEIAGRA): project leader;
 - Maurizio Aragrande, Massimo Canali (DEIAGRA): editors;

 - Maurizio Aragrande (DEIAGRA): author of Executive Summary; Introduction; Chapters 2.4; 3.1; 3.2.1.2; 3.2.2; 3.2.3; 3.2.4; 3.2.5; 3.3; 3.6.2; 3.7; 3.8; 3.9.1; 4.1; 4.2; 4.4; Annex 2; Annex 3-Note for the Users and Sections 4 and 5;
 - Massimo Canali (DEIAGRA): author of Chapters 2.1; 2.2; 3.2.1.1; 3.9.2; Annex 1; Annex 3-Section 1;
 - Sebastiano Rizzioli, Susanna Visser (Università di Ferrara – Dip. di Scienze Giuridiche): authors of Chapter 1.2;
 - Luigi Russo (Università di Ferrara – Dip. di Scienze Giuridiche): author of Chapters 1.1; 3.5; 4.3; Annex 3-Section 3;
 - Fabio Previato (Selyon S.a.s): author of Chapters 2.3; 3.4; 3.6.1; Annex 3-Section 2.

Other contributions from:

- Gianluca Macchi (DEIAGRA);
- BRM, Comité Économique Agricole du Bassin Rhône-Méditerrané;
- Catalonia Qualitat, Asociación Catalana de Organizaciones de Productores de Fruta;
- CSO, Centro Servizi Ortofrutticoli Società Cooperativa;
- FruitVeB, Magyar Zöldség-Gyümölcs Szakmaközi Szervezet;
- REO Veiling, Roeselare En Omstreken Veiling;
- Selyon S.a.s..

Executive summary

- 1) This study is a feasibility analysis of a European platform for data and information exchange for the European fruit and vegetable market. The specific tasks of the study are defined in details by the Tender specifications as follows:

Task 1- Legal assessment: compatibility of the platform with European Union law, and national law on competition and data privacy, if relevant.

Task 2 - Collection of existing data and methodology: overview on existing data collection and processing mechanisms in at least 3 of the main producing Countries.

Task 3- Technical requirements of the platform: technical requirements for the platform

Task 4- Conclusions and recommendations: feasibility of the platform implementation.

Each task has covered a single distinct chapter of the study.

- 2) A platform model has been elaborated according to the basic characteristics and the objectives indicated by the Tender specifications, and by analysing the functioning of the statistic and information systems of five organisations: one producer organisation (PO), two associations of producer organisations (APOs), and two inter-branch organisations (IBOs) operating in the fruit and vegetable industry of five EU Member States (Belgium, France, Hungary, Italy, and Spain). Then, the feasibility and the economic sustainability of the model have been assessed by taking into account technical, legal and financial criteria.
- 3) The platform objectives indicated by the Tender specifications have represented the most important assumptions in the designing of the model. Through the platform, they intend to make the fruit and vegetable industry:
 - a) reach a higher degree of effectiveness in managing the available resources and in preventing market crises through the sharing of information among the associations of European producers to the widest possible extent;
 - b) establish a more balanced competitive position for producers, given their weakness within the fruit and vegetable supply chain with respect to wholesalers, processors and distributors.

Additional assumptions regard the compliance of the platform with privacy and competition law, the statistical significance of produced data, the security of the information systems, and a partnership scheme based on voluntary adhesions and on the mutuality of the data exchange among the partners. Finally, it must be underlined that the reference platform model, including technical solutions and estimated costs, are based on the assumption that the IT system will not be developed, hosted and managed by EC and/or DG AGRI facilities.

- 4) To avoid and correct the structural market crises, it is necessary to detect and forecast for each species and variety the long-term trends of the domestic supply, the import, and the demand in the domestic and foreign markets. On the other hand, in the short-term, crisis management requires a systematic monitoring of the current campaign by providing data and forecasts on aspects like: production volumes, loss of products related to weather, harvest scheduling, level of stocks, in-coming shipments of imported products, producer and retail prices, and consumers' seasonal preferences with respect to qualitative aspects of products. The management of short-term measures needs that the information system be particular effective to carry out with rapidity and correctness the whole proceeding of collecting,

processing, and releasing the data. Decisions regarding market withdrawals, accumulation of stocks, and no harvesting should be taken as soon as possible, when a crisis shows his first symptoms, and imply immediate costs face to uncertain benefits, consequently the timing necessary to obtain a correct information supporting them is crucial. All these elements concur to define the data scope of the platform (see the table below).

Data scope of the platform

Types of data		Description	Frequency of data release
1	Data on crop areas	<i>Fruit crops</i> : invested area amount by region, species, variety, age, density, and ripening period of plantations, areas of new plantings and cut plantations.	Annual
		<i>Vegetables</i> : evolution of plantings according to the different species and varieties into the main production regions.	Annual
2	Production forecasts	<i>Early production forecasts</i> : elaborated on the basis of the data on the crop areas and on information about the progression of flowerings and the development of fruit in the different production regions.	Annual (before the starting of the harvest)
		<i>Quantitative estimations of expected production</i> : based on sample analyses.	2 weeks (during the harvest)
		<i>Harvest scheduling</i> : resulting from the agro-meteorological conditions of the harvest season in the major production regions with information on the expected harvest spikes.	Weekly
3	Harvest monitoring of the most perishable products	Information on the progression of the harvest by species and variety in the major production regions, including: weather conditions, phytosanitary and vegetative state of crops, progress of the harvest, quality of products.	Weekly
4	Data on final production	Amount of final production and yields in the different regions by species and variety.	Annual (post-harvest)
		Information about the quality of final production in the different regions by species and variety.	Annual (post-harvest)
5	Data on stocks for storable fresh products	Information by species and variety on the quantity stocked in the most important storage facilities.	Weekly
6	Data on producer prices	Data on producer prices by species, variety and quality class of products from the most important reference markets.	Weekly
7	Monitoring the retail market	Data on sales from the main European supermarket chains by species and variety, including information on quality classes, origin of products, type of packaging, brands, and prices.	Weekly
8	Data on consumption	Data by species and variety on consumers' purchases in the different Countries including: amount and value of purchases, average consumer prices, annual distribution of purchases, annual consumer price variations, distribution of purchases and average prices by marketing channel, distribution of purchases by region.	Annual
		Data on total and average consumption of fruit and vegetables by cultivar in all the major EU and extra-EU consumer Countries	Annual
9	Monitoring of the imports flow	Data on import sourced from the official statistics in the different Member States by species.	Annual
		Monitoring of the imports from the monthly official bulletins issued by the Member States.	Monthly
		Information about the in-coming shipments of products from third party Countries by species and variety, in the major ports.	Weekly

Types of data		Description	Frequency of data release
10	Data on exports	Data on intra-EU and extra-EU exports of fruit and vegetables sourced from the official statistics issued by the different Member States by species.	Annual
		Monitoring of the intra-EU and extra-EU exports trade from the monthly official bulletins issued by the Member States	Monthly

Source: own elaboration.

- 5) The organisations of the fruit and vegetable sector, which are to become partners of the platform, will act either as the main suppliers of data and information, and as the exclusive users. For this reason, the partner organisations must be able to guarantee minimum standards as regards the types of data provided (species and varieties, cropped areas, production forecasts, imports/exports flows, prices, consumption, etc.), the covered geographical area, the timing of data delivery, and the quality of the methodologies used to collect and process the information. The partners will be able to access the platform by following specific procedures, which comply with the technical and the legal requirements of the information system. Any access will take place through the platform Web Portal. The data will be transferred by suppliers through automatic procedures. Data queries will be possible according to the criteria defined in the Table below.

Data organization

Main criteria		Subcriteria
1	Species and space	Cultivated species and varieties
		Geographical areas
2	Timeline	Historical (historical series)
		Ongoing (data on the current campaign)
		Production forecasts (short term forecasts and long term trends)
3	Types of data	Types of data as listed in the data scope Table (p. v), taking also into consideration the frequency of the data uploading and release.

Source: own elaboration.

The technical requirements of the platform have been set out according to the indications of the Tender specifications.

- 6) Considered the nature of the platform's processed data, and the platform's transnational dimension, a series of conditions must be fulfilled in order to comply with the European competition law. In particular:
- a) The platform shall be managed by inter-branch organisations (IBOs), since the European law provides regulations for these entities which are compatible with the transnational dimension.
 - b) The creation of the platform should be communicated to the European Commission. The platform could not be operative before the Commission acknowledgment (that is within two months from the communication), and the statement of compatibility with

the competition law. The Commission may assess the compatibility of the platform with the European law at any time, during its operation.

- c) The European platform shall not cause any forms of market partitioning within the Community, shall not impair the proper functioning of, create distortions of competition, involve the establishment of prices or eliminate competition, under pain of being incompatible with European rules. In that case, the recognition of the platform operator shall be terminated.
- d) In this view, an in-depth analysis should be developed on a case-by-case basis, taking into account all the relevant issues to comply with the EU competition rules and regulations. The outcome of the analysis should assess the general impact of the platform operation on competition. With reference to the implementation strategy described below, the evaluation of the collusion risk should take place during the platform's Conceiving and Launch phases, when the potential participants and the monitored markets of fruit and vegetables will be identified. During this phase, for each of the markets monitored by the platform, a structural assessment of the collusion risk based on theoretic and empirical approaches (see § 3.9.2) should be performed. The final outputs of the structural assessment should include: (i) the identification of specific markers for a behavioural screening (see § 3.9.2) of the markets; (ii) the elaboration of a user code and good practices for the participating operators to avoid the misuse of the platform data; and (iii) the definition, in collaboration with the anti-trust authorities, of a security procedure for suspected or ascertained illicit use of the platform information. A regular behavioural screening of the markets and the operators involved should start with the Implementation phase and the functioning on the platform. This screening should activate the security procedure if signs of a possible collusive conduct are detected. The data collected by the platform should allow periodical revisions of the structural assessment so that the behavioural screening may be intensified according to a possible increase of the collusion risk. The public authorities could also evaluate the opportunity of a more direct involvement in the initiative to use the platform for their antitrust activities in the fruit and vegetable industry.

7) As far as privacy law is concerned, some caution should be adopted:

- a) Data sensitiveness should be assessed (common data versus sensitive data). As a matter of fact, sensitive data should be kept separately, considering that sensitive data will require a higher degree of security.
- b) The subjects which provide data to the platform must be informed about the goals and purposes of data collection. Personal data may be processed only for legitimate purposes, and according to agreed procedures.
- c) Suppliers must voluntarily sign up (in writing) an agreement allowing for their data processing, including information about the above mentioned objectives and purposes, control, access and updating procedures.
- d) The subjects involved in the data treatment must be prior authorized, and they must act according to the instructions received (this applied to both the person responsible for and the processors of the data treatment).
- e) A control system must be established to prevent data access from subjects other than the legitimate person responsible for the treatment. Legitimate processors need to issue a treatment policy, and obtain the prior consent from the data owner. Processors must then identify the way and the timing of data storage. Data will have to be kept as long as required by the particular treatment they have been collected for.

- 8) The platform costs have been calculated according to the investment and the operation profiles. The initial investment cost is summarised in the Table below.

Initial investment necessary to set up the Platform

Description	N°	Months	Price (EUR)	Total (EUR)
Manager	1	3.0	7,000	21,000
Data treatment	2	3.0	4,200	25,200
Legal matters	1	3.0	5,600	16,800
Administration	1	3.0	4,200	12,600
Assistant	2	3.0	2,800	16,800
Location		3.0	5,000	15,000
IT				204,400
Total investment				311,800
Depreciation (5 years)				62,360

Source: own elaboration.

The operating costs are displayed below.

Estimated operating costs of the platform

Type of cost	EUR/year
Depreciation	62,360
Personnel	571,200
Location	60,000
Subtotal	693,560
Overheads (30%)	208,068
Total	901,628

Source: own elaboration.

Both types of costs have been calculated under the assumptions that all factors and services needed to implement the platform are purchased and evaluated at market price, and that the platform is a private initiative. Besides the investment and operating costs, the potential partners may also need to sustain adaptation costs to meet the platform standards, and to implement specific software allowing for the automatic transfer of data from their information systems to the platform. The amount of these adaptation costs varies for each partner, because it depends on the specific characteristics of the single information systems, and cannot be evaluated at this stage. The amount of the platform costs to be shared among the partners may act as a financial barrier for the participation of many organisations; however, this barrier may be lowered if the number of partners is high since the very beginning of the initiative.

- 9) The skills required to manage the platform include - besides a knowledge of the fruit and vegetable industry - competence and skills in IT technology, statistics, and in legal and administrative matters. A committee representing the partner organisations must be established as well. In this committee, the public institutions may be represented too.

10) The feasibility of the platform has to cope with two main issues: the implementation costs and the role of public institutions. The role and responsibility of the actors involved (whether public and/or private) has been analysed according to a conceptual framework. The analysis shows that the platform effectiveness could be strengthened by a synergism between the public and the private institutions. A common project can be developed on the basis of common interests in the development of an effective and reliable information system, operating in the fruit and vegetable industry. The release of incentives in favour of the platform partners is compatible with the role of the public institutions in this initiative, considering that incentives are not only of monetary kind, but may also be of an organisational nature. From this perspective, an implementation strategy is proposed as in the following Table.

Implementation strategy and role of public institutions

Phase 1: conceiving

Objectives: discuss the platform concept according to objectives, means, organisation, priorities and alternatives.

Means: participatory approach; technical design,.

Role: define the public objectives and priorities; define potential partnership, by considering private and public institutions; define intervention limits.

Actions and measures: define the preliminary platform design(s).

Phase 2: launch

Objectives: inform potential participants; incite potential participants to express, intentions, alternatives, and options

Means: communication; participatory approach.

Role: launch the discussion about the platform design in the professional environment; manage the participatory approach with the interested organisations; assign technical and managerial leadership.

Actions and measures: create discussion opportunities; collect adhesions from potential participants; group participants according to motivations and technical capacity (leaders, followers); define technical and financial needs of the platform according to the participatory approach; define partnership and institutional settings with partners (including financial participation); assign leadership and detailed tasks to partners.

Phase 3: implementation

Objectives: implement the agreed platform project.

Means: constitute the task force (leaders); define incentives (moral and material, if any is foreseen)

Role: assign incentives; follow and orient the platform implementation.

Actions and measures: Participate in the administration board; asses result and effectiveness; propagate the results.

Phase 4: growth

Objectives: increase effectiveness; improve methodology; increase services.

Means: communication; positive emulation; targeted incentives (followers); sponsorship.

Role: supervise the platform operation; define strategy and objectives according to the development of the platform.

Actions and measures: participate in the administration board; asses result and effectiveness; propagate the results

Phase 5: long term

Objectives: cover peripheral areas; join structural development; financial autonomy.

Means: communication; positive emulation.

Role: supervise the platform operation; define strategy and objectives according to the development of the platform.

Actions and measures: participate in the administration board; asses result and effectiveness; propagate the results

Source: own elaboration.

Acronyms

AKII	Agrárgazdasági Kutató Intézet (Hungarian Agricultural Economics Research Institute)
APO	Association of Producer Organisations
AREFLH	Assemblée des Régions Européennes Fruitières, Légumières et Horticoles
BRM	Comité Économique Agricoles du Bassin Rhône-Méditerranée
CAP	Common Agricultural Policy
CMO	Common Market Organisation
CSO	Centro Servizi Ortofrutticoli
DEIAGRA	Università di Bologna – Dipartimento di Economia e Ingegneria Agrarie
ECHR	European Convention for the Protection of Human Rights and Fundamental Freedoms
ECR	European Court reports
EP	European Parliament
EU	European Union
FruitVeB	Magyar Zöldség-Gyümölcs Szakmaközi Szervezet
FV	Fruit and Vegetables
HCSO	Hungarian Central Statistical Office
IBO	Inter-branch organisation
IKO	International Kiwi Organisation
IT	Information technology
LAVA	Logistieke en Administratieve Veilingassociatie (Administrative and Logistic Association of Auctions)
PO	Producer Organisation
REO Veiling	Agricultural Auction Market for Roeselare and the surrounding area
VBT	Vereniging van Belgische Tuinbouwveilingen (Association of Belgian Horticulture Auctions)
WAPA	World Apple and Pear Association

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Introduction

This study is the feasibility analysis of a platform for data and information exchange for the European fruit and vegetables market. The Tender specifications indicate a model of platform:

- managed in partnership by the European Commission (DG AGRI) and the industry through its professional organizations;
- made available to Producer Organisations which are members of the platform network;
- focused on the most representative producer Countries (at least, France, Spain, and Italy);
- including an Internet-based data & information exchange system, managed by an SQL-Server database (or equivalent); and a Web Portal for the provision and the propagation of the information to the professional sector and to the public services;
- covering a defined list of products (apples, pears, peaches, nectarines, plums, strawberries, kiwi, asparagus, tomatoes, citrus fruits);
- providing data related to production, stocks, harvest campaign forecast, prices, consumptions.

The specific tasks of the study are:

Task 1 - Legal assessment (compatibility of the platform with existing European law, and national law on competition and privacy, if relevant);

Task 2 - Collection of existing data and methodologies (overview on the existing data collection and processing mechanisms in at least 3 of the main producing Countries);

Task 3 - Technical requirements of the platform;

Task 4 - Conclusions and recommendations.

To develop the study, the following methodology has been implemented.

Five organisations which produce information for the fruit and vegetable industry have been identified in Belgium, France, Hungary, Italy, and Spain. They are POs, APOs and inter-branch organizations (IBOs), which already operate their own information systems by covering wide geographical areas.

The functioning of these organizations has been analysed through a questionnaire composed of five sections in which the following aspects are asked about:

1. the information system's activities and organisational layout;
2. hardware and software equipments utilised;
3. basic reference national law and rules in the fields of privacy and competition;
4. structure and financing of the organisation;
5. how the need for more information and data about the fruit and vegetable industry is perceived, and what are the motivations for participating into a European platform aimed to data and information exchange.

In Chapter 1, the legal framework about privacy and competition matters has been examined thoroughly. The questionnaires' feedbacks on the field have allowed to make an insight analysis of the information made available from the European institutions, and to assess the significance of national legislation for the purposes of this study. From this perspective,

practical requirements for the platform have been drawn, in order to assure its compliance with the legislative framework.

The answers of the interviewed organisations to sections 1, 2, 4, and 5 of the questionnaire have been examined in depth in Chapter 2.

Chapter 3 deals with the following elements:

- a) the identification of an appropriate platform model;
- b) the possibility for the interviewed organisations to participate into the European platform.

The solutions identified for the platform organisation and operation are based on a reasoning about the possible motivations for the actors potentially involved (i.e., the public and private institutions) to develop a common initiative. In particular, an area of common interest has been identified, in order to define the objectives of the platform and its organisational layout. This includes the basic rationale for the functions to be undertaken by the public institutions.

The platform model proposes a series of solutions related to the juridical aspects, the technical requirements, the costs, and the financial sustainability. An implementation strategy has thus been suggested and specific tasks have been assigned to the potential participants.

The concluding remarks and the role of public institutions in the implementation of the platform are the object of Chapter 4.

1 Legal Assessment

This chapter investigates the legal aspects related to the feasibility of a European platform for information exchange in the fruit and vegetable market with respect to the rules on competition and privacy. For both the subjects, an analysis of the legislation issued by the EU (European Union) institutions is provided; the single Member States' specific rules have been taken into account only if relevant for the purposes of this study. The chapter includes two sections: the first one is dedicated to competition laws, while second one to privacy laws.

1.1 Laws on competition

The compliance of the platform with the competition rules has been analysed into three steps:

1. Identification of the European rules;
2. Analysis of the legislation, by focusing on producer organisations (POs) and inter-branch organisations (IBOs);
3. Conclusions.

1.1.1 Identification of the EU rules

The European law about competition comprises the following provisions:

- a) the Treaty Establishing the European Community (TEC): in particular, the Article 36 on the application of competition rules on production and trade of agricultural products, and the Title IV, Chapter 1 (Articles 81-89) about the Rules on Competition which bans cartels, abuse of dominance, and state aids;
- b) the Council Regulation (EC) No 1184/2006, which establishes rules on competition regarding the production and marketing of some agricultural products, and which replaces the Council Regulation n. 26/1962;
- c) the Council Regulation (EC) No 1234/2007, establishing a common organisation for the agricultural markets, and specific provisions for certain agricultural products (Single CMO Regulation);
- d) the Council Regulation (EC) No 1182/2007, laying down specific rules as regards the fruit and vegetable industry, then repealed by Council Regulation (EC) No 361/2008 amending the Regulation (EC) No 1234/2007;
- e) the Commission Regulation (EC) No 1580/2007, laying down rules for the implementation of the Council Regulations (EC) No 2200/96, (EC) No 2201/96, and (EC) No 1182/2007 in the fruit and vegetable sector.

The European legislation fully regulates the POs and the interrelations between this matter and the antitrust legislation. For this reason, and because of the European legislation primacy, the single EU Member States' national legislation is not considered to be relevant for the purposes of this feasibility study: *in subiecta materia*, the national legislation may only implement the European law, and do not apply in case of conflict with it.

Moreover, it should be noted that the anti-competition policies having effects only within the domestic market of a single Member State are exclusively subject to the legislation of that very Member State, and they do not apply to the European legislation, unless they are deemed capable of appreciably affecting trade between Member States according to the criterion of “the effect on trade” indicated by the *Commission Guidelines on the effect on trade concept contained in Articles 81 and 82 of the Treaty* (Commission Notice n. 2004/C 101/07). As a consequence, if a database is effective only within a Member State and does not appreciably affect trade between Member States, it is subject only to the national legislation.

1.1.2 Examination of the relevant EU law

The establishment of a database among entities operating in different Member States, and the corresponding flow of information regarding the data considered to be sensitive with respect to competition, such as data on crop areas, production volumes, types of products, market prices etc., may certainly create problems of compatibility with the European antitrust law. Among other aspects, Article 81 of the TEC prevents the establishing of agreements among undertakings which may distort competition by sanctioning these agreements with nullity; hence the obligation for the companies involved to compensate third parties in case of damages.

Beyond the general antitrust legislation, the specific regulations of the agricultural industry - i.e., the rules concerning the production and marketing of the agricultural products listed in the Annex I of the TEC - has also to be taken into account. Under this perspective, Art. 36 of the TEC is particularly relevant, as far as it states that:

“The provisions of the chapter relating to the competition rules are applicable to the production of and trade in agricultural products only to the extent determined by the Council under the provisions and in accordance with the procedure provided for in Art. 37 (2) and (3), having regard to the objectives set out in Art. 33.

The Council may, in particular, authorise the granting of aid:

- (a) for the protection of enterprises handicapped by structural or natural conditions;
- (b) within the framework of economic development programmes.”¹

For the agricultural industry, the Council is therefore entitled to totally or partially decide upon the non application of the TEC Chapter on competition rules. As a matter of fact, within the contexts of all the European legislation regarding the agricultural markets, Article 36 is always invoked in the legal preamble, since the Common Market Organisation (CMO) itself represents a market policy tool non complying with the principle of a free market only subject to the forces of free competition between enterprises.

Since 1962, the Council has also adopted a horizontal regulation for the exemption: that is the EEC Council Regulation No 26/1962 applying certain rules of competition to the production and trade of agricultural products, which was amended several times, and which has now been replaced by the Council Regulation (EC) No 1184/2006.² Article 1 of this Regulation states that competition rules apply to the agricultural industry as well, but soon after this statement, the regulation provides for some very important exceptions.

¹ TEC, Art. 36.

² Council Regulation No 1184/2006 of 24 July 2006 is a consolidation “for purposes of clarity” of the previous EEC Council Regulation No 26/1962. According to Article 4 of Regulation No 1184/2006, the references to the Regulation No 26/1962 should be considered references to the new regulation in accordance with the correlation table in the Annex II.

Article 2(1) of the Council Regulation No 1184/2006 - first sentence - lays down that competition rules do not apply to the agreements, decisions and practices which “constitute an integral part of a national organization of the market or which are necessary for the achievement of the objectives set out in art. 33 of the Treaty”. The first exception is essentially unenforceable, since the national market organisations are no longer effective. The second exception relates to the agreements concerning the products listed in the Annex I of the TEC, regardless of the legal status (whether they are agricultural producers or not) of those who have entered the agreement. In this matter, the European Court of Justice³ has taken a very restrictive position by requiring that those who intend to benefit from the exemption must provide sufficient evidence for the need of entering such an agreement for the achievement of *all the objectives* of the Common Agricultural Policy (CAP) listed in Article 33.

Article 2(1) of Council Regulation No 1184/2006 - second sentence - identifies a third type⁴ of exemption regarding those agreements, decisions and practices of “farmers, associations of farmers or groups of such associations belonging to a single Member State, to the extent that, without leading to an obligation to apply a fixed price, affecting the production or sale of agricultural products or use of joint facilities for the storage, handling or processing of agricultural products, unless the Commission finds that competition is thereby excluded or that compromises the objectives of Article 33 of the Treaty”. In this case, the subjective requirements of the agreement are relevant, because the agreement only relates to the producers of a Member State, who are considered “farmers” *sensu strictu*, i.e. individuals engaged either in the cultivation of plants or in the animal breeding, and not simply as producers of some goods included in Annex I of the TEC.

The motivation of this exemption lays in the considerable number of farmers existing in Europe, which gives them a very weak position in the market negotiations, and it is unlikely that they may really carry out anti-competitive actions by operating either individually or through agreements.

On the contrary, the Community not only tends to legitimize – without prejudice to the general prohibition of agreements to the detriment of competition -, but it also encourages the creation of partnerships between farmers, precisely in order to strengthen their market position against the more concentrated downstream segments of the agro-food supply chain. As a matter of fact, the food-processing industry, the wholesalers and the big retailers are in general confronted with a multitude of farmers, having thus a stronger bargaining power. Basically, the EU CAP has allowed the concentration of the supply in the farm sector in order to balance its disadvantages with respect to buyers, provided that farmers do not make collusive arrangements between themselves aimed at influencing market prices.

Article 82 of the TEC - which prohibits the abuse of dominant position within the common market or in a substantial part of it - is not waived by the Regulation No 1184/2006. However, it is difficult to imagine that one farmer or one association of farmers – differently from some companies trading products included in the Annex I – may achieve a dominant position on the Common Market, so that the non derogation does not seem to have, in practice, significant effects for the farm sector.

Rules similar to those contained in Articles 1 and 2 of Regulation No 1184/2006 have also been introduced into the Regulation No 1234/2007, setting up the so called “single CMO”. The Part IV (Articles from 175 to 182) of this Regulation is dedicated to the competition rules which are

³ See judgments in Case 71/74 of 15 May 1975, *Frubo* in ECR, p. 563, and in Case 40/73 of 16 December 1975, *Suiker Unie and Others*, in ECR, p. 1663.

⁴ In this sense, now, specifically, the Court of Justice in Case C-319/93, 40 and 224/94 of 12 December 1995, *Dijkstra*, in ECR, p. 4471.

meant to apply to all the agricultural products subject to the single CMO. Fruit and vegetables were initially excluded because of the on-going negotiations about the reform for the specific fruit and vegetables CMO approved by means of the Council Regulation No 1182/2007; subsequently, they have been incorporated into the single CMO upon the entry into force of the Council Regulation No 361/2008 amending Regulation (EC) No 1234/2007.

As a consequence, the previous Regulation No 1184/2006 shall now apply to those agricultural products not subject to the provisions of Regulation No 1234/2007. In particular, Article 175 of the new Regulation incorporates the contents of Article 1 of the previous Regulation No 1184/2006, establishing the general applicability of the competition rules to the agricultural industry. The following Article 176 replicates the exemptions of Article 2 of Regulation No 1184/2006, by reaffirming that:

“Article 81(1) of the Treaty shall not apply to agreements, decisions and practices of farmers, farmers’ associations, or associations of such associations belonging to a single Member State which concern the production or sale of agricultural products or the use of joint facilities for the storage, treatment or processing of agricultural products, and under which there is no obligation to charge identical prices, unless the Commission finds that competition is thereby excluded or that the objectives of Article 33 of the Treaty are jeopardised.”⁵

Article 176a on “Agreements and concerted practices in the fruit and vegetables sector” has been added to the Regulation No 1234/2007 by the Council Regulation No 361/2008 by reproducing the provisions of the fruit and vegetables CMO formerly defined by Article 22 of the Council Regulation No 1182/2007. Article 176a relates to the recognized IBOs: in particular, it excludes the application of Article 81(1) of the TEC to the agreements, decisions and concerted practices of fruit and vegetables IBOs that are aimed at carrying out the activities referred to in Article 123(3)(c) (which will be discussed below) provided that:

- the agreements have been notified to the Commission;
- within 2 months from receipt of notification, the Commission has not found that the agreements, decisions or concerted practices are incompatible with the Community rules. During this period the agreements may not be put into effect.

In addition, agreements are always considered incompatible if they:

- may lead to any form of market partitioning in the Community;
- may affect the sound operation of the CMO;
- may create competition distortions which are not essential to achieve the effects of the CAP pursued by IBOs’ activity;
- involve the fixing of prices;
- may create discrimination or eliminate competition in respect of a substantial proportion of the products in question.

In the case of multi-year agreements, the 1st year notification shall also be valid for the following years, but the Commission may at any time assess their incompatibility.

⁵ Council Regulation (EC) No 1234/2007, Article 176(1).

1.1.3 Rules on POs and inter-branch organizations within the fruit and vegetables industry

In addition to the horizontal rules on competition, it is also necessary to consider the legislation on POs and IBOs, which is particularly articulated in the fruit and vegetable industry. The most recent industry reform has been prepared by the Council Regulation No 1182/2007, which contains several provisions regarding POs and IBOs.

Yet that Regulation has had a short life, since it has soon been repealed by the Council Regulation No 361/2008, which has determined its integration into the Council Regulation No 1234/2007, establishing the single CMO. The Regulation No 361/2008 has also repealed the previous Regulations No 2200/1996, and No 2201/1996, regarding, respectively, the CMOs of fruit and vegetables, and of the processed fruit and vegetables. In particular, the Regulation No 361/2008 has established the provisions described below:

a) it has added the Section IVa on “Aids in the fruit and vegetable sector” (Articles from 103a to 103h) to the Council Regulation No 1234/2007. Some Articles of this Section are relevant for the purposes of this study:

- Article 103c about the objectives of POs’ operational programmes in the fruit and vegetables industry, identified in “production planning”, “boosting products’ commercial value”, and “crisis prevention and management” (the latter including measures for “promotion and communication”);
- Article 103d about the Community’s financial assistance in support of the POs’ operational funds to be organized as follows: the CAP-imposed financial aid equivalent to 4.1% of the production value marketed by the PO may be increased to 4.6% provided that the amount in excess of 4.1 % is used only in case of crisis prevention and management measures; those limits shall be 60% for a program submitted by several POs participating in several Member States in transnational actions;
- Article 103e exempting the national financial assistance from the application of Articles 87, 88, and 89 of the TEC about the prohibition of state aids, by derogating the general prohibition of state aid as defined by Article 180 of the Regulation No 1234/2007, in those Member States’ regions where the degree of producers’ organisation in the fruit and vegetables industry is particularly low.

b) it has added the provisions specifically related to the POs and IBOs in the fruit and vegetables industry to the Council Regulation No 1234/2007, Part II, Title II, Chapter II (Articles from 122 to 127) about “organizations of producers, inter-branch organizations and operator organizations”. Notably, it has included the Section Ia on “Rules concerning producer and inter-branch organisations and producer groups in the fruit and vegetables sector” (Articles from 125a to 125n), of which Subsection I (Articles 125a and 125b) is about “Rules of association and recognition of producer organizations”, Subsection II about “Association of POs and producers groups” (Articles from 125c to 125e), Subsection III about “Extension of rules to producers in an economic area” (Articles from 125f to 125j); Subsection IV about “IBOs in the fruit and vegetables sector” (Articles from 125ka to 125n). Among those measures, some Articles are considered to relevant for this study, such as:

- Article 122(c) - as modified by Council Regulation No 361/2008 - specifies that Member States shall recognise the POs which, *inter alia*, pursue a specific aim which, for the fruit and vegetables industry, shall “include one or more of the following objectives: (i) ensuring that production is planned and adjusted to demand, particularly in terms of

quality and quantity; (ii) concentration of supply, and the placing on the market of the members' products; (iii) optimising production costs and stabilizing producer prices”;

- Article 123 - as modified by Council Regulation No 361/2008 - states (paragraph 1, letter c) that IBOs should pursue a specific objective, which may in particular relate, among others, to “(ii) adapting production jointly to the requirements of the market and improving the product; (iii) promoting the rationalisation and mechanisation of production”;
- the same Article 123 also provides that:
 - o in paragraph 2, IBOs which develop their business in the territories of several Member States have to be recognized by the Commission;
 - o in paragraph 3(c), Member States shall recognize the IBOs which carry out two or more activities among the following ones:

“(i) improving knowledge and the transparency of production and the market; (ii) helping to coordinate better the way fruit and vegetables are placed on the market, in particular by means of research and market studies;; (iv) exploiting to a fuller extent the potential of the fruit and vegetables produced; (v) providing the information and carrying out the research necessary to adjust production towards products more suited to market requirements and consumer tastes and expectations, in particular with regard to product quality and protection of the environment; ...”;

- Article 125a(1)(d) establishes that the statute of POs operating in the fruit and vegetable sector sets, *inter alia*, the obligation for the members to provide the information required by the PO for statistical purposes, in particular on growing areas, cropped quantities, yields, and direct sales;
- Article 125b(1)(g) submits the approval of a PO by a Member State to the condition, *inter alia*, that: “they do not hold a dominant position on a given market unless this is necessary in pursuance of the objectives of Article 33 of the Treaty”;
- Article 125c sets that associations of producer organizations (APOs) may be recognized, and can play any activities planned for the PO, if the association does not hold a dominant position on a given market, except where necessary for the purposes of Article 33 of the Treaty;
- Article 125d allows POs and APOs to outsource any of their activities, including to subsidiaries, provided that they provide sufficient evidence that doing so is an appropriate way to achieve their objectives;⁶

⁶ Some provisions - now contained in the Council Regulation No 1234/2007, and in the Commission Regulation 1580/2007 - refer to the transnational activity of the POs and the IBOs. Article 103d(3)(a) of the Regulation No 1234/2007 refers to the POs' operational programs or to part of the POs' operational programmes, which may benefit a 60% financial contribution from the Community if jointly submitted by several POs belonging to different Member States. Article 30 of the Commission Regulation No 1580/2007 set up provisions for transnational POs, while Article 37 deals with transnational APOs and provides they have their own operational programmes; finally, Article 115 deals with checks on the transnational POs and APOs. These rules seem to be in contrast with the general instructions of Article 176a of Council Regulation No 1234/2007, stating that the agreements among POs are not subject to the general prohibition of entering agreements which are harmful to competition (as established by Art. 81 of the TEC) only if they operate within a Member State. Moreover, if the provisions of the Commission Regulation No 1580/2007 have to be considered as secondary rules, since they are adopted by the Commission in execution of the Council Regulation No 1182/2007, the same may not be said for the latter which has been incorporated into the Council Regulation No 1234/2007. As far as they provide for specific competition rules applicable to the agricultural sector, these Council Regulations could be legitimated by the instructions contained in the Article 36 of the TEC, and might allow the operation of POs and APOs at a transnational level. Under this

c) it has inserted, as already mentioned, the former Article 22 of the Council Regulation No 1182/2007 within Article 176a on “Agreements and concerted practices in the fruit and vegetables sector”.

1.1.4 Conclusions

From the law and the regulations described in the paragraphs above, it is possible to draw some conclusions about the compatibility of the European platform with the current European law on competition.

Article 176 of the Council Regulation No 1234/2007 does not seem to be directly applicable, since it exempts from prohibition the agreements undertaken by farmers’ associations (and these are undoubtedly the POs) provided that they belong to one Member State, and that they do not fix the prices of the agricultural products. If the proposed database involves organizations that operate in several Member States, the provision in question could not be applied.

On the opposite, the special rule for fruit and vegetables defined by Article 176a of the same Regulation No 1234/2007 about the decisions, agreements and concerted actions of recognised IBOs, seems to have a certain relevance. Such actions must be designed to achieve the already mentioned objectives of Article 123(3)(c), that is to perform, *inter alia*, two or more activities among the following ones:

- improving the knowledge and transparency of production and market;
- contributing to a better coordination on the marketing of fruit and vegetables, in particular through research and market studies;
- exploiting to a greater extent the potential of fruit and vegetables;
- providing information, and conducting research necessary to adjust production towards products more suited to the market requirements.

There is no doubt that the platform would give birth to an activity aimed at pursuing the objectives listed above; thus, if it is carried out by several IBOs, the initiative will not be subject to the prohibition set by Article 81 of the TEC provided that the rest of conditions and requirements laid down by the relevant provisions of the Single CMO Regulation are respected.

According to our reasoning, the provision of Art. 176a would be the most proper rule applicable to this case. It stems from the assumption that the European platform should be formed by several IBOs under the obligation of notifying to the European Commission its setting up and of waiting for a 2-month period before becoming operative, unless a decision of incompatibility with the Community rules is taken by the Commission.

Attention should also be paid to the fact that the European platform must not enter in conflict with Article 176a(4), i.e., that is to say it must not:

interpretation, the implementation of a European platform operated by different POs or APOs might be legitimated by the general provisions of Article 103d(3)(a) of Council Regulation No 1234/2007. In addition, Article 125a(1)(d) of the Council Regulation No 1234/2007 defines actions which are closely related to those of the platform, by establishing that the statute of a PO operating in the fruit and vegetables industry must oblige, *inter alia*, its associate producers to supply information for statistical purposes regarding, in particular, the growing areas, the cropped quantities, the yields, and the direct sales. It might therefore be argued that, given the unequivocal prediction in primary legislation (i.e., the legislation introduced by the European Council) of likely cross-border activities operated by POs, and given the equally unequivocal prediction of the obligation of collecting data for those organisations, these organisations might be entitled to establish a European database, to gather information for purely statistical purposes. However, this activity must not imply the achievement of a dominant position in the Community market for the POs involved.

- cause any form of market partitioning within the Community;
- affect the proper functioning of the market organisation;
- create competition distortions which are not necessary to achieve the CAP objectives pursued by the IBOs;
- entail the fixing of prices, without prejudice to IBOs' activities carried out in the application of specific Community rules;
- create discrimination or eliminate competition with respect to a substantial proportion of the products in question.

Should this be the case, besides an incompatibility *ex lege* with the EU rules, there would also be the withdrawal of the recognition granted to the IBOs involved, to the effects of Article 125k(3) under the same Regulation.

It is however necessary to verify if the exchange of information among the organisations which manage the platform originates any anticompetitive behaviour forbidden by the European laws. This possibility depends on a variety of circumstances and needs to be examined more in-depth and case by case (see the details of the evaluation of the collusion risk within the platform in § 3.9.2).

Since the platform is intended to operate for several years, Article 176a(6) establishes that the notification for the first year is also valid for all the subsequent years of the agreement duration, unless the Commission declares the platform incompatibility with the European legislation.

1.2 Laws on privacy

The implementation of a European database on the fruit and vegetables market requires the examination of the national and European legislations in the field of personal data protection and confidentiality. The analysis will start from the relevant European laws, and it will then identify the national framework, to finally focus on the compatibility of the European platform with privacy laws, drawing some final conclusions.

1.2.1 European legislation on the protection of personal data

1.2.1.1 Fundamental acts

Article 8 of the European Convention for the Protection of Human Rights and Fundamental Freedoms (ECHR), signed in Rome on 4 November 1950, provides that:

- “1. Everyone has the right to respect for his private and family life, his home and his correspondence.
2. There shall be no interference by a public authority with the exercise of this right except such as is in accordance with the law and is necessary in a democratic society in the interests of national security, public safety or the economic well-being of the country, for the prevention of disorder or crime, for the protection of health or morals, or for the protection of the rights and freedoms of other.”⁷

European data protection law first emerged within the framework of the Council of Europe. The Convention for the Protection of Individuals with regard to Automatic Processing of Personal Data was thus opened for signature by the Member States of the Council of Europe in Strasbourg on 28 January 1981. Its purpose is that of securing the respect for the individual's

⁷ ECHR, Article 7.

rights and fundamental freedoms in the territory of each contracting Party, for every individual, whatever his nationality or residence, and, in particular, the individual's right to privacy, with regard to automatic processing of personal data. As far as the European Union is concerned, Article 8 of the Charter of Fundamental Rights of the European Union - in addition to Article 7, relating to the respect for private and family life - is specifically devoted to the protection of personal data. The article states that:

- “1. Everyone has the right to the protection of personal data concerning him or her.
2. Such data must be processed fairly for specified purposes and on the basis of the consent of the person concerned or some other legitimate basis laid down by law. Everyone has the right of access to data which has been collected concerning him or her, and the right to have it rectified.
3. Compliance with these rules shall be subject to control by an independent authority.”⁸

As regards the primary Community law, Article 286(1) of the TEC provides that:

“From 1 January 1999, Community acts on the protection of individuals with regard to the processing of personal data and the free movement of such data shall apply to the institutions and bodies set up by, or on the basis of, this Treaty.”⁹

1.2.1.2 Directive 95/46/EC, and other relevant Community legislation

Within the framework of the secondary Community legislation, the relevant basic enactment is represented by the Directive 95/46/EC of the European Parliament, and of the Council dated 24 October 1995, on the protection of individuals with regard to the processing of personal data and on the free movement of such data (OJ 1995 L 281, p. 31), which lays down rules relating to the processing of personal data in order to protect the rights of individuals in that respect, while ensuring the free movement of those data across the European Community. Its relationship to the provisions originating from the Council of Europe is expressly indicated at the 10th and 11th recitals of its Preamble. In particular, the 10th recital states that:

“the object of the national laws on the processing of personal data is to protect fundamental rights and freedoms, notably the right to privacy, which is recognized both in Article 8 of the [ECHR] and in the general principles of Community law; ... for that reason, the approximation of those laws must not result in any lessening of the protection they afford but must, on the contrary, seek to ensure a high level of protection in the Community.”¹⁰

In addition, the 11th recital states that:

“the principles of the protection of the rights and freedoms of individuals, notably the right to privacy, which are contained in this Directive, give substance to and amplify those contained in Convention.”¹¹

⁸ Charter of Fundamental Rights of the European Union, Article 8.

⁹ TEC, Article 296.

¹⁰ Directive 95/46/EC, 10th recital.

¹¹ *Ib.*, 11th recital.

Adopted on the basis of former Article 100a of the TEC. now Article 95 of the TEC (upon amendment), the Directive 95/46/EC originated from the idea expressed in the third recital of its Preamble, according to which:

“the establishment and functioning of an internal market ... require not only that personal data should be able to flow freely from one Member State to another, but also that the fundamental rights of individuals should be safeguarded.”¹²

More specifically, the Community legislature has started, at the seventh recital, from the finding that:

“the difference in levels of protection of the rights and freedoms of individuals, notably the right to privacy, with regard to the processing of personal data afforded in the Member States may prevent the transmission of such data from the territory of one Member State to that of another Member State;”¹³

and this may in particular represent an obstacle to the pursuit of activities at a Community level, while distorting competition. The Community legislature, in its eighth recital, has therefore considered that:

“in order to remove the obstacles to flows of personal data, the level of protection of the rights and freedoms of individuals with regard to the processing of such data must be equivalent in all Member States.”¹⁴

The result of such an approach is that:

“given the equivalent protection resulting from the approximation of national laws, the Member States will no longer be able to inhibit the free movement between them of personal data on grounds relating to protection of the rights and freedoms of individuals, and in particular the right to privacy.”¹⁵

Object

Article 1 of Directive 95/46/EC, headed “Object of the directive”, applies its approach in these terms:

“1. In accordance with this Directive, Member States shall protect the fundamental rights and freedoms of natural persons, and in particular their right to privacy with respect to the processing of personal data.

2. Member States shall neither restrict nor prohibit the free flow of personal data between Member States for reasons connected with the protection afforded under paragraph 1.”¹⁶

¹² *Ib.*, third recital.

¹³ *Ib.*, seventh recital.

¹⁴ *Ib.*, eighth recital.

¹⁵ *Ib.*, ninth recital.

¹⁶ *Ib.*, Article 1.

Definitions

Article 2 of the Directive defines, *inter alia*, the terms ‘personal data’, ‘processing of personal data’, ‘personal data filing system’, and ‘controller’ as follows:

- a. ‘personal data’ means any information relating to an identified or identifiable natural person (‘data subject’); an identifiable person is one who can be identified, directly or indirectly, in particular by reference to an identification number or to one or more factors specific to his physical, physiological, mental, economic, cultural or social identity;
- b. ‘processing of personal data’ (‘processing’) shall mean any operation or set of operations which is performed upon personal data, whether or not by automatic means, such as collection, recording, organization, storage, adaptation or alteration, retrieval, consultation, use, disclosure by transmission, dissemination or otherwise making available, alignment or combination, blocking, erasure or destruction;
- c. ‘personal data filing system’ (‘filing system’) shall mean any structured set of personal data which are accessible according to specific criteria, whether centralized, decentralized or dispersed on a functional or geographical basis;
- (d) ‘controller’ shall mean the natural or legal person, public authority, agency or any other body which alone or jointly with others determines the purposes and means of the processing of personal data; ...¹⁷

Scope

As regards the scope, Article 3(1) provides that the Directive:

“... shall apply to the processing of personal data wholly or partly by automatic means, and to the processing otherwise than by automatic means of personal data which form part of a filing system or are intended to form part of a filing system.”¹⁸

Article 3(2) indicates one of the limits for the material scope of the Directive, since it provides that:

“This Directive shall not apply to the processing of personal data: in the course of an activity which falls outside the scope of Community law, such as those provided for by Titles V and VI of the Treaty on European Union and in any case to processing operations concerning public security, defence, State security (including the economic well-being of the State when the processing operation relates to State security matters) and the activities of the State in areas of criminal law.”¹⁹

Data quality

Chapter II of the Directive is devoted to “General rules on the lawfulness of the processing of personal data”. Within that chapter, Section I covers the “Principles relating to data quality”. Article 6 of the directive lists those principles known as ‘fairness’, ‘lawfulness’, ‘purpose’, ‘proportionality’ and ‘accuracy’ of processing of personal data. The chapter formulates that:

¹⁷ *Ib.*, Article 2.

¹⁸ *Ib.*, Article 3(1).

¹⁹ *Ib.*, Article 3(2).

“1. Member States shall provide that personal data must be:

- (a) processed fairly and lawfully;
 - (b) collected for specified, explicit and legitimate purposes and not further processed in a way incompatible with those purposes ...;
 - (c) adequate, relevant and not excessive in relation to the purposes for which they are collected and/or further processed;
 - (d) accurate and, where necessary, kept up to date; ...;
 - (e) kept in a form which permits identification of data subjects for no longer than is necessary for the purposes for which the data were collected or for which they are further processed. ...;
2. It shall be for the controller to ensure that paragraph 1 is complied with.”²⁰

Legitimacy

Section II of Chapter II of the Directive is devoted to the “Criteria for making data processing legitimate”. Article 7, which makes up that section, reads as follows:

“Member States shall provide that personal data may be processed only if:

- (a) the data subject has unambiguously given his consent; or
- (b) processing is necessary for the performance of a contract to which the data subject is party or in order to take steps at the request of the data subject prior to entering into a contract; or
- (c) processing is necessary for compliance with a legal obligation to which the controller is subject; or
- (d) processing is necessary in order to protect the vital interests of the data subject; or
- (e) processing is necessary for the performance of a task carried out in the public interest or in the exercise of official authority vested in the controller or in a third party to whom the data are disclosed; or
- (f) processing is necessary for the purposes of the legitimate interests pursued by the controller or by the third party or parties to whom the data are disclosed, except where such interests are overridden by the interests for fundamental rights and freedoms of the data subject which require protection under Article 1(1).”²¹

Sensitive data

With regard to personal data commonly categorized as ‘sensitive’, Article 8(1) lays down the principle that the processing of such data is prohibited. In particular, it provides that:

“Member States shall prohibit the processing of personal data revealing racial or ethnic origin, political opinions, religious or philosophical beliefs, trade-union membership, and the processing of data concerning health or sex life.”²²

There are, however, a number of exceptions to that principle of prohibition (set out in detail in the subsequent paragraphs of Article 8) which are not relevant to the aim of the study.

²⁰ *Ib.*, Article 6.

²¹ *Ib.*, Article 7.

²² *Ib.*, Article 8(1).

Right of access to data

Article 12 provides also some provisions about the right to access to the personal data. Every data subject has the right to obtain from the controller:

- “(a) without constraint at reasonable intervals and without excessive delay or expense:
 - confirmation as to whether or not data relating to him are being processed and information at least as to the purposes of the processing, the categories of data concerned, and the recipients or categories of recipients to whom the data are disclosed,
 - communication to him in an intelligible form of the data undergoing processing and of any available information as to their source,
 - knowledge of the logic involved in any automatic processing of data concerning him at least in the case of the automated decisions referred to in Article 15(1);
- (b) as appropriate the rectification, erasure or blocking of data the processing of which does not comply with the provisions of this Directive, in particular because of the incomplete or inaccurate nature of the data;
- (c) notification to third parties to whom the data have been disclosed of any rectification, erasure or blocking carried out in compliance with (b), unless this proves impossible or involves a disproportionate effort.”²³

Exemptions and restrictions

Article 13(1) provides under the heading ‘*Exemptions and restrictions*’ that:

- “Member States may adopt legislative measures to restrict the scope of the obligations and rights provided for in Articles 6(1), 10, 11(1), 12 and 21 when such a restriction constitutes a necessary measure to safeguard:
- (a) national security;
 - (b) defence;
 - (c) public security;
 - (d) the prevention, investigation, detection and prosecution of criminal offences, or of breaches of ethics for regulated professions;
 - (e) an important economic or financial interest of a Member State or of the European Union, including monetary, budgetary and taxation matters;
 - (f) a monitoring, inspection or regulatory function connected, even occasionally, with the exercise of official authority in cases referred to in (c), (d) and (e);
 - (g) the protection of the data subject or of the rights and freedoms of others.”²⁴

Confidentiality and security

Confidentiality and security of processing need to be ensured as well, as provided by Articles 16 and 17 of the Directive. Moreover, for the purposes of keeping proof, the parts of the contract or the legal act relating to data protection and the requirements relating to the measures referred to the protection of personal data shall be in writing or in another equivalent form.

²³ *Ib.*, Article 12.

²⁴ *Ib.*, Article 13(1).

The protective regime shall not be impaired when personal data leave the Community territory. It has become apparent that the international dimension of information flow would make the legislation, that is effective only in that territory, inadequate if not useless. In the case of transfers of personal data to a third country, the Community legislation therefore opted for a system requiring that, in order to allow a transfer, the third country involved has to ensure an “adequate level of protection” for such data.²⁵ Otherwise, “the transfer of personal data to a third country which does not ensure an adequate level of protection must be prohibited”.²⁶

Data protection supervisor

Article 28 of the Directive provides that:

“1. Each Member State shall provide that one or more public authorities are responsible for monitoring the application within its territory of the provisions adopted by the Member States pursuant to this Directive. These authorities shall act with complete independence in exercising the functions entrusted to them.

2. Each Member State shall provide that the supervisory authorities are consulted when drawing up administrative measures or regulations relating to the protection of individuals' rights and freedoms with regard to the processing of personal data.”²⁷

A similar function is assigned to the Data Protection Supervisor defined by Article 286 of the TEC, and set up by the Regulation of the European Parliament, and the Council No 45/2001 of 18 December 2000, on the protection of individuals with regard to the processing of personal data by the Community institutions and bodies and on the free movement of such data. Article 41 of this Regulation provides that:

“1. An independent supervisory authority is hereby established referred to as the European Data Protection Supervisor.

2. With respect to the processing of personal data, the European Data Protection Supervisor shall be responsible for ensuring that the fundamental rights and freedoms of natural persons, and in particular their right to privacy, are respected by the Community institutions and bodies.

The European Data Protection Supervisor shall be responsible for monitoring and ensuring the application of the provisions of this Regulation and any other Community act relating to the protection of the fundamental rights and freedoms of natural persons with regard to the processing of personal data by a Community institution or body, and for advising Community institutions and bodies and data subjects on all matters concerning the processing of personal data.”²⁸

As regards the aims of the Regulation No 45/2001, Article 3 provides that:

“1. This Regulation shall apply to the processing of personal data by all Community institutions and bodies insofar as such processing is carried out in the exercise of activities all or part of which fall within the scope of Community law.

²⁵ *Ib.*, Article 25(1).

²⁶ *Ib.*, 57th recital.

²⁷ *Ib.*, Article 28.

²⁸ Regulation of the EP and the Council No 45/2001, Article 41.

2. This Regulation shall apply to the processing of personal data wholly or partly by automatic means, and to the processing otherwise than by automatic means of personal data which form part of a filing system or are intended to form part of a filing system.”²⁹

Finally, to complete the description of the European privacy law, it shall be pointed out the existence of the Directive 2002/58/EC of the European Parliament and of the Council of 12 July 2002 concerning the processing of personal data and the protection of privacy in the electronic communications sector (Directive on privacy and electronic communications), and of the Directive 2006/24/CE of the European Parliament and of the Council of 15 March 2006 on the retention of data generated or processed in connection with the provision of publicly available electronic communications services or of public communications networks and amending Directive 2002/58/EC.

Considering the lack of uniformity in the legislations of the different Member States on the movement and processing of personal data, through such measures the Community institutions have recommended Member States the adoption of national implementing rules to ensure an appropriate level of protection, at least equivalent to that at the European Community level.

1.2.2 National measures implementing the Directive No 95/46/CE and other relevant national measures

Member States involved in the Platform have transposed the Directive No 95/46/CE through the following measures:³⁰

- **France:** *Loi n° 78 -17 du 6/1/1978 relative à l'informatique, aux fichiers et aux libertés*, as amended by the *Loi n° 2004/801 du 6/8/2004 relative à la protection des personnes physiques à l'égard des traitements de données à caractère personnel*, and updated in 2008.

- **Italy:** *Decreto legislativo 30 giugno 2003, n. 196, “Codice in materia di protezione dei dati personali”* entered into force on 1st January 2004;

- **Spain:** *Ley Constitucional n° 15/1999; Real Decreto n° 1720/2007; Real Decreto n° 156/96 de 02/02/1996, por el que se modifica el Estatuto de la Agencia de Protección de Datos, aprobado por Real Decreto 428/1993, de 26 de marzo, para designar a la Agencia de Protección de Datos como representante español en el grupo de protección de personas previsto en la Directiva 95/46/CE, de 24 de octubre BOE n° 37 de 12/02/1996 Página 4939 (Marginal 2991;*

- **Belgium:** *Loi du 11/12/1998 transposant la directive 95/46/CE du 24 octobre 1995 du Parlement européen et du Conseil relative à la protection des personnes physiques à l'égard du traitement de données à caractère personnel et à la libre circulation de ces données;*

- **Hungary:** 1992. XVIII. Law on data protection of private data which last modification was on 1st of January in 2007. This law use exactly the same rules and same level of data protection like the European rules.

The protection of legal persons with regard to the processing data is not affected by the Directive No 95/46/CE. Therefore, Member States may provide, or not, the same level and the same kind of protection of processing data belonging to both the legal and the natural persons.

²⁹ *Ib.*, Article 3.

³⁰ Information about the national laws has been retrieved from official sources of the European Community (notably from the web site http://eur-lex.europa.eu/LexUriServ/LexUriServ.douri=CELEX:71995L0046:EN:NOT#FIELD_FR) and from the answers included in section 3 of the questionnaire distributed to the organizations of the fruit and vegetable sector involved in the study, in Belgium, France, Italy, Hungary and Spain.

The field organisations participating into the feasibility study have confirmed, through their legal experts, that in their own Member State the legislation provides the same level of protection as at the European level.

1.2.3 Compatibility of the European platform with the EU privacy law

1.2.3.1 Specific aspects related to the platform operation

The compliance with the legislation on the protection of personal data is one of the most important requirements to be attained by the platform. The platform should be built according to the following considerations.

The data involved in the implementation of the platform are classified - according to the EU legislation on the protection of personal data - as 'personal data' defined by Article 2(a) of the Directive 46/95/EC (see § 1.2.1.2). The personal data may indeed be brought back to a general and broader category that almost includes all the information directly and indirectly related to the individual.

It is worth outlining that these data may be objective data (e.g. name) or subjective data (e.g. opinion or assessment), and that they can be identified or are identifiable directly and indirectly. It follows that, in the presence of anonymous data, privacy legislation is not applicable.

The difference that the legislations on the protection of personal data set between common (or ordinary) and sensitive data is very important: sensitive data require greater protection, and they therefore entail different actions to be adopted.

The implementation of the platform should involve the evaluation of its information, regarding the type of data (personal or anonymous, and common or sensitive), their sources (first acquisition or subsequent updates), the terms and purposes of the treatment, and the security measures.

The data collecting operations - that the platform here analysed aims to implement - clearly refer to the concept of 'processing personal data' provided by Article 2(b) of the Directive 46/95/EC (see § 1.2.1.2).

The individuals should be informed of:

- who will process the personal data;
- the purposes of the data processing;
- treatment method of personal data;
- whether it is mandatory or not for the subject to communicate the data;
- his rights versus third parties that handle the data.

The platform can also be regarded as a 'personal data filing system' that is defined by Article 2(c) of the Directive 46/95/EC EC (see § 1.2.1.2).

1.2.3.2 Creation of a database platform

Considering the practical-operational level, personal data will be collected, organized, processed and managed in archives or "databases". Yet the feasibility of the platform is subject to the following conditions and modes:

a) the controller should ask personal data in writing;

The controller (Platform) has to ask expressly (in writing) and unambiguously to the data subjects (individual producers) their consent in giving data, specifying the reasons and purposes of the collection (i.e., to develop European fruit and vegetable market through the analysis of certain aspects and indicators of the market), the exact identity of the controller (platform), the voluntary reply to the request of consent for processing data, and the absence of consequences in case of denying the consent (except for the impossibility of use the database).

b) data subjects (individual producers) should give their consent unambiguously, i.e. expressively;

Individual producers have to give their consent expressively and in writing; besides, it is important to underline that personal data involved in the platform are not sensitive, but rather common. This circumstance implies that the particular procedure drafted by Article 8, of the Directive 46/95/EC, is not necessary.

c) Recipients

It is important to underline that personal data collected, archived and processed by the platform are disclosed to the platform members: POs and individual producers that have given their consent to the personal data collection and processing.

1.2.4 Conclusions

To sum up, according to these considerations, the creation of the platform includes:

- 1) A first connotation of the data involved (common or sensitive). These data should be kept separately, considering that sensitive data will require a higher level of protection;
- 2) The need to verify that the subjects involved in the treatment are actually authorized to and they are acting according to the instructions received (regarding both responsible and processor of the data treatment);
- 3) The identification of the terms and purposes of the processing that will also be communicated to the data subjects. Please note that the personal data may be processed only for legitimate purposes and according to procedures listed in the briefing.
- 4) Finally, it will be also necessary to establish a control system that prevents data from being viewed from subjects other than the legitimate responsible for the treatment. The legitimate processor needs to issue the treatment policy, and obtain the consent from the data owner. The processor must then identify the way and the timing of data storage. Data will have to be kept as long as required by the particular treatment they have been collected for.

2 Existing Data and Information Exchange

This chapter carries out Task 2 of the feasibility study, which consists into describing the data collection and processing mechanisms of five organisations of producers from Italy, France, Spain, Hungary and Belgium.³¹ These organisations have been asked, through a questionnaire, to provide details on their corporate structure, and a report describing their activities of data collection, processing and publication regarding the fruit and vegetables industry and markets.

In particular, the inquiry has focussed on the activities regarding the following aspects:

- data on crop areas (fruit and vegetable plantations);
- production forecasts;
- data on final production;
- data on stocks;
- monitoring of the harvest campaign for the most perishable products;
- monitoring of markets (wholesale, export, and retail markets);
- data on consumption;

For each of its activity, every organisation has been asked to describe:

- the types of data published, and the aim of the publications;
- the fruit and vegetable products object of those publications (species, varieties);
- the sources of the data published;
- the geographical scope of data;
- the methodology used for data collection and processing;
- the type of publications used to issue the data.

The organisations have also been asked to describe: the IT characteristics of their information systems, the motivations for them to take part into the platform, and the legal framework of competition and data privacy in their respective Countries.³²

The five organisations involved into the study are not a statistically significant sample of the European producers. They are a convenience sample representing some of the most important cases within the European fruit and vegetable industry. As a consequence, the analysis developed in this chapter has to be primarily and correctly referred to the individual cases reported, as regards the whole European context other situations different from those examined here may occur.

³¹ “The feasibility study will be done on data provided by a sample of Producer Organisations/Association of Producer Organisation from at least 3 Member States including Italy, France, and Spain: the main producing countries.” (Tender specifications, § 2.1.3, page 6). The representativeness of these Countries mainly stems from their relevance into the fruit and vegetable industry. The Contractor extended the investigation to Belgium and Hungary, according to criteria defined into its Technical Proposal.

³² Legal information directly provided by the organisations involved into the study has completed the information gathered through the official web sources.

2.1 Organisations involved into the study

2.1.1 Italy: CSO

CSO (Centro Servizi Ortofrutticoli) is a consortium of private operators which incorporates 50 partner organizations including POs, APOs, and trader companies of the fruit and vegetables industry, whose aggregate value of sales amounts to 1.2 billion EUR (about 10% of the total turnover of the Italian fruit and vegetables industry). The consortium supplies its associates with information and statistics on the fruit and vegetables industry, and markets, and it develops services in different fields related to this business: e.g., legislation, quality certifications, logistics, fair exhibitions, organization of conferences, and assistance in international board meetings. The total annual budget of the CSO activity amounts to 4.2 million EUR.

CSO activity is organised into four departments: statistics and market observatory, legislation and quality certifications, marketing, and logistics. The statistics and market observatory department manage the CSO information system with 5 employees and a budget of 560,000 EUR, financed through the contributions by the associated partner organisations and by providing services to non-associated entities, including public administrations.

2.1.2 Spain: Catalonia Qualitat

Catalonia Qualitat - Asociación Catalana de Organizaciones de Productores de Fruta is an APO, a private association with the status of a non-profit organisation, and with an annual budget of 750,000 EUR. Its members are organisations of fruit producers, generating altogether an annual production of about 500,000 tons of fruit. Catalonia Qualitat provides its members with several kinds of services regarding the fruit production and marketing, and the POs' Operational Programs. The services include the delivery of information and data about the fruit market.

The activity of Catalonia Qualitat is organized into five departments: Management, Administration, Communication and Promotion, Quality and Inspection, and the Technical Department, which manages the corporate information system by employing three people. A fourth person assists this department with administrative tasks during the peak periods. Catalonia Qualitat manages the Observatori de la Fruita Fresca of Catalonia promoted by the Departament d'Agricultura, Alimentació i Acció Rural of the Generalitat de Catalunya.

2.1.3 Hungary: FruitVeB

FruitVeB (Magyar Zöldség-Gyümölcs Szakmaközi Szervezet) is the national IBO, responsible for the Hungarian fruit and vegetable industry. It is a professional association with open membership including, not only the growers, the traders (exporters, importers, retailers and wholesalers) and the processors, but also the education and research institutes and the consumers. The total membership of over 25,000 entities is composed in part of individual members, and in part of other professional associations.

FruitVeB has the status of a public entity, with an annual budget of about 385,000 EUR. It develops strategies for the fruit and vegetable industry, and it takes part in consultations for governmental and EU decisions about this sector. FruitVeB also provides for various services to POs. The information system is financed by its members, and it employs two persons for collecting and registering data, making analyses and preparing publications.

2.1.4 France: BRM

The Agricultural Economic Committee³³ of the Bassin Rhône Méditerranée or BRM is an IBO of the fruit and vegetables industry set up in 1998. It covers four regions in South-Eastern France: Auvergne, Languedoc-Roussillon, Provence-Alpes-Côte d'Azur, and Rhône-Alpes. The organisation represents 96 POs, with 8,000 producers cultivating 78,000 hectares. Its total production amounts to 1.5 million tons of fruit and vegetables, while its annual turnover is 915 million EUR.

The activity of BRM is organised into 25 product sections, aimed at developing the various aspects of the product strategies, improving marketing, enhancing producers' income and, at orienting consumers. The annual budget of BRM amounts to 6.2 million EUR, and about 50% of the total is financed by its members. BRM's corporate information system is managed by an Economic Observatory which employs two persons. The Economic Observatory supports a yearly expenditure of 80,000 EUR, financed from the BRM functioning costs.

2.1.5 Belgium: REO Veiling

The producer organisation REO Veiling (Agricultural Auction Market for Roeselare and the surrounding area) is a cooperative auction of fruit and vegetables based in Roeselare. It is a private association gathering 3,000 producers, with a total annual turnover of 160 million EUR, out of which 55% is from export. The information system of REO Veiling is financed by associated POs.

2.2 Data collection, processing and publication

This section summarises the reports provided by the different organisations involved into the feasibility study about their own activities of data collection, processing and publication. The activity of each organisation in the different types of information managed (i.e., data on crop areas, production forecasts, data on final production, etc.) has been described through a table which makes a synthesis of the different types of data treated, the sources, the species of fruit and vegetables analysed, the geographical areas covered, and, finally, the information outputs.

³³ The "Comités Économiques Agricoles" regulated by the French rural code are professional organisations performing services of general interest under the control of the state. They are set up and ruled under the same legislation of the private companies.

2.2.1 Data on crop areas

2.2.1.1 Italy: CSO

Types of data (crop areas)	Sources	Species	Geographical areas	Outputs
1) Data on fruit crop areas by species, variety, density of plantation, age of plantation, ripening period, region, province, municipality	Registries of the partner POs for the recording of the areas of tree crop plantations belonging to their associate producers	Peaches, nectarines, apricots, plums, pears, apples, kiwi	Regions where the presence of partner POs is significant	Annual updating of the database of the fruit crop areas, and projections on the fruit plantations in production during the subsequent 3-year period
2) Changes to the fruit crop areas resulting from new plantings and cuts by species, variety, age of plantation, ripening period, region, province	Farm samples	Peaches, nectarines, apricots, plums, pears, apples, kiwi	Emilia-Romagna (provinces of Forli-Cesena, Bologna, Ferrara), Veneto, Piemonte	Annual report (completing the database information referred in (1) in the areas where the partner POs have few or no associated producers)
3) Monitoring of the strawberry crops (data on the crop area evolution by variety)	Estimates based on the partner POs' data	Strawberry	Italy and regional details	Annual report

Sources: own elaboration from questionnaires.

2.2.1.2 Spain: Catalonia Qualitat

Types of data (crop areas)	Sources	Species	Geographical areas	Outputs
1) Data on fruit crop areas, by species, variety, age of plantation, location	The Catalan Registry of fruit crop plantations (based on the farmers' annual declarations)	Fruit crops	Catalonia region	Annual updating of the database of fruit crop areas

Sources: own elaboration from questionnaires.

2.2.1.3 Hungary: FruitVeB

Types of data (crop areas)	Sources	Species	Geographical areas	Outputs
1) Data on fruit and vegetables crop areas, by species, location, and data on the irrigated areas	The producers associated with the POs partners of FruitVeB	Fruit crops	Hungary	Annual updating of the database of fruit crop areas

Sources: own elaboration from questionnaires.

2.2.1.4 France: BRM

Types of data (crop areas)	Sources	Species	Geographical areas	Outputs
1) Data on fruit crop areas by species, variety, tree form, age of plantation, ripening period, location. Data on new plantings and cuts	Databases of associated POs	Peaches, nectarines, apricots, plums, cherries, pears, apples, kiwi, table grapes, walnuts, chestnuts, almonds, soft fruit	Auvergne, Languedoc-Roussillon, Provence-Alpes-Côte d'Azur and Rhône-Alpes	Annual updating of the database of fruit crop areas, long-term forecasts on production by species and variety
2) Data on vegetable crops areas, by species, variety, location, and period of planting.	Databases of associated POs	Tomatoes, melons, lettuce, artichokes, asparagus, onions, potatoes	Auvergne, Languedoc-Roussillon, Provence-Alpes-Côte d'Azur and Rhône-Alpes	Monitoring of area annual evolution under vegetable crops (the inquiry identifies the single parcels invested in vegetables crops)
3) Data on areas under greenhouses by type of shelter, size, roofing material, type of bay, heating, irrigation system, equipment, waste management, location	Databases of associated POs	-	Auvergne, Languedoc-Roussillon, Provence-Alpes-Côte d'Azur and Rhône-Alpes	Annual updating of the database reporting the greenhouse areas in use and those to be renewed

Sources: own elaboration from questionnaires.

2.2.1.5 Belgium: REO Veiling

Types of data (crop areas)	Sources	Species	Geographical areas	Outputs
1) Data on vegetable crop areas by species, variety, 1 st harvest date, end of harvest, location	Farm inquiries; receiving information from VBT/LAVA	Vegetables	Belgium	Mainly for internal use (limited publications).

Sources: own elaboration from questionnaires.

2.2.2 Production forecasts

2.2.2.1 Italy: CSO

Types of data (production forecasts)	Sources	Species	Geographical areas	Outputs
1) Early forecasts on production of stone fruit based on the data on crop areas, and on the progression of the flowerings, and the early development of fruit	Elaborations from the CSO database and from interviews to local experts about the progression of the flowerings, and the early development of fruit	Peaches, and percocha peaches, nectarines, apricots, plums	Italy	Early forecast on the annual stone fruit production. Participation into the annual Europêch conference spreading early forecasts on the European stone fruit production
2) Estimated forecasts on nectarine production by variety in Centre and Southern Italy	Data from associated POs and other producers, farm samples in the provinces of Caserta, Salerno and Matera	Nectarines	Centre and Southern Italy	Tables and graphs describing the forecasted nectarine production by variety and ripening period
3) Estimated forecasts on peaches and nectarines production by variety in Northern Italy	Data on yields per tree from farm samples in Emilia-Romagna, Piemonte, and Veneto	Peaches and nectarines	Northern Italy (Emilia-Romagna, Piemonte, Veneto)	Forecasts on estimated yields per hectare and on total production
4) Weekly harvest calendar of peaches and nectarines by variety	Interviews to local experts about the ripening progression variety	Peaches and nectarines	Italy	Weekly publishing of the harvest calendar of peaches and nectarines by variety, marking the harvest peaks
5) Forecasts on pear and apple production by variety and region	Data on yields per tree, and tree form from farm samples	Pears and apples	Emilia-Romagna, Piemonte, Veneto, Italy	Annual forecast on production by variety. Participation into the annual Prognosfruit conference spreading forecasts on the European pome fruit production
6) Forecasts on production of kiwi by region	Data from farm samples in Emilia-Romagna, Piemonte, Veneto, and Latium; interviews to local experts in the other regions	Kiwi	Emilia-Romagna, Piemonte, Veneto, Latium, Italy	Annual forecast on production completed with information on production from third countries

Sources: own elaboration from questionnaires.

2.2.2.2 Spain: Catalonia Qualitat

Types of data (production forecasts)	Sources	Species	Geographical areas	Outputs
1) Early forecasts on production of peach and nectarines based on the data on crop areas, and on the progression of the flowerings and the early development of fruit	Information from a network of experts	Peaches, pavia peaches and nectarines	Catalonia	Early forecasts (April) on the annual production of peaches and nectarines
2) Forecasts of peach and nectarine production by variety based on estimated yields	Data from a sample of parcels and from the Official Registry of Fruit Crops plantations of Catalonia	Peaches and nectarines	Catalonia	Forecasts (July) on the production of peaches and nectarines
3) Forecasts of apple and pear production by variety based on estimated yields	Data from a sample of parcels and from the Official Registry of Fruit Crops plantations of Catalonia	Apple and pears	Catalonia	Forecast (June) on the production of summer pears and forecasts (July) on the production of apple and pears
4) Forecasts of fruit production for Spain and Europe	External sources	Peaches and nectarines, pears	Spain, Europe	Annual European and Spanish forecasts of production of peaches, nectarines, and pears
5) Forecasts on apple and pear production from the Southern Hemisphere	External sources	Apple and pears	Argentina, Brazil, Chile, New Zealand, South Africa	Annual forecasts

Sources: own elaboration from questionnaires.

2.2.2.3 Hungary: FruitVeB

Types of data (production forecasts)	Sources	Species	Geographical areas	Outputs
1) Production forecasts	Information from stakeholders' representatives (producers, traders, processors, and professional consultants) participating into the FruitVeB products' Committees	Greenhouse products, watermelons and melons, big seeded vegetables, tomatoes for processing, apples and pears, stone fruits, small fruits, horseradish, mushroom, gherkin	Hungary	Issue of periodical forecasts, published in the FruitVeB's journal, following the meetings of the Committees

Sources: own elaboration from questionnaires.

2.2.2.4 France: BRM

Types of data (production forecasts)	Sources	Species	Geographical areas	Outputs
1) Estimated potential production of peaches and nectarines by variety and location based on the inventory of invested areas	Elaborations from the updating of the the BRM tree-crop areas database.	Peaches, nectarines	Auvergne, Languedoc-Roussillon, Provence-Alpes-Côte d'Azur and Rhône-Alpes	Estimates made in winter of the annual potential production
2) Early forecast of peach and nectarine production by variety and location, taking into account the progression of the flowerings and the early development of fruit	Elaborations based on the BRM tree-crop areas database and information gathered from the associated POs	Peaches, nectarines	Auvergne, Languedoc-Roussillon, Provence-Alpes-Côte d'Azur and Rhône-Alpes	Early forecasts (April) on the annual production of peaches and nectarines
3) Summer estimates of peach and nectarine production by variety and location, at the end of the harvest campaign	Information from the associated POs	Peaches, nectarines	Auvergne, Languedoc-Roussillon, Provence-Alpes-Côte d'Azur and Rhône-Alpes	Weekly estimates on the estimated production with information on the quality of fruit at the end of the harvest calendar by variety and location
4) Forecasts on apple and pear production by variety and location	Information from associated POs (periodical surveys by questionnaires starting from June) and other organisations	Apples and pears	Auvergne, Languedoc-Roussillon, Provence-Alpes-Côte d'Azur and Rhône-Alpes. For pears also: Great South-Western France, Val de Loire, Northern France	Estimates on estimated production with information on the ripening progression, the quality of fruit, and the vegetative and phytosanitary state of plantations

Sources: own elaboration from questionnaires.

2.2.2.5 Belgium: REO Veiling

Types of data (production forecasts)	Sources	Species	Geographical areas	Outputs
1) Forecast on production by species and variety	Collecting data from producers and receiving information from other auction organisations, LAVA, VBT, and also from foreign organisations	Fruit and vegetables	Belgium	Mainly for internal use

Sources: own elaboration from questionnaires.

2.2.3 Data on final production

2.2.3.1 Italy: CSO

Types of data (final production)	Sources	Species	Geographical areas	Outputs
1) Data on final production of fruit crops by species, variety, quality of products, and region	Data from associated POs and farm samples	Peaches, nectarines, apples, pears, kiwi	Emilia-Romagna, Piemonte, Veneto	Annual report on final production with information on yields, production/harvest ratio, and quality of production

Sources: own elaboration from questionnaires.

2.2.3.2 Spain: Catalonia Qualitat

Types of data (final production)	Sources	Species	Geographical areas	Outputs
1) Data on final production of fruit crops by species, variety, and region, based on estimated average yields	Data from a sample of parcels, from the Official Registry of Fruit Crops plantations of Catalonia, and from POs and traders	Peaches, nectarines, apples, pears	Catalonia	Annual report (November) on final production, harvested production with information on the quality of products and losses related to weather and plant diseases

Sources: own elaboration from questionnaires.

2.2.3.3 Hungary: FruitVeB

Types of data (final production)	Sources	Species	Geographical areas	Outputs
1) Data on final production and yields of fruit and vegetables by species and variety	FruitVeB associates	fruit and vegetables	Hungary	Annual report

Sources: own elaboration from questionnaires.

2.2.3.4 France: BRM

Types of data (final production)	Sources	Species	Geographical areas	Outputs
1) Data on final production and on yields of fruit and vegetables by cultivar and variety	Questionnaires distributed in December to associated Pos	Fruit and vegetables	Auvergne, Languedoc-Roussillon, Provence-Alpes-Côte d'Azur and Rhône-Alpes	Data on final production of fruit and vegetables with analyses on the latest trends over the last 6-year period, and comparisons with the production of other regions and Countries

Sources: own elaboration from questionnaires.

2.2.3.5 Belgium: REO Veiling

Types of data (final production)	Sources	Species	Geographical areas	Outputs
1) Data on production by species, variety per month, season and year	Collecting data from associated producers	Fruit and vegetables	Belgium	Mainly for internal use

Sources: own elaboration from questionnaires.

2.2.4 Monitoring of the harvest campaign for the most perishable products

2.2.4.1 Italy: CSO

Types of data (harvest monitoring)	Sources	Species	Geographical areas	Outputs
1) Information about the harvest campaign of strawberry from the major production regions, including: weather, phytosanitary and vegetative state of plants, progression of the harvest, quality of products	Information from a network of local experts	Strawberry, peaches and nectarines, and asparagus	Huelva (Andalucia), Metaponto (Basilicata), Campania, Cesena (Emilia-Romagna), Verona (Veneto), Cuneo (Piemonte)	Weekly bulletin
2) Information about the harvest campaign of peaches and nectarines from the major production regions, including: weather, phytosanitary and vegetative state of plants, progression of the harvest, quality of products	Information from an European network of local experts	Peaches and nectarines	Catalonia, Southern France, Macedonia, Calabria, Basilicata, Campania, Abruzzo, Emilia-Romagna, Piemonte, Veneto	Weekly bulletin
3) Information about the harvest campaign of asparagus from the major production regions, including: harvest starting date, weather, phytosanitary and vegetative state of plants, progression of the harvest, quality of products, sales	Information from an European network of local experts	Asparagus	Spain, France, Germany, Calabria, Campania, Puglia, Emilia-Romagna, Veneto	Weekly bulletin. Information from Spain includes data on exports by variety

Sources: own elaboration from questionnaires.

2.2.4.2 Spain: Catalonia Qualitat

Types of data (harvest monitoring)	Sources	Species	Geographical areas	Outputs
1) Data on harvested volumes of peaches and nectarines by variety, and information about the quality of products	Information from a network of local experts (estimates based on forecasted yields and on the monitoring of the fruit ripening state)	Peaches, nectarines	Catalonia (data are transmitted to Areflh for the European monitoring)	Weekly bulletin integrating the harvest data with information about the latest trends of the domestic and export markets (demand, supply, prices)

Sources: own elaboration from questionnaires.

2.2.4.3 Hungary: FruitVeB

Types of data (harvest monitoring)	Sources	Species	Geographical areas	Outputs
1) Harvest monitoring of sour cherry	FruitVeB monitoring committee for the sour cherry harvest, which includes representatives of the POs, and marketing the sour cherry	Sour cherry	Hungary	Issue of information about the harvest progression and the market trends at regular meetings, and upon specific requests by POs

Sources: own elaboration from questionnaires.

2.2.4.4 France: BRM

Information about the activity of BRM for the monitoring of peach and nectarine harvest campaign is provided in § 2.2.2.4, including information about the campaign forecasts.

2.2.4.5 Belgium: REO Veiling

Types of data (harvest monitoring)	Sources	Species	Geographical areas	Outputs
Daily follow-up of the supply of the most perishable products by cultivar and variety, and screening of data for the purposes of forecasting	Collecting data from producers and receiving information from LAVA, VBT and Prognosfruit	Apples and pears	Belgium	Data are for internal use and transferred to LAVA

Sources: own elaboration from questionnaires.

2.2.5 Data on stocks

2.2.5.1 Italy: CSO

Types of data (stocks)	Sources	Species	Geographical areas	Outputs
1) Data on stocks of apple and pears in Italy and in Europe	Information from the major storage facilities and from a national association of apple producers. European data are provided by Eurofel network	Apples and pears	Italy, Europe	Issue of data on stocks of apple (monthly) and pears (on a 2 week basis). European data are issued monthly
2) Data on stocks of kiwi in Italy and in France	Information from the major storage facilities and national projections. Data from France are provided by the Bureau National Interprofessionnel du Kiwi (BIK).	Kiwi	Italy, France	Issue of data on stocks of kiwi every 2 weeks.

Sources: own elaboration from questionnaires.

2.2.5.2 Spain: Catalonia Qualitat

Types of data (stocks)	Sources	Species	Geographical areas	Outputs
1) Data on stocks of apples and pears in Spain (Catalonia) and in Europe	Information from the Catalan major storage facilities, European data are provided by international organisations	Apples and pears	Spain (Catalonia), Europe	Monthly issue of data on stocks of apples and pears from November to July

Sources: own elaboration from questionnaires.

2.2.5.3 Hungary: FruitVeB

Types of data (stocks)	Sources	Species	Geographical areas	Outputs
1) Data on stocks of fruit and vegetables	Information from the products' Committees of FruitVeB	Fruit and vegetables	Hungary	Data on stocks of fruit and vegetables in the major storing facilities

Sources: own elaboration from questionnaires.

2.2.5.4 France: BRM

Types of data (stocks)	Sources	Species	Geographical areas	Outputs
1) Data on stocks of peaches and nectarines by variety	BRM monitors the stocks of associated POs	Peaches and nectarines	Auvergne, Languedoc-Roussillon, Provence-Alpes-Côte d'Azur and Rhône-Alpes	Weekly data on the level of stocks and cross-reference analysis with prices
2) Data on stocks of apples and pears by variety and location	BRM monitors the stocks of associated POs	Apples and pears	Auvergne, Languedoc-Roussillon, Provence-Alpes-Côte d'Azur and Rhône-Alpes	Monthly report on the level of stocks by variety, production region, with information about the destinations of deliveries, and about the situation in competitor Countries

Sources: own elaboration from questionnaires.

2.2.5.5 Belgium: REO Veiling

Types of data (stocks)	Sources	Species	Geographical areas	Outputs
Weekly data on stocks of apples and pears by variety, and forecasts over a 3-week period	Collecting data from producers and receiving information from LAVA, VBT and Prognosfruit	Apples and pears	Belgium	Mainly for internal use

Sources: own elaboration from questionnaires.

2.2.6 Monitoring of markets

2.2.6.1 Italy: CSO

Types of data (markets)	Sources	Species	Geographical areas	Outputs
1) Data on producer prices	Weekly bulletins of the Chambers of Commerce	Fruit and vegetables	Italy	Issue of a weekly bulletin with producer prices for fruit and vegetables, and historical comparisons
2) Data on export prices (destination Germany) for peaches, nectarines and plums by variety, quality class, packaging	Network of experts	peaches, nectarines, plums	Italian product destined to Germany	Issue of a weekly bulletin integrating data on export prices with data and forecasts on the harvest progression (see § 2.2.4.1) ³⁴
3) Information and data on the current trends of domestic and export markets for pears by variety, size, packaging	Network of experts	Pears	Italy, Belgium, France, Spain	Issue of a weekly bulletin
4) Information about the current trends of the export market (destination Germany) for kiwi by variety, size, packaging	Network of experts	kiwi	Italian product destined to Germany	Issue of a weekly bulletin
5) Data on prices of fresh fruit and vegetables in the Italian supermarkets by species, variety, origin, size, brand, packaging	Recording prices in 5 supermarket chains in Bologna, Rome, and Milan	Fruit and vegetables	Italy	Weekly bulletin reporting current prices and historical references
6) Data on prices of pre-packaged fruit and vegetables in the Italian supermarkets by cultivar, variety, origin, brand, packaging	Recording prices in 5 supermarket chains in Bologna, Rome, and Milan	Pre-packaged fruit and vegetables	Italy	Weekly bulletin
7) Data on prices of fresh fruit and vegetables in the German supermarkets by cultivar, variety, origin, size, brand, packaging	Recording prices in 5 supermarket chains in Berlin and München	Fruit and vegetables	Germany	Weekly bulletin

³⁴ These data are also integrated by periodical information on the supply and markets of the major competitors from France and Spain.

Types of data (markets)	Sources	Species	Geographical areas	Outputs
7) Data on prices of organic fresh fruit and vegetables in the Italian, German supermarkets by cultivar, variety, origin, size, brand, packaging, qualitative evaluation	Recording prices in 5 supermarket chains in Milan, Berlin, and München	Fruit and vegetables	Italy, Germany	Weekly bulletins
8) Data on Italian export of fresh fruit and vegetables by cultivar, and destination	Monthly data on export from official statistics	Peaches, nectarines, apple, pears, kiwi, strawberry	Italian exports	Monthly bulletin reporting export volumes, values, average prices, and historical comparisons
9) Data on shipments of apple and pears from Argentina by destination	Information about shipments departing from the harbour of San Antonio (Argentina) (source Patagonia Norte SA)	Apples, pears	Argentina exports	Issue of a bulletin every 2 weeks

Sources: own elaboration from questionnaires.

2.2.6.2 Spain: Catalonia Qualitat

Types of data (markets)	Sources	Species	Geographical areas	Outputs
1) Data on the producer prices	Departamento de Agricultura, Alimentación y Acción Rural Of the Generalitat de Catalonia	Fruit and vegetables	Catalonia	Reporting of the producer prices
2) Data on the wholesale prices of fruit in bulk and non manipulated by species and variety	Main Catalan wholesale markets (Mercolleida, Llotja de Bellpuig and Mercofraga)	Fruit	Catalonia	Reporting of the wholesale prices for fruit in bulk
3) Data on the wholesale prices of packaged fruit, by cultivar, variety, quality, packaging, destination (domestic/export market)	Departamento de Agricultura, Alimentación y Acción Rural Of the Generalitat de Catalonia	Fruit and vegetables	Catalonia	Reporting of the volume of sales and the average prices
4) Data on the wholesale prices from the Spanish markets by cultivar and variety	Main Spanish auction markets (Mercabarna, MercaBilbao, MercaMadrid, MercaSeville)	Fruit	Spain	Reporting of the wholesale prices
5) Data on consumer prices for fruit and vegetables by species and variety	Catalan Agency of Consumption	Fruit and vegetables	Catalonia	Reporting of the consumer prices
6) Data on import and export of fruit and vegetables by cultivar and variety	ICEX – Aduanas	Fruit and vegetables	Spain	Monthly reports

Sources: own elaboration from questionnaires.

2.2.6.3 Hungary: FruitVeB

Types of data (markets)	Sources	Species	Geographical areas	Outputs
1) Data on market prices of fruit and vegetables from 6 wholesale markets and 11 retail markets, by species, variety and quality class	In Hungary, only the AKII monitors the wholesale and consumer prices	Fruit and vegetables	Hungary	Weekly bulletin reporting prices for producers, traders, and consumers
2) Data on import and export of fruit and vegetables by species and variety from official statistics	Official statistics	Fruit and vegetables	Hungary	Monthly bulletins from the Hungarian Central Statistical Office

Sources: own elaboration from questionnaires.

2.2.6.4 France: BRM

Types of data (markets)	Sources	Species	Geographical areas	Outputs
1) Economic monitoring on fruit and vegetables, consisting in information by species and variety about current market trends (stocks, sales, wholesale and retail, prices, advertising, import-export, short-terms forecasts)	Information from POs, traders, supermarkets, national, foreign and international organisations of the fruit and vegetables industry	Apricots, asparagus, artichoke, cherries, cucumber, fig, strawberry, raspberry, melon, walnut, peaches, nectarines, apple, pears, grape, lettuce, tomatoes	Auvergne, Languedoc-Roussillon, Provence-Alpes-Côte d'Azur and Rhône-Alpes, France, Europe	Weekly economic survey by product. integrated with information about the main trends at European level.
2) Monitoring of the retail market by collecting a wide range of information on how fruit and vegetables are sold in supermarkets (a number of supermarket chains are partner to the initiative)	A team of BRM inspectors visits the partner supermarkets by collecting information on species, varieties, origin, category, packaging, prices, product display, advertising, promotions, etc.	Fruit and vegetables	France (information are collected in the supermarkets of: Lille, Paris, Tours, Mets, Lyon, Valence, Avignon, Marseille, Toulouse, Perpignan, Toulon)	Weekly reports aimed at steering market coordination between POs and the main supermarket chains

Sources: own elaboration from questionnaires.

2.2.6.5 Belgium: REO Veiling

Types of data (markets)	Sources	Species	Geographical areas	Outputs
1) Data on the trends in the German market of fruit and vegetables	LAVA	Fruit and vegetables	Germany	Weekly reports
2) Data on the quality of fruit and vegetables in retail shops, and a special program to survey the quality of endives	LAVA	Fruit and vegetables	Belgium	Monthly reports

Sources: own elaboration from questionnaires.

2.2.7 Data on consumption

2.2.7.1 Italy: CSO

Types of data (consumption)	Sources	Species	Geographical areas	Outputs
1) Data on the retail purchase of fruit and vegetables by Italian households	Inquiries by market research institutes	Fruit and vegetables	Italy	Issue of a monthly bulletin reporting the distribution of purchases among the most relevant categories of fruit and vegetables, average price, and historical comparisons
2) Annual trends in the purchase of fruit and vegetables by volume, average price, market channel, geographical area	Based on the monthly bulletins indicated at point 1 above	Fruit and vegetables	Italy	Annual report
3) Trends in the out-of-home consumption of fruit and vegetables	Inquiries on consumer samples	Fruit and vegetables	Italy	Annual report

Sources: own elaboration from questionnaires.

2.2.7.2 Spain: Catalonia Qualitat

Types of data (consumption)	Sources	Species	Geographical areas	Outputs
1) Data on the consumption of fruit and vegetables in Spain by species and variety	MARM	Fruit and vegetables	Spain	Issue of a monthly bulletin reporting households consumption and expenditure
2) Data on the Spanish households' distribution of purchases	MARM	Fruit and vegetables	Spain	Annual report

Sources: own elaboration from questionnaires.

2.2.7.3 Hungary: FruitVeB

Types of data (consumption)	Sources	Species	Geographical areas	Outputs
1) Data on annual consumption of fruit and vegetables from official statistics	Official statistics	Fruit and vegetables	Hungary	Annual issue of data from the Hungarian Central Statistical Office

Sources: own elaboration from questionnaires.

2.2.7.4 France: BRM

For information on consumer trends, BRM makes use of external sources, in particular the surveys of specialised institutions dealing with market analysis.

2.2.7.5 Belgium: REO Veiling

For information on consumer trends, REO Veiling makes use of external sources, in particular the surveys of specialised institutions dealing with market analysis.

2.3 IT characteristics of the information systems

Section 2 of the questionnaire has been aimed at describing the IT infrastructure features of the interviewed organizations. The questions have concerned some relevant IT aspects (the system hardware and software layer, the data layer, the integration layer, the presentation layer, and the security layer). In general, the answers have resulted to be complete³⁵ and of good quality, allowing for a general evaluation of the IT infrastructure, as summarized in Table 2.1. The quality of the IT infrastructure varies significantly among the interviewed organization, but averagely it ranks good, fitting to the objectives of the information systems operated by the organizations.³⁶

Table 2.1 Overall evaluation of the IT infrastructure quality

Organisation	Overall Answers Quality	IT Infrastructure quality
REO Veiling (BE)	••	•••
BRM (F)	••	••
CSO (I)	••	•
Catalonia Qualitat (SP)	•••	••
FuitVeB (HU)	•••	••

Legend: - Insufficient; • Sufficient; •• Good; ••• Very good.

Sources: own elaboration from questionnaires.

Among various aspects, particular emphasis has been given to IT security, which is probably the most relevant aspect for the purposes of technical functioning of the information systems, and for privacy. As a matter of fact, should the interviewed organizations participate into a European platform, they must be able to grant at least the continuity of service, a reliable and operative software system, and the protection of applications and data. Table 2.2 shows that, for this particular issue, the results vary even more significantly than in the overall evaluation.

³⁵ Only in one case, two questions (out of 32) were missing.

³⁶ The judgment about the IT facilities of the interviewed organisations is only functional to the study objectives. This means that the synthetic assessment provided in this section do not take into account all the criteria usually applied by IT operators. If the European platform is implemented, a stricter analysis of the participants' facilities will be necessary.

Table 2.2 IT security evaluation

Organisation	Network Security Devices	Protection Software	Access Controls	Data Backup
REO Veiling (BE)	•••	••	••	••
BRM (F)	••	•	-	•••
CSO (I)	••	••	•	••
Catalonia Qualitat (SP)	•	-	•	•••
FuitVeB (HU)	•	-	••	••

Legenda: - Insufficient; • Sufficient; •• Good; ••• Very good.

Sources: own elaboration from questionnaires.

Only in the case of the Belgian organization, the different aspects of security averagely reach a good level, followed by Italy. In all other cases, very high scoring for some aspects are accompanied by insufficient score for at least one aspect. This is true in particular for software protection in two cases, and for access control in one case. The participation into a wider network would thus imply some technical IT adjustment at least in some cases, and for some aspects.

Besides the above mentioned issue, some other comments seem to be relevant for the purposes of the study:

- all partners make very limited use of third party and industry-standard software applications for data collection, data mapping, data translation, data analysis, data presentation and business intelligence tools;
- most partners use generic and basic applications such as MS Excel and MS Access, which require a fair amount of typing and manual input, or have in-house custom applications to automate those tasks;
- there is only a limited capability for allowing access to data results through the web;
- many partners do not provide web-access and use other channels (e-mail) for delivering results to third parties.

Therefore, automation and integration between the information platform and the partners' IT systems will require custom software modules intended to collect, translate and import the partners' data into the platform, in order to avoid the manual insertion and errors. Such adapter software modules could reside either on the information platform premises or on partners' premises, depending on where the "data translation" process takes place.

The extensive use of SQL-Based systems (such as MS Access, MS SQLServer, MySQL etc.) for storing raw data and results will ease the task of developing data adapters and data extractor modules.

2.4 Motivations for taking part into the platform

Section 5 of the questionnaire has been devoted to identify the motivations for participating into the European platform. For this purpose, the interviewed organisations have been asked to answer some questions on the following aspects:

- a. Participation into networks for data exchange (especially international ones);
- b. Need for enhancing the exchange of data and information among the industry operators;
- c. Aims and main features of a European platform;
- d. Willingness to provide resources for its functioning.³⁷

Table 2.3 reports a synthetic overview of all answers.³⁸ The participation into the European networks for data and information exchange (e.g., Europêche, Interpera, AREFLH, Prognosfruit, etc.) is a widespread activity among the interviewed organisations, though at different degrees. The participation into worldwide organisations, such as the International Kiwi Organisation (IKO) and the World Apple and Pear Association (WAPA), is also witnessed.

The intensity of this activity (in terms of number of networks) ranks high, particularly among the organisations of the most important producer Countries (Italy, France, Spain), while it is lower in the case of Hungary. Besides the organised network, a relevant information exchange occurs among the organisations of the most important producer Countries (e.g., CSO, BRM, Catalonia Qualitat).

All the participants agree that the industry does need to intensify the data and information exchange at a European level. Opinions are more articulated when the aims of the initiative and its management come into question.

As far as the objectives of the initiative are concerned, it is commonly believed that the initiative should provide means for crisis prevention and management or for equivalent purposes, e.g., for demand/supply balance. Equally, access to data should be selective according to some restriction criteria, such as: access strictly shared among partners, paid access, time limitation for the access, nature of data. In one case, a free access would be accepted, but only for the most general data.

Other objectives seem to be relevant. Among them:

- the strategic aims, mostly related to horizontal competition, such as: identify market opportunities, define product positioning;
- the integrated management of the fruit and vegetables industry, such as: co-ordination among producers, improvement of data quality, improvement of data exchange.

The outcome of these answers is coincident with the dual role of information: i.e., the information exchange is perceived as a mean to improve horizontal and vertical competitiveness, but also to serve the common and general interests of improving the organisation of the fruit and vegetable industry, for different purposes, e.g.: efficient crisis management, efficient organisation. Finally, it should be pointed out that those aims are not necessarily evaluated in the same way by all the organisations interviewed: some of them prefer

³⁷ The questions related to point (d) asked the organizations to assess how many resources they would allocate for the development of an European platform. We guided the answers by asking to chose among one or more of the following criteria: capital, human resources, facilities, time share, others. We left people free to answer according to a scale grading from 1 (least resources allocation) to 10 (highest resource allocation) or by real quantitative indicators (e.g. amount of capital, number of persons). Despite the heterogeneous answers, the result was clear. At the time questionnaire was filled in, the interviewed were not aware of the platform model developed under Chapter 3 of this study. This means that they reacted to a general idea of an European initiative for the enhancement of information exchange, whose features they indicated by answering to the questions included under (c).

³⁸ The questions we put were sometimes of general nature. Despite some indication about the way, the answer should be drafted, the participants into the questionnaire were left free to express their opinion at their own convenience. This produced some heterogeneity in the feedbacks and in some cases we crossed the answers to make clear trends appear. In doing this, we rendered somehow the original answers. This is of course our own responsibility in the interpretation of the questionnaire.

horizontal competition, while others underline the need of information for the industry as a whole.

As far as the second point is concerned, relating to the management of the European platform, opinions vary among the interviewees, ranging within the following options:

- industry bodies (e.g., POs or IBOs);
- public or semi-public organisations, but with a technical role assigned to POs because of their knowledge of the industry and the proceedings;
- efficiency option, i.e. to give priority to the functional effectiveness of the initiative (easy, timely, ready to use); no matter who manages it.

In general, the role which each organisation would play in a European initiative is of course coincident with that of a data supplier. But some organisations would like to share their technical competence for the development of the initiative (e.g., in relation to data treatment, but also the industry know-how, and the procedures of data and information exchange). Yet all data in the arrangement of the organisation would be made available for exchange. Mutual exchange is also the condition to stay in the deal.

The answers about resource allocation for the initiative are optimistic. Despite the differences of the indicators, it clearly appears that the interviewed organisations are willing to provide resources (sometimes, relevant resources or a significant part of their own resources) for the development of the European platform, should they be considered in terms of capital (in this case, one organisation has a budget allocated), human and technical resources, or time shares. At the same time, these answers show the importance assigned to each of those factors for the development of the initiative.

Table 2.3 Inquiry on the motivations of POs for participating into the platform, summary of results

Items	CSO (I)		BRM (F)		Catalonia Qualitat (ES)		FruitVeB (HU)		REO Veiling (B)	
1. Participation into networks	Various European networks International/world networks		Regional, national networks Various European networks International/world networks		Various European networks Regional networks		European network (1)		Regional, national, international	
2. Usefulness of enhanced info exchange	Yes		Yes		Yes		Yes		Yes	
3. EU platform management	Public or semi-public org. POs for matter		Pos		Not relevant		Inter-branch org.		POs	
4. Aim of the EU platform	Information exchange Crisis management Data quality		Develop a market oriented mind Strategic positioning Crisis management		Crisis prevention Market opportunities Co-ordination Efficient response		Information development		Crisis prevention Market opportunities Competition Efficient information	
5. Role in the EU platform	Data provider Data treatment Know-how		Data provider		Data provider Know-how		Data provider		Data provider	
6. Data transferred/obtained	All data Selective access		Data about the produce Selective access		All data Selective access		All data Selective access		All data	
7. Resource allocation	Capital	-	Capital	Yes ³⁹	Capital (1-10)	9	Capital (1-10)	2	Capital (1-10)	4
	Human Resources (number of staff)	2	Human Res. (1-10)	2	Human Res. (1-10)	9	Human Resources (number of staff)	3	Human Res. (1-10)	8
	Facilities (1-10)	10	Facilities	--	Facilities (1-10)	5	Facilities	50%	Facilities (1-10)	8
	Time share(1-10)	8	Time share	--	Time share (1-10)	7	Time share	20%	Time share (1-10)	8
	Others ⁴⁰ (1-10)	9	Others:	--	Others ⁴¹ (1-10)	9	Others	--	Others (1-10)	--

Sources: own elaboration on questionnaires data and information

³⁹ Budget allocated for comparable activities: EUR 80.150

⁴⁰ Work experience

⁴¹ Work experience

3 Platform technical requirements

The technical requirements of the European platform are described in relation to a reference model based on a series of assumptions about its functioning and organisation. Starting from basic assumptions, the consequences for the relevant platform technical aspects are then drawn. Finally, an implementation strategy has been defined - potential participants have been assigned specific roles in view of the platform development. It is hereby supposed that the platform would be managed by a leading authority having technical and political functions, and that public institutions may participate into the initiative. The rational exercise to justify this assumption is developed in Annex 2, while a detailed identification of the role of the public institutions in the initiative is developed in Chapter 4.

3.1 Main assumptions

This section is approached on the basis of the questionnaire analysis results developed in the previous section, as well as on a series of assumptions relating to the goals and the functioning of the platform. This will allow to draw a model for the information platform at the EU level.

Both at the local and at the international level, there are many initiatives aimed at collecting, processing and spreading information about the fruit and vegetables market. Such initiatives vary in terms of effectiveness and completeness, institutional settings, data sourcing and technical solutions. The existence of a new initiative at the European level is justified if it provides additional services to those already existing. In addition, the participation of the EU may add institutional relevance to the initiative, according to the role it will play.⁴²

However, it must be underlined that the reference platform model described in the following paragraphs, including technical solutions and estimated costs, is based on the assumption that the IT system will not be developed, hosted and managed by the European Commission and/or DG AGRI facilities.

The starting point of our model is based on the objectives assigned to the platform. Given the role of the information and the economic relevance for the functioning of the industry, it is assumed that the platform main objectives should be:

1. to reach a higher effectiveness in managing the available resources and preventing market crises, through the sharing of information, to the widest possible extent, among the European organisations of producers;
2. to affirm a balanced competitive position for producers, given their weaker position in the fruit and vegetables supply chain.

To be effective in the achievement of above said objectives, the platform must be:

- a. *representative*, i.e. able to collect and transmit to the participants all relevant information about the most significant part of the fruit and vegetables industry;

⁴² The participation of the EU bodies into the platform as well as their potential role are mainly subject to policy decisions. In this chapter we provide a reasoning on this issues to exemplify the aspects that should be taken into account from an economic perspective (see Annex 2).

- b. *reliable*, which means that the information provided by the platform must comply with some minimum quality standards;
- c. *voluntary*, which means that the organisations of the fruit and vegetable industry may join the initiative on a voluntary basis;⁴³
- d. *safe*, which means that the platform is protected against IT attacks and threats;
- e. based on *mutual exchange* of data and information: i.e., the partners of the platform, as a general criterion, may only be represented by the organisations which have already developed their own information systems and which convene on the sharing of their own data through the platform on the basis of a mutual-exchange agreement.

In doing this, the platform must comply with the European legal framework, particularly as regards privacy and competition rules.

After the activation of the platform, it is also assumed that the number of participating organisations may increase. As a matter of fact, it is possible to suppose, on the one hand, that several organisations may require more time before understanding the usefulness and the relevance of the initiative, so it is expected that these organisations will ask to become partner of the platform only after its initial phase and that, on the other hand, other organisations – willing to be partners of the platform since the very beginning – may achieve the required standards only later. All this implies that:

- the platform must be flexible enough so as to include, in the future, a growing number of partner organisations;
- the representativeness of the platform, with respect to the universe of the European fruit and vegetables producers, should increase in the future, with the consequent growth in the number of participating organisations;
- a certain period of time must be foreseen for the platform to reach a satisfactory degree of representativeness.

From this perspective, the service provided by the platform should be considered as a sort of imperfect public good, or as a *club good*, that is a good of public utility, useful for all participants, which may be accessed on a voluntary basis by a restricted category of users according to some pre-defined criteria (see Annex 2).

These assumptions have also technical and organisational implications, and they bring to the identification a strategy for the achievement of the objectives.

3.2 Platform reference model

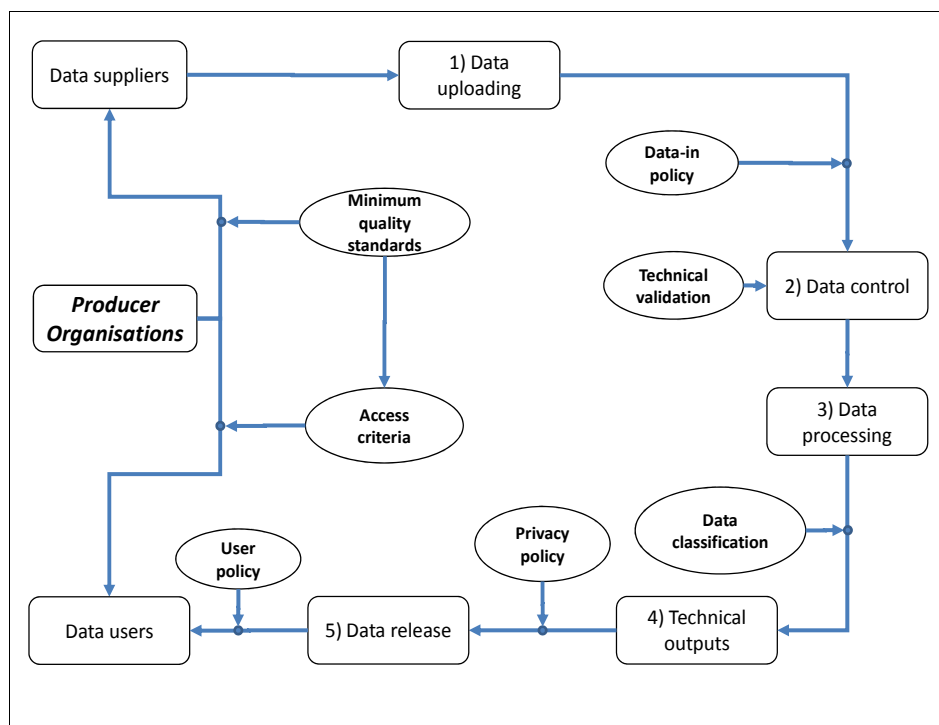
Some cautions have to be adopted to understand the results and the limit of the methodology applied. The model described in the following paragraphs is based on a very schematic drawing of the platform and its functioning. This simplification is necessary to reason about the complexity of the problems related to the platform implementation. In the context of the feasibility study, the platform model is a tool to simulate the situations that the potential partners organisations may encounter along the implementation process.

⁴³ Voluntary adhesion is relevant also in relation to the legal aspects regarding privacy. In particular, the fact that IBOs may join the platform on a voluntary basis is a disclaimer for publication by other participants, given the awareness of the supplier about the usage and processing of data.

The platform model is conceived as a self standing initiative. This means that any public institution is supposed to host the platform at its premises, the sharing of facilities is not foreseen at this stage yet, and any technical standard may be imposed to the partners (except those necessary for the functional and operational assumptions previously described).

Figure 3.1 shows the general diagram of the platform.

Figure 3.1 General plot of the platform



Source: own elaboration

Only IBOs are eligible to become partners of the platform, and they are eligible only if:

- has developed an information system;
- is able to supply data complying with the minimum quality standards provided by the platform.

Only the partner organisations may gain access to the platform by acting either as data suppliers and as data users; the minimum quality standards for data supply are therefore the criteria allowing to gain access to the platform. The relevant functions outlined in the figure are:

1. *Data uploading* is operated by the partner organisations when they act as suppliers. They enter the platform Web Portal through a restricted and protected access, and start to load the data by filling electronic forms (data-in policy).
2. *Data control* is operated by the platform, which provides for the technical validation of data.
3. *Data processing* - Data are analysed, ordered, classified, and organised for publication by the platform.
4. *Technical outputs* - The technical outputs are represented by the information products of the platform.

5. *Data release* - Data release is subject to the privacy policy of the platform, and to the observance of all privacy and competition legislation. The platform outputs are released through the platform Web Portal. The partner organisations shall login as users to the Web Portal by complying with the platform user policies and access criteria.

The functioning of the platform is described in details in the following sections.

3.2.1 Minimum quality requirements for participation

Data quality is not an assumption about the quality level of the information supplied by potential participants, but a necessary pre-requisite to become partners of the platform. In this sense, the data quality is a crucial aspect of the platform implementation, strongly related to its feasibility.

Data quality depends on many parameters involving, among others, the reliability of sources, the absence of input errors, the robustness of statistical methodologies and algorithms applied. These parameters may differ significantly among the existing information systems.

The standardisation of the different methodologies and procedures applied by the platform partners to their own activities of data collection and processing would be useful, but it is also very difficult to be achieved, because of the costs, especially in the initial phases of the platform implementation. Yet, to make the platform a more reliable tool, minimum quality standards for the information uploaded to the platform must be defined.

The capacity of the information systems to comply with the minimum standards represents a barrier to the platform access for the potential partner organisations. The standards should be referred to the scope and the quality of the data.

3.2.1.1 Data scope

The technical specifications of this study stress a main objective – that is to say, institutionalising, through a common platform, the existing exchange of data among the European POs to create a toll for crisis prevention.⁴⁴ The same document also provides the general elements of the platform's data scope in terms of monitored crops (i.e., peaches, nectarines, plums, apples, pears, kiwi, strawberry, citrus fruit, tomatoes, and asparagus), types of data (production, campaign forecasts and market trends, producer and consumer prices, consumption, stocks), and geographical area covered.⁴⁵

From this perspective, the role of information in crisis prevention has been investigated to find out the data needed to fulfil the crisis prevention and management requirements (see § 2 and the Annex 1 and Annex 3). In the Annex 1 we argue that an efficient and transparent information system can become a very important tool to prevent and manage market crises in the fruit and vegetables sector. On this perspective, the experiences of the existing information systems investigated in § 2 says that, to avoid and correct the structural market crises, it is necessary to detect and forecast for each species and variety the long-term trends of the domestic supply, the import, and the demand in the domestic and foreign markets (see § 2 and Annex 1).

On the other hand, in the short-term, crisis management requires a systematic monitoring of the current campaign by providing data and forecasts on aspects like: production volumes, loss of products related to weather, harvest scheduling, level of stocks, in-coming shipments of imported products, producer and retail prices, and consumers' seasonal preferences with respect to qualitative aspects of products (see § 2 and Annex 1).

⁴⁴ Tender Specifications AGRI/2008-G4-01, p. 4.

⁴⁵ *Ib.*, pp. 5-6.

The management of short-term measures needs that the information system be particularly effective to carry out with rapidity and correctness the whole proceeding of collecting, processing, and releasing the data. Decisions regarding market withdrawals, accumulation of stocks, and no harvesting should be taken as soon as possible, when a crisis shows its first symptoms, and imply immediate costs face to uncertain benefits, consequently the timing necessary to obtain a correct information supporting them is crucial (see § 2 and Annex 1).

The analysis results, which identify the type of data to be uploaded by the partner organisations, and those to be processed and issued by the platform, are summarised in Table 3.1. As regards the crops to be covered by the platform, in general, the existing information systems developed by the organisations of the fruit and vegetable industry deal only with the species cultivated by their associated producers. It may therefore happen that, for some of the species of fruit and vegetables indicated by the technical specifications, there will be no data available in the platform because of the lack of producing them among the partners.

Similarly, it may happen that some partners may not be able to provide all the types of data requested by the platform, either because they lack data or because the data do not comply with the minimum quality standards required. The lack of some types of data should not be a criterion to exclude a potential partner; on the contrary, it could be a reason to provide some incentive to improve the quality of the information supplied and to achieve the standard requirements.

However, the aggregation and the exchange of data regarding elements like production, stored volumes and prices should be carefully evaluated in order to avoid opportunistic behaviours aimed at limiting market competition by the platform partners. This requires a case by case analysis to verify the compliance of the platform with the relevant aspect of the competition rules (see the details of the evaluation of the collusion risk within the platform in § 3.9.2).

Table 3.1 Types of data processed and issued by the platform.

Types of data		Description	Frequency of data release
1	Data on crop areas	<i>Fruit crops</i> : invested area amount by region, species, variety, age, density, and ripening period of plantations, areas of new plantings and cut plantations.	Annual
		<i>Vegetables</i> : evolution of plantings for the different species and varieties in the main production regions.	Annual
2	Production forecasts	<i>Early production forecasts</i> : elaborated on the basis of data on crop areas and of the information about the progression of flowerings and the development of fruit in the different production regions.	Annual (before the starting of the harvest)
		<i>Quantitative estimates for expected production</i> : based on sample analyses.	2 weeks (during the harvest)
		<i>Harvest scheduling</i> : resulting from the agro-meteorological conditions of the harvest season in the major production regions, with information on the expected harvest spikes.	Weekly
3	Harvest monitoring of the most perishable products	Information on the progression of the harvest by species and variety in the major production regions, including: weather conditions, phytosanitary and vegetative state of crops, progress of the harvest, and quality of products.	Weekly
4	Data on final production	Amount of final production and yields in the different regions by species and variety.	Annual (post-harvest)
		Information about the quality of the final production in the different regions by species and variety.	Annual (post-harvest)
5	Data on stocks for storable fresh products	Information by species and variety about the quantity stocked in the most important storage facilities.	Weekly
6	Data on producer prices	Data on producer prices by species, variety and quality class of products from the most important reference markets.	Weekly
7	Monitoring of the retail market	Data on sales from the main European supermarket chains by species and variety, including information about quality classes, origin of products, type of packaging, brands, and prices.	Weekly
8	Data on consumption	Data by species and variety on consumers' purchases in the different Countries including: amount and value of purchases, average consumer prices, annual distribution of purchases, annual consumer price variations, distribution of purchases and average prices by marketing channel, distribution of purchases by region.	Annual
		Data on total and average consumption of fruit and vegetables by species in all the major EU and extra-EU consumer Countries	Annual
9	Monitoring of the import flows	Data on imports as sourced from the official statistics in the different Member States by species.	Annual
		Monitoring of the imports from monthly official bulletins issued by the Member States	Monthly
		Information about the incoming shipments of products from third party Countries, by species and variety, in the major ports.	Weekly
10	Data on exports	Data on intra-EU and extra-EU exports of fruit and vegetables as sourced from the official statistics issued by the different Member States by species.	Annual
		Monitoring of the intra-EU and extra-EU export trade from monthly official bulletins issued by the Member States	Monthly

Source: own elaboration.

3.2.1.2 Data quality

The data and information that may be supplied by the organisations willing to become partners of the platform should be evaluated according to minimum criteria regarding:

- a. data sources (e.g., primary or secondary data, public or private sources, official/non official/estimate data, etc.);
- b. methodologies applied (e.g., standard statistical methodologies, *ad hoc* methodologies, specific mathematical models);
- c. data control procedures;
- d. representativeness of data.⁴⁶

The methods currently used by potential partners to collect and process data are varied, thus an accurate evaluation of the consistency of the methodologies is necessary for the reliability of the platform. In the long term, even a methodology standardisation could be taken into consideration. This requires elements which, may be only listed here. The data supplied by partners should be controlled by the platform personnel, by quantitative and qualitative tools, as specified in § 3.2.3.

The issue under (d) is particularly relevant for the European platform in question. A lack of representativeness drastically reduces the significance of data, especially with respect to crisis prevention.

A geographical criterion for data representativeness should also be applied as a threshold for the participation into the platform. As a matter of fact, a higher level of operational effectiveness could be reached if each participant provides data on a defined geographical area (e.g., region, group of regions, Member State).⁴⁷

If one organisation meets the minimum standards, it may become partner of the platform. On the one hand, this implies the obligation to supply the types of data needed by the platform by complying with the quality standards and the timing of the data supply. On the other hand, only a partner organisation may gain access to the platform as a data user, in accordance with the “mutual exchange” condition (see point (e) under § 3.1). The minimum quality standards will be defined by the managing authority of the platform.

⁴⁶ The representativeness of data may be expressed according to some basic parameters: e.g. in relation to production: the reference area, the share of production in comparison to the amount of total regional production, etc; in relation to prices: the reference market, the commercial category or the commercial reference, the destination market, etc.

⁴⁷ The problem of the geographical representativeness of data is important for the operation of the platform by the final users in relation to all kinds of data (statistical data, forecast, etc.). An example can better explain the problem. We may conceive a situation where, in a given region, different information systems exist, being operated by different actors (IBOs, public institutions, etc.). If each of them decide to join the platform and provides the platform with its own data, a redundancy of information would appear at the same geographical level, with data being not necessarily consistent with each other. Secondly, the final user would face different data concerning the same region and/or the same cultivars, a situation which would create confusion, and reduce platform effectiveness. It must also be outlined that the adoption of methodological and geographical criteria to select data suppliers has significant implications as well. First of all, a set of acceptable methodologies should previously be defined and accepted as the methodological standard for the platform. Secondly, the platform management should assign a specific role to a leading organisation at the geographical level. The application of such criteria should be evaluated carefully in the platform implementation strategy: on the one hand, it might hinder the access to the platform to a significantly high number of potential data suppliers (thus reducing its representativeness to some extent, at least in the short-medium term). On the other hand, it would contribute to affirm adequate quality standards for the information issued, with remarkable positive outcomes in the long term.

3.2.2 Data supply (data-in policy)

Data suppliers will gain access to the platform from a remote site to transfer their own data into the platform. This part of the process is developed according to a platform access policy or “data-in policy”, which mainly deals with the protection and safety of the access, and with the standardisation of the information supplied. Endorsement rules should also be considered to provide continuity and credibility to the platform.

3.2.2.1 Protection and safety

The access to the platform must be protected against attacks and threats. IT-based procedures must be foreseen in this case. This aspect will be treated apart, as far as it relates to the general problem of IT security devices needed to make the platform protected against any attacks and misuses (see § 3.7)

3.2.2.2 Standardisation

Given the differences which may appear among the partner organisations in relation to the typology of information systems, and to the ways the data are provided, the data transfer should be developed on the basis of standardised formats (specifically open standards such as XML whenever possible, or industry standard files such as EXCEL, MDB, ASCII). This process should automatically operate by assuming the existence of IT compatibility between the data suppliers and the platform.⁴⁸ The formats closely respond to the types of data required for crisis prevention and management (§ 3.2.1.1).

3.2.2.3 Endorsement rules

The participation into the European platform implies the acceptance of endorsement rules. This would be the final formal act upon a larger process of information about the initiative and the creation of a general awareness by part of the potential participants (see § 3.8). The effectiveness of the initiative, and the specific needs imposed by the platform objectives require that data must be provided in a continuous and timely manner (e.g., many data useful for crisis management have to be made available on a weekly basis). A formal act defining the willingness to be engaged in the initiative should be signed, including all the conditions for participation.

3.2.3 Data control

The data supplied by the platform partners should be submitted to a control procedure based on statistical tools and logic criteria.

The control should avoid the problems related to accidental errors in the original data provided by the partners. Even banal errors in the original data could multiply their effects when circulated at the European level by reducing the reliability of the platform. In the forecasting service this could generate failures for the main objective of the system. The data control is based on quantitative tools (crossed verification, data coherence analysis, comparison among time series, etc.) and on the knowledge of the European fruit and vegetable industry (production systems, production potential and structure, geographical differences among production systems, etc.).

⁴⁸ This seems an optimal solution for the platform operation and to reduce its costs. The adoption of this solution implies that, if the IT equipment of a data supplier is not compatible with the platform, a specific *ad hoc* software must be installed, and an adaptation cost has to be sustained by the data supplier or by the platform. We assume that the cost of the adaptation is faced by the data supplier. This solution seems to be more appropriate at the organizational level and it allows for a realistic evaluation of the platform cost.

The adoption of such procedure will prevent major problems from occurring in terms of data reliability, and will increase the platform effectiveness. On the basis of this control, a feedback should be provided to the data suppliers in case of error. Countermeasures or disincentives may be applied in case of recurring errors.

Data control should also be applied to prevent some partners from assuming an opportunistic behaviour. For instance, one partner organisation may decide to cut the costs it sustains to provide quality data to the platform, and reduces the quality of its data by relying on the fact that the other partners do not do the same, and the final quality of the platform will not be significantly affected. This would have a quite negative effect on the credibility and on the effectiveness of the initiative.

3.2.4 Data processing and outputs

The technical output of the platform will result from the processing of the data provided by the partner organisations. Firstly, the incoming information will be organised according to different classification criteria.

3.2.4.1 Classification and traceability of data

The main criteria for classifying the platform’s data are listed in Table 3.2.

Table 3.2 Classification criteria for the data uploaded to the platform

Main criteria		Sub-criteria
1	Species and space	Cultivated species and varieties
		Geographical areas
2	Timeline	Historical (historical series)
		Ongoing (data on the current campaign)
		Production forecasts (short-term forecasts and long-term trends)
3	Types of data	Types of data as listed in Table 3.1, taking also into consideration the frequency of data uploading and release.

Source: own elaboration.

All data should also be traceable, that is to say the system should assure:

- the identification of the suppliers of the data and information uploaded to the platform;
- the acknowledgment of the quality characteristics of the data uploaded according to the criteria listed in § 3.2.1.2.

3.2.4.2 Data processing

Once data are organised, the database must be made available for queries by the users. The main assumption behind the production of outputs is that the platform supplies the basic information in order to allow the users to develop their own calculations and considerations about the market trends. The platform administration should not be involved in producing forecast models, so as to avoid any market perturbations.

This said, some data treatment could be applied (e.g., by adopting the descriptive statistical means). Secondly, in addition to the basic data, the platform could provide elaborations of the data (e.g., periodic report, in-depth analysis, etc.)

3.2.5 Data release and user policy

The information and data produced by the platform will be made available online in the platform website through guided menus. The user access will be reserved to the partner organisations.

As already mentioned, the platform will produce information according to the concept of “club good”. This means that the use of the platform will be selective: only those organisations which will supply data to the platform will be allowed to have access to the platform products, while an exclusion criterion will operate against all the non partners. In fact, without this exclusion the functioning of the platform under the conditions described in § 3.1, and especially with regard to its capability to be implemented as a financially self-sustained initiative, will be impossible.⁴⁹ On the contrary, it might be taken into consideration the possibility to agree some form of access to the platform to external users subject to the payment of fees.

On this basis, it will be under the responsibility of the platform management the implementation of specific security mechanisms and policies granting the access only to authorized users and ensuring proper privacy, protection and accountability of data. Security measures will be based on specific hardware mechanism (see § 3.4.8), software components and services such as system access logs, data access and data modification audit trails, data encryptions for very sensitive data (such as passwords) with industry standard algorithms (e.g. MD5), and organizational procedures such as frequent renewal of user credentials, automatic credentials expiration, formal assignments of security roles and responsibilities.

As far as individual and personal data are concerned, under any circumstances the users will be excluded from sensitive data in the respect of privacy law. In addition, the users will have to declare that they will make use of the platform data only for institutional and legal purposes. The traceability of the access will be provided in any case.

The modalities by which the platform partners will operate the access to the platform (e.g.: who and how many people in each partner organisation will be authorised to access directly to the platform data? How the platform data will be disseminated within the partner organisations? There will be differentiated level of access to the information? etc.) cannot be detailed by this study, since it should be a subject of the specific agreement among the organisations implementing the platform. We assume that a principle of assuring the widest possible spreading of the information among the platform partners at the lowest possible cost has to be followed. On a technical point of view, a specific PROFILE will be assigned to each authorized user. The assigned User PROFILE will be applied when users access the platform and authenticate themselves. Each PROFILE will define a specific data access level and data access rights using standard mechanisms such as ACL (Access Control Lists). Actual PROFILES and ACLs will be fully defined during the implementation phase, but we can anticipate the canonical ones, such as: System Administrator, Group Data Manager (with read/write access to data of several organizations), Organization Data Manager (with read/write access to data of a single organization), User (generic institutions with read only access), etc.

⁴⁹ In general, the private information systems currently existing in the fruit and vegetable industry have been created thanks to the association of several organisations, which provide data and contribute to the information system's costs (see § 2). These organisations could accept to share their own information with competing organisations within a European platform just on the basis of a mutual exchange scheme. If some partners were allowed to make a free use of the platform without any obligation of providing data or paying fees, for the partners which supply the data and sustain the related costs, this would be an unacceptable externalisation of benefits.

The public entities may supply data to the platform through their statistical departments and institutions . In this case, they may become “data supplier” and achieve the right to access the platform information; private partners would have the advantage of finding into the platform website all the data available from both public and private sources.⁵⁰

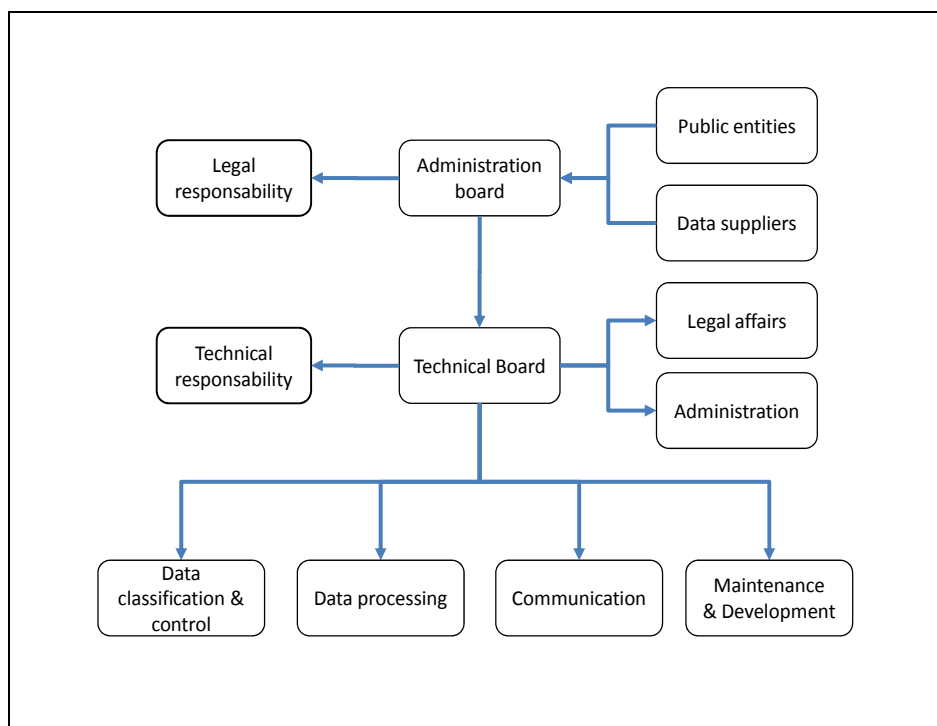
The platform access could be however granted to certain public (e.g., the European Commission, Member States and regional authorities) which do not provide data. The arguments in favour of this derogation are based on the role of the public institutions in the context of the current industry policies, and also on the fact that public institutions might find appropriate funding to support the initiative.

3.3 Platform management

3.3.1 The organisational diagram

The platform requires a central body who takes the responsibility of the platform organisation and management, as drafted in Figure 3.2. The administration board, formed by the representatives of the partner organisations, is the leading body of the platform, with decisional power and legal responsibility. Its main task is to define the institutional objectives of the platform and to verify their implementation.

Figure 3.2 Organisation diagram of the platform



Source: own elaboration.

⁵⁰ An example of data which could be provided by public institutions are the periodical updating of import and export flows. The Articles 17 and 136 of Commission Regulation (CE) No 1580/2007 oblige the Member States to communicate to the European bodies the data on imports of fruit and vegetables.

The technical board is the executive body. Based on the institutional objectives, the technical board:

- a) prepares the internal and external rules (policies);
- b) assesses the minimum requirements (see § 3.2.1);
- c) supervises the data collection and controls the data (see § 3.2.2 and 3.2.3);
- d) supervises data treatment (see § 3.2.4);
- e) supervises the outputs (see § 3.2.5);
- f) provides the maintenance, and assures the development of the platform (updating, upgrading, etc.).

Given the platform functions, the technical board must deal with different specific competences (IT, statistics, administration, legal matters, and knowledge of the fruit and vegetable industry), which should be coordinated by a manager to assure the effectiveness of the various functions.⁵¹

3.3.2 Partnership

The organisational issues may also concern the partnership of the platform, including the leadership of the initiatives and its funding.

A significant problem related to the partnership is the identification of the mutual interests among the potential participants. While describing the main features of the EU platform, a series of tentative assumptions have been made about the possible roles of participants, especially in relation to the public institutions (e.g., in § 3.1, we assumed that information is shared by the partners; in § 3.3.1, we assumed a generic interest by the public institutions in participating into the administration board).

A rational way to identify the possible partnership between private and public actors (roughly simplifying: on one side, the public institutions; on the other, the organisations of producers) into the platform should stem from the analysis of the interested partners' motivations, which are mainly of economic nature. The identification of an overlapping area of interest between the private organisations and the public institutions would provide indications for definition of the respective roles and responsibilities. A logic exercise in this field has been developed for this purpose, as detailed in Annex 2.

The public institutions participation into the platform may take the form of different typologies of measures, including the moral incentive and/or the control about its functioning, and/or the financing (see details about the public institutions roles in Chapter 4).

3.4 IT requirements

The description of the IT structure just refers to the main IT equipment necessary to comply with the basic needs and objectives of the platform reported in the former paragraphs.⁵²

⁵¹ Considering the possibility to improve data quality and homogenize the methodology, the central body might also have the responsibility to define the standards. This task will require scientific skills which stem from an interdisciplinary approach to the problem, and will entail the identification of an *ad hoc* board of experts. The setting of the initial quality requirements to access the platform should be defined during the starting phases of the implementation (see § 3.8).

⁵² The standard procedures and methodologies adopted for IT projects have not been applied in this feasibility study. In the case that a detailed project of the platform has to be developed in the future, the actual analysis, design and implementation phases will be carried out accordingly to the industry standard Unified Process (UP)

It must be underlined that the proposed IT architecture of the platform is based on specific assumptions of technical and organisational nature, described in the following sections. The whole IT architecture and the related technical devices define one of the possible scenarios for the platform. The proposed solutions might change in relation to the technical innovation in this field. The final design of the platform will also depend on a closer and more detailed analysis of the non functional requirements of the platform developed in co-operation with the participants and stakeholders in case that an implementation project follows the feasibility analysis.

3.4.1 Dimensions

As the dimensions of the information platform mainly depend on the database size, i.e. the number of records stored in the database, and on the number of users, the following dimensions are assumed for the purposes of this analysis:

- 20 organisations partners will use the information platform with 2,000 users (200 of them concurrently);
- every partner will transmit 5,000 records per year (4 KB record size);
- data must be available for a period of 10 years.

Given these figures, the platform must assure a good front-end experience for 200 concurrent users and a fair database performance with a database size of 4GB.

We assume that the information platform is implemented on a dedicated system (most expensive implementation) to have complete control of the architecture and design. No alternative implementation (e.g. shared hosting services) has been considered.

3.4.2 Overview on the information platform architecture

The proposed information platform architecture has been designed by considering the assumptions reported in § 3.1, in order to provide a proper level of services in terms of:

- Scalability: the Platform should have enough data disk space to store additional data and to supply additional computation power. The database size forecast is based on the assumption that every partner organisation will provide aggregate and consolidate data: additional disk space (even several times the foreseen needed space) and computation power will be needed if the Platform provides data aggregation capabilities. The same conclusion can be drawn if additional users (e.g. external users submitted to the payment of fees) need to access the Platform.
- Reliability and availability: the Platform should be designed with the proper level of hardware redundancy and with high-availability and disaster recovery features in order to avoid data loss and to minimize the probability of a system downtime. No Site Disaster Recovery features will be taken into account in this design, only a Service Disaster Recovery is foreseen (due to the presence of system single-point-of-failures).

methodology. Following UP phases of Inception, Elaboration, Construction and Transition, we will iterate along a set of activities including Business modelling, Requirements, Analysis and Design, Implementation, Test and Deployment. On each phase, some of these activities will be carried out more deeply than others. For instance, during Elaboration the major focus will be on Requirements gathering through Use Case, Analysis and Design, while during the Implementation phase the major focus will be software development and implementation. Finally, each phase will produce proper deliverables in the form of analysis documents, technical schemas in UML notation, software source code, test plan and test case, etc. (see also Scott, 2002).

- Security: high-end security and network devices (e.g. firewalls/switches/routers) and enterprise class operating systems and software modules can guarantee a high-level of security and robustness against unauthorized access.

In order to achieve these targets, and therefore to provide a very high level of service, the information platform architecture has been dimensioned to properly support virtualization and virtualized services.

Virtualization is a proven software technology that allows to run multiple Virtual Machines on a single physical machine, sharing the resources of that single computer across multiple environments. Different virtual machines can run different operating systems and multiple applications on the same physical computer. If you use more than one physical machine, the virtualization allows to consider the whole hardware of the different physical machines as a cluster of resources, a sort of “single big computer” that runs Virtual Machines efficiently, with a very high level of availability. This is the basic concept of the Virtual Infrastructure.

The main reasons for using virtualization are:

- scalability: platform capabilities can be easily expanded (scale-out) with no impact on the service level;
- reliability: advanced high-availability and disaster recovery features minimize downtime in case of hardware or software failures;
- security: effective isolation of systems and services increases the level of security and robustness.

In order to enable virtualization and the Virtual Infrastructure, the hardware will be equipped with VMware Virtual Infrastructure software suite: every physical machine (cluster node) will have VMware ESX Server Hypervisor as its main operating system (except Disaster Recovery Server) and a VMFS file system formatted shared storage (SAN) will be configured to store the Virtual Machines needed to supply the platform services.

Next generation VMware vSphere software suite should be evaluated at the time of the Platform implementation as it should provide better performance and reliability.

3.4.3 Hardware

Enterprise-level hardware is needed to guarantee the proper reliability and performance levels. The number of components and the hardware specifications have been selected in order to provide high performance, scalability, service high-availability, and automated disaster recovery capabilities starting from the very first version of the infrastructure.

The main components, shown in Figure 3.3, are:

- *2 Watchguard X750 Firewalls* – High-end firewalls for network traffic filtering and isolation, they are the only entry-point to the infrastructure from the Internet, first layer of security;
- *2 Cisco Catalyst Express 520 Ethernet Switches* – High-performance Gigabit Ethernet Switches, advanced NIC Teaming support for high-availability;
- *1 HP SAN StorageWorks 2012FC Dual Controller with 12 SAS 146GB 15K Rpm Hard Drives - RAID 10 with 2 hot-spare drives (700GB total storage)* – Shared high-performance storage, it will host all the Virtual Machine files; this is a single point of failure for the system
- *2 HP StorageWorks 8/20q 8-port Fiber-Channel Switches* – High-bandwidth fiber-channel switch to connect SAN to physical servers;

- *3 HP DL 380 G5 - 2 CPU Xeon Quad-Core 3GHz - 32GB RAM - 3 SAS 146GB Hard Drives, RAID 1 configured with hot-spare drive – **Cluster nodes***: high-performance servers that will run Virtual Machines;
- *1 HP DL 380 G5 - 2 CPU Xeon Quad-Core 3GHz - 32GB RAM - 5 SAS 146GB Hard Drives, RAID 10 configured with hot-spare drive – **Disaster Recovery Server***: high-performance server for Disaster Recovery Purpose in case of SAN total failure (MySQL Replica and additional Apache Web Server with Application Replication);
- *1 HP DL160 G5 1TB SATA Storage Server – **NAS Backup***: secondary shared storage device to store data and virtual machine backups.

146 GB is the currently minimum size available for SAS Hard Drive.

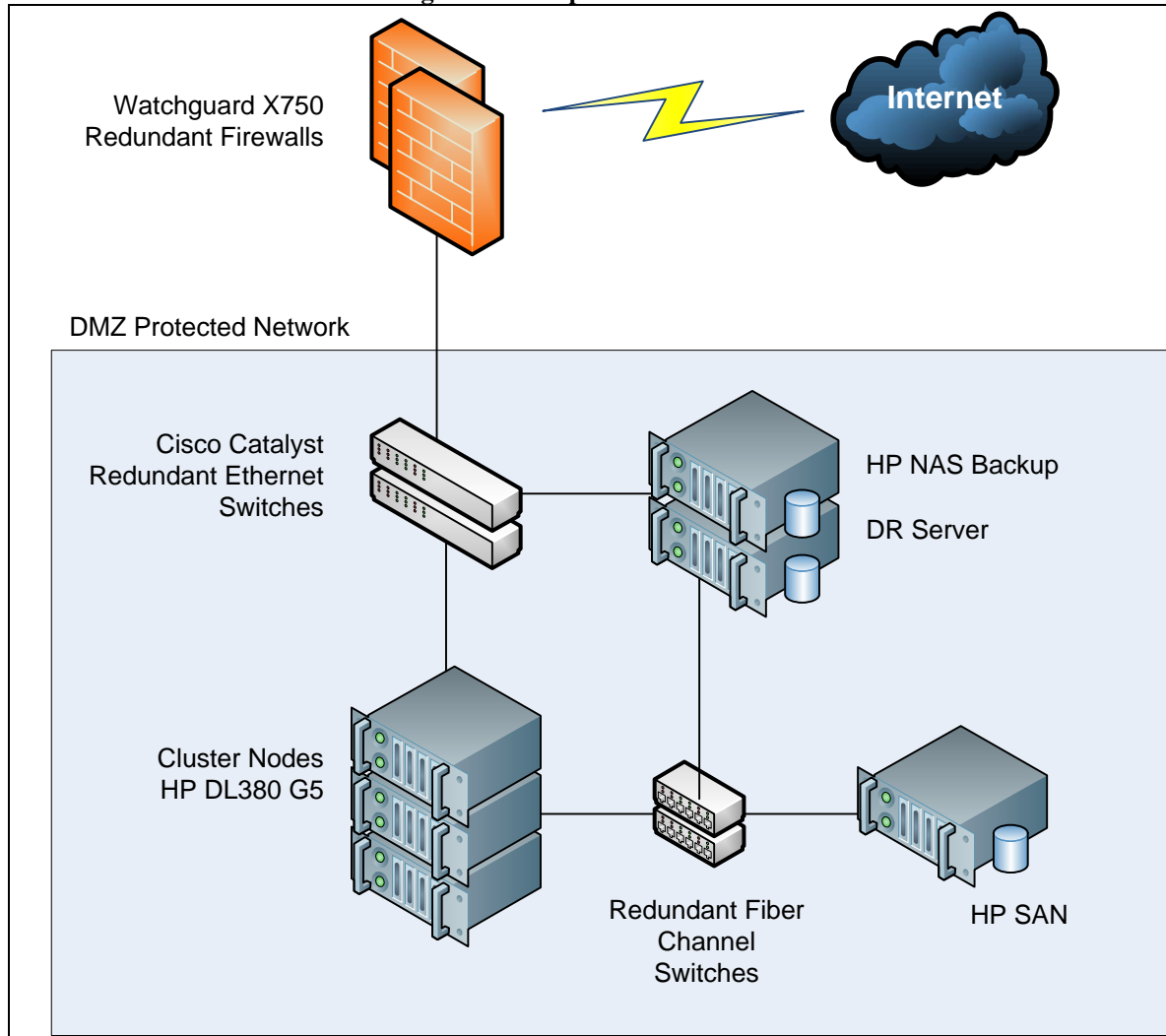
The disk space used to store running virtual machines, therefore platform data, is the one provided by the SAN system (700 GB). The dimension of the disks has been chosen in order to guarantee an adequate level of scalability: at least 5 virtual machines and all the Platform modules and data will be stored on the SAN (ref. § 3.4.4) but additional virtual machines and additional data could be stored to extend the Platform capabilities.

The hard disks on the three HP DL 380 G5 will be used to run ESX, not to store the Platform data.

The complete infrastructure must be located in an adequate data centre in order to have:

- redundant symmetric network connection to the Internet;
- redundant power supply with UPS system;
- controlled and constant temperature and humidity.

Figure 3.3 The platform hardware



Source: own elaboration

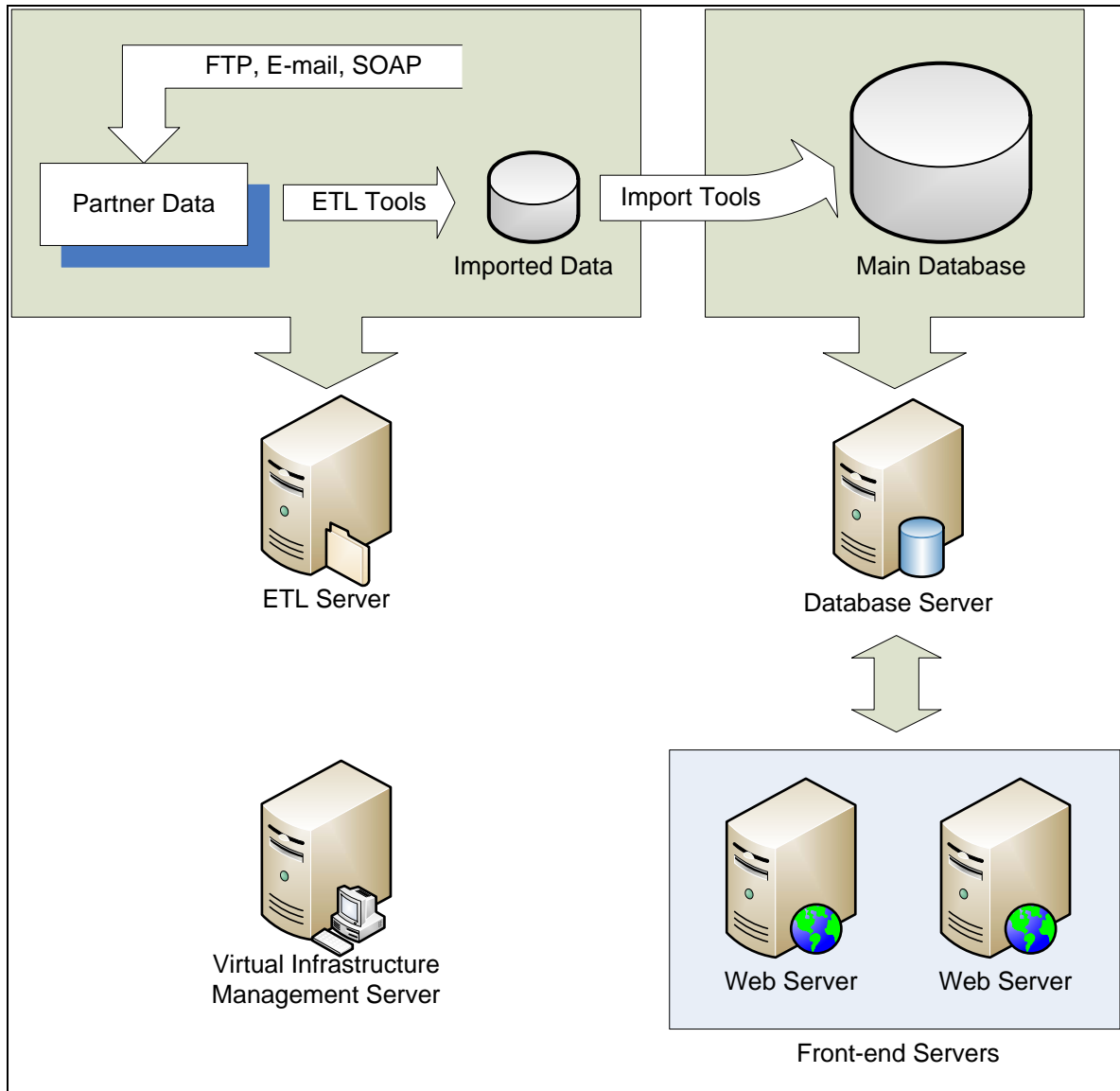
3.4.4 System Software

All the Virtual Machines that run in the Virtual Infrastructure will be equipped with Red Hat Enterprise Linux, a reliable and stable enterprise-class operating system.

Five Virtual Machines will run in the Virtual Infrastructure (see Figure 3.4):

- two Front-end Web Servers - Red Hat Enterprise Linux with Apache Web Server;
- one Database Server - Red Hat Enterprise Linux with Sun MySQL RDBMS;
- one ETL Server - Red Hat Enterprise Linux with third-party components and custom software;
- one Virtual Infrastructure Management Server - Red Hat Enterprise Linux with VMware vCenter Server, needed to administer the Virtual Infrastructure and to use all the available features like high-availability and disaster-recovery ones.

Figure 3.4 The system software of the platform



Source: own elaboration

3.4.5 Data

The Database Server VM will manage data with Sun MySQL Relational Database Management System (RDBMS). The MySQL database is the world's most popular open-source database because of its consistent fast performance, high reliability and ease of use. It has also become the database of choice for a new generation of applications built on the LAMP stack (Linux, Apache, MySQL, PHP / Perl / Python), also used by the platform.

Furthermore, MySQL provides security and high-availability features like:

- built-in security for access and data manipulation privileges;
- automatic replication for data-loss prevention and disaster recovery.

3.4.6 Integration

The ETL Server VM will handle the data collection and data integration of the various data source provided by the partner organisations via:

- *File-based integration*, by which files of various types (ASCII, CSV, Excel, MDB) are exchanged via FTP and/or E-mail, and then properly converted into the platform target data format;
- *Automated Web-Service integration*, by which the exchange platform “talks” directly and automatically with the existing remote IT System to extract and receive the raw data using modern system-to-system data exchange web protocols, such as SOAP/XML, REST or basic HTTP.

All the imported data will be stored locally in a buffer database, with the proper platform data format, and it will be definitely imported into the main databases after a final validation in order to have an additional security layer before updating/manipulating the main database.

- *Front-end integration*, by which a human operator will manually input data directly into the platform, available through the Front-end Web Servers via web forms.

3.4.7 Presentation

A presentation layer will be provided by two Front-end Web Servers VM's with Apache Web Server. Apache Web server on Linux is the *de facto* standard over the Internet; it provides high-end performance, security features and support to many front-end technologies and frameworks for building web-based interfaces.

Two virtual machines will be used to provide load-balancing and transparent high-availability to the users.

3.4.8 Security

Different and nested security layers assure the proper level of data security and data privacy:

- *Network layer*: firewalls provide network traffic filtering with advanced features, such as intrusion detection (IDS); only the permitted traffic is therefore properly routed to the servers/virtual machines;
- *Operating system layer*: embedded OS user access control and remote access through SSL protocol provide the proper level of security. Only authorized users can logon to the servers through an encrypted channel;
- *Database layer*: database users will be defined in order to enable authenticated and controlled data access and manipulation at database and table level;
- *Application layer*: an additional data and application access security policy define, through proper platform user profiles, which platform user can access which platform data and services (analysis, statistics etc.).

High-availability (HA), Disaster Recovery (DR) and Backup policies will guarantee the proper level of data protection and service availability, with automated procedures to manage and monitor physical and virtual machines' health and back-ups:

- advanced VMware HA and DR features allow to automatically restore virtual machine after a software or hardware failure;
- scheduled back-ups and a dedicated Disaster Recovery Server, running MySQL Replica, an additional Apache Web Server and Application Replication will preserve data and service availability, even after a critical failure such as a total SAN hardware failure.

3.5 Legal requirements regarding privacy and competition

The compliance with privacy and competition law is among the most important basic requirements for the implementation of the platform. The analysis of the EU law concerning privacy and competition has outlined some indications and *caveat* concerning the implementation of the European platform.

Considering the nature of data in the arrangement and implementation of the platform, and their use and role at the EU level (which can be defined of transnational type), in order to comply with the existing competition law, some conditions must be fulfilled. In particular:

- i) the platform should be operated by several IBOs. For these typologies of organisations, EU law provides for regulations which are compatible with the transnational role of the platform.
- ii) the creation of the platform should be communicated to the European Commission. The platform could not be operative before the acknowledgment of the Commission, to be provided within two months from the communication, and the statement of compatibility with the competition law. Since the platform will operate for several years, Article 176a(6) of the Council Regulation No 1234/2007 states that the initial notification of the agreement is also valid for the subsequent years, unless the Commission declares, at any times, the incompatibility of the platform with European law;
- iii) the European platform must not contravene the provisions included in Article 176a(4) of the Council Regulation No 1234/2007, i.e. agreements, decisions and concerted practices which may:
 - lead to the partitioning of markets in any form within the Community;
 - affect the sound operation of the CMO;
 - create distortions of competition which are not essential to achieving the objectives of the CAP pursued by the IBOs' activity;
 - entail the fixing of prices, without prejudice to the activities carried out by IBOs in the application of specific Community rules;
 - create discrimination or eliminate competition in respect of a substantial proportion of the products in question.

The failure to comply with such provisions imply the withdrawal of the Commission's recognition. Furthermore an in-depth case-by-case analysis should be developed, taking into account all the relevant aspects to prevent the rising of anticompetitive behaviours among the platform partners (see the details on the evaluation of the collusion risk within the platform in § 3.9.2).

As far as privacy law is concerned, some caution should be adopted as follows:

- data connotation should be assessed in order to define their degree of sensitiveness (common data vs. sensitive data). Sensitive data should be kept separately, considering that sensitive data will require more security;
- subjects providing data to the platform must be informed about the aims and purposes of the platform. Personal data may be processed only for legitimate purposes and according to agreed procedures;

- suppliers must voluntarily sign up (in writing) an agreement allowing for data processing, and including information about the above mentioned aims and purposes, control, access and updating procedures;
- on the other hand, subjects involved in data treatment must be authorized and must act according to the instructions received (this applies both to the person responsible of and to the processors of the data treatment);
- a control system must be established to prevent data access to subjects other than the legitimate responsible person for treatment. The legitimate processor needs to issue the treatment policy and must obtain the consent from the data owner. The processors must then identify the way and the timing of data storage. Data will have to be kept as long as required by the particular treatment they have been collected for.

3.6 Costs of the platform

The platform costs include:

- a) the cost of the initial investment, i.e.: hardware, software and software development, platform organization. These expenditures are subject to depreciation, and must be divided over a time span;⁵³
- b) the operational costs related to the resources necessary to run the platform, i.e.: labour costs, location, depreciation, and overheads.

These costs are estimated in detail later so as to provide an evaluation of the economic sustainability of the platform. The evaluation will merely be indicative of the real costs of the platform. In addition, some costs cannot be estimated at this stage, due to their specificity and variability in relation to the real implementation of the platform.

3.6.1 Initial investment

3.6.1.1 Hardware costs

The costs related to the platform hardware (excluding VAT) are shown in Table 3.3.

⁵³ Five years seem to be an adequate period for the IT equipment.

Table 3.3 Hardware costs for the platform set-up

Product	Quantity	Price (EUR)	Total (EUR)
Watchguard X750 Firewall with Fireware Pro	2	3,100	6,200
Cisco Catalyst Express 520 24 Port	2	3,600	7,200
HP DL380 G5 - 2 CPU QC 2.83GHz - 32GB RAM (3 SAS 146GB HD - RAID 1 + Spare)	3	6,800	20,400
HP DL380 G5 - 2 CPU QC 2.83GHz - 32GB RAM (5 SAS 146GB HD - RAID 10 + Spare)	1	7,300	7,300
HP SAN MSA 2312FC DC SMART ARRAY - 700GB (12 SAS HD 146GB 15K)	1	9,700	9,700
HP StorageWorks 8/20q Fibre Channel Switch and Simple SAN Connection Kit	1	6,500	6,500
HP StorageWorks 8/20q 8-port Fibre Channel Switch	1	2,300	2,300
HP DL160 G5 1TB SATA Storage Server	1	2,000	2,000
TOTAL			61,600

Source: own elaboration.

3.6.1.2 Software costs

The costs related to the platform software (excluding VAT) are shown in Table 3.4.

Table 3.4 Software costs for the platform set-up

Product	Quantity	Price (EUR)	Total (EUR)
VMware Infrastructure Enterprise for 2 processors + Gold (12x5) 1 Year Support	3	5,900	17,700
VMware vCenter Server Foundation + Gold (12x5) 1 Year Support	1	5,100	5,100
TOTAL			22,800

Source: own elaboration.

The IT platform will contain several bespoke software modules, that have to be customised according to detailed functional requirements. Only after an in-depth analysis of such requirements, the actual costs of the software development may be calculated.

The custom modules will include:

- Data Collection: this module will handle raw data coming from the partners through E-mail, Ftp, Soap and Web-Services;
- Data Mapping and translation (ETL): this module will handle data mapping and the transformation of all data received from external sources, converting them into a common format, ready to be imported into the master database;
- Data Analysis and Statistics: this module will provide the actual application logic to all the data received, producing statistics, elaborations and indicators;
- Data Presentation: this module will handle the data presentation to the external users of the platform, accessing the platform through the web;

- Application Infrastructure: other horizontal modules are needed to ensure generic functions such as data security, user profiling, logging and audit trail, PDF creation, E-mail notification, etc.

To be able to analyse the user requirements, and to design, implement, test, and deploy all the custom modules listed above, a 3 man/year effort is necessary, which translates into 120.000 EUR at current market rates. A more precise estimate will be available after the functional analysis and design phase.

3.6.1.3 Other costs and total initial investment

Other costs must be considered to implement this project, such as:

- installation and configuration costs;
- data centre server co-location monthly fee;
- platform setting and organization.

Such costs are related to the initial investment required for the starting of the platform and cannot be properly estimated in this phase, as they depend on the final infrastructure implementation, and on the level of services the platform needs to provide. Anyway, rough estimates are reported in Table 3.5 below, which sums up all of the costs related to the initial investment.

Table 3.5 Initial investment necessary to set up the platform

Description	N°	Months	Price (EUR)	Total (EUR)
Manager	1	3.0	7,000	21,000
Data treatment	2	3.0	4,200	25,200
Legal matters	1	3.0	5,600	16,800
Administration	1	3.0	4,200	12,600
Assistant	2	3.0	2,800	16,800
Location	-	3.0	5,000	15,000
IT	-	-	-	204,400
Total investment	-	-	-	311,800
Depreciation (5 years)	-	-	-	62,360

Source: own elaboration.

3.6.2 Operational costs

3.6.2.1 Labour costs

The estimates for the labour costs are reported in Table 3.6. Based on the current structure of some of the interviewed organisations, the cost of the technical board running the platform has been estimated. The unit prices are indicative.

The number of people involved in the platform operation is mainly justified by the following criteria:

- the need to cover the technical competence in the scientific and administrative disciplines required for the platform operation (IT, statistics, administration, legal matter, secretary, management). The manager skills should not be limited to the co-ordination but have to include a rooted knowledge of the fruit and vegetable industry (this kind of knowledge should also characterise the data treatment experts).

- the assumption of a high level of service provided by the platform, particularly in the respect of the service continuity over time, including the timely assistance to the users and the prompt response to possible platform crisis.

As already mentioned in § 3.4.1, this solution represents a high cost scenario in comparison with the alternative of reduced service performance of the platform.

Table 3.6 Annual cost of platform personnel

Description	Quantity	Gross salary (EUR/month)	Unit annual cost (EUR)	Total cost (EUR/year)
Manager	1	7,000	84,000	84,000
IT experts	3	4,200	50,400	151,200
Data treatment experts	3	4,200	50,400	151,200
Legal expert	1	5,600	67,200	67,200
Administration	1	4,200	50,400	50,400
Assistant	2	2,800	33,600	67,200
Total personnel	11	-	-	571,200

Source: own elaboration.

3.6.2.2 Location cost

Location costs have been estimated for a comprehensive structure of about 170 m², with a space allocation as shown in Table 3.7.

Table 3.7 Annual costs of the platform location

Offices	Area (m ²)	Unit price (EUR/month)	Cost (EUR/year)
Manager office	16	5,000	60,000
IT experts	30		
Data treatment experts	30		
Legal expert	10		
Administration	10		
Assistant	16		
Server location	25		
Others structures	30		
Total	167		

Source: own elaboration.

3.6.2.3 Total operational costs

All considered, the total operational costs of the platform are calculated in Table 3.8. The total amount the estimated annual operation cost of the platform to be shared by the partners.

Table 3.8 Estimated total annual operational costs of the platform

Type of cost	EUR/year
Depreciation	62,360
Personnel	571,200
Location	60,000
Subtotal	693,560
Overheads (30%)	208,068
Total	901,628

Source: own elaboration.

3.7 Economic sustainability

The economic sustainability of the platform may be evaluated by calculating the ratio between the annual costs and the annual turnover of a potential partner. To this aim, it is necessary to assume the amount of the turnover and the number of organisations participating into the platform. This calculation is reported in Table 3.9.

Table 3.9 Costs sustained by the platform partner organisations compared to their annual turnover and to the number of participants

Average annual turnover of the partners (million EUR)	Costs of initial investment per partner as % of the average annual turnover of the partners			Annual operational costs per partner as % of the average annual turnover of the partners		
	5 partners participating	10 partners participating	15 partners participating	5 partners participating	10 partners participating	15 partners participating
10	0.624%	0.312%	0.208%	1.803%	0.902%	0.601%
30	0.208%	0.104%	0.069%	0.601%	0.301%	0.200%
60	0.104%	0.052%	0.035%	0.301%	0.150%	0.100%
100	0.062%	0.031%	0.021%	0.180%	0.090%	0.060%

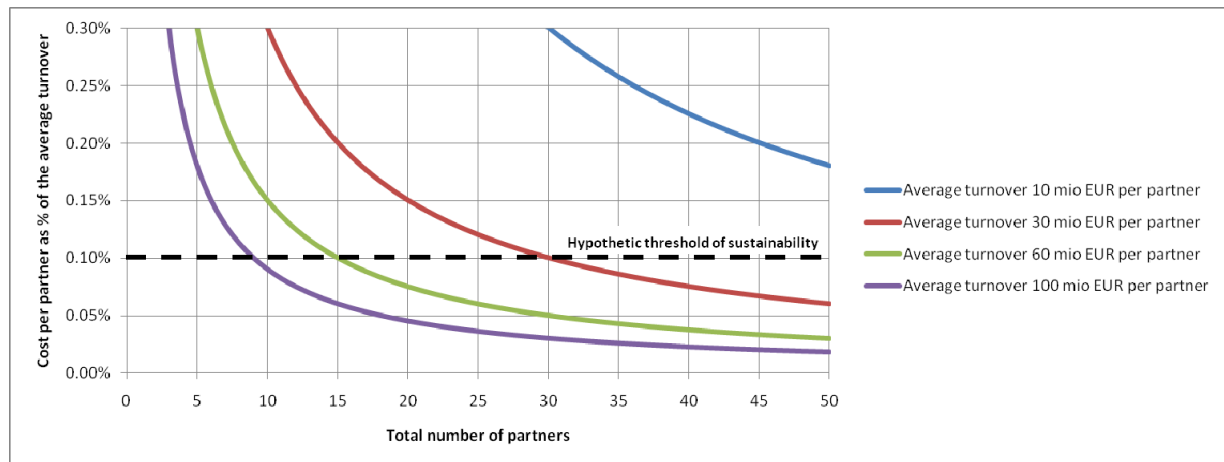
Source: own elaboration.

The cost of the platform is supposed to be sustainable, if it is less than 0.1% of the partners' average turnover. The table indicates that the major economic impact of the platform originates from the operational costs, which are sustainable only if a significant number of partners join the platform: e.g. 15 partners with an average turnover of EUR 60 million. If the partners have an average turnover of EUR 100 million, the threshold is attained with 9 partners. The graph of Figure 3.5 shows a variety of such combinations.

The proposed exercise stresses the importance of reaching a significant number of participants for the economic feasibility of the platform, and also to create the conditions for a large adhesion.

Finally, it should be mentioned that the partner organisations may face adaptation costs to meet the platform standards regarding the minimum data quality requirements. At present, it is not possible to evaluate these costs, which should be analysed case by case.

Figure 3.5 Operational costs sustained by the platform partners compared to their annual turnover and to the total number of partners



Source: own elaboration.

3.8 Implementation strategy

This section describes the implementation strategy of the platform model as defined in the previous sections. The implementation strategy takes into account the platform objectives, and the main assumptions behind it. Additional assumptions are in this case as follows:

- i) the varying degree of development and the technical characteristics of the IT systems deployed by the potential partners;
- ii) the different willingness of the potential partners to be engaged into the initiative;
- iii) the opportunity to reach the highest degree of the platform representativeness⁵⁴ (considering both production volumes and the geographical distribution) as a necessary condition for its effectiveness, particularly in view of its role in crisis prevention;
- iv) the possibility to provide selected incentives to participants.

The assumptions above indicate that an adequate timeline for the implementation of the platform should be defined. At this level, it is worth foreseeing at least five implementation phases:

- a) Conceiving;
- b) Launch;
- c) Implementation;
- d) Growth;
- e) Long term.

Table 3.10 reports the objectives, the means, the outputs and the estimated duration of each phase. The effectiveness of the platform if compared to its objectives mainly lies in its

⁵⁴ In this case, representativeness indicators applied might be of quantitative nature at the relevant geographical level: e.g., production or commercialized production as a rate of the local (whether regional, macro-regional or national) production.

representativeness, either in terms of production volumes, and at a geographical level. Among the participants, different positions may be supposed to emerge according to the *willingness* to participate and the *real possibility* to do it:

- the willingness to participate is related to the motivations which, according to our reasoning scheme (see Annex 2), are determined by the real advantages perceived by the potential participants in relation to the cost of the participation;
- the possibility to participate is determined by the existence of an IT system, meeting the minimum requirements, to be operated at the participant's premises.

Table 3.10 Implementation strategy of the platform

Phase	Objectives	Means	Output	Estimated duration
0. Conceiving	Define the platform concept according to objectives, means, organisation, priorities and alternatives	Technical design	Platform project	9 months
1. Launch	Inform potential participants Collect consent and options	Communication Participatory approach	Collect adhesions Group participants (leaders, followers) Define technical and financial needs Define partnership and institutional settings Assign leadership and tasks	4-6 months
2. Implementation	Implement the agreed platform project	Constitute the task force (leaders) Define means (competences, assistance, funding, incentives)	Platform operation Effectiveness assessment Result publication	12-18 months
3. Growth	Increase effectiveness Improve methodology Increase services	Communication Positive emulation Targeted incentives (followers) Sponsorship	Enlarged participation Increased representativeness Increased effectiveness in crisis prevention	12-24 months
4. Long term	Cover peripheral areas Join structural development Financial autonomy	Communication Positive emulation	Increased methodology standardisation Standardised procedures Model fine tuning and communication means development	5 years

Source: own elaboration.

The scheme in Table 3.11 defines, in a very simplified way, the typologies arising from the crossing of the two variables.

Table 3.11 Typologies of potential participants

Technical capability	Willingness to participate	
	YES	NOT
YES	<i>Leader</i>	<i>Adverse</i>
NOT	<i>Follower</i>	<i>Bottom liners</i>

Source: own elaboration.

The “Yes/Yes” typology defines the potential leaders of the implementation process. They already operate an IT system and appreciate the advantages of the initiative. The “Follower” typology does perceive the advantages, but it lacks of infrastructures. On the opposite side, the “Adverse” typology lacks motivation, but it does operate an adequate information system. Finally, the “Not/Not” typology lacks both.

During phases 0 to 2, the Leaders may play a basic role for the platform set-up and development. The organisations which initially have an Adverse attitude may revise their motivation, if the platform demonstrates an actual utility, and develop a “better-inside-than-outside” strategy. The participation of the Followers is not hindered by motivations, but by real barriers; some incentives helping these potential partners to improve their information systems and to reach the platform standards may therefore contribute to the implementation of the platform.⁵⁵ The Bottom liners need both motivational and real incentives, which would make them move towards either the upper or the left case of the scheme.

Assuming that public bodies have a role in the initiative, individually or in co-operation with the IBOs, and that they provide incentives (at least, in part), a differentiated system of roles and incentives could be provided for the above mentioned typologies; the scheme in Table 3.12 exemplifies this concept according to the five implementation phases. Incentives might be limited to the initial phases of the process. While the number of participants increases, the self-financing capability of the platform will likewise increase.

A further consideration concerns the kind of data that could be supplied to the platform according to the implementation timing. Structural data (crop areas, final production, yields, etc.), for institutional reasons too, are in general provided more easily than the information about the on-going campaign, and are more suited to prevent structural crises. On the other hand, the production of data during the campaign (e.g., production forecasts, prices, stocks, etc.) requires a more efficient organisation, and this information allows to manage occasional market crises, and the occurring effects of structural unbalances.

For these reasons, the effectiveness of the platform, especially with respect to occasional crises and immediate effects of structural market instability, might be hindered, during the early stage of the implementation, by the quality of data and by a lack of representativeness. Given the importance of the early initiative results for motivating the Adverse and the Bottom liners, this aspect gives further grounds to the provisioning of incentives to the Leaders and the Followers in the early phases of implementation.

⁵⁵ Incentives may lower technical barriers like, for instance, the adequacy of an existing information system to comply with the platform standards or, even, the development of an information system from scratch. On the opposite, structural barriers which are determined, for instance, by the lack of scale economies necessary to develop an information system, that would require an aggregation process, could not be solved with incentives only. This criterion might also apply to identify the entity and the functional limits of the financial incentives to be delivered to potential participants.

Table 3.12 Roles and incentives during the implementation process

Phase	Leaders	Followers	Adverse	Bottom liners
0. Conceiving	Provide positive examples of organisation and technical solutions	-	-	-
1. Launch	Assume a leading role in the launching of the initiative Witness positive motivation Assume responsibilities in the next phase (implementation)	Witness positive motivation Identify own access barriers	-	-
2. Implementation	Are represented by assigned starter incentives (e.g. basic platform facilities) Contribute identifying human resources Operate the platform	Are represented by assigned incentives to lower access barriers	Are the target of positive communication to increase motivation	Are the target of positive communication to increase the motivation
3. Growth	Operate the platform Contribute improving the platform	Solve their own technical problems and join the platform Operate the platform Witness the development of the platform	Develop a positive mind May join the initiative on the basis of its effectiveness.	May join the initiative on the basis of its effectiveness and of targeted incentives.
4. Long term	Operate the platform Contribute improving the platform	Operate the platform Contribute improving the platform	Join the platform Operate the platform Contribute improving the platform	Solve their own technical problems Join the platform Operate the platform Contribute improving the platform

Source: own elaboration.

3.9 The model's (private and public) pros and cons

3.9.1 The pros and cons of the platform for the public and the private actors

A logic reference for the evaluation of the pros and cons of the proposed platform model is represented by the existing initiatives operating at a European level for the circulation of information concerning the industry. These initiatives are:

- the existing **networks** which operate in the fruit and vegetables industry for data and information exchange (e.g., Freshfel, Europeche, etc.). As a general rule, these are voluntary and mostly informal networks, whose participants meet before the harvest campaign to compare their own forecasts. In principle, during the year, they also exchange information about the most important market and structural data, with different degrees of participation and effectiveness.

- the **public initiatives** providing data and information, operated by EU and national/regional institutions. They provide information on the basis of surveys, national statistics, *ad hoc* information channels, sometimes related to specific institutional tasks or stemming from the producers organisations themselves (e.g., CMO operational programmes).

The scheme in Table 3.13 synthetically displays the pros and cons of the proposed European platform according to the private and public point of view.

Table 3.13 Pros and cons of the proposed EU platform

	Public actors	Private actors
CONS	Collusion risk	Cost
PROS	Low institutional engagement Self financing in the long term Additional source of reliable information	Timely and ready-to-use information Adequate data aggregation levels Wide geographical scope Stimulus toward data standardisation Methodology standardisation Increased bargaining power in vertical relationships Low transaction cost of getting information Stimulus toward aggregation
	More effective tool for crisis prevention Improved resource allocation	

Source: own elaboration.

Assuming that the private and the public entities have different interests in information (see Annex 2), the pros and cons may differ according to two points of view. In a long-term perspective,⁵⁶ from a public standpoint the platform pros is represented by the additional source of data, directly stemming from the field, with a high degree of representativeness and reliability, obtained against the substantial absence of costs and a low institutional engagement.

For the private actors, the pros consists in an increased availability of information about the market, according to adequate aggregation criteria, with low transaction costs: this may improve the position of producers within the fruit and vegetable supply chain. The possibility to participate into the initiative also represents a stimulus to aggregation for the organisations of the fruit and vegetable industry. A common area of interest between the private and the public actors is the availability of a more effective tool for crisis prevention and a better allocation of resources within the industry.

Relevant cons may be found in the additional cost of the initiative for the private actors, and the risk of misuses of the information stemming from the platform (e.g., collusion risk) for the public actors (as outlined above in § 3.2.1.1 and in § 3.5).

3.9.2 Public cons: the evaluation of the collusion risk

The risk of collusions and anticompetitive behaviours among the platform partners needs to be more carefully considered. The issue of oligopolistic collusion has been widely treated in the

⁵⁶ In this case, the assumption of a long-term perspective refers to the phases 3 and 4 of the implementation strategy, when the platform is supposed to have attained financial autonomy.

economic literature⁵⁷ and the collection and share of information has to be considered a primary source of potentially collusive relationships among firms. As observed by Clarke (1983, p. 392): “information-pooling mechanisms like trade associations can be considered *prima facie* evidence that firms are illegally cooperating ... On the other hand, lack of information-pooling mechanisms can be taken as fairly good evidence that cooperative behaviour is impeded”.

By dealing with this issue within the context of this study, it is necessary to advance some premises:

- a) All the agricultural industry, and especially the fruit and vegetable sector, is structurally affected by fragmentation of production. This basic feature creates a long sequence of problems for agricultural development and, not least, the very weak bargaining power of producers with respect to the more concentrated downstream industries (trading companies, food processors and retailers). This problem is heightened by the perishability of agricultural products which is particularly rapid for the fresh fruit and vegetables. To overcome these hindrances, the agricultural policies, including the CAP, have always supported the association of farmers, the concentration of the agricultural supply, and the vertical coordination of the agri-food supply chains.
- b) Despite the European fruit and vegetable producers, thanks to a strong CAP contribution, have significantly increased their level of aggregation, this sector is still subject to an overwhelming dominance of the lower segments of the supply chain and especially the retail sector, where the concentration trend has been much more intensive.⁵⁸ For this reason, the organisations, which will share information within the platform, are not at all likely to attain such a critical mass to be able to turn the present market situation of an oligopsony broadly controlled by big retailers, wholesalers and processors, into an oligopoly dominated by the associations of producers.⁵⁹
- c) As widely treated in § 2, the collection, processing and exchange of data and information is currently an ordinary activity of the European POs, APOs, and IBOs operating in the fruit and vegetable industry. The activity, mostly aimed at coordinating the supply chain and preventing market crises, is carried on through specialised information systems created as internal or external bodies of these organisations, and is in general supported by regional and national governments and by the CAP. The sharing of data takes place among the organisations managing each information system, but there are exchanges among the different information systems at both the national and the European level.⁶⁰ In fact, a primary objective of the platform should be “to institutionalise the [current] exchange of data & information, covering the main products and indicators as a tool of crises’ prevention” (Tender Specification AGRI/2008-G4-01, p. 4).

⁵⁷ For a review of the literature see Porter (2005), Cabral (2005), Grout and Sonderegger (2005).

⁵⁸ The Tender Specification of this study, in its § 1.1 describing the context of the study, stresses these aspects: “Access to reliable, complete and up-to-date information constitutes a key factor for a transparent and efficient European fruit & vegetables market. The knowledge of market data and the exchange of information on market developments also serve as a major tool in preventing and combating crises on the market. The sector’s professional interest and producer organisations play an essential role in this process. This is particularly the case with a view to the dominant position of retailers and the industry. But it is equally obvious that the sector alone can not succeed in this task without a minimum set of common rules and also, acting in full compliance with European rules and regulations.” (Tender Specification AGRI/2008-G4-01, p. 4).

⁵⁹ It should be also taken into consideration that the platform has to be managed by IBOs (see § 1.1.4) which are not exclusive organisations of producers but may include operators of the downstream industries of the fruit and vegetable supply chain.

⁶⁰ The exchanges of data among the information systems takes place through the national and European associations of the fruit and vegetable industry, conferences, and official meetings of experts organised by regional and national authorities and by the European Commission.

Beyond these premises, the wide scope and the high detail of the data required for an effective prevention of market crises, the intensity needed in the exchange of data (see § 3.2.1.1 and the Annex 1), and the mechanism envisaged for the platform's self-sustainability without specific disbursements from the Member States' and the EU's budgets (i.e. the access to the platform will be limited to those organisations able to supply data which comply with the platform's quality requirements; see § 3.2) imply the risk of anticompetitive behaviours infringing the limits set up by Article 176a(4) of Council Regulation n. 1234/2007. On the other hand, with reference to the point (b) of the above premises, the inefficacy of an illegal cartel face to bigger and more powerful buyers does not change the illegal nature of the cartel's activity, which has to be however persecuted: hence, the necessity of an in-depth evaluation of the collusion risks within the platform.

There are basically two types of methodologies that make use of the economic analysis to evaluate the presence of cartels into a given market, the structural and the behavioural methods (Rey, 2007):

- the *structural methods* consist in detecting the specific characteristics of the markets more likely subject to the formation of cartels. A primary source for identifying the characters of collusive markets is the economic theory. Table 3.14 lists the main elements found to favour or hinder the formation of cartels by theoretic analyses: it is noticeable that certain conditions hindering the formation of cartels, like the presence of few, big and powerful buyers or a dominant semi-monopolistic market leader, are not desirable on the viewpoint of free and fair competition.

Table 3.14 Main characteristics of the markets favouring or hindering the formation of cartels according to the theoretical analysis

Basic structural characteristics:			
- presence of a small number of competitors	(favouring)	- market transparency	(favouring)
- high entry barriers	(favouring)	- presence of private information	(hindering)
- frequent interaction between firms	(favouring)		
Demand-side characteristics			
- instable demand	(hindering)	- dominance of large powerful buyers (the market is oligopsonistic)	(hindering)
- growing demand	(favouring)		
- inelastic demand	(favouring)	- club effects and network effects (the market tends to be monopolistic)	(hindering)
Supply-side characteristics			
- mature industries with scarce innovation	(favouring)	- horizontal differentiation of products (effects are ambiguous)	(?)
- exceeding production capacity and presence of stocks	(favouring)	- multi-market contacts	(favouring)
- cost asymmetries	(hindering)	- structural links	(favouring)
- symmetric capacities	(favouring)	- cooperative and contractual agreements	(favouring)
- product homogeneity	(favouring)		

Source: own elaboration from Rey (2007), Grout and Sonderegger (2005), Grout and Sonderegger (2007).

Empirical analyses, which have investigated the statistical correlation between the features listed in Table 3.14 and the actual presence of cartels in the markets, and also the examination of case studies have however shown that the elements identified by the theory have very different weights in the formation of cartels. Some of them unexpectedly have revealed scarce importance, while other elements generally neglected by the theory, e.g. the high cost of personnel, can be highly symptomatic of the presence

of cartels (Grout and Sonderegger, 2005). Table 3.15 shows the main background characteristics of cartelized markets and the principal factors associated to the discovery of cartels which have been identified by researches on the European and American markets by making use of statistical correlation and case-study analyses.

Table 3.15 Main characteristics of cartelized markets according to empirical analyses and case studies

Main background characteristics of cartelized markets	Factors associated to the discovery of cartels
homogeneity of products	high transparency of the market high payroll per employee reduced R&D expenditure
scarce volatility of turnover	declining demand high level of market concentration high barriers to entry
stable presence of few big companies	exceeding production capacity and formation of stocks ranking in econometric models predicting the presence of cartels

Source: own elaboration from Grout and Sonderegger (2005); Grout and Sonderegger (2007).

- the *behavioural methods* focus on the search of evidence that a cartel is likely to have been formed by investigating on the firms' behavioural patterns which look more associable with collusion than with competition. In this field, an important research stream deals with markers which detect possible deviations from competitive to collusive conduct and can be used to monitor the markets (Harrington, 2007). Table 3.16 shows a list of such markers resulting from the screening of price and quantity variations in the market.

Table 3.16 Price and quantity markers indicating possible collusive behaviours between firms

Price markers	Quantity markers
<ul style="list-style-type: none"> - A higher list (or regular) price and reduced variation in prices across customers - A series of steady price increases is preceded by steep price declines - Price rises and imports decline - Firms' prices are strongly positively correlated - A high degree of uniformity across firms in product price and other dimensions including the prices for ancillary services - Low price variance - Price is subject to regime switches 	<ul style="list-style-type: none"> - Market shares are highly stable over time - There is a subset of firms for which each firm's share of total supply for that subset of firms is highly stable over time - A firm's market share is negatively correlated over time with respect to variations of costs

Source: own elaboration from Harrington (2007).

The two methodologies are complementary and can be jointly used to assess the risk of collusion in the European platform. They can also correspond to different stages of an assessment procedure where structural methods are firstly used to investigate the extent of the collusion risk in the market and then a behavioural screening is applied to find out the signs of illicit agreements that may have taken place. The intensity of the screening could be modulated according to the level of collusion risk observed in the structural analysis.

With reference to the platform's implementation strategy described in § 3.8, the evaluation of the collusion risk should be started during the Conceiving phase, when the leader partners, the other potential participants and the different markets of fruit and vegetable products made object of the exchange of information will be identified. During this phase, for each of the markets monitored by the platform, a preliminary structural assessment based on both theoretic and empirical approach should be performed through the following steps:

- identification of the market operators potentially involved;
- delimitation of the geographic and economic area covered by each operator;
- definition of the market structure;
- analysis of the competitive environment;
- identification of the positions of dominance;
- identification of the possible abuses operated through the platform;
- appraisal of the overall risk of collusion in the market;
- appraisal of the specific risk of collusion among the operators acceding to the platform;
- identification of specific markers for a behavioural screening.

The preliminary assessment should be refined during the Launch phase, when the platform's partnership will be defined, in order to carry out a final structural assessment of the collusion risk within the markets monitored by the platform and among the operators acceding to the platform before the starting of the Implementation phase.

In particular, the identification of the possible abuses practicable through the platform should take into consideration, not only the particular competitive position of each operator involved, but also the scope and the intensity of the data exchange, the data-in policy, the classification and processing of data, the platform's output, and the user policy as described in § 3.2.1.1 and in the Annex 1. This analysis should bring to define the limits to the use of the platform with respect to the provisions of Article 176a(4) of Council Regulation n. 1234/2007 and to the other European and national rules on competition applicable for this case.

Among the final outputs of the structural assessment, besides the specific markers for a behavioural screening, there should be:

- the elaboration of a user code and good practices for the participating operators to avoid the misuse of the platform data;
- the definition, in collaboration with the anti-trust authorities, of a security procedure for suspected or ascertained illicit use of the platform information.

A regular behavioural screening of the markets and the operators involved should start with the Implementation phase, when the platform will commence to work. The screening should be based on the specific markers defined during the structural assessment, and should activate the security procedure when signs of a possible collusive conduct are detected. The data collected by the platform should allow periodical revisions of the structural assessment so that the behavioural screening may be intensified according to a possible increase of the collusion risk.

With regards to the public pros and cons (§ 3.9.1) and to the current exchange of information referred in point (c) of the premises to this section, given the considerable potential of the platform in providing market information, the public authorities could evaluate the opportunity of a more direct involvement in the initiative in view of its use for their antitrust activities in the fruit and vegetable industry.

4 Conclusions and recommendations

In Chapter 2, we have analysed five IT systems operated by organisations within the European fruit and vegetables industry. The questionnaires have highlighted the technical and organisational characteristics of those systems, and they have provided for some general information about the different actors' willingness to develop a European initiative. In Chapter 3, we have proposed a model for a European platform, according to some basic criteria and assumptions. In describing that model, we have outlined its requirements under different points of view, by focusing on the technical, juridical, organisational and economic aspects.

The model conceived refers to a technical solution whose operation would fall under the direct responsibility of private entities at the organisational and the technical levels. The proposed solution does not exclude the involvement of public institutions, whose participation may be debated at a political level, and which is out of this study scope.

The question for the platform effective feasibility is now the following one: are those organisations ready to participate into the *proposed* European platform model? Given the model characteristics and the results of the questionnaires, the question about its feasibility can be answered by:

- outlining the main critical points for the platform functioning;
- considering the characteristics of the analysed IT systems in relation to the platform critical aspects.

Although they are not representative of the whole European fruit and vegetable industry, the study cases analysed in Chapter 2 may provide for some elements of reasoning about the issues relating to the implementation of a European platform.

The participation of the data suppliers into the platform requires the allocation of economic resources for the initial investment and its functioning. Moreover, their participation may generate other costs to adapt the current IT systems operated by the data suppliers to the European platform standards. Such an adjustment may concern both the technical equipment and the organisation of data collection and human resources. The platform feasibility depends on the potential participant's willingness and possibility of effectively affording those costs.

But the feasibility is related to the aggregation effect too: if the number of participants is already significant in the earliest phases of the platform's implementation, the initiative would have immediate effectiveness and credibility.

On the basis of these premises, the feasibility issue should be analysed according to two different approaches:

- Individual approach - the possibility of a single organisation, owning an IT system, to participate into the European platform, with a defined role in its organisational layout. This approach is mainly related to technical and motivational issues (see the analysis developed under § 3.8 and, in particular, the Table 3.11).
- Aggregate approach - the possibility that the European platform becomes an effective system for the exchange of information in view of its goals. This approach depends on possibility that a relevant number of organisations effectively joins the platform.

The above mentioned approaches are strictly connected, as far as it is assumed that the number of participants may increase during the years, following a precise implementation strategy, and

making the platform more and more effective over a certain time span. Table 4.1 reports the platform critical aspects.

Table 4.1 Critical aspects of the platform's feasibility

Technical adaptation	
- Data transfer procedures a) Hardware b) Software c) Transfer management	The automatic transfer of data from each peripheral unit to the platform requires the adoption of a specific software, whose characteristics depend on both the type of IT used by the unit, and on its compatibility with the platform. Besides the technical equipment, this also implies the fact that the staff is trained for the usage of the new proceedings.
- Data scope a) Improvement of data collection b) Geographical representativeness	The information system operated by the data supplier might not fully comply with the types of data needed by the platform. In this case, the participation of the data supplier into the platform may require the improvement of its data collection system (e.g., with regards to the geographical area or to the types of crops covered), with additional organisational costs.
- Methodology a) Minimal requirements b) Standardisation c) Timeliness	Like in the previous case, the need for adapting the current methodology to the minimum standard requirements (e.g., the timeliness of data supply during the production campaign) may require methodological adaptations and changes in the organisation.
Juridical aspects	
- Compliance with privacy laws - Compliance with competition laws	Data suppliers which do not adopt privacy protocols might be obliged to comply with the general rules applied by the European platform. Competition law restricts the operation of POs, APOs and IBOs depending on the geographical scope of their operation (national or transnational).
Sustainability	
- Motivation - Resource availability to pay for technical adaptation	Motivation is important to decide upon the participation into the European platform. Once the motivation is assessed, the possibility to access the platform depends on the financial resources required to cover the adaptation costs.

Source: own elaboration

4.1 Individual approach: costs of participation

The participation into the European platform implies investment of capital and operational costs. These costs might be significantly high for small organisations, especially if the number of participants is reduced. Moreover, the potential participants might face other significant costs to adapt their organisation and methodology to the platform quality standards. These adaptations are mainly connected with the technical aspects. Here below is a brief description of their nature and relevance.

Data transfer proceedings

This aspect should be analysed individually for each organisation. In particular, software and human resource training may reach some relevance in terms of cost.⁶¹ By reasoning on the basis

⁶¹ The cost of adapting the peripheral IT to the needs of data transfer towards the central unit of the European platform may sum up to 4 weeks/unit (e.g., two working weeks for two persons), associated to non-relevant costs of hardware and materials.

of a large participation into the platform, it can be assumed that such costs may to a large extent be attributed to the potential participants.

Data scope

Table 3.1 has outlined the typology of data that should be supplied to the European platform to comply with its basic objectives, in particular the prevention of market crises. The results of the questionnaires show that the interviewed organisations can provide for the range of data required for these purposes, though, in some cases, with an expansion of the scope of data which they already collect. A good point common to all interviewed organisations is the geographical importance of the data provided, which is at least regional, thus potentially adaptable to the European platform.

Methodology

The methodologies applied by the five interviewed organisations show some similarities and differences. For example, in order to work out the production forecasts, three organisations make use of quantitative methodologies based on farm samples, while two organisations operate with qualitative methodologies, based on experts' advices and other information sources. In general, the data sources are likewise different;⁶² the standardisation of the methodologies thus does appear to a serious problem at an organisational level.⁶³

On the other hand, it must be noticed that networking is a well-developed methodology among the organisations (POs, APOs, IBOs, etc.), involving their associates, market experts and other supply chain actors, within an adequate timing. Networking is also applied among the organisations at the European level (AREFLH provides an example in this field).

The above mentioned problems affect the sustainability of the platform in terms of cost. The cost-efficiency problem is of a complex nature as far as it does not limit itself to the direct platform implementation, but it also involves the adaptation costs, which should be considered as a technical and financial barrier for the platform joining and as part of the initial investment. The issue of the minimum quality standards seems to be particularly relevant in this case. If only few organisations are able to meet the minimum quality standards, the platform participation rate drops, the implementation costs tend to rise, and, in turn, the effectiveness starts dropping as well. The choice of the minimal requirements is thus a strategic variable for the platform implementation, as far as an offset may occur between quality standards and effectiveness, especially in the earliest phase of the implementation process.

⁶² For example, the data on the crop areas are, in some cases, directly transferred to the information systems; in other cases, they are supplied through public entities or are sourced from official statistics.

⁶³ If a quantitative methodology is adopted by the platform as the standard procedure for production forecasts, the adaptation costs for the organisations which make use of a qualitative methodology may be relevant. These aspects have implications on the minimum quality standards to access the platform: strict criteria may rise barriers for some organisations.

4.2 Aggregate approach: the role of public institutions and incentives

The above mentioned offset connects the issue of the adaptation costs to the success of the European platform. At this level, it is worth reminding the questionnaire results concerning the motivations (see § 2.4), in other words: the need for a wider information sharing among producers, the importance of the crisis prevention as a primary objective of the European platform, and, last but not the least, the willingness to provide one's resources to sustain the platform implementation. Besides the deterministic resource quantification, it is possible to conclude that a positive spirit of mind appears in favour of the initiative, as well as the willingness to allocate resources to its development. This leads to the conclusion that feasibility does also exist in terms of motivations.

The costs issue calls into question the opportunity of providing public incentives to the potential participants to reach a significant degree of representativeness since the very first phases of the platform implementation. This aspect is connected with the role which public entities may play in the European platform. In particular, the point is:

- What is the public entity's interest in sustaining the initiative? And, consequently: what might its role be?
- Given the necessity of providing incentives to the initiative, what kind of incentives should be provided for?

In the previous chapters, it has been argued that enough reasons exist to justify a role for the public institutions into the platform implementation, being our reasoning based on rational (though not conclusive) argumentations. In addition, the pros-and-cons analysis has showed that a common area of interest is shared between the private and the public actors in the development of a European platform for the fruit and vegetable industry; but it has also showed that, on the other hand, a potential conflict may occur, mainly affecting the use of information by the platform participants.

The above mentioned reasoning stands for the participation of public entities into the platform, in view of the following objectives:

- a) To sustain the production of a public asset (information) to directly and indirectly contribute to the achievement of the CAP goals for the industry. Within this framework, the possibility of getting an additional, reliable information source should be considered as well by public institutions.
- b) To address the platform towards the objectives compatible with and not in conflict with the public interest, thus preventing possible misuses and opportunistic behaviours from occurring, as potentially connected with the concentration of information at the EU level.

The platform model is conceived as a stand-alone initiative, mainly based on the direct beneficiaries' interest. On the other hand, if the above mentioned objectives are supposed to be valid motivations for the public actors to participate into the platform, it is logical to discuss about the opportunity of a public action in favour of the platform. Provided the critical aspects of the platform implementation, the public action should mainly be targeted in the earliest phases. From this perspective, the role of the public institutions in the initiative may imply a variety of actions, aimed at both the financial and the institutional support. The actions suggested below might be adopted on a joint or separate basis, as their intensity is the result of the political willingness to sustain the European platform.

4.2.1 Financial support to the platform

Given the private organisations' significant interest in the crisis management, and given the decentralised crisis prevention from the EU to the private organisations, the provisioning of direct public incentives to the platform could be coherently limited to the platform installation and to the earliest phases of its functioning. This would only be the starting point in view of overtaking the difficulties connected with the deployment of the initiative, and in the attempt of reaching a minimal degree of effectiveness and representativeness at the EU level. During this phase⁶⁴, direct incentives might be delivered for the platform installation (including the IT costs, the human resources, and other structural and infrastructural needs). At the same time, a system of incentives might also be provided to sustain the adaptation costs of the less favoured organisations. Direct funding measures might in turn be submitted to some conditions, as follows:

- Co-financing, with the interested organisations of producers;
- Time limits for the incentives plan, according to the functional criteria (e.g., implementation phase, reaching of a minimum amount over a defined period, etc.)

4.2.2 Institutional measures and actions

The institutional actions should be conceived as the willingness driver (whether explicit or latent) for the potential participants into the initiative. Just to exemplify:

- Assuming a role in the implementation strategy of the platform as initiative promoter;
- Assuming a role in the management of the European platform (long term);
- Providing the platform with public data, in order to expand the platform scope with targeted, organised and ready-to-use data.

Furthermore, the possibility of adapting the existing industry regulations to the goals of the platform should be considered (e.g., by stressing the objective of the information production in the context of the operational programmes; by stressing the role of the inter-branch organisations in the production of information).⁶⁵

The above mentioned solutions seem to be consistent with the principles currently applied in the context of the fruit and vegetable CMO (co-financing, decentralisation of responsibility in the sector management). The financial and institutional participation of the public entities would also strengthen the character of "public asset" for the information provided - aspect particularly important in view of the proper use and management of the European platform.

4.2.3 The role of the public institutions

The role of the public institutions can be defined in detail in view of the implementation strategy. Table 4.2 reports the same phases and objectives of the implementation strategy of Table 3.10, but focusing more in details on the role of the public institutions, and on the list of measures and actions that might be undertaken.

⁶⁴ This phase includes step 0 to 2 of the implementation strategy, for an estimated duration of 2.5 years.

⁶⁵ Reg (CE) N. 1182/2007, Articles 8, 9, 20. Article 9 defines the objectives of the operational funds, including (section f) the crisis prevention and management. To this purpose (paragraph 2), a series of promotional and communication actions are foreseen (point c). Article 20 defines the "inter-professional organizations" and includes, among their actions, the market knowledge and the contribution to production coordination.

Table 4.2 The role of public institutions

1st Phase: conceiving

Objectives: discuss the platform concept according to objectives, means, organisation, priorities and alternatives.

Means: participatory approach; technical design.

Role: define public objectives and priorities; define potential partnership, considering private and public institutions; define intervention limits.

Actions and measures: define the preliminary platform design(s).

2nd Phase: launch

Objectives: inform potential participants; incite potential participants to express intentions, alternatives, and options

Means: communication; participatory approach.

Role: launch the discussion about the platform design in the professional environment; manage the participatory approach with the interested organisations; assign technical and managerial leadership.

Actions and measures: create discussion opportunities; collect adhesions from potential participants; group participants according to motivation and technical capacity (leaders, followers); define technical and financial needs of the platform according to the participatory approach; define partnership and institutional settings with partners (including financial participation); assign leadership and detailed tasks to partners.

3rd Phase: implementation

Objectives: implement the agreed platform project.

Means: set up the task force (leaders); define incentives (moral and material, if any)

Role: assign incentives; follow and guide the platform implementation.

Actions and measures: Participate in the administration board; asses results and effectiveness; propagate the results.

4th Phase: growth

Objectives: increase effectiveness; improve methodology; increase services.

Means: communication; positive emulation; targeted incentives (followers); sponsorship.

Role: supervise the platform operation; define strategy and objectives according to the development of the platform.

Actions and measures: participate in the administration board; asses results and effectiveness; propagate the results

5th Phase: long term

Objectives: cover peripheral areas; join structural development; financial autonomy.

Means: communication; positive emulation.

Role: supervise the platform operation; define strategy and objectives according to the development of the platform.

Actions and measures: participate in the administration board; asses results and effectiveness; propagate the results

Source: own elaboration

4.3 Legal aspects

The legal aspects are connected with the compliance of the European platform with the competition and privacy law. Considered the nature of the data in the setting up of the platform, their use and role at the EU level (definable of a transnational nature), in order to comply with the competition law, a series of conditions must be fulfilled. In particular:

- i) The platform should be operated by several inter-branch (say inter-professional) organisations. For this kind of organisation setting up, the EU law provide for regulations which are compatible with the transnational role of the platform.
- ii) The creation of the platform should be communicated to the European Commission. The platform can not be operative before the EU Commission acknowledgment (that is

within two months from the communication), and the statement of compatibility with competition law. Since the platform is expected to operate for several years, Article 176a(6) of Council Regulation (EC) n. 1234/2007 establishes that the initial notification of a multiannual agreement among IBOs is valid for all the subsequent years, unless the Commission declares the incompatibility of the platform with the EC law, at any time.

- iii) The European platform must not infringe the provisions included in Article 176(4)(a), providing that it shall not cause any form of partitioning of markets within the Community, impair the proper functioning of, create distortions of competition which is not necessary, involve the establishment of prices or eliminate competition, under pain of being incompatible with EU rules. In that case, As far as inter-branch organisations can operate on the EU Commission recognition, the failure to comply with the above mentioned provisions imply also the recognition withdrawal.

As far as privacy law is concerned, some caution should be adopted:

- i) Data connotation should be assessed in order to define their degree of sensitiveness (common data vs. sensitive data). Sensitive data in fact should be kept separately, considering that sensitive data will require a higher degree of security.
- ii) Subjects providing data to the platform must be informed about the goals and purposes of the platform. Personal data may be processed only for legitimate purposes and according to agreed procedures.
- iii) Suppliers must voluntary sign up (in writing) an agreement allowing for data processing, and including information about the above mentioned goals and purposes, control, access and updating procedures.
- iv) On the other hand, subjects involved in data treatment must be authorized, and must act according to the instructions received (this regards both the person responsible for the procedure and the processors of the data treatment).
- v) A control system must be established in order to prevent data access from subjects other than the legitimated person responsible for the treatment. The legitimate processor need to issue the treatment policy and must obtain the prior consent from the data owner. The processor must then identify the way and the timing of data storage. Data will have to be kept as long as required by the particular treatment by which they have been collected for.

4.4 Final recommendations

- a) The implementation of the platform implies a cost for the initial investment and the operation on the long run. In addition, adaptation costs might be faced by the potential participants. Regarding the first type of cost, the outcomes of the analysis show that the implementation costs can be reduced by assuring the highest rate of participation into the platform. The adaptation costs cannot be estimated, as far as they should be evaluated case by case.
- b) The importance of this typology of costs should carefully be considered since the very initial phases of the implementation strategy, as it might hinder potential participants to join the platform. The problem is mainly connected with the quality standards of the platform, because of the offset which occurs between the quality standards and the degree of participation into the platform. From this perspective, it should be considered the fact that many information exchange networks operate at the international and the

European level, which simply makes the available information circulate with apparently no possibility to check data quality and methodology. Data quality standards is thus an important point of differentiation for the proposed platform model, if compared with the existing networks.

- c) Under this perspective, the technical capacity of the potential participants should clearly be assessed since the very initial phase of the platform creation. A survey on the technical capacity at the European level should be a preliminary step in the implementation process. The assessment of the willingness to participate (the motivation) also represents an important step of this process.
- d) The kind of data made circulate by the European platform should be defined according to the platform objectives (see below, point h). A reasoning should be developed about the possibility of mitigating minimal data quality standards to expand the participation degree in the platform, at least in the medium-short term. On the other hand, for the purposes of platform effectiveness, data quality should be improved during the course of time. Under these circumstances, the European platform might become an effective market observatory in the long run.
- e) At a legal level, the kind of organisation that, according to current law, can actually manage the European platform should carefully be taken into account. The European platform is a sort of transnational activity. According to current law, inter-branch organisations can operate at a transnational level to implement the platform and, at the same time, to comply with competition law.
- f) The compliance with existing privacy law can be obtained through the implementation of adequate procedures between the platform and the data suppliers, and within the platform. At this level, a relevant problem concerns the nature and the sensitiveness of the data exchanged across the platform. The degree of data sensitiveness, their sources, the aggregation levels should all be assessed since the very initial phase of the platform implementation.
- g) The role of the public institutions in the European platform is mainly subject to a political evaluation, which falls out of this study scope. The study has provided for some rational elements to examine this issue. *By assuming* the existence of a space for public intervention (based, for example, on the nature of “public good” given to information for the purposes and within the limits of the CAP), some aspects should then be considered.
- h) The results of the questionnaires and the conceptual analysis show that the market information may play a different role (potentially conflicting) for the private and the public actors. This leads to the recommendation that the objectives and the operating rules of the platform must clearly be set in advance, and must be shared between the public and the private institutions, in view of a common interest between the public and the private actors (e.g., the objectives related to the crisis prevention).
- i) The need for a clear definition of the platform objectives is also called into question when competition law is applied to the same platform functioning. The risk for misuses (that is the risk of opportunistic uses of the platform) cannot be excluded. This aspect should carefully be taken into account, when the possibility of a public institution involvement is considered (for example, the public authorities could evaluate the opportunity of a more direct involvement in the initiative in view of its use for their antitrust activities in fruit and vegetable industry).
- j) Considering the risks stemming from the concentration of data and information exchange, it is recommended that an in-depth analysis is developed on a case-by-case basis, taking into account all the relevant issues to comply with the EU competition rules and regulations. With reference to the platform’s implementation strategy, the evaluation

of the collusion risk should take place during the platform's Conceiving and Launch phases, when the potential participants and the monitored markets of fruit and vegetables will be identified. During this phase, for each of the markets monitored by the platform, a structural assessment of the collusion risk based on theoretic and empirical approaches (see § 3.9.2) should be performed. The final outputs of the structural assessment should include: (i) the identification of specific markers for a behavioural screening (see § 3.9.2) of the markets monitored by the platform; (ii) the elaboration of a user code and good practices for the participating operators to avoid the misuse of the platform data; and (iii) the definition, in collaboration with the anti-trust authorities, of a security procedure for suspected or ascertained illicit utilisations of the platform information. A regular behavioural screening of the markets and the operators involved should start with the Implementation phase and the functioning on the platform. This screening should activate the security procedure if signs of a possible collusive conduct are detected. The data collected by the platform should allow periodical revisions of the structural assessment so that the behavioural screening may be intensified according to a possible increase of the collusion risk .

- k) Given the public institutions' interest in the European platform implementation, and provided the nature of the initiative, and the above depicted issues, the role that these institutions could play may vary among a range of different possibilities (e.g., the direct involvement in the platform management, the sponsorship, the institutional endorsement, the control, the financing, the data supplying, etc.), all aspects which do not exclude each other. From the producer organisations' point of view, the involvement of public institutions is neither excluded nor strictly necessary as a prerequisite for the platform implementation, while platform effectiveness is considered an essential and crucial aspect. This typology of arguments should also be taken into account from a public point of view.

Bibliography

- Bacaria, J., (2004), “Buchanan (club’s theory)” in *An Eponymous Dictionary of Economics (A Guide to Laws and Theorems Named after Economists)*, by Segura, J., Rodriguez Braun, C., (Eds.), Edward Elgar, Chentelham U.K., Northampton, M.A., USA. (selene.uab.es/jbacaria/Economia_Aplicada/club.doc).
- Cabral, L., M., B., (2005) “Collusion Theory: Where to Go Next?”, in *Journal of Industry, Competition and Trade*, Vol. 5-3/4, pp. 199-206.
- Cafiero, C., Capitanio, F., Cioffi, A., Coppola, A., (2007) “Risk and Crisis Management in the Reformed European Agricultural Policy”, in *Canadian Journal of Agricultural Economics*, Vol. 55, pp. 419–441.
- Catalonia Qualitat (2007), *Estudio de creacion del observatorio de fruta dulce de Cataluna*, Lleida, nov-dic 2007.
- Clarke, R., N., (1983), “Collusion and incentive for information sharing”, in *Bell Journal of Economics*, Vol. 14, pp. 383–394.
- Commission Notice n. 2004/C 101/07, *Guidelines on the effect on trade concept contained in Articles 81 and 82 of the Treaty*, Official Journal of the European Union, C 101 of 27/04/2004, pp. 81-96.
- Commission Regulation (EC) n. 1580/2007 of 21 December 2007 laying down implementing rules of Council Regulations (EC) n. 2200/96, (EC) n. 2201/96 and (EC) n. 1182/2007 in the fruit and vegetable sector.
- Council of Europe (1950), *Convention for the Protection of Human Rights and Fundamental Freedoms (as amended by Protocol No 11)*, Rome, 04/11/1950.
- Council of Europe (1981), *Convention for the Protection of Individuals with regard to Automatic Processing of Personal Data*, Strasbourg, 28/01/1981.
- Council Regulation (EC) n. 1182/2007, of 26 September 2007, laying down specific rules as regards the fruit and vegetable sector, amending Directives 2001/112/EC and 2001/113/EC and Regulations (EEC) n. 827/68, (EC) n. 2200/96, (EC) n. 2201/96, (EC) n. 2826/2000, (EC) n. 1782/2003 and (EC) n. 318/2006 and repealing Regulation (EC) n. 2202/96.
- Council Regulation (EC) n. 1184/2006, of 24 July 2006, applying certain rules of competition to the production of, and trade in, agricultural products.
- Council Regulation (EC) n. 1234/2007, of 22 October 2007, establishing a common organisation of agricultural markets and on specific provisions for certain agricultural products (Single CMO Regulation).
- Council Regulation (EC) n. 361/2008 of 14 April 2008 amending Regulation (EC) n. 1234/2007 establishing a common organisation of agricultural markets and on specific provisions for certain agricultural products (Single CMO Regulation).
- Directive 95/46/EC of the European Parliament and of the Council of 24 October 1995 on the protection of individuals with regard to the processing of personal data and on the free movement of such data.
- Directive 2002/58/EC of the European Parliament and of the Council of 12 July 2002 concerning the processing of personal data and the protection of privacy in the electronic communications sector (Directive on privacy and electronic communications).

Directive 2006/24/CE of the European Parliament and of the Council of 15 March 2006 on the retention of data generated or processed in connection with the provision of publicly available electronic communications services or of public communications networks and amending Directive 2002/58/EC.

Ehlermann, C., D., Atanasiu, I., (eds.), (2007) *European Competition Law Annual 2006: Enforcement of Prohibition of Cartels*, Hart Publishing, Oxford/Portland, Oregon.

European Court of Justice, Judgment of the Court of 15 May 1975, *Nederlandse Vereniging voor de fruit- en groentenimporthandel, Nederlandse Bond van grossiers in zuidvruchten en ander geïmporteed fruit "Frubo" v Commission of the European Communities and Vereniging de Fruitunie*, Case 71-74, European Court reports, 1975, p. 563.

European Court of Justice, Judgment of the Court of 16 December 1975. *Coöperatieve Vereniging "Suiker Unie" UA and others v Commission of the European Communities*, Joined cases 40 to 48, 50, 54 to 56, 111, 113 and 114-73, European Court reports 1975, p. 1663

European Court of Justice, Judgment of the Court of 12 December 1995, *Hendrik Evert Dijkstra v Friesland (Frico Domo) Coöperatie BA and Cornelis van Roessel and others v De coöperatieve vereniging Zuivelcoöperatie Campina Melkunie VA and Willem de Bie and others v De Coöperatieve Zuivelcoöperatie Campina Melkunie BA, References for a preliminary ruling: Gerechtshof Leeuwarden and Arrondissementsrechtbank 's - Hertogenbosch - Netherlands, Competition - Statutes of dairy cooperative associations - Fee payable on withdrawal or expulsion - Interpretation of Article 2 of Regulation no 26*, Joined cases C-319/93, C-40/94 and C-224/94, European Court reports 1995, p. I-04471

European Union (2000), *Charter of Fundamental Rights of the European Union*, Official Journal of the European Communities, C 364/1, 18/12/2000.

European Union (2006), *Consolidated Versions of the Treaty Establishing the European Union and of the Treaty Establishing the European Community*, Official Journal of the European Communities, C 321 E/1, 29/12/2006.

Fernández-Barcala, M., González-Díaz, M., (2006) "Brand equity in the European fruit and vegetable sector: A transaction cost approach", *International Journal of Research in Marketing*, Volume 23, Issue 1, March 2006, pp.31-44.

Grout, P., A., Sonderegger, S., (2005) *Predicting Cartels*, Economic discussion paper, Office of Fair Trading, London, March 2005.

Grout, P., A., Sonderegger, S., (2007) "Structural Approaches to Cartel Detection", in Ehlermann, Atanasiu, (2007), *op. cit.*

Harrington, J., E., (2007) "Behavioral Screening and the Detection of Cartels", in Ehlermann, Atanasiu, (2007), *op. cit.*

McCorriston, S., (2002) "Why should imperfect competition matter to agricultural economists?", *European Review of Agricultural Economics*, Volume 29, Number 3, pp. 349-371.

Regulation of the European Parliament and the Council No 45/2001 of 18 December 2000 on the protection of individuals with regard to the processing of personal data by the Community institutions and bodies and on the free movement of such data.

Rey, P., (2007) "On the Use of Economic Analysis in Cartel Detection" in Ehlermann, Atanasiu, (2007), *op. cit.*

Scott, K., (2002) *The Unified Process Explained*, Addison-Wesley.

Porter, R., H., (2005) "Detecting Collusion", in *Review of Industrial Organisation*, Vol. 26, pp. 147-167.

Tender Specification AGRI/2008-G4-01, *Feasibility study on the setting up of a Platform for data and information exchange for the European fruit and vegetable market*, European Commission, Brussels, 2008.

van Amstel-van Saane, M., Driessen, P., Glasbergen, P., (2006) “Assurances in Eco-labels to Diminish Information Asymmetry: a Comparison of Five Dutch Eco-labels”, *First Annual Conference on Institutional Mechanisms for Industry Self-Regulation*, Hanover, 24-25 February, 2006 (paper).

Annex 1

Prevention of market crisis and information systems

Market crisis

The Common Market Organisation of the fruit and vegetables sector deals with crisis prevention by referring to *market crisis* in terms of production surpluses which cause sudden and important lowering of producer prices.

For the fruit and vegetables producers of a given region, market crises can be either *structural*, when they recur repetitively in the long term, or *occasional*, when they occur in relation to a particular temporary conjuncture.

Structural market crises can involve one or more species of fruit and vegetables, and even a single variety, and are related to a combination factors:

- exceeding growth of domestic production;
- steady or declining consumption;
- increase of import;
- decline of export.

In the *long term*, structural crisis have to be managed by correcting the causes of the market unbalances, e.g.:

- reducing production volumes;
- stimulating consumption;
- improving competitiveness with respect to imported production and in the export markets;
- finding new markets which could absorb the surpluses.

In the *short term*, several measures may cope with structural crises and alleviate their immediate effects on the income of producers:

- market withdrawals and management of stocks;
- green harvesting and non harvesting;
- mutual funds.

The Common Market Organisation of the fruit and vegetables sector provides such tools. However, the application of short-term measures, by reducing the immediate impact of the crisis on producers, should not hinder the process of structural adjustment.

In general, fruit production is more affected by structural crises than the vegetable sector. The higher amount of initial investments required by tree crops needs to be distributed over longer depreciation periods and this makes it more difficult to operate a rapid adjustment of the supply.

Occasional market crises in the Fruit and Vegetables sector can be determined by a variety of causes. Most are due to variability of weather conditions and to the typical variability of crop yields from one year to the other. These factors determine phenomena at the origin of turbulence in the markets, like: anticipation or delay of ripening, production peaks or lack of product, unusual

accumulation and then release of stocks. Weather conditions can also modify the ordinary seasonal attitude of consumers towards fruit and vegetables, hence depressing market demand.

Other factors of occasional market crises have been identified in the loss of consumers' confidence in food safety, which in several occasions caused dramatic impacts on the market, and also in the excessive concentration of import deliveries in a given marketplace, which can generate instability at the local level, especially if there is lack of coordination with the domestic supply.

Occasional market crisis have to be tackled by removing their specific causes – if it is possible – and with the tools already indicated to lessen the short-term effects of structural crises. In general, a good organisation of the supply chain makes the recovery from a crisis easier, especially for the income of producers. On the one side, a good coordination of the supply-chain can make the measures undertaken against a crisis more effective, on the other side when the supply chain has many intermediary agents the producers lose control on the downstream segments: in this situation, the upward movements of consumer prices, related to the recovery from a crisis, are transmitted slowly to producers.

Information and crisis prevention and management

An efficient and transparent information system can become a very important tool to prevent and manage market crises in the fruit and vegetables sector. On this perspective, to avoid and correct the structural unbalances, it is necessary to detect and forecast for each species and variety the long-term trends of the domestic supply, the import, and the demand in the domestic and foreign markets.

On the other hand, in the short-term, crisis management requires a systematic monitoring of the current campaign by providing data and forecasts on aspects like: production volumes, loss of products related to weather, harvest scheduling, level of stocks, in-coming shipments of imported products, producer and retail prices, and consumers' seasonal preferences with respect to qualitative aspects of products.

The issue of timing for data release. The management of short-term measures needs that the information system be particular effective to carry out with rapidity and correctness the whole proceeding of collecting, processing, and releasing the data. Decisions regarding market withdrawals, accumulation of stocks, and no harvesting should be taken as soon as possible, when a crisis shows his first symptoms, and imply immediate costs face to uncertain benefits, consequently the timing necessary to obtain a correct information supporting them is crucial.

Types of data needed

Data on the crop areas. An updated database of the areas invested with fruit and vegetables is necessary to forecast the long-term trends of production and for early campaign forecasts. As for the fruit crops, the data should indicate the amount of the areas invested by region, species, variety, age, density, and ripening period of plantations, by specifying the areas of new plantings and cut plantations. Data release should be at least annual. Regarding vegetables, the information on the crop areas should allow to follow the evolution for the different species and varieties into the main production regions.

Production forecasts and harvest schedule. Early forecasts on the production of the year should be elaborated on the basis of the data on the crop areas and on information about the progression of flowerings and the development of fruit in the different production regions. Early forecasts should

be followed by more precise estimations worked out from quantitative analyses. Since market balance greatly depends on the distribution of production along the harvest season, it is necessary that production forecasts be supported by the publication of the weekly scheduling of harvesting, by species and varieties, resulting from the agro-meteorological conditions of the harvest season in the major production regions with information on the expected harvest spikes.

Harvest monitoring. The most perishable products, like stone fruit, berry fruit, asparagus, etc., require an specific monitoring of the harvest. Weekly information on the progression of the harvest by species and variety in the major production regions should be released. This should include information on: weather conditions; phyto-sanitary and vegetative state of crops; progress of the harvest; quality of products.

Data on final production. Data on the amount of final production and on yields in the different regions by species and variety should be worked out. If possible the data should be integrated by information on the quality of final production and by indicators like the harvested production/total production ratio and the first quality product/total harvest ratio.

Data on stocks. Data on stocks are relevant for the marketing of fresh products that can be stored for long periods, like pome fruit and kiwi. Information by species and variety on the quantity stocked in the most important storage facilities should be made available weekly.

Data on producer prices. Data on the producer prices represent a major indicator of the state of the market. The sources of these data are very differentiated at the European level and the information need to be selected and organised for publication in a form quickly readable and understandable for operators. The publication of data by species, variety and quality class of products from the most important reference markets should be weekly.

Monitoring the retail market. A regular monitoring of the retail market should release weekly data on sales, at the least, from the main European supermarket chains. Data by species and variety should include information on quality classes, origin of products, type of packaging, brands, and prices.

Data on consumption. The analysis of the evolution of consumption should deliver annual data by species and variety on consumers' purchases in the different countries including: amount and value of purchases; average consumer prices; distribution of purchases along the year; consumer price variations along the year; distribution of purchases and average prices by marketing channel; distribution of purchases by region.

Monitoring the import flows. Data on import sourced from the official statistics in the different Member States by species should be delivered annually. A more continuous monitoring of the import flows along the year could be worked out by collecting and delivering weekly information on the in-coming shipments of products from third countries, by species and variety, in the major ports.

Data on export. Data on intra-EU and extra-EU export of fruit and vegetables sourced from the official statistics in the different Member States by species should be delivered annually. Periodical publications issued by official institutions should also allow a more continuous monitoring of the export trade along the year with monthly release of data.

Annex 2

Actors motivation and platform organisation

The actors' motivations

According to the Tender specification of the study (§ 1.3), the platform “will be managed in partnership by the Commission (DG AGRI) and the sector, notably through its professional interest organisations (...), Associations of Producer Organisations (APO) as well as individual Producer Organisations (PO)”, actually private and public actors of the sector.

No matter what the institutional setting of the platform will be (e.g. compulsory, incentive based or facultative), the actors motivation is a crucial point for the effectiveness of the initiative and its sustainability over a long term perspective.⁶⁶ The motivation refers to two basic questions:

- a) What are the objective motivations that should lead to the participation into the initiatives?
- b) How far motivations justify the actors engagement to develop a common activity to implement the platform?

The FV sector shows many initiatives aimed at data collection and sharing, stemming from private and public bodies. The existence of such initiatives shows that both public and private subjects consider information a useful tool to develop the respective institutional objectives. In general terms, this is an obvious statement, but in the context of this study it's worth clarify what are the specific aims of the private and public bodies and how information serves those aims. Before entering this subject, it's worth outlining that the information has a production cost. Information provided by public institution has the character of a public good, is paid by public funds and has free access. In the private context, information is paid and accessed by the payers. In the private context, information is a “club good”.⁶⁷

The private context

From a private standpoint, the information usefulness is related to the specific economic aim of the actors, that is the maintain or development of a competitive position in the market. Information is part of the strategies aimed at this. More in detail, information utility is related to main aspects:

⁶⁶ The underlying assumption of the reasoning is the hypothesis of a non-compulsory participation of the actors involved in the initiative.

⁶⁷ A *club good* is a particular kind of public good, in the sense given by the original definition of Samuelson. The club good theory was proposed by M. Buchanan in 1965. A club good can be defined as “(...) a particular case of public good, which has the characteristics of excludability and non-rivalry (or partial non-rivalry depending on the congestion). By contrast, a pure public good has the characteristic of both, non-excludability and non-rivalry. Therefore a club is a voluntary group of individuals deriving mutual benefit from sharing either the cost of production or the member's characteristics or an impure public good. A club good is characterized by excludable benefits. The fundamental characteristic of the club is its voluntary membership. Its members take the decision to belong to the club because they anticipate the benefits of the collective provision from membership. For this reason, a club good is excludable and this is its main characteristic, because without exclusion there would be no incentives to belong to the club and pay fees or rights to enter. Therefore, in contrast to pure public goods, it is possible to prevent its consumption by the people that will not pay for it. However the club good keeps the characteristic of non-rivalry, that is, the consumption of the good by one person does not reduce the consumption of the same good by others, except when congestion happens and the utility of any individual will be affected by the presence of more members of the club. Rivalry and congestion increase when the number of individuals sharing the same club good increases too. (source: Bacaria, J. , 2004).

- i) The structural and the technological status of the sector (e.g. physical and functional distance between the demand and the offer, conservation limits of the product, production seasonality and cycle, production calendar, etc.), which contribute assigning a relevant role to the information to adapt supply to demand.
- ii) The competitive environment among producers (horizontal competition) and between producers and purchasers (vertical competition). Just to exemplify, talking about horizontal competition, information about market trend in the short run may play a relevant role in the identification of the destination market where to compete. In the vertical competition, the information about market at the different level of the supply chain may influence the price formation also in the earliest stage of the supply chain.⁶⁸

In conclusion, the relevance of the information must be evaluated in the sector and supply chain competitive environment and in view of the technological specification of the products.

The technological specification of the sector

If compared with the other types of crops, fresh fruit and vegetables are particularly subject to uncertainty of outcomes. The production of fruit and vegetables requires important investments in terms of both technical means (machinery, fertilizers, pesticides, genetic materials, energy, water, etc.) and workforce but, with respect to the other crops, the yields are in general more variable from one year to the other and are highly influenced by weather conditions and pest diseases.

Marketing of fresh fruit and vegetables is not only constrained by the rigidity of demand and price volatility, as the most of agricultural commodities, it is also conditioned by the high perishability of products resulting from their elevated content of water, which amplifies the costs of transportation and storage. Moreover, because of the considerable need of labour force and investments per land unit, most of production tends to be organised in small family holdings. This is at the origin of the specific fragmented structure of the fruit and vegetables industry, which makes it more costly to carry out vertical integration and large-scale marketing strategies.

On the point of view of the agricultural policies, fruit and vegetables are not strategic products and they have never been granted with a level of market protection comparable to the one historically assured to cereals, oil crops, sugar and livestock products. The risks at the level of production, marketing, supply chain organisation and policies concur to increase financial and income risks of producers.

All these elements indicate the particular relevance of risk and risk management in the fruit and vegetables production. A shared and clear information, for the role it can play in crisis prevention and management, can be a very powerful tool of risk management for producers. On the one side, a full awareness about the trends of supply, import, and demand is the better instrument for producers to prevent crises related to structural market unbalances. On the other side, the management of market crises needs an efficient production of data about harvests, stocks, in-coming import, producer and consumer prices, and consumers' behaviour.

Sector and supply chain competitive environment

Organised distribution play a relevant role within FV supply chains. Given the geographical limits of a market, a distributor can generally choose the most competitive offer among a relatively high number of producers (oligopsony). The absence of strong producers brands puts the distributors out

⁶⁸ On the other side, it must be said that the supply chain structure and the different power of vertical competitors may seriously limit the relevance of the information in the price formation process.

of vertical competition phenomena in the respect of the producers.⁶⁹ On the contrary, vertical integration is more frequent between distribution and agriculture, particularly in relation with the affirmation of stringent quality standards and the need of the larger and larger supply flows marketed by the organised distribution. Quality and organisational aspects of the supply (product variety, supply volume, logistics, etc.) are probably not less important than price in the selection of the supplier.

The complexity of these factors and the supply volume demanded by the organised distribution add the organisational variables to the pure price competition. In this context, the individual model of competition should be modified.

Given the conditions of the horizontal competition (which involves more and more producers organisations), the focus of the organisational issues has relevant consequences at structural and behavioural level.

The pure price competition, notably in the FV sectors, is strongly determined by natural resources and farm dimension, two factors which can be modified in the long run and facing heavy costs. In absence of organisational solutions, natural factors, which are “non-learning factors” by definition, determines the cost competition possibility. On the contrary, organisation-based competition can be learnt, takes advantage of scale and scope economies and may result in a redistribution of the competitive advantage among competitors. At the same time, this need for aggregation reduces the outcome of the individual strategies, in the favour of the co-operative ones.

The public context

Public organisations assign information a different role, which follows the specific public aims. In this case the CAP is the institutional context to be considered. In this context we can assume the following objectives:

- a) *Market functioning*. The reference model (at least at the theoretical level) is the perfect market competition. One of the requirement of the model is that information is freely available and transparent to all of the market players to allow for the formation of rational expectations and optimise the resource allocation. Market transparency determine the time and spatial destination of the product according to spatial price gradient.
- b) *Redistribution*. One of the role of the policy (notably the CAP) is the distribution of opportunities in the favour of the categories which are in a weaker economic position due to structural reasons. Given particular structural situations, derogations to the pure competition rules are applied. This is the case of the farmers in the context of many (almost all) food supply chains, including the FV. Farmers are also mostly exposed to the risk of price and income drops related to FV market crisis. Measures allowing, directly or indirectly, to support farmers in case of market crisis are redistribution means in the sense that they limit the damages occurring to the weaker economic agents of the supply chain.
- c) *Decision making*. Information is a decision making tool. Public institutions actually need and demand information to prepare decisions. Market information is a day-by-day tool allowing the implementation of the measures concerning the CMO functioning. The transition toward the decoupled CAP model contributed to the decentralisation of the market regulation to the premises of the producers organisations. The obligation to transfer some

⁶⁹ These phenomena are more common between the distribution companies and the food industry. The development of distributor brands for FV products is generally aimed at getting consumer fidelity in the context of a very strong horizontal competition in the distribution sector.

information from the POs to the EU (*via* Member States) still stands, but not necessarily fits the aim of crisis prevention.

Individual goods vs. public goods

The participation of public and private actors in a common project aimed at sharing information is feasible at the condition that a common interest is found:

- i) Between private actors. In this case the relevant question might be: what is the interest in sharing information with potential competitors?
- ii) Between the private and the public actors. In this case the question might be: what is the interest for a public institution to participate in such initiative? (And in turn: what is the interest for private actors to make information available to the public institution?)

Recognizing whether an overlapping area of interest exists or not is a primary condition for the feasibility of the platform and from a policy making standpoint. It's also the starting point to define the organisational features of the initiative among a number of possibilities (e.g. compulsory, facultative, incentive based etc.).

As mentioned in the sections above, the FV sector has been showing a trend toward aggregation during the time, firstly among individual producers, secondly among producers organisations. Aggregation is mainly a voluntary process, imposed by economic circumstances and pushed by political incentives. During this process, the lower level units transfer some function to the higher level entity and define the rules of the new organisation. Information making is one of the functions that the higher level organisations manage in the favour of the associates (the lower level units). Information sharing accompanies the aggregation (sometimes it's the primary objective of the new entities).

It's worth underlining that during this process the information passes from a merely private good to a kind of collective good shared among a limited number of participants. In this sense information can be considered a club resource. The problems related to club goods have been analysed at theoretical level. Some aspect of the theory particularly fits to the problem under analysis as far as a producer organisation (or an association of producers organisation) producing information (the club good) is created on the basis of a voluntary membership and establishes rules to access the service (excludability from the good). On the other side, all the associates can access the service (non rivalry in the use of the good), pay the service (the marginal cost of the information) and expect an advantage from it (the marginal benefit of the information).⁷⁰

The benefits expected from the aggregate approach to the information (in comparison with the individual ones) must be considered with more attention. Benefits from a commonly shared approach to the information among producers are related to the following issues:

- More market power in the vertical relationship: the information about market trend along the supply chain may help price formation in the vertical relationships.

⁷⁰ From a private standpoint, the choice between the individual and the aggregate production of the same good (the information) is determined by the comparison between the marginal benefit and the marginal cost of the aggregation. Benefits are generally related to vertical and horizontal competition. Costs include the building of a new entity and the negotiation of new rules with the other associates (transaction cost) and the real cost of producing the good (production cost). In the case of the information in the FV sector, the individual solution is hardly conceivable in the sense that an individual producer might simply not have access to the quantity and quality of information that the aggregation would allow, because of the relevant barriers to access the good (scale economy, knowledge, skills, organisation, etc. related to the implementation of an information system).

- Crisis prevention: information also allows for production coordination in quantitative terms and along the space and time lines, reducing (though not eliminating) the risk of market crisis. In this view, the information cost can be considered a mean which partially contribute to market stabilisation. On the other side, the effectiveness of a common strategy in the information sector may be hindered or limited by asymmetric information among producers (see the example in the box below).

Concerning the public sector it must be reminded that:

- The crisis prevention is among the objectives of the CMO. Reg. (CE) 1182/2007 affirms a decentralised crisis management model (based on the initiative of POs, APOs),⁷¹ and provides rule and means to face this problem (art. 8 to 10). Crisis prevention falls within the Operational programmes, co-financed by public institutions according to limiting criteria.
- A rooted strategy of the CAP assigns producers organisation a leading role in the sector to organise the production and to adopt the measures in view of counterbalancing their weaker position in the supply chain (to this aim, derogations are provided to the established competition rules).

Resuming from the reasoning above, it can be concluded that:

- a) An overlapping area of interest does exist among producers and between the public and the private sectors. This statement provides the rationale for further assumptions concerning the role of the above mentioned institutions, in the sense that it's logical to assume that some kind of partnership in the development of the EU platform should be developed.
- b) While the interest and the possible role of POs and APOs in the initiative is clear enough, the possible role of public institutions may vary according to a relevant extent, ranging from the moral support to the control of the "good practices" in the operation of the platform (e.g. against misuses) to the financial participation.

The practical solution heavily depends on the political process, which is not considered in this study.

⁷¹ Indirectly and to a lesser extent, also the inter-professional organisations may help to this aim (art. 20).

Box: asymmetric information and market crisis

A, B, C and D_i produce the same good and share the same market. During the last campaign (say the moment t_1) the production was 100, shared in different quota among the producers:

- QA= 50% production
- QB= 20% production
- QC= 10% production
- QD_i ($i= 1$ to 4) = 20% production (in average 5% production for each i -producer)

There is a cognitive threshold in the sector at the 20% production. This means that, given their dimension and organisation, A and B have an information system allowing timely market forecast, so they can base their decision on rational expectations (that is to say that, based on their information system, they do not make mistake about the future trend of the market, at least in average). C and D_i have no information system and are forced to base their production decisions on adaptive expectation (e.g. based on the price of the last two or three market periods). This creates an asymmetric information between (A,B) and (C, D_i) about the next campaign (say at the moment t_{+1}).

An event X is perturbing the market at the moment t . The event is leading to a production surplus in relation to the demand. The foreseen price at the moment t_{+1} ($P_{t_{+1}}$) will fall in relation to the expectation formulated at the moment t_1 (P_{t_1}), where $P_{t_{+1}} < P_{t_1}$

At the moment t

- A and B can anticipate the effect of X at the moment t_{+1}
- C and D_i remain on the information available at moment t_1 .

As a consequence:

- A and B adopt measures to counterbalance X: they limit their production to avoid or mitigate the price fall, e.g. to assure that $P_{t_{+1}} \geq P_{t_1}$;
- C and D_i do not update market forecast: they produce to sell at P_{t_1} .

90 is the production compatible with $P_{t_{+1}} \geq P_{t_1}$ that is 10% less than last campaign (t_1). A and B will reduce their production of the same rate while C and D_i do not reduce production. The global production from A, B, C and D_i will be $(Q'A + Q'B) + QC + QD_i = (45+18)+20+10= 93 > 90$. The final price at t_{+1} will be $P^*_{t_{+1}}$ where $P_{t_{+1}} < P^*_{t_{+1}} < P_{t_1}$ thus resulting in a loss for everybody.

Despite the larger production managed by A and B, the production of C and D_i can reduce the effectiveness of their information system. The only way to avoid this result is that A and B conjointly anticipate the decision of C and D_i , pursuing their own advantage and, implicitly, the advantage of C and D_i , who would become more or less consciously free rider in the respect of the good (the information) produced by A and B.

It's easy to imagine that the implementation of a co-operative behaviour among all of the market players on the production of information would result in the reduction of the market loss.

Source: own elaboration

Annex 3
Questionnaire for description of POs' information systems

Feasibility study
Setting up of a platform for data and information exchange for the
European fruit and vegetables market

(The European Commission-DG AGRICULTURE- ref: AGRI / 2008-G4-01)

Questionnaire

for the description of the information system

Dipartimento di Economia e Ingegneria Agraria
Università degli Studi
Bologna

A. Note for the users

1. Forewords

This questionnaire has been developed in the framework of the Feasibility study “**Setting up of a platform for data and information exchange for the European fruit and vegetables market**” (The European Commission-DG AGRICULTURE- ref: AGRI / 2008-G4-01).

According to the Tender Specifications, the study is articulated in 4 task, described in the following box. The questionnaire is one on the relevant aspect for the methodology of Task 2, that we proposed in our technical offer. As for the other parts, the result of Task 2 will be included in a chapter of the final report.

Box 1- Study tasks

Task 1: Legal assessment

The contractor will check the compatibility with European Union rules & regulations and national legislation if relevant, on competition and data privacy, of the activity of the planned Platform in terms of accessing and processing of data, data exchanges and level of publication of the data.

Task 2: Collection of existing data and methodology

The contractor will draft an overview on existing data collection & processing mechanism in at least 3 of the main producing countries. The contractor will assess this existing practice as regards the feasibility of extending or developing a joint methodology covering more organisations/Member States/products.

Task 3: Technical requirements of the Platform

The contractor will draft an outline of necessary technical (IT-based) requirements for the 'Platform' including: legal and Technical constraints, detailed outputs of the option(s), implementation costs of the option(s)

Task 4: Conclusions and recommendations

The contractor will summarize the findings and assess the feasibility of the implementation of such a Platform, with clear details on organisation (Producers Organisations/Member states administration/Commission involvement), legal and technical requirements, use and advantages, timing and costs of the options proposed for the Platform.

Source: The European Commission, DG AGRI, Tender specifications

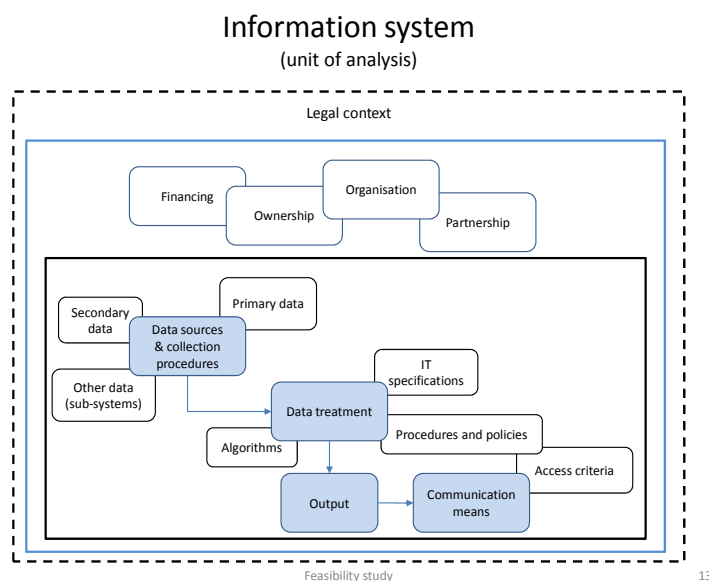
On this point, the methodology requires that DEIAgra drafts the questionnaire and delivers it to the APO co-operating in the study for compilation.

2. Aim of the questionnaire

The aim of the questionnaire is to collect all the information which allow to understand how the information system operated by the APO works, in view of assessing the feasibility of a common platform operating at the EU level.

In drawing the questionnaire, we referred to a general idea of the information system, designed in the figure below. In the inner level (framed by the black line), the blue boxes include the main technical functions of an information system, which is at the core of the task (e.g. procedures for data collection, data treatment, output, communication means). White boxes behind refer to the issues linked to the main functions. A second level of investigation (framed by the blue line) is about the organisational characters of the information system. Finally, the outer line (dashed line) includes the legal environment embedding the functioning of the information system, which are the legal limits imposed by the privacy and competition law, according to whom the information works.

The structure of the questionnaire and the answers included closely reflect this approach to the description.



Source: DEIAgra, Kick off meeting presentation, Brussels 14/01/09

3. Structure of the questionnaire

Following the above mentioned approach, the questionnaire is structured according to the following sections.

Section 1: Technical information

Section 2: IT information

Section 3: Juridical information

Section 4: Organisation and financing

Section 5: Other questions

In each section, we included some suggestion for compilation to guide through the complexity of the description, helping the responsible well understanding the kind and deepness of the required information, and not missing arguments.

All in all, what we do expect is a complete description of the various aspect of the information system through a **comprehensive, clear and structured report in English**.

4. Competences for compilation

Given the complexity of the questionnaire and the different disciplinary approaches, it's good to provide competent persons within the organization to compile the different section of the report. In detail, the following competences should be assigned:

Arguments	Competences
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4.4.1.1 Section 1 - Technical information	4.4.1.2 Statistics, algorithms, operation of the data base, collecting operation and data treatment
4.4.1.3 Section 2 - IT information	4.4.1.4 IT specialist
4.4.1.5 Section 3 - Juridical information	4.4.1.6 Law specialist
4.4.1.7 Section 4 - Organisation and financing	4.4.1.8 Law specialist
4.4.1.9 Section 5 - Other questions	4.4.1.10 APO manager

Together with the questionnaire we send a complete example of compilation, based on the Italian case, to serve as a guide and real application example.

5. Deadline

The dead line foreseen for questionnaire compilation is **February 23 2009**. The questionnaires, filled in and completed, will be sent to the address below by e.mail. People included in the list will also provide **on line assistance** during the compilation.

Please note that the information will be processed and will be the relevant material upon which we will draft the feasibility of the models of the data and information exchange platform operating at the European level.

This means that the questionnaires you send back need to be first of all verified and processed; then, probably additional information and explanation might be required. Finally, based on the result, feasible models will be conceived, according to different scenarios. This process will take time and will be possibly discussed with you before submission to the Steering group of the study..

Name	Address		
	e.mail	Phone	Fax
Maurizio Aragrande	maurizio.aragrande@unibo.it	+39.051.2096143 (mobile: +39.339.8208346)	+39.051.2096162
Massimo Canali	massimo.canali2@unibo.it	+39.0543.374665 (mobile +39.329.215 81 36)	+39.0543.374 660
Gianluca Macchi	gianluca.macchi@unibo.it	(mobile: +39.335.8168171)	+39.051.2096162

Section 1: Technical information

1.1. Objective of this Section

This section of the questionnaire aims to collect the information needed to work out the Task 2 of the Feasibility Study, which consists in:

- to describe the data collection and processing mechanisms existing in the EU Member States involved into the study;
- with regard to the existing data collection and processing *mechanisms*, to assess the feasibility of extending or developing a joint methodology which will cover, for different species and varieties of fruit and vegetables, the Producer Organisations and the EU Member States involved into the study;
- the findings of this Task will form the 2nd Chapter (*Existing Data and Information Exchanges*) of the final deliverable of the Feasibility Study.

According to the Terms of Reference of the Feasibility Study, the existing data and information exchanges should be collected through direct contacts with the Producer Organisations involved and through field work if needed.

The range of products covered by the study should include:

- pome fruit (apple, pears);
- stone fruit (peaches, nectarines, plums);
- berry fruit (strawberries);
- citrus fruit;
- kiwi;
- asparagus;
- tomatoes.

The Terms of Reference require that, for each product, the scope of the study should take into account:

- production data and varieties: quantities (weeks $n - 1$, n , $n + 1$);
- campaign forecasts and development of market trends (quantities, varieties, cropped area, etc.);
- stocks: monthly (apple, autumn pear, kiwi, citrus) and weekly (peach, nectarines, summer pears, plums);
- prices at any level of the supply chain (producer level, e.g. ex packing station, min/max/average for major size classes, category I; consumer level);
- consumption at least in the major consumer markets (e.g. Germany, the UK, France, Italy, and Spain).

Other variables could be added. So it's worth describing all the kind of data collected and treated to run the information system

1.2. Describing the activity of data collection and processing

In order to achieve the objective indicated above in § 1.1, the questionnaire asks to provide a report describing the activities of your organisation as regards collection, processing and publication of data about fruit and vegetables production and markets.

The report, **indicatively 25-30 pages**, should be written in English. The table of contents of this section should be organised as follows:

Arguments	Description
1. Data on the crop areas (fruit plantations, plantings of vegetables);	- Activity 1.1 (for example: Updating data on areas of fruit crop plantations by variety and age of the plantations, and forecasts on mid-term trends); - Activity 1.2 (for example: Monitoring the areas invested with strawberries); - Activity 1.3
2. Production forecasts;	- Activity 2.1 (for example: forecasts on regional and national production of peaches and nectarines); - Activity 2.2 (for example: forecasts on regional and national production of apple and pears); - Activity 1.3
3. Data on final production;	- Activity 3.1; - Activity 3.2;
4. Data on stocks;	- Activity 4.1;
5. Monitoring the harvest campaign of the most perishable products (stone fruit, berry fruit, fresh tomatoes, asparagus)	- Activity 5.1;
6. Monitoring markets; 6.1. Wholesale markets; 6.2. Export markets; 6.3. Retail markets;	- Activity 6.1.1; - Activity 6.2.1; - Activity 6.3.1;
7. Data on consumption;	- Activity 7.1;
8. Other activities.	- Activity 8.1;

For each activity, the following elements should be provided:

- a) Types of data published and aim of the publications;
- b) Fruit and vegetable products made object of the publications (species, varieties);
- c) Source of the data published;
- d) Geographical scope of the data;
- e) Methodology for data collection and processing;
- f) Type of publications used to release the data.

In the description of the activities it is important to stress any experience of **data exchange with other organisations and other countries**, as well as the activities specifically aimed at preventing market crisis.

1.3. Suggestions for compilation

- ➔ The report concerning this section is basically about the following questions :
 - What species and variety are concerned by the data collection?
 - What kind of data are collected about species & varieties?
 - What sources data come from?
 - How are they collected and transferred to the elaboration/treatment centre?
 - What what frequency or in what period?
 - How are they treated?
 - What is the general organisation which takes in charge this task?
- ➔ Describing the issues above also takes in other related arguments. All the details and explanation concerning the issues above should be specified for the best understanding of the information system functioning. For instance:
 - The methodology of data collection and treatment, point (e) above, should include all the relevant information which characterizes the statistical and technical matter (e.g. sample dimension, selection criteria if any, representativeness; algorithms for production forecast, if any, etc.) as well as the technical process of data collection and treatment.
 - The compilation of point (f): Type of publications used to release the data is about the type of output published and made available to the different kind of users (associate, operators, public, ...), the access conditions by type of data and user. In practice: who can access to what kind of output, at what condition. More in detail:
 - What kind of output is published by the information system?
 - What kind of communication means are adopted to deliver data and information? (e.g.: web site, printed/printable matter, e.mail, report, ...)
 - At what condition each kind of information is delivered to the users and the public (e.g.: affiliation, subscription, financing of ad hoc studies, etc. ...)
- ➔ To avoid missing important information, it might be useful structuring the description according one relevant entry variable. For instance, if data collection, treatment and publication differ meaningfully by species, it could be worth to structure the answer the question above separately for each species.

Section 2: IT Information

Sub-sections

- 2.1. Hardware Layer
- 2.2. System Software Layer
- 2.3. Data Layer
- 2.4. Integration Layer
- 2.5. Presentation Layer
- 2.6. Security Layer

The aim of this section is to understand what are the IT characteristics of the your information system. As above mentioned, each section provides questions on specific area and function of the IT system, including the security policies or regulation concerning data protection and access. This aspect crosses the legal field (see Section 3) as far as privacy is concerned (a relevant aspect of the foreseen European platform).

The table of contents of this is structured according to precise questions. You may use the tables themselves (adding notes and observation, if the case), or draft a report, at your convenience

ID	Question	Answers	NOTES
2.1	Hardware Layer		
2.1.1	What is the Hardware Platform (Brand and Model) on which your IT System is based on? (examples: HP D360, IBM eServer, AS400, Not Branded etc.)	Server: Not Branded Servers HP Proliant ML110 Client: Acer Clients Not Branded Clients	
2.1.2	What are the main physical characteristics of the Hardware Platform ? (example: CPU Type and number, RAM Size, Disk Size etc.?)	Server: CPU Intel Xeon 2.66GHz Quad Core 2GB RAM 72GB Hard Disk Client: CPU Intel Core 2 Duo 2GHz 1GB RAM 200GB Hard Disk	
2.1.3	Does the Hardware Platform have any data redundancy and replication mechanism ? (examples: RAID 0, Multi Node, Clustering etc.)	Server: Hard Disk RAID 1, 1+0 No replication Client: No redundancy, no replication	
2.1.4	What type of network protection devices and algorithms you have in place ? (example: firewall brand and model, DMZ, Intrusion Detection Systems, etc.)	Firewall Zyxel ZyWall 35 Traffic permitted only on specific TCP/UDP ports (e.g. TCP 80)	
2.1.5	---		

ID	Question	Answers	NOTES
2.2	System Software Layer		
2.2.1	What is the main Operating System(s) in use (brand and version number)? (examples: Windows XP PRO SP2, Windows 2003 Server SP1, Linux RedHat 5.0)	Red Hat Enterprise Linux ES 4 Windows Server 2003 Small Business Windows XP Professional SP3	
2.2.2	If your system have a WEB Interface, what is the WEB Server in use (brand and version)? (examples: Apache 2.2, Microsoft IIS etc.)	Apache 2.0.52	
2.2.3	What is the main Programming Language and Environment used ? (example: JAVA EJB, Microsoft .NET C#, Microsoft Visual Basic etc.)	PHP 4.3.9 on Apache 2.0	
2.2.4	What is, if any, the System Monitoring Tool in use to control the IT environment? (example: NAGIOS, Microsoft SMS, CA etc.)	No monitoring system in place	
2.2.5	What type of protection software do you use ? (example: antivirus, antispam, etc.)	TrendMicro Client/Server/Messaging suite (antivirus, antispam)	
2.2.6	---		

ID	Question	Answers	NOTES
2.3	Data Layer		
2.3.1	<p>Could you list the main DATA ENTITIES that are managed by your main software application(s)? (example: plots, plants, growers, produces, produce traceability, market prices)</p>		
2.3.2	<p>For each main DATA ENTITY, could mention a rough figure that indicates how many of such ENTITIES you have currently stored in your software application(s)? (example: list number of total “records” for each DATA ENTITY)</p>		
2.3.3	<p>For each main DATA ENTITY, could mention a rough figure that indicates how many NEW instances of those ENTITIES are collected/inserted each year in software application(s)? (example: list number of new “records” for each DATA ENTITY)</p>		
2.3.4	<p>What is the main software application(s) in use for data-collection, data analysis and reporting? (example: please list name and main function of such applications)</p>		
2.3.5	<p>Is your main software application(s) a be-spoke (built in-house) development or a third-party packaged product? (example: if be-spoke, please describe who built it, if packaged please mention Brand and Model)</p>		
2.3.6	<p>How do you perform your day-to-day data analysis and reporting? (example: only from the main data software application, or using external tool like Microsoft EXCEL 2003, Microsoft Access, Data Warehouse and Business Intelligence suite)</p>		
2.3.7	<p>What is, if any, the main third-party data-warehousing, data-analysis, reporting and business intelligence application suite in use? (example: Business Object, IBM Cognos etc.)</p>		
2.3.8	---		

ID	Question	Answers	NOTES
4	Integration Layer		
2.4.1	What are the main external data sources from which you collect data ? (examples: institutional databases, growers' IT Systems, market prices, POS retail price monitoring etc.)		
2.4.2	How do you collect data from such data sources? (examples: manually with on-the field operators, paper document exchange, file exchanges, fully automated IT systems integration and data-exchange etc.)		
2.4.3	How do you handle data mapping and transformation of data coming from external data sources? (example: manual translation, automatic translation with ETL Tools, etc.)		
2.4.4	What type analysis and algorithms do you apply on those gathered data? (example: list the main type of elaboration applied on data)		
2.4.5	Are you using any MIDDLEWARE system for internal/external system integration? If so, please mention brand and version (example: IBM MQ Series, TIBCO Rendezvous, Microsoft BizTalk etc.)		
2.4.6	---		

ID	Question	Answers	NOTES
2.5	Presentation Layer		
2.5.1	On what form do you make results available to end-users? (examples: pdf reports, excel reports, paper reports, html pages on the web etc.)		
2.5.2	What are the channels along which you deliver your results? (example: PDF on institutional/static web site, web-based database, scientific papers, journals, books etc.)		
2.5.3	Do you expose any application, databases or services on the Web for your end-users ? (example: list name and function of web services available to your end-users.)		
2.5.4	How much “autonomous” are end-users when accessing your results ? (example: users can only download pre-defined PDF reports, users can execute queries and searches, users can launch specific statistical analysis and see results.		
2.5.5	---		

ID	Question	Answers	NOTES
2.6	Security Layer		
2.6.1	What level of security enforcement do you apply to internal operators when accessing data? (examples: none – all can see all data, some – some sensible data are protected, full – all data have specific grant level)		
2.6.2	What level of security enforcement do you apply to external users when accessing data? (examples: none – all can see all data, some – some sensible data are protected, full – all data have specific grant level)		
2.6.3	How do you enforce your security policies to data access from within your organization, if applicable? (example: Operating System access rights, Database access rights, Application-specific access-rights)		
2.6.4	How do you enforce your security policies to data access from outside your organization, if applicable? (example: Web-based username-password, SSL, RSA-Keyfob etc.)		
2.6.5	What type of auditing system do you enforce for internal and external data access? (example: none – data access and data modification are not audited, some – some type of data access is audited, full – a full audit trail is available for any type of operation)		
2.6.6	How do you protect data from accidental data loss? (example: manual data copy, automatic tape backup, automatic disk backup, remote backup etc.)		
2.6.7	Do you have any type of disaster-recovery policies? (example: remote site data replication, cold stand-by servers etc.)		
2.6.8	---		

Section 3: Juridical information

Task 1 of the study requires to highlight about the compatibility between European laws on privacy & competition and the European FV platform. National laws shall also be analysed to verify the compatibility in the respect of the EU. For this reason we ask your co-operation in identifying and describing the relevant national laws in this context.

Beside answering questions the questions below, we would like to receive in particular:

- precise laws references
- the text of the law (or indication about public web sources where the document can be found). We can easily work in English and French. For other languages, we would appreciate a synthesis in English or French about the relevant aspects of the laws (see also the list below)
- a concise description of the most relevant aspects of the law (according to the issues below) is welcome in any case,
- bibliography (if available and relevant).

The questions below specially focuses on some aspects of the above mentioned legislation which can guide the description

- 1) Does it exist, in your country, any national regulation about **competition** (constitutional law, ordinary law or of any other kind)?
- 2) If yes, does it takes into account the so called “**agrarian exception**”, that is what is included in the art. 36 of the European Treaty, and the older REG CEE n. 26/62 (now REG CEE 1184/06 and art 175 s.reg. 1234/07)?
- 3) Does it exist any national regulation concerning the **Producers Organisations**? If yes, please quote the juridical reference and bibliography or make a synthesis
- 4) Does it exist any national **specific regulation** concerning the fruit and vegetables Producers Organisation? If yes, please quote the juridical reference and bibliography, or make a synthesis
- 5) In your information system, who is the **juridical owner of the data**? Please detail by kind of data
- 6) If you use data coming from (which are property of) other organisations or you deliver your data to other organisations, what kind of agreement or contract regulates the data exchange? Please describe briefly
- 7) Did your country applied the European law about **privacy**? If yes, please list the legislation (provide materials or web references, if possible, or make a synthesis)
- 8) Does national legislation, in application of the dir. 95/46/CEE, make any difference between the treatment of legal and natural persons? If yes, please explain briefly.
- 9) Does your information system adopt internal rules or policies for data protection (specify by type of data)? Does it comply with national/European rules on privacy? (see also above section 2.6)

Section 4: Organisation and financing

In this section describe the main features of your organisation. Particular attention should be given to the part/department which develops the information system. The table of contents of this section should be organised as follows:

Arguments	Description	Possible answers (examples)
1. General description of the organisation	Describe the type of organisation and its structure, the number and kind of associates (farms; producers associations) and/or other dimensional parameters (hectares, production volume, ...)	Producer organisation (PO) Association of producers organisation (APO) Company ...
2. Mission of the organisation	Describe the kind of mission of the organisation according to its statute, including the role of the information system within the organisation	
3. Juridical status	Describe the legal status of the organisation, the kind of partnership (if any) with external organisation and the type or regulation means	Private association Public body Semi-public organisation
4. Economic dimension	Describe the economic dimension of the organisation	Turnover or other indicators (real or estimated)
5. Financing of the information system	Describe how the operation of the information system is financed, in the respect of the type of service provided and the type of public/customers	Contribution /subscription from social basis, partners , external bodies; selling of data, services, reports. (all in %, real or estimated)
6. Decisional processes	Describe the responsibilities of the internal bodies in the respect of the operation of the information system (who decide what and how)	
7. Resource allocation for information system	Describe the human and physical organisation of the branch/department/service dedicated to the functioning of the information system	Nr of persons employees (person/year) globally employed, tasks and responsibilities, nr of rooms, nr of computers/work stations. Distinguish between structured and non structured personnel

Suggestions for compilation

- Provide or draft organisation chart of the organization, if possible
- When quantitative indicators are required (e.g. question 4, 5), if exact data are not easily available, provide indicative estimations

Section 5: Other questions

In this section we submit some questions to get your opinion to understand your point of view about the possibility to develop an initiative concerning the exchange of data and information at the European level. Your point of view is not binding for the future, feel free to express your own opinion in a credible and reliable way.

1. Do you participate in higher level information system or data exchange organisation (national and international network or events)?

- If not, why?
- If yes
 - a. What kind of organisation is it ? (e.g. regional/national/international administration, sector/inter-sector association, network, ...)
 - b. What kind of data do you provide to the above mentioned organisations?
 - c. Who has access to data you send?
 - d. To which data do you get access in return? Is any of this public?
 - e. Beside data and information transmission, what is your role in the higher level information system/network?
 - f. How do you transfer data/participate in it/them (e.g. informatics support, reports, communications, events, ...)? what periodicity?
 - g. How much time/resources do you allocate to this activities (e.g. estimate of how many month/man or share of it)

2. Do you think that the sector where you operate need to enhance the exchange of data and information?

- If not, why?
- If yes:
 - a. what objectives the enhanced information exchange should have (list some objectives, based on your point of view. Just to exemplify.: Crisis prevention, enhancing competition; enhancing market efficiency and best resource allocation, creating market opportunities, strengthen producer market power, develop efficient supply chain,)
 - b. what data/information should be enhanced and exchanged? what kind of data should be provided in return?
 - c. who should access to them? what kind of users? (farmers, producers organizations, sector organization, all the actors of the supply chain, the participants into the initiative no matter their position and role, funding institutions only,)
 - d. At what condition? (e.g. free of charge, paying, by status or role in the supply chain,)

3. What kind of organisation should manage this initiative?

(e.g. public, private, producers organisation)

4. What aim(s) should be assigned to such an organisation?

5. How your organisation would participate in it?

(e.g what kind of role and/or responsibility)

6. What kind of data would you accept to transfer to it?

7. What kind of data would you like to get in return? By what means? What access criteria should apply?

8. Ranking 0 to 10, how many home-resources would you allocate to this aim?

Please answer according to one or more of the following indicators

- a. Capital:
 - b. Human resources: (e.g. nr of persons or %)
 - c. Facilities:.... (type and number, or share of the firm resorces)
 - d. Time share (%) of your workload organisation :.....
 - e. Other indicators
-