Cost of and good practices for FADN data collection

Final Report
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Final Report
Study on costs of and good practices for FADN data collection

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<td>CH</td>
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<td>UK</td>
<td>United Kingdom</td>
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## Abbreviations

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<tr>
<th>ABBR</th>
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<tr>
<td>AAC</td>
<td>Agricultural Advisory Centre (Poland)</td>
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<td>AFBI</td>
<td>Agri-Food and Biosciences Institute (UK)</td>
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<tr>
<td>APCA</td>
<td>Assemblée permanente des chambres d'agriculture (France)</td>
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<tr>
<td>ARMA</td>
<td>Agency for Restructuring and Modernisation of Agriculture (Poland)</td>
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<td>ARMS</td>
<td>US Agricultural Resource Management Survey</td>
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<td>AWU</td>
<td>Annual Work Unit</td>
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<tr>
<td>BEA</td>
<td>Bureau of Economic Analysis (US)</td>
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<td>BMEL</td>
<td>Federal Ministry of Food and Agriculture (Germany)</td>
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<td>BMELV</td>
<td>Federal Ministry of Food, Agriculture and Consumer Protection (Germany)</td>
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<tr>
<td>BMLFUW</td>
<td>Federal Ministry of Agriculture, Forestry, Environment and Water Management (Austria)</td>
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<tr>
<td>CAA</td>
<td>Centre for Agricultural Assistance (Italy)</td>
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<td>CAFRE</td>
<td>College of Agricultural, Food and Rural Enterprise (UK)</td>
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<td>CAP</td>
<td>Common Agricultural Policy</td>
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<tr>
<td>CASD</td>
<td>Centre d'accès sécurisé à distance (France)</td>
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<tr>
<td>CBS</td>
<td>Croatian Bureau of Statistics</td>
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<tr>
<td>CEI</td>
<td>Centre of Economic Information (Netherlands)</td>
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<td>CER FRANCE</td>
<td>Conseil National du Réseau (France)</td>
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<tr>
<td>CGTA</td>
<td>Centre de Gestion Technique Agricole (Belgium - Wallonia)</td>
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<tr>
<td>CPD</td>
<td>Continuing Professional Development</td>
</tr>
<tr>
<td>CRA</td>
<td>Agricultural Research Centre (Italy)</td>
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<td>CSO</td>
<td>Central Statistics Office (Ireland)</td>
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CVR: Central Business Register (Denmark)
DAEA: Direction de l'Analyse économique agricole (Belgium - Wallonia)
DAFM: Department of Agriculture, Food and the Marine (Ireland)
DARD/DARDNI: Department of Agriculture and Rural Development, Northern Ireland
DESTATIS: Federal Statistical Office (Germany)
DG AGRI: Directorate-General for Agriculture and Rural Development (EU)
DGARNE: Department of Agricultural Economic Analysis within the Directorate General for Agriculture, Natural Resources and Environment (Belgium - Wallonia)
DKK: Danish Krone
DOM: Département d’outre-mer (France)
DRAAF: Directions régionales de l’Alimentation, de l’Agriculture et de la Forêt (France)
DRAPs: Direcções Regionais de Agricultura e Pescas (Portugal)
EAA: Economic Accounts for Agriculture
ECA: European Court of Auditors
ECB: European Central Bank
EDI-CIRCLE: Centralised system of recording and paying invoices (Netherlands)
EDR: Electronic data reporting/recording
EFA: Ecological focus area
ELSTAT: Hellenic Statistical Authority (Greece)
ESRC: Economic and Social Research Council (UK)
ESU: European Size Unit
FACEPA: Farm Accountancy Cost Estimation and Policy Analysis of European Agriculture
FADN: Farm Accountancy Data Network
FADNTOOL: Integrating Econometric and Mathematical Programming Models into an Amendable Policy and Market Analysis Tool using FADN Database
FAPRI: Food and Agricultural Policy Research Institute (US)
FAS: Farm Accounts Survey (UK - Scotland)
FBS: Farm Business Survey (UK - England and Wales)
FLINT: Farm Level Indicators for New Topics on policy evaluation
FMS: Farm Management Survey (UK)
FSS: Farm Structure Survey
FTE: Full-time equivalent
GDP: Gross Domestic Product
GHG: Greenhouse Gas
GPP: Gabinete de Planeamento, Política e Administração Geral (Portugal)
HICP: Harmonised Index of Consumer Prices
HUF: Hungarian Forint
IA: Impact Assessment
IACS: Integrated Administration and Control System
IAFE-NRI: Institute of Agricultural and Food Economics - National Research Institute (Poland)
IBERS: Aberystwyth University’s Institute of Biological, Environmental and Rural Sciences (UK)
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<th>Abbreviation</th>
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<tr>
<td>IDELE:</td>
<td>Institut de l’Elevage (France)</td>
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<td>INEA:</td>
<td>Istituto di Nazionale Economia Agraria (Italy)</td>
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<td>INPS:</td>
<td>National Institute of Social Security (Italy)</td>
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<td>INRA:</td>
<td>Institut national de la recherche agronomique (France)</td>
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<td>INSEE:</td>
<td>Institut national de la statistique et des études économiques (France)</td>
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<td>ISS:</td>
<td>Institute for Sustainability Sciences (Switzerland)</td>
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<td>ISTAT:</td>
<td>National Institute of Statistics (Italy)</td>
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<td>JEU:</td>
<td>National farm accounts survey (Sweden)</td>
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<td>JRC:</td>
<td>Joint Research Centre</td>
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<td>JRC-IPTS:</td>
<td>The JRC Institute for Prospective Technological Studies</td>
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<td>KTBL:</td>
<td>Association for Technology and Structures in Agriculture (Germany)</td>
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<td>LAAS:</td>
<td>Lithuanian Agricultural Advisory Service</td>
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<td>LAO:</td>
<td>FADN Liaison Agency</td>
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<td>LCA:</td>
<td>Life Cycle Assessment</td>
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<td>LEI / LEI-DLO:</td>
<td>Landbouw Economisch Instituut (NL)</td>
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<td>LFA:</td>
<td>Less Favoured Area</td>
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<td>LFL:</td>
<td>Bayerische Landesanstalt für Landwirtschaft (Germany)</td>
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<td>LIAE:</td>
<td>Lithuanian Institute of Agricultural Economics</td>
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<tr>
<td>LLFG:</td>
<td>Landesanstalt für Landwirtschaft, Forsten und Gartenbau (Germany)</td>
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<td>LRF:</td>
<td>Federation of Swedish Farmers</td>
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<td>LU:</td>
<td>Livestock unit</td>
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<td>LUKE:</td>
<td>Natural Resources Institute Finland</td>
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<td>LVL:</td>
<td>Latvian Lat</td>
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<td>MAAF:</td>
<td>Ministry of Agriculture, Agro-food and Forestry (France)</td>
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<td>MAF:</td>
<td>Ministry of Agriculture and Food (Bulgaria)</td>
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<td>MAGRAMA:</td>
<td>Ministerio de Agricultura, Alimentación y Medio Ambiente (Spain)</td>
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<td>MAPA:</td>
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<td>MSA:</td>
<td>Mutualité Sociale Agricole (France)</td>
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<td>MTT:</td>
<td>Agrifood Research Finland</td>
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<td>NFS:</td>
<td>Irish National Farm Survey</td>
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<td>NIA:</td>
<td>Northern Ireland Assembly</td>
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<td>NLB:</td>
<td>New Land Bookkeeping</td>
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<td>NPPC-VUEPP:</td>
<td>National Agricultural and Food Centre, Research Institute of Agricultural and Food Economics (Slovakia)</td>
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<td>NSO:</td>
<td>National Statistics Office (Malta)</td>
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<td>NUTS:</td>
<td>Nomenclature des Unités Territoriales Statistiques</td>
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<td>OECD:</td>
<td>Organisation for Economic Co-operation and Development</td>
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<td>OGA:</td>
<td>Other Gainful Activities</td>
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<td>OMB:</td>
<td>Office of Management and Budget (US)</td>
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<td>ONS:</td>
<td>Office for National Statistics (UK)</td>
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<td>PA:</td>
<td>Paying Agency (Malta)</td>
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<td>PLN:</td>
<td>Polish Zloty</td>
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<td>RAD:</td>
<td>Regional Agricultural Directorates (Bulgaria)</td>
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<td>RBR:</td>
<td>Rural Business Research (UK)</td>
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<td>RDP:</td>
<td>Rural Development Programme</td>
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<td>RDR:</td>
<td>Rural Development Regulation</td>
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REA: Survey on the Economic Performance of Farms (Italy)
REPS: Rural Environment Protection Scheme (Ireland)
RERC: Rural Economy Research Centre (Estonia)
RIAE: Research Institute of Agricultural Economics (Czech Republic)
RICA: Réseau d'Information Comptable Agricole
RIIAE: Research and Information Institute for Agricultural Economics (Hungary)
ROCE: Return on Capital Employed
SCB: Statistika centralbyran (Sweden)
SCM: Standard Cost Model
SEK: Swedish Krona
SER: Service d'économie rurale (Luxembourg)
SFP: Single Farm Payment
SG: Scottish Government
SGM: Standard Gross Margin
SLR: Standard Labour Requirements
SMARTSOIL: Sustainable farm Management Aimed at Reducing Threats to SOILs under climate change
SO: Standard Output
SPS: Single Payment Scheme
SRISE: Services régionaux de l’information statistique et économique (France)
SRUC: Scotland’s Rural College
SSP: Service de la Statistique et de la Prospective (France)
SUDAT: Latvian national farm survey
SVAPPAS: Sustainable Value Analysis of Policy and Performance in the Agricultural Sector
TBN: German national farm accounts survey/ network
TI: Thünen Institute (Germany)
TIFF: Total Income from Farming
TS: Tender Specifications
UAA: Utilised agricultural area
USDA: United States Department of Agriculture
USDA-ERS: USDA Economic Research Service
USDA-NASS: USDA National Agricultural Statistics Service
WG: Welsh Government
WTO: World Trade Organization
ABSTRACT

This study investigates the cost of and good practices for FADN data collection in EU Member States during the period 2012-2014 using evidence gathered from existing literature, a survey of EU-28 FADN Liaison Agencies, nine case studies, and interviews with senior policy officials within the European Commission and the OECD. A desk-based study of the comparator system in the USA was also undertaken. Costs were assessed both in money terms and by labour input along the data supply chain. A variety of institutional arrangements are used by Member States to provide data to FADN. Within these, three types of organisation carry out the process of data collection: FADN Liaison Agencies; public advisory bodies; and, accounting firms. Data collection by accounting firms from accounts drawn up at the expense of farmers for tax purposes provides data at the lowest public cost per farm. At the other extreme, highest costs per farm are where advisory agencies combine data collection with provision of extension services. FADN data are widely used by Member States and therefore bring substantial, if unquantified, benefits. Examples of good practices which can be shared between Member States and that are reflected principally in costs and benefits are identified.

RÉSUMÉ

Cette étude examine le coût de la collecte de données RICA et les bonnes pratiques qui y sont liées dans les États membres de l’UE pour de la période 2012-2014. Les informations pour cette étude ont été recueillies auprès de différentes sources: un examen de la documentation existante; une enquête en ligne auprès des 28 organes de liaison des États membres; des études de cas dans neuf États membres; et des entrevues avec des hauts responsables de la DG AGRI et de l’OCDE. Une étude de cas sur le système équivalent au RICA aux États-Unis, sur base d’un examen de la documentation existante, a également été entreprise. Les coûts ont été évalués à la fois en terme monétaire et en termes d’apport de travail tout au long de la chaîne d’approvisionnement de données. Différents arrangements institutionnels sont utilisés par les États membres afin de fournir des données RICA. Trois types d’organisation effectuent le processus de collecte de données: les organes de liaison RICA; les services de conseil publics; et les cabinets comptables. La collecte de données par des cabinets comptables, en utilisant les comptes établis par les agriculteurs à des fins fiscales, est la moins chère par exploitation en termes de coût public. À l’autre extrême, les coûts par exploitation sont les plus élevés si les services de conseil publics combinent la collecte de données avec les services de vulgarisation agricole. Les données RICA sont largement utilisées par les États membres et donc elles apportent des avantages substantiels, même si ces avantages ne sont pas quantifiables. Des exemples de bonnes pratiques qui peuvent être partagées entre les États membres et qui se reflètent principalement dans les coûts et les avantages sont identifiés.
EXECUTIVE SUMMARY

Introduction
The Farm Accountancy Data Network (FADN or EU-FADN) is an instrument, launched in 1965, for evaluating the incomes and business operation of agricultural holdings and the impacts of the Common Agricultural Policy (CAP) viewed from the EU level. To do this it uses data contributed by national farm accounts surveys in each Member State in the form of completed “Farm Returns”. Member States receive a standard fee from the Commission for each duly completed “Farm Return”, within certain rules established by the FADN legislation. The current legal base is Council Regulation (EC) No 1217/2009.

In the interests of clarity, this report uses the term “FADN” or “EU-FADN” to refer to the EU system (the latter where added clarity is needed) and the term “national farm accounts survey(s)” to refer to the national systems which provide data for the FADN.

There can be benefits from using national farm survey data at the national level, and most Member States take the opportunity provided by the need to contribute to FADN, as well as the data collected, for their own purposes. Many Member States also collect and use additional data beyond the requirements of FADN and/or maintain larger samples for national reasons.

The organisation of the national farm surveys contributing data to FADN at national level, the methods of collecting data and the related costs vary greatly across the EU. In the absence of a comprehensive overview of national farm accounts survey data collection methods and related costs, the Directorate-General for Agriculture and Rural Development (DG AGRI) commissioned this study from Agra CEAS Consulting Ltd, in association with Areté. In addition to providing an inventory of methods and costs, an objective of the study was to help improve the data collection process (including data quality and timeliness) through benchmarking and the sharing of best practice. The study was organised into four themes (organisation and data collection methodologies; costs; benefits; and, best practice which can be shared).

Methodology
This study used multiple methodologies to gather evidence. A literature review was the starting point for descriptive chapters covering the EU policy framework for FADN and the organisation and operation of national farm accounts surveys. The main body of evidence was gathered through two methodologies, first an online survey of all 28 Member State Liaison Agencies (plus their counterparts in Norway and Switzerland) and, second, case studies in nine EU Member States selected to cover the variety of organisational structures used by Member States (plus a desk-based case study of the USA equivalent to FADN, the Agricultural Resource Management Survey (ARMS)). Case studies were carried out in Bulgaria, France, Germany, Italy, Lithuania, the Netherlands, Poland, Sweden and the UK and covered more than half (56%) of all EU-FADN holdings.

The study benefited from a panel of expert advisors who peer-reviewed the analysis.

Additional information came, inter alia, from interviews with senior DG AGRI staff outside the EU-FADN unit, senior OECD staff and participation in international workshops and meetings.
Findings and conclusions
The organisation of FADN and methods of collecting the data

Legal framework: The EU-FADN Regulations apply within each Member State without the need for national legislation. However, 16 Member States do have additional national legislation, largely it appears to allocate tasks to institutions.

National legal constraints on the use of administrative records (which can offer a potential way of reducing costs and minimising the burden on farmers) do not apply in most Member States. Even where such restraints are found, access on a permissive basis often offers a way by which this information can be used.

Legal constraints can extend to uses of data gathered from farms. The main such constraint relates to the assurance of confidentiality given to farmers by the Regulation. Our conclusion is that these legal restrictions on use do not constrain access to results at the national level in a way that impacts significantly on the public benefits obtainable. However, for some research purposes, access to individual farm data is desirable, and a variety of arrangements can be found in Member States by which this is possible without compromising disclosure assurances.

Establishment of national farm accounts surveys and current rationale: For many Member States the establishment of national farm accounts surveys predated their requirement to supply data to EU-FADN and was to serve national purposes. While EU Membership carries this obligation to supply data, national purposes are still relevant.

Status of the Liaison Agencies: The status of the Liaison Agency is primarily a matter of administrative convenience and there seems to be no obvious association between this and the functioning of the national farm accounts survey, including the running costs.

Organisation of the FADN supply chain: There is considerable variety in terms of the division of responsibilities along the FADN supply chain. Organisational structure within individual Member States is fairly stable and is explained primarily by history (with a high level of path dependence) and practical considerations.

National FADN Committees: The National FADN Committees typically have representation from along the FADN supply chain. Many National FADN Committees have additional functions beyond those set out in the EU-FADN legislation, although there is no discernible impact on performance within these groups. Regional Committees are only found in Belgium, Germany and Spain.

Representativeness of the sample: Agricultural production and area are well represented by the FADN sample, but this applies far less to the proportion of holdings (and by implication holders) within the FADN field of observation. Given this divergence, EU-FADN is probably rather better suited for policy analyses relating to the economics of agricultural production than it is to the more social aspects of the wellbeing of the wider agricultural population. Any change in the current EU-FADN sample orientation towards a greater coverage of holdings (and holders) would carry cost implications, but may also bring additional benefits, which we recommend be considered should any change be proposed.

Sample turnover and recruitment: Sample turnover is typically 10% or less. There is substantial variation in the methods used by Member States to add fresh farms to their national farm accounts survey. For family farms the two main approaches are: (i) selection at random from a list of farms derived from the Farm Structure Survey; and, (ii) selection from existing clients of data collectors. The first approach offers potential statistical superiority, but a lower recruitment rate. The second approach may introduce
selection bias (by focusing on farmers receiving advice), but by building on existing relationships offers a higher success rate and therefore cheaper recruitment. Our conclusion is that the approach used to recruit farms will carry cost implications, and that there may be a trade-off with statistical quality, though this is by no means certain.

**Farmer participation incentives:** Participating farmers receive financial payments (at various rates) in 11 Member States. Payment in kind, in the form of a set of completed accounts, is provided in 14 Member States. Participating farmers are provided with benchmarking data in 21 Member States and those in Member States where data are collected by advisory/extension agents also benefit from specific advice based on their documented performance. In conclusion, participating farmers receive different incentives but it is not evident to what extent these are actually required to induce cooperation or to improve sample retention. However, withdrawal of established incentives could be expected to impact on participation.

**Data collection methods and sources used:** Data collection is a complex, though fairly stable, process with most Member States (18) indicating more than one ‘main’ method. Even within a single Member State there may be different methods for small farms who are not obliged (by national tax legislation) to keep accounts and for farms that have corporate status. Data collection from farmers/farm secretaries is considered to be a main data collection method in most Member States. Extraction of data by private accounting firms from completed accounts is the main data collection method in eight Member States. Data extracted from secondary sources such as registers and administration systems is a main data collection methodology in 15 Member States.

**Data recording methods:** Member States use a range of data recording methods and the balance between them will have cost implications; many Member States use more than one method of recording data. The most widely used method remains paper recording for subsequent electronic entry into the national farm accounts survey database. Online entry is used in 16 Member States and offline entry in nine Member States. Thirteen Member States extract data from farm accounting software packages.

**Data validation:** Data are generally validated at national level before entry to RICA-1, the collection and verification system for the Commission’s EU-FADN database. For the majority of Member States, this takes place at multiple points in the data supply chain. A number of techniques are used, ranging from informal examination to deep scrutiny with IT systems. There are three stages at which data can be validated before uploading to the Commission’s RICA-1 (which then generates additional queries). Nine Member States employ validation when data are (i) collected; (ii) entered into regional databases; and, (iii) entered into the national farm accounts system. At the other end of the spectrum, five Member States validate data only on entry into the national system.

**Typology of national farm accounts surveys:** Although it is possible to distinguish groups of Member States with respect to various metrics, there is little consistency in these groups when different categorisations are used. The most relevant typology in the context of this study is by data collection methodology and this is likely to be a key determinant of cost. Our conclusion is that Member States can broadly be divided into three types: those where the Liaison Agency collects data (Type 1: C-LA); those where data collection is carried out by public advisory services (Type 2: C-AS); and those which collect data through a network of accounting firms (Type 3: C-AF).

**The costs of collecting FADN data in Member States**

**Resource requirements:** Resource requirements (labour usage) per completed Farm Return, covering data collection, data processing and organisation (including validation), were calculated for 21 Member States for which sufficient data were available. The number of hours required by Liaison Agencies and data collectors per completed Farm
Return varied considerably between Member States with the data collection process forming the most time-intensive activity. The share taken by this activity was higher where the sample size was larger (as fixed costs were spread over a larger number of holdings) and/or where the data collection methodology was more labour demanding.

A more exhaustive coverage of the complete data supply chain, including additional elements not covered in the above analysis (such as time contributed by the farmer), was possible for case study countries. This confirmed the wide diversity of labour requirements: total time required per completed FADN Farm Return ranged from eight hours in Germany to 63 in Poland.

**Monetary costs:** A similar finding comes from the analysis of costs. The total public cost to budget of Member States for the EU-28, averaged for the 2012-14 period, was just over €58 million. This amounts to a (weighted) average cost at the EU-28 level of €678 per completed Farm Return but with considerable variation between Member States, ranging from an average (2012-14) of €107 in Bulgaria and €156 in Romania, to €2,905 in Belgium.

**Factors explaining differences in cost:** A number of factors can be identified that explain, at least in part, the differences observed in monetary costs. Some of these relate to the structure and nature of the national farm accounts survey, for example relative scale and scope and different resource requirements resulting from different data collection methods. Others relate to external factors such as different wage levels between Member States and different average farm sizes within the FADN field of observation.

The choice of data collection methodology can offset, at least to some extent, higher costs arising from greater wage levels and from increased farm scale. The most efficient form of data collection in terms of public cost is from existing accounts (which have been produced at private cost) (Type 3: C-AF) and this approach is therefore most suited to Member States with a large sample, large average farm size or high labour costs or any combination of these. Of course, not all Member States require the production of accounts for tax reasons, or at least not for all farms, and so cannot produce national farm accounts survey data on this basis.

**Costs of change or adaptation:** National farm accounts surveys will be required to adjust the scope or scale periodically to meet the changing needs of the policymakers who form their main group of clients. While we conclude that the costs of adaptation will be specific to each Member State, some general principles are evident. The cost of changing the variables collected under national farm accounts surveys will be related to the extent to which Member States are already collecting this information for national purposes. Although extending the collection of any type of data to the Member States that do not currently collect it would incur costs, these would be marginal to the basic data collection infrastructure already in place. In the other direction, savings from reducing the scope of EU-FADN coverage would be marginal, again as a result of the existing data collection infrastructure. In both cases changes would have impacts on benefits which would need to be taken into account.

Adjustments to sample size involve similar considerations. Any increase would incur additional costs, but these would be marginal rather than average as the existing fixed costs would be spread over a greater number of Farm Returns. Conversely, a reduction in sample size would not lower the total by the average cost, but rather by the marginal cost as fixed costs would be spread over fewer Farm Returns.
The benefits obtained from FADN data to Member States

A main conclusion concerning the benefits obtained from farm accounts survey data is that these are hard to quantify in monetary terms that might be compared with the costs of carrying out the surveys. The benefits obtained from making use of farm accounts survey information take two main economic forms. First, there are the private benefits, of which the main example will be those accruing to farm businesses in the form of improved performance through, for example, using the data for benchmarking purposes. These are, in principle, measurable, though there are substantial practical problems in doing so. Second there are the public benefits linked to the use of the results to assist in decisions by government on issues of policy; the need for information coming from national farm accounts surveys was a prime reason why accounts surveys that pre-dated the requirement to supply data to EU-FADN were originally set up. Better policy decisions should in turn lead to better and more appropriate outcomes. The rationale for spending public money on farm accounts surveys will be similar to those for maintaining public statistics of any type. Similarly, the value to research of farm accounts results is difficult to determine.

Access to results and data: With a few exceptions, our finding is that availability of the results of national farm accounts survey results is good, although access to farm-level raw data for research could be improved. Almost all Member States publish results from their national farm accounts surveys with an apparent preference for electronic publication. Public databases are available in 15 countries; this should greatly facilitate access, though quite what this gives access to varies. In contrast to the availability of standard results, access to farm-level data, a feature that obviously adds greatly to its value as a research tool, is universally restricted, respecting the general principle of maintaining confidentiality. However, often there are circumstances in which this may be relaxed while at the same time safeguarding precautions are applied, or technical solutions devised that make anonymous data accessible and costless (for example, remote access to the Netherlands national farm accounts survey database and the Data Builder tool in England within the UK).

Users and uses: A clear finding is that the data collected by national farm accounts surveys are widely used by the national (and where appropriate regional) governments of Member States. The data are almost universally used in policy formulation and evaluation and are also a common source of data supplied to Eurostat for the Economic Accounts for Agriculture or for similar accounts at national level; estimating costs of production is another common use.

Results are widely (almost universally) used as the basis of providing extension and advice to farmers, including in the form of benchmarking. This suggests that the various organisational arrangements for collecting data from farms do not impact on this form of use to an extent that can be detected. However, the impact on the economic performance of participating farms that a combined approach to data collection and the provision of advice may give rise to may be significant.

Valuing the benefits: To help fill the information gap on the value of national farm accounts surveys to Member States, a set of contingency questions was put to relevant government departments in case study countries to establish the perceived level of present benefits in relation to the known costs. There was a wide range of responses to the perception of the benefits compared with the total cost, from ‘lower’ in the UK (England and Scotland) to ‘much higher’ in Germany and Poland. Overall, Bulgaria, Germany, the Netherlands and Poland regarded their farm accounts surveys as representing good value for money, and the UK (England) reasonable value. Governmental use was clearly seen to be the principal beneficiary. Academic institutions and research bodies came next, followed by farmers through advisors and extension
agents. Farmers benefitting directly and farmers’ lobby groups were seen as benefitting the least. Our conclusion is that the perceived value of benefits relative to costs would cause Member States to at least consider continuing with national farm accounts surveys in the absence of a requirement to supply EU-FADN with data.

**Best practices in FADN data collection and use that can be shared**

Based on the types of evidence available to this study, a number of best practices exist that should be considered for general adoption among Member States. Fundamental to improving performance of national farm accounts surveys is the periodic carrying out of evaluation, with associated monitoring exercises. We recommend that all Member States introduce appropriate systems to examine both the costs of data collection and analysis, the variability within this, and the reasons, and the uses to which the results are put. Allied to this, we recommend collaboration at the EU level to introduce a common and consistent evaluation framework.

In terms of collection of data, there are several specific examples of best practice:

- The use of data already in accounts where these have to be kept for taxation purposes;
- the use of administrative data which can reduce data collection costs;
- the provision of access to administrative data via consent that avoids the testing of legal constraints;
- the elimination of stages in the data supply chain that can reduce costs, remove the causes of transcription error, speed the process and assist with validation. The most elementary of these is the replacement of paper data entry by electronic entry;
- the carrying out of validation procedures at multiple points along the data supply chain before data are entered into the national farm accounts system, and the introduction of systems that learn from past experience; there may be the opportunity for international cooperation in the design of programmes for this purpose;
- the necessity of making of payments to participating farmers should be periodically reviewed.

The relatively low level of sample turnover allows panel data (longitudinal sample) to be used to investigate issues such as exposure to risk and productivity growth. However, the availability of panel data is currently by accident rather than design and this imposes limits on its utility. An explicit longitudinal panel, within the overall sample and suitably weighted, would increase the value of FADN as a research tool.

Where a fee is currently charged for access to data, consideration should be made to removing this. However, a preferred solution is that offered by the UK (England) in which access to the basic raw data is provided through a website which allows queries to be raised and returns datasets while maintaining safeguards for confidentiality.

Finally, given the different practices across Member States, frequent lack of awareness of what happens in other countries and a silo attitude to some developments (such as in IT), we conclude that there are currently impediments to the free flow of information on data collection. We recommend that consideration be given to how this might be improved and cooperation fostered to reach solutions to common problems. These may involve building on the existing framework provided by the EU-FADN Committee and its associated working groups and the Pacioli network, but may also need to go beyond these to form technical groups or task forces with the specific aim of sharing information and spreading good practice.
1. INTRODUCTION

The concept of the Farm Accountancy Data Network (FADN or EU-FADN) was launched in 1965. The FADN is an instrument for evaluating the incomes and business operation of agricultural holdings and the impacts of the Common Agricultural Policy (CAP) viewed from the EU level. To do this it uses data contributed by national farm accounts surveys in each Member State in the form of completed “Farm Returns”. Member States receive a standard fee from the Commission for each duly completed “Farm Return”, within certain rules established by the FADN legislation. Some of the national farm accounts surveys pre-date FADN, but others were developed specifically to meet this requirement of EU membership. The current legal base of EU-FADN is Council Regulation (EC) No 1217/2009.

In the interests of clarity, this report uses the term “FADN” or “EU-FADN” to refer to the EU system (the latter where added clarity is needed) and the term “national farm accounts survey(s)” to refer to the national systems which provide data for the FADN. The terms “farm” and “holding” are used interchangeably.

There can be benefits from using national farm survey data at the national level, and most Member States do use the opportunity provided by the need to contribute to FADN, as well as the data collected, for their own purposes. Many Member States also collect and use additional data beyond the requirements of FADN and/or maintain larger samples for national reasons.

In the absence of any comprehensive overview of national farm accounts survey data collection methods and related costs, the European Commission’s Directorate-General for Agriculture and Rural Development (DG AGRI) requested tenders to carry out a study. The Tender Specification for this work has shaped the nature and content of this publication. The contractors were required to examine the methods by which Member States collect data to feed into the FADN, the costs incurred in doing this, the benefits obtained and to identify best practice. The underlying purpose of the study is to help improve the data collection process (including data quality and timeliness) through benchmarking and the sharing of good practice.

Agra CEAS Consulting Ltd, a joint venture between Informa plc and Imperial College London, in association with Areté, was awarded the contract.

1.1. Overall approach to the study

In addition to some descriptive elements of the policy background to FADN data collection and use, the report covers four Themes:

1. Organisation of FADN at Member State level and methods of collecting the data.
2. The costs of collecting FADN data in Member States.
3. The benefits obtained by member States from FADN data.
4. Best practices in FADN data collection and use that can be shared among Member States.

These Themes were analysed on the basis of information gathered from a comprehensive literature review and primary data collected through an online survey of Member State Liaison Agencies plus case studies in nine Member States. Supplementary information on the perceived value of EU-FADN results was collected through interviews with senior staff in the Commission and other external users. A desk-based case study of the US Agricultural Resource Management Survey (ARMS) provided a non-EU comparator.

1.1.1. Distinguishing patterns in FADN data collection

This element of the study laid the foundation for the later stages. An early task was to understand the ways in which national farm accounts surveys, which contribute data to the FADN system, are organised and the data collection methodologies they use. A typology of Member States was produced based on their method of data collection. This typology then informed our selection of case study countries, alongside consideration of the ways in which data are used, as well as for the later analysis.

1.1.2. Measuring the costs and benefits of FADN data collection

A key issue in comparing costs of collecting data for EU-FADN between Member States is the need for an acceptable basis on which this can be undertaken. We used two approaches: a top-down approach based on total budgetary cost, which was then adjusted for different labour costs and for national samples that are larger than those required under EU-FADN, was applied to all Member States; a bottom-up approach based on the Standard Cost Model, i.e. distribution of cost according to labour inputs was applied to our case study countries only.

The key issue to confront was the need to not compare simply in monetary terms given the different cost base across the EU. To address this issue we considered costs in terms of the resource required in full-time equivalent labour units as a first step (in line with the Standard Cost Model approach, described later). The standardisation of labour cost allowed a comparison between Member States with this important factor controlled for. However, it is important to bear in mind that the differential cost of labour may make some approaches more/less cost effective in some Member States than in others, and this will need to be recalled when considering best practice.

Where a national farm accounts survey is used solely to provide data to FADN, all costs associated with it should be assigned to the FADN data collection/processing system. However, where national farm account surveys exceed the scale and/or scope of FADN, it may not be appropriate to assign all costs to the FADN system. In some Member States, national farm accounts surveys pre-dated the need for that country to supply FADN on accession to the EU; clearly these were in a different situation when moving to meet their FADN data obligations from those where a completely new system had to be established. However, a Member State’s obligation to provide FADN with data would continue even if there was no longer any perceived national requirement for a farm accounts survey. Our basic assumption is that there are core costs of FADN which vary between countries and reflect the organisation and collection method; if a Member State chooses to collect additional data, the costs of doing so are the marginal elements. Member States may benefit from the national use of basic FADN data. If additional costs are incurred through more extensive collection (in terms of variables or numbers of sample farms), these will have to be weighed by Member States against the additional benefits that can be extracted. In practice in this study it was necessary to take a case-by-case approach to this issue where the national farm accounts survey different in scale and/or scope from the requirements of FADN.

Required resources were considered in total and also in terms of where they fall. National farm accounts surveys which rely on considerable farmer involvement (either directly or through the farmer’s employment of an accountant) may incur lower budgetary costs for the FADN system, but at the expense of an increased burden on participants or public extension services. We therefore developed a “FADN supply chain” in each case study Member State which elaborated the process of data collection and in so doing identified the stages and actors involved to which resource requirement should be allocated.
1.1.3. Identifying explanatory factors

Our online survey identified the main reasons behind the organisation of national farm surveys and data collection methodologies so that we can present an overview at the EU-28 level. However, understanding the explanatory factors in greater detail was only possible through our case studies. That said, the reasons behind certain organisational and methodological approaches are likely to be similar and the material uncovered in the case studies should therefore be capable of extrapolation to the EU-28.

It should be noted that, where national farm accounts surveys pre-date FADN, a key determinant of organisation and data collection method will be simple path dependency and the original rationale may be lost in the mists of time; while this may also apply to more recently instigated surveys, it is likely to be to a lesser extent. It is also possible that the approach taken historically would not have been taken more recently. It was therefore important to consider within the case studies the extent to which the current national farm survey would be implemented differently if it were to be started from scratch (\textit{ab initio}).

1.1.4. Identifying best practice that can be shared

In considering best practice we draw a distinction between approaches which could be adopted by Member States in the short-term and those that would require longer-term changes. We also make a distinction between what might be optimal in the long-term and what might be achievable, i.e. a form of “constrained best practice” or “better practice”; Poppe and Beers (1996a) note that it is not always easy to copy successful innovation from one region to another (and in some cases it may not be possible). Constraints of this nature are likely to include legal factors, such as the use which can be made of tax records, which are unlikely to be altered by a Member State to facilitate the collection of data in a specific sector of the economy.

An important guide to identifying best practice is the changes that Member States have introduced in the recent past or plan to introduce in the near future. Our working assumption behind changes made is that these will have been to reduce costs or burdens, improve robustness or timeliness, take advantage of technological developments or adapt to changes in policy requirements. This assumption was challenged in the case studies; it may also be the case that changes were driven by other reasons, but nonetheless had impacts in these areas. In some cases changes may have resulted in a better cost/benefit ratio; alternatively changes could simply have reallocated costs along the supply chain between activities and/or organisations involved (including the Commission in terms of the extent to which data checks are required). As well as pointing directly to best (or better) practice, the changes made, and other options considered at the time, may also highlight approaches not to take.

1.2. Structure of the report

The structure of this report reflects the requirements of the Tender Specification for the study. It begins with an explanation of the EU policy framework for FADN data collection and use (Chapter 2), which provides essential background to the FADN system. The methodology followed in carrying out this study is set out in Chapter 3. Chapter 4 describes the content of our inventory of the organisation, data collection methods, resources and costs, and data uses in national farm accounts surveys. Our analysis of the four study Themes is contained in Chapters 5 to 8 and our conclusions and recommendations in Chapter 9.
2. THE EU POLICY FRAMEWORK FOR FADN DATA COLLECTION AND USE

2.1. The purpose of FADN

The FADN is an instrument for evaluating the income of agricultural holdings and the impacts of the Common Agricultural Policy (CAP); it is one of a set of information tools for managing the CAP (Bajek, 2015). The concept of the FADN was launched in 1965, when Council Regulation 79/65/EEC of 15 June 1965 established the legal basis for the organisation of the network. This base legislation has been amended several times and Council Regulation (EC) No 1217/2009 of 30 November 2009 provided a codified version. This legislation makes clear a number of points. First, the purpose of the FADN (recital (2)):

“The development of the common agricultural policy requires that there should be available objective and relevant information on incomes in the various categories of agricultural holding and on the business operation of holdings coming within categories which call for special attention at Community level”.

This purpose is elaborated by Article 1 and is worth quoting in full:

1. To meet the needs of the common agricultural policy, a Community network for the collection of farm accountancy data is set up (hereinafter referred to as the ‘data network’).

2. The purpose of the data network shall be to collect the accountancy data needed for, in particular:

   a) an annual determination of incomes on agricultural holdings coming within the field of the survey defined in Article 4; and

   b) a business analysis of agricultural holdings.

3. The data obtained pursuant to this Regulation shall, in particular, serve as the basis for the drawing up of reports by the Commission on the situation of agriculture and of agricultural markets as well as on farm incomes in the Community. The reports shall be submitted annually to the European Parliament and the Council, in particular for the annual fixing of prices of agricultural produce.

Specifically, Article 39 of the Treaty on the Functioning of the European Union (using the same words as in the 1957 Treaty of Rome) notes that the objectives of the CAP (with particular relevance to FADN) are:

a) to increase agricultural productivity by promoting technical progress and by ensuring the rational development of agricultural production and the optimum utilisation of the factors of production, in particular labour;

b) thus to ensure a fair standard of living for the agricultural community, in particular by increasing the individual earnings of persons engaged in agriculture.

FADN is necessary to provide information about farmers’ incomes in order to assess progress against Objective b). FADN offers the only source of harmonised farm data which allows EU-wide comparisons and provides EU policy makers with an evidence base on which to make informed decisions.

Wesseler (2015) reports on the first communication on FADN (dating from 1962) which notes that the system would help the Commission in applying EU regulations already in force and in developing the CAP.

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Impact assessments of prospective policy scenarios are carried out on economic, environmental and social sustainability of farm businesses by sector, by Member State and by region (European Commission, 2015). Bajek (2015) provides a list of the ways in which FADN has been used by the Commission in the impact assessment of policy proposals:

- Pre-1992: Annual price package, various schemes (including LFA);
- 1992: MacSharry reform – price cuts, direct payments;
- 1998-99: Agenda 2000 – more price cuts, direct payments;
- 2002-03: 2003 reform – decoupled payments;
- 2003: EU sugar policy reform options;
- 2006: EU wine policy reform options;
- 2007-08: CAP Health Check 2008 (including milk quota abolition);
- 2012-13: CAP 2020 policy options;
- 2013: State aid in agriculture (de-minimis);

These impact assessments have been used to assess the effect on income (by type of farm and by region) of introducing/withdrawning policies either progressively or immediately, fully or partially, in a coupled, decoupled or recoupled manner and whether limited or not by capping or modulation. Mainly it has been the impact of Pillar I subsidies that have been examined using FADN data, but they have also been employed in estimating the costs of “greening” measures.

Bajek (2015) also notes the use of FADN data in:

- Annual budget planning for the CAP (share of direct payments below €5,000 per Member State and per support scheme in the context of financial discipline).
- Trade negotiations (price changes).
- Risk in agriculture (price volatility).
- Impact of crises (rising costs, impact of crop failure/disease).
- The production of regular and occasional reports (covering farm economics and income; margins and income in the milk, beef, cereals, pig fattening, olives, nuts and rice sectors; production costs; organic farms; farming in Less Favoured Areas; and, rural development support).

Plees (2015) reports on the use of FADN in evaluating policy implementation for DG AGRI. Evaluation is a requirement for any policy using the EU budget and is an opportunity to assess the performance of CAP, receive input for policy steering and enhance the CAP’s acceptability and credibility. The importance of evaluation has risen over time with increasing evaluation of non-spending programmes and examination of the continuing rationale of policies. The use made of FADN has shifted; initially it was used only for economic analysis, but later it began to be used to assess the environmental impact of the CAP and as a data source for modelling.

Plees (2015) reports that 61 of 89 evaluations (69%) carried out by DG AGRI since 2000 depended on information from FADN. Three of these evaluations used FADN data at the EU level, 19 at the Member State level and 39 at the regional level. FADN data were used to study the following within these evaluations:

- farm income (42);
- intermediate consumption (32);
- importance of subsidies (31);
- margins (29);
• cost of production (27); and,
• farm structures (27).

The 2013 CAP reform introduced a monitoring and evaluation framework for the CAP which is based, as far as possible, on existing information sources such as the FADN.

The Commission is aware of the strengths and weaknesses of FADN, as well as the opportunities and threats, as evidenced by Wesseler (2015) which form a sub-set of issues raised in this report.

2.2. Legislative requirements

Recital (3) of Regulation (EC) No 1217/2009 states that “the accounts of agricultural holdings constitute the basic source of essential data for any assessment of incomes on agricultural holdings or study of their business operation” while recital (4) notes that data should be obtained from specially selected agricultural holdings and stresses the need for a common approach to both the selection of holdings and definitions used. Recital (5) stresses the voluntary nature of participation.

The Regulation sets out the need for the sample accurately to reflect the structure of the agricultural sector and makes clear that the main decisions concerning the selection of holdings should be adopted at the national level with a regional dimension permitted where this is appropriate.

Recital (14) explicitly makes clear that farmers are to be provided with assurances that their accounts and other individual details obtained in connection with FADN will not be used for taxation purposes, purposes other than those provided for in the Regulation or divulged by persons involved in the FADN. This is addressed in detail under Article 16. However, this assurance does not preclude the use by FADN of data assembled by farmers for taxation purposes, or where national legislation allows this, the use of taxation records to supply data to FADN.

Article 6 sets out the requirement for Member States to set up a National FADN Committee which shall be responsible for the selection of returning holdings. This entails responsibility for the selection plan and a report on the implementation of this plan. Regional FADN committees (where they exist) must cooperate with the Liaison Agency in selecting returning holdings.

Article 7 sets out the duties of the Liaison Agencies which include (in summary):

a) Informing the National Committee, Regional Committees and the accountancy offices of the detailed rules of application concerning them and ensuring that these are properly implemented.
b) Drawing up the selection plan for approval by the National Committee and reporting on its implementation.
c) Compiling a list of returning holdings and a list of accountancy offices willing and able to complete Farm Returns.
d) Collate completed Farm Returns and verify that they have been duly completed.
e) Forward duly completed returns to the Commission.
f) Liaise between the Commission, the National Committee and Regional Committees as necessary.

3 However, senior DG AGRI staff wondered whether, in the future, it would be appropriate to make participation mandatory in exchange for receiving public support.
Accountancy office(s) are contracted on the authority of Member States to provide duly completed Farm Returns.

The FADN system therefore consists of an annual survey carried out in Member States on a sample of their agricultural holdings. Although derived from national surveys, the FADN is harmonised in that the bookkeeping principles and definition of the variables are the same in all Member States, allowing comparability.

A Committee for the Farm Accountancy Data Network (the ‘Community Committee’, established under Article 18 of Regulation (EC) No 1217/2009) assists the Commission in the management of the FADN network at the EU level.

2.3. The FADN field of observation

Holdings are selected to take part in the survey on the basis of sampling plans established at the level of each region in the EU (see above). FADN focuses on agricultural holdings deemed to be commercial, in the sense that they are large enough to provide a main activity for the farmer and a level of income sufficient to support his or her family (Commission of the European Communities, 1985). However, the interpretation of what is commercial has changed over time. The original Council Regulation 79/65 stipulated that the field of survey should cover those agricultural holdings, which (a) are run as market-oriented holdings; and, (b) provide the main occupation of the operator. The most recent reference to the field of survey is in Article 2 of Regulation (EU) No 1198/2014, which explains that ‘the field of the survey represents the largest possible share of agricultural output, agricultural area and farm labour, of holdings run with a market orientation’.

During the first three years of FADN, data were taken only from agricultural holdings having an area exceeding five hectares, with the exception of holdings producing wine, fruit, vegetables and olives. In 1972 this was amended. In addition to being market-oriented, and providing the main occupation of the operator, holdings were to be of a size capable of employing at least one worker (one work unit) over a year, though this threshold could be reduced to 0.75 work units (Hyvönen, 2004). These criteria implied a discrimination against part-time farmers in the sample, but this was justified by the belief that ‘main-living’ farms constituted the most important target for agricultural policy measures, an interpretation which should not go unnoticed. However from 1982/83 a new tool, Economic Size Units (ESUs), became available and subsequently selection thresholds were made only in terms of these units (which are based on Standard Gross Margin), later changed again to Economic Size (expressed in Standard Output terms). No notice is intended to be taken when selecting the sample of any other gainful activities in which the operator may engage.

Consequently, while the overwhelming majority of farming activity falls within the FADN field of observation (approximately 90% of total agricultural production), only 42% of the EU’s agricultural holdings found in its farm structure survey are represented (2015). However, figures for the latter metric vary widely between countries. For example, in Slovakia only 17% of farms are covered by FADN (but these represent 96% of the economic activity), whereas in Ireland 75% of the farms are covered (with 98% of the activity). Though numerically important, holdings below the FADN size thresholds contribute very little in terms of agricultural activity. In many Member States, especially more recent additions to the Union, it is likely that the coverage within FADN of actual

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4 By way of context, although not directly comparable to the FADN field of observation, European Parliament (2013) notes that in 2010 there were 8.1 million farms with UAA less than five hectares which together contributed 67% of all farm holdings and engaged 42% of total Annual Work Units, but accounted for only 7% of total EU-27 UAA.
holdings is even lower because some fall below the minimum size threshold for inclusion in the Structure Survey.

The EU-FADN size thresholds are proposed by Member States, discussed and then approved by the Commission; an implementing Regulation is then adopted. The role of size thresholds, as specified in Commission Delegated Regulation (EU) No 1198/2014, is to allow representative results for the field of survey to be obtained. In doing this they should “maximise the benefit/cost ratio and be determined with the aim of including in the field of survey holdings that represent the largest possible share of agricultural output, agricultural area and farm labour, of those holdings which are run with a market orientation”.

No farms below a Standard Output (SO) size threshold of €2,000 are included in FADN at all and no farms below €25,000 SO are included in Belgium, Germany, Luxembourg, Netherlands, Slovakia or most of the UK5, or below €8,000 in Austria, Czech Republic, Denmark, Finland, France, Ireland or Sweden. The consequence of this is that FADN results for farms within these lower size classes must be treated with caution as they do not encompass farms from every Member State. For example, in published EU-27 results, farms in the €2,000 to €8,000 size class only come from 14 countries6 and those in the €8,000 to €25,000 size class 22 countries7. Only in results for farms with SO of €25,000 and over are all Member States represented. This is important in making observations about the relationship between variables and farm size using EU-level results and also when drawing comparisons between Member States.

In summary, the FADN sample is not universal (in the sense that it does not attempt to cover everyone engaged in agricultural activity, many of whose holdings are of very small scale and who do so for hobby, self-supply or other non-commercial purposes). The omission of farmers at the smaller end of the scale is important when viewing the CAP as a policy directed at the standards of living of the persons engaged in agriculture, as a policy aimed at supporting the viability of small farms, at the rural community or, indeed, as a policy with implications for the environment and climate change (where comprehensive coverage may be important). However, within its (limited) field of observation, the methodology does provide data which are representative in terms of region, economic size and type of farming and which also cover the vast majority of agricultural production. Hence, FADN is likely to be valuable for the analysis of economic policy relating to the agricultural sector. However, it is likely to be less useful for the analysis of social policy relating to the rural population linked to ‘the land’.

2.4. National responsibility for FADN

Management of FADN is the responsibility of the national Liaison Agency. During our reference period (2012-14), this role was undertaken by research institutes in 12 Member States that often, but not necessarily, conduct the data collection with its own staff8. In 14 Member States the FADN was under the direct management of the Ministry of Agriculture with data collection often outsourced, in some cases to an extension service9, in other cases to a fiscal accounting office. Responsibility for FADN fell under the government statistical department in two Member States.10 In 2015 responsibility for FADN in Cyprus was transferred from the Agricultural Research Institute to the Department of Agriculture.

5 The SO threshold is €15,000 in Northern Ireland.
6 BG, CY, EE, EL, ES, HU, IT, LT, LV, MT, PL, PT, RO and SI.
7 The additional eight Member States are AT, CZ, DK, FR, IE, FI, SI and UK (Northern Ireland).
8 CY, CZ, DE, EE, FI, HU, IT, LT, LV, NL, PL, SK.
9 AT, BE, BG, EL, ES, IE, FR, HR, LU, MT, PT, RO, SI, UK.
10 DK, SE.
2.5. EU contribution to national data collection

Participation in the FADN survey imposes a cost on the Liaison Agencies, in respect of which a payment is made by the EU for each successfully completed Farm Return received by the Commission (set by legislation currently at €160 per Farm Return\(^ {11} \)).

2.6. The use made of FADN results

There are four main methods by which the results of the FADN are communicated:

1. **Standard results.** The standard results are a set of statistics, computed from the Farm Returns that are periodically produced and published by the Commission. These are available in a public database. They describe in considerable detail the economic situation of farmers by different groups throughout the European Union.

2. **FADN public database.** In addition to the standard results, the public database also offers the possibility to access the information in bespoke categorisations.

3. **Publications.** An overview of EU farm economics is published annually. This reviews the state of affairs of EU farms and their evolution by Member State and by type of farming. Sector analyses are published annually and there are regular reports on income evolution and distribution of direct payments and periodic ones on Less Favoured Areas (now replaced by Areas of Natural Constraint). The results of specific *ad hoc* analysis are published at the request of Commission Services and other European Union Institutions, especially units in charge of the management of agricultural markets, rural development, the evaluation of CAP measures and policy design.

4. **Contributions.** Finally, FADN makes a significant contribution to research projects and evaluations and studies requested by Commission Services and national governments. A review of requests made to use FADN farm-level data, held centrally within DG AGRI and not provided to researchers to maintain confidentiality, in the period 2012 to 2014 is set out below in Table 2.1.

### Table 2.1: FADN data requests received by DG AGRI

<table>
<thead>
<tr>
<th></th>
<th>Finished</th>
<th>Ongoing</th>
<th>Under assessment</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>2012</td>
<td>12</td>
<td>7</td>
<td></td>
<td>19</td>
</tr>
<tr>
<td>2013</td>
<td>6</td>
<td>8</td>
<td></td>
<td>14</td>
</tr>
<tr>
<td>2014</td>
<td>9</td>
<td>8</td>
<td></td>
<td>17</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>18</strong></td>
<td><strong>24</strong></td>
<td><strong>8</strong></td>
<td><strong>50</strong></td>
</tr>
</tbody>
</table>


These requests were made by the following types of organisation (sometimes by contractors working for on their behalf). In some cases two organisations were jointly involved in a project meaning that a direct comparison against Table 2.1 is not possible:

- European Commission: 24 (of which: Joint Research Centre (JRC) 12; DG AGRI 6; other DGs 6);
- European Parliament: 1;
- Research institutes: 14; and,
- Universities: 13.

\(^{11}\) Commission Implementing Regulation (EU) No 283/2012 of 29 March 2012 fixing the standard fee per farm return from the 2012 accounting year of the farm accountancy data network.
Within these requests FADN data were used (some projects belong in more than one category and are therefore counted twice):

- to evaluate, or assess the impact of, policy: 13;
- to assess prospective policy or the impact on agriculture of alternative approaches: 13;
- for economic studies: 11;
- to build or develop sector models: 7;
- to develop indicators: 4; and,
- to investigate aspects of climate change: 4.
3. METHODOLOGY

3.1. Data collection tools

A number of methodologies were used in the conduct of this study. These are briefly elaborated in the sub-sections below.

3.1.1. Brainstorming

The **objective** of this methodology was to make use of the contractor’s existing knowledge of the national farm accounts survey data collection systems, of the use Member States make of the results from the national farm accounts survey and of the organisation and use of similar systems in third countries, plus the research expertise within our team in order to assist with the structuring of the project and the development of the various methodological tools (including specifically interview topic guides and questionnaires). This methodology also utilised our panel of expert advisors (see below).

The **output** from this methodology was the elaboration of the overall approach to the study, the development of the descriptive sections, the identification of sources of information, the identification of the criteria for the selection of case studies, the elaboration of the methodology and tools to be used (including case study structure and defining the scope of the literature review). This methodology was also used to guide the analysis and reporting phases.

Regular brainstorming sessions took place throughout the study for the purposes set out above. The study team held a number of discursive meetings to refine our approach to the study. The output from these sessions included the questionnaire used in the online survey, the topic guide employed in the discussion held in case study countries, the proposed analysis to be undertaken and the structure and content of reporting.

3.1.2. Expert advisory team

The **objective** of this methodology was to provide guidance, advice and validation at key stages of the study.

The **output** from our use of the expert advisors fed into various stages of the study, but was especially important in our analysis and in validating our conclusions.

We established a panel of high level expert advisors to help guide the study. These were:

- David Cawley, formerly senior economist at Defra and one time UK representative on the FADN Committee
- Professor Sophia Davidova, Professor of European Agricultural Policy, University of Kent
- Dr Shingo Kimura, Organisation for Economic Co-operation and Development (OECD)
- Dr Laure Latruffe, Researcher in Applied Agricultural Economics, Institut national de la recherche agronomique (INRA)
- Professor Cristina Salvioni, Associate Professor of Agricultural Economics, University of Chieti-Pescara

The expert advisors were used at strategic points in the study to provide advice and guidance to the study team. At an early stage this was especially important in providing advice on information sources to be used and in designing the online survey.
questionnaire and setting out the case study topic guide. As the study progressed the expertise of our advisors was helpful in making the final case study selection and in peer-reviewing our analysis, conclusions and recommendations. We retained a flexible approach and requested feedback from individual team members where we felt that this would be useful. Of particular note was the contribution of Dr Laure Latruffe to the French case study.

3.1.3. Literature review

The objective of this methodology was to gather as much data and relevant literature as possible and to identify the precise relevance of this data/literature to the different study themes.

The output from our literature review provided an evidence base which was used, in particular, in constructing the descriptive chapters and in addressing all four study themes. The literature review also played a role in identifying the criteria for selecting the case studies.

The literature review was dynamic in that it was updated with information coming to light throughout the project. The identification of literature was facilitated by our team’s extensive knowledge of national farm accounts surveys and the FADN system and how it is built up in a range of Member States. This meant that the risk of important information sources being missed was considerably reduced. In practice, the majority of the literature of direct relevance to this study is contained within a few sources, mainly the Pacioli workshop reports, and a series of unpublished papers made available by the FADN unit within DG AGRI.

Once identified, literature was screened for relevance. For example, the Pacioli workshop reports were read to identify which contained material relating to the themes under consideration in this study. The collection of literature was simply a logistical task which involved retrieval of the articles to be reviewed. Once collected, literature was reviewed in detail and used to construct our literature review.

3.1.4. Online survey

The objective of the online survey was to gather comparable information for all 28 Member States on the organisational structure of the national farm surveys, data collection methodologies, costs (resource use and financial) and the uses to which the data are put at national level.

The main output from this survey was a comprehensive and consistent dataset for the inventory of national approaches and the establishment of a typology of approaches to validate the selection of case study countries. Additional outputs include a headline view of the situation across all EU-28 Member States, including cost information where this has been supplied. The online survey results were used in the analysis of the study themes.

An online survey of FADN Liaison Agencies in each Member State (and their equivalents in Norway and Switzerland) was carried out. The survey was designed to be easy to complete with a focus on closed questions. The intention was that the FADN Liaison Agencies could complete the questionnaire with known information without the need for additional research. An exception to this was the section on resource requirements and costs. Although we did not expect to receive comprehensive answers here, in practice response rates were better than anticipated.
The questionnaire was developed from the requirements for the inventory and was designed explicitly to populate this in a consistent manner; too much of the material in the literature was not comparable in either time or scope. The final version of the questionnaire benefited from comments provided by our expert advisors and the study’s Steering Group (coordinated by DG AGRI). Responses were facilitated by the opportunity provided to the contractor by the Commission to attend the 194th FADN Committee Meeting in Brussels on 11 March, 2015, at which the Commission introduced the study to Member State Liaison Agency delegates and requested cooperation with the study. The contractor stressed the importance of completing the online questionnaire and requested assistance.

Once finalised the questionnaire was transformed into an online script for use with our online survey software (SurveyMonkey). A contact list provided by the DG AGRI FADN unit was used to disseminate the survey which was launched on 26 March, 2015. Ultimately responses were received from the EU-28 (plus Norway and Switzerland).

The survey responses were subjected to a validation process and amendment where necessary. We are confident that the replies received and validated provide comprehensive and accurate information.

3.1.5. Case studies

The objective of our case studies was to provide detailed information on the organisation of the national farm survey data collection systems, the methodologies used to obtain the data, the costs of implementation on a total and marginal basis and the use to which national farm accounts survey data are currently put. By selecting the case studies to take account of the diversity of organisational and methodological approaches we ensured that they are representative of the approach taken in the EU-28 as a whole.

The output from the case studies was a series of Member State fiches providing (i) a description of the organisation of the national farm survey data collection network; (ii) description of the methodological approach to data collection; (iii) an assessment of the costs involved in data collection; and, (iv) a description of the national uses to which the national farm accounts survey data are currently put. The information gathered formed part of the evidence base on which the analysis of the themes was carried out.

3.1.5.1. Selection of case studies

It was agreed that the final case study selection should cover the majority of collected FADN data. This provided the first constraint in selecting our case studies: the need to include at least three of the four Member States with the largest FADN samples, i.e. Germany, Italy, Poland and Spain.

The second constraint was the need to ensure that the case studies selected covered each of the main patterns of data collection within national farm accounts surveys. Our literature review was used to address this second criterion, though it was recognised that some of the information may have been outdated or incomplete (case studies had to be chosen in advance of the results of the on-line survey coming to hand). In doing this our selection focused on the need to understand the resource and cost implications of different approaches to data collection. We considered the organisation of the national farm accounts survey, including which organisation collects the data and how this organisation relates to the Liaison Agency (data collected by employees of the Liaison Agency, accounting firms, etc.). We also considered the data collection methodology (based on the mixture of existing administrative records, the use of information from accounts and primary data collection from farmers).
Based on the above constraints, a proposal was made to carry out case studies in the Member States presented in Table 3.1. The first three were included in order to ensure that, overall, the majority of FADN sample farms was covered. Additional reasons for selecting these Member States were:

- **Germany**: partial use of administrative records, use of accountancy firms, federal structure with regional variations (on the advice of the Liaison Agency we decided to focus on Bavaria and Sachsen-Anhalt to provide a contrast in circumstances).
- **Italy**: 19 regions and 2 autonomous provinces, very heterogeneous in scale and type of farming.
- **Poland**: new Member State, heterogeneous farm sizes, data collected by agricultural advisory centres.

We also felt that there was a strong rationale for including:

- **Sweden**: extensive use of administrative records and the designation of the national statistics organisation as FADN Liaison Agency.
- **Netherlands**: some use of administrative records, sophisticated use of IT and long established uses of the data.
- **UK**: long-standing national farm accounts system and use of universities to collect data under a tendering arrangement.

The rationale for selecting the remaining three case studies was less compelling. In the interests of providing a good balance between the EU-15 and new Member States we suggested that two of these should be relatively recent additions to the Union. A Baltic State and Black Sea Member State were proposed to provide geographic balance. In order to cover the most FADN sample farms (and thereby respect the first criteria) we selected **Lithuania** and **Bulgaria**; this also provided one Member State where the Liaison Agency is the Ministry (Bulgaria) and one where it is an institute (Lithuania). We selected **France** as the remaining case study country to ensure that our total coverage exceeded 50% of FADN sample farms. France also has a substantial number of farms for which the keeping of accounts is not required by the national tax system and because of the regional approach taken there. Table 3.1 presents the case study countries selected which together account for 56% of the total FADN sample.

**Table 3.1: Case study coverage**

<table>
<thead>
<tr>
<th>Member State</th>
<th>Contribution to coverage</th>
<th>Reason for selection</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bulgaria</td>
<td>3%¹</td>
<td>Liaison Agency: Ministry. Economic Size threshold low and therefore small farms are included. Different approach to data collection depending on existence of accounts. Data collection by advisory service. Data collection via multiple farm visits and recorded on paper. No national validation of data. National system introduced to meet the requirements of FADN. Data provision to external users is restricted. Geographical balance and new Member State.</td>
</tr>
<tr>
<td>Germany</td>
<td>10%¹</td>
<td>Accounts for a major proportion of total Farm Returns.</td>
</tr>
<tr>
<td>Member State</td>
<td>Contribution to coverage</td>
<td>Reason for selection</td>
</tr>
<tr>
<td>--------------</td>
<td>--------------------------</td>
<td>----------------------</td>
</tr>
<tr>
<td>France</td>
<td>9%&lt;sup&gt;1&lt;/sup&gt;</td>
<td>Accounts for a major proportion of total Farm Returns. Liaison Agency: Ministry. Regional approach. Data collection by accountancy firms. National selection ensures farms falling within the fixed tax regime and those compiling standard tax returns are included. Collection of additional output information. Data collected from accounts and via farm visits.</td>
</tr>
<tr>
<td>Italy</td>
<td>13%&lt;sup&gt;1&lt;/sup&gt;</td>
<td>Accounts for a major proportion of total Farm Returns. Liaison Agency: Institute. 19 regions and 2 autonomous provinces, very heterogeneous in scale and type of farming. National system includes parallel survey for the Economic Accounts for Agriculture (EAA) which also covers smaller farms. Data collection by Institute. Compulsory participation. Collection of additional output information.</td>
</tr>
<tr>
<td>Lithuania</td>
<td>1%&lt;sup&gt;1&lt;/sup&gt;</td>
<td>Liaison Agency: Institute. Lithuanian Agricultural Advisory Service (LAAS) collects data from family farms; (Lithuanian Institute of Agricultural Economics, LIAE), Liaison Agency) collects data from agricultural companies. Geographical balance. New Member State.</td>
</tr>
<tr>
<td>Netherlands</td>
<td>2%&lt;sup&gt;1&lt;/sup&gt;</td>
<td>Liaison Agency: Institute. Additional national criteria for stratification of field of survey. Use of different size classes within farm type and separate stratum for organic and nationally important sectors. Maximum size threshold and limits on proportion of non-agricultural income. Additional data collected. Data collection is carried out by the Liaison Agency’s regional data collectors. Data collection based on documentary evidence as</td>
</tr>
<tr>
<td>Member State</td>
<td>Contribution to coverage</td>
<td>Reason for selection</td>
</tr>
<tr>
<td>--------------</td>
<td>--------------------------</td>
<td>----------------------</td>
</tr>
<tr>
<td>Poland</td>
<td>14%¹</td>
<td>Accounts for a large proportion of total Farm Returns. Liaison Agency: Institute. Data collected by regional agricultural advisory centres. The national farm survey exceeds the scope of EU FADN (additional data are collected). Large network of data providers. No obligation for holdings to keep accounts. New Member State.</td>
</tr>
<tr>
<td>Sweden</td>
<td>1%¹</td>
<td>Liaison Agency: Statistics Sweden. Complex data collection involving multiple organisation (Statistics Sweden, Board of Agriculture and accountancy firm), registers and data sources. Users extend beyond national government to include sector organisations.</td>
</tr>
<tr>
<td>United Kingdom</td>
<td>3%¹</td>
<td>Liaison Agency: Ministry. Regional approach. Long-established farm accounts system. Additional national criteria for stratification of field of survey. Additional national selection criteria. Data collection via universities under contract and tender procedure (data collected by the Liaison Agency in Northern Ireland). Data collection via questionnaires with supporting evidence.</td>
</tr>
</tbody>
</table>

TOTAL coverage  56%¹

In retrospect, the choice of EU case studies proved to meet well the needs of this study. In addition, our research proposal included a comparative study of FADN with the equivalent information source in a third country. Many non-EU OECD countries have them in some form. Even within the Pacioli literature contributions are frequently found from *inter alia* Norway, Switzerland, Macedonia, Canada and the USA; the first two are rather similar to their respective EU neighbours and were covered in our online survey.

The purpose of this exercise was to find examples of good practice which may have relevance to FADN. It was therefore important to focus on a country in which the microeconomic data collected from farms can be demonstrated to have multiple and diverse uses, where statistical robustness is high, and yet where the collection methods are feasible within the EU as a whole. Though there would no doubt be some features of collection and use in any of these that might be worthy of note, on balance our judgement was that the most instructive comparison would be with the USA. That said, it is important to be mindful that there are differences between the USA approach and that of FADN which will need to be borne in mind when considering best practice; there is no utility in trying to learn lessons which are incompatible with the FADN.
A further reason for choosing the USA is the large amount of documentation that is readily available in electronic form, thus making the case study a desk exercise. However, personal contacts with senior United States Department of Agriculture (USDA) Economic Research Service staff were also required to supplement the literature where this was necessary.

3.1.5.2. Case study conduct

The case studies provided analytical depth across the range of Member States selected. Their key strength was in allowing us to investigate the impact of different approaches on data collection costs, on the utility of the data produced and in identifying best practice across the EU.

The organisations to interview were determined in consultation with the respective Liaison Agency. The organisational structure within each Member State determined the coverage required. In Member States with a centralised organisation (for example, Netherlands, Sweden, Lithuania) fewer interviews were required than in Member States with a more significant regional dimension (for example, Germany and the UK).

The case study interviews were carried out as follows (subsequently several additional phone calls and email exchanges also took place):

<table>
<thead>
<tr>
<th>Country</th>
<th>Dates</th>
</tr>
</thead>
<tbody>
<tr>
<td>UK (England, Scotland, Wales and Northern Ireland)</td>
<td>23 March, 10 April, 1, 11, 12, 14, 20, 21 May, 2015</td>
</tr>
<tr>
<td>Sweden</td>
<td>14 April, 2015</td>
</tr>
<tr>
<td>Netherlands</td>
<td>17 April, 2015</td>
</tr>
<tr>
<td>Lithuania</td>
<td>22, 23 April, 2015</td>
</tr>
<tr>
<td>Germany (Bavaria and Sachsen-Anhalt)</td>
<td>20, 28, 29 April, 11 May, 2015</td>
</tr>
<tr>
<td>Poland</td>
<td>8, 9 May, 2015</td>
</tr>
<tr>
<td>Italy</td>
<td>29, 30 April, 4 May, 2015</td>
</tr>
<tr>
<td>Bulgaria</td>
<td>5, 12, 13 May, 2015</td>
</tr>
<tr>
<td>France</td>
<td>6, 11, 12, 13 May, 2015</td>
</tr>
</tbody>
</table>

Some meetings were held with single organisations, while others were held with participants from several organisations. In all situations discussions followed the same Case Study Topic Guide that had been converted to tabular form to facilitate the collection of information in a systematic way. Meeting notes were returned to participants as soon as was practicable and clarifications incorporated. On receipt of the completed case study notes, a quality control procedure was undertaken. This began with a review by the Project Manager to ensure that all required information had been completed. The Project Manager then assessed the case studies to ensure that they had been completed in a coherent manner and that the questioning had been carried out to the required depth. In carrying out this assessment the Project Manager identified areas where further information was required, and follow-ups were organised to achieve this.

3.1.6. Attendance at relevant workshops/meetings

The plan of work included attendances at relevant workshops and meetings throughout the course of the study to both inform interested parties about the study and also to gather additional information. Clearly this activity was dependent on the timing of suitable events and receiving invitations. Ideally the 2015 Pacioli meeting would have been attended, but this took place at the end of September and therefore fell outside the pertinent time period of our study.
Nevertheless, several opportunities arose that were more timely. As noted above, an invitation was accepted to attend the 194th meeting of the FADN committee in Brussels (11 March, 2015). This provided an opportunity to explain the purpose of the study, briefly inform delegates about its organisation, stage of the work and encourage cooperation with the study. The contractor also took the opportunity to network with Member State officials who would be targeted by the online survey and the case studies.

Members of the study team attended the 89th Annual Conference of the Agricultural Economics Society at the University of Warwick, England on 13 - 15 April, 2015, the 29th International Conference of Agricultural Economists in Milan, Italy on 9 – 14 August, 2015 and the Rural Business Research and Defra Farm Business Survey Seminar in London, 9 September, 2015. These conferences provided an opportunity to talk to many members of the international agricultural economic research community about their use of FADN data in research; members of government departments which use FADN data were also in attendance and many useful insights were gleaned. The contacts provided and suggestions made provided useful background, particularly on access to FADN data for research purposes and the uses to which FADN data are put.

### 3.1.7. Interviews outside the FADN data supply chain

Interviews were held with several people during the course of our case studies who also have wider expertise of FADN, for example, the current coordinator of the FP7 FLINT project and the organiser of the Pacioli network. Additional interviews were held with senior Commission officials who are able to comment on FADN from a wider perspective. Similarly, discussions were held with a senior official within the OECD and a UK Defra official in the EU and International Directorate who were able to take an overview and were able to comment on FADN from the perspective of making international comparisons for policy purposes. The list of interviewees is as follows:

- Jens Schaps, Director, Directorate C - Single CMO, economics and analysis of agricultural markets, DG AGRI
- Pierre Bascou, Director, Directorate D – Direct support, DG AGRI
- Tassos Haniotis, Director, Directorate E - Economic analysis, perspectives and evaluation; communication, DG AGRI
- Josefine Loriz-Hoffmann, Director, Directorate F - Rural development programmes I, DG AGRI
- John Bensted-Smith, Director of the JRC Institute for Prospective Technological Studies (IPTS)
- Catherine Moreddu, Trade and Agriculture Directorate, OECD
- Grant Davies, Economic Advisor, CAP Analysis & Reform, Better Regulation, EU and International Directorate, Department for Environment, Food and Rural Affairs (Defra)

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12 FLINT (Farm Level Indicators for New Topics in Policy Evaluation) is an EU Framework 7 project which will define Farm Level Indicators to improve the policy evaluation on, *inter alia*, cross-compliance, sustainability and innovation in the CAP. The data collection on these indicators will be linked to the FADN Network to the extent possible, although alternatives will be explored. Project reference: 613800.
4. THE LEGAL, INSTITUTIONAL, ORGANISATIONAL AND ECONOMIC FRAMEWORK AT MEMBER STATE LEVEL

Inventories setting out the organisation of FADN in each EU Member State, including how data are collected, have been populated from our literature review, our online survey and our cases studies; these were used as an evidence base for the analysis. Key information which can be used to quickly compare the situation between Member States contains the following categories and items:

**Organisational issues**

- FADN Liaison Agency
- Actors involved in:
  - Sample creation/selection
  - Sample recruitment
  - Data collection
  - Data checking/validation
  - Submission to RICA-1
  - National publication of results
  - Feedback to participating farmers

- Number of FADN regions
- National farm accounts survey established
- National sample size
- Scope of coverage (additional variables)
- Depth of coverage (i.e. greater detail)
- Economic size threshold (Standard Output)
- FADN sample size
- Field of observation coverage
- Annual change in sample (2012-2014)
- Incentives used for farmer participation

**Data collection methodologies**

- Main data collection methodologies
- Data sources
- Data recording method
- Data validation stages
- Release of validated data

**FADN resources and costs**

- Total expenditure on the national farm accounts survey (2012-14 average)
- Average cost per completed FADN Farm Return (2012-14 average)
- Average cost per completed national Farm Return (2012-14 average)
- Liaison Agency staff required for data organisation and processing (including validation)
- Liaison Agency staff required for data collection (if applicable)
- Other data collection staff
- Average number of completed Farm Returns per full-time equivalent (FTE) data collector
**Data use**

- Use by national and/or regional government
- Use by other organisations and farmers
- Access to an online national farm accounts survey database

It should be noted that this Inventory of key information does not contain a category on legislation. The legal framework within which farm accounts surveys operate was, in the years 2010-12 (which formed the specified reference period for this study), Council Regulation (EC) No 1217/2009 of 30 November 2009, described in detail in section 5 below. There is also related implementing legislation. Because this legislation is in the form of a Regulation it is directly applicable in all Member States.

However, certain Member States have additional national legislation directly relating to their national farm surveys. Sometimes this national legislation refers to setting up the infrastructure and data collection processes in advance of joining the FADN network. In other countries there is national legislation covering issues such as data confidentiality. There are also situations where undertakings (i.e. assurances rather than specific law) have been given to cooperating farmers which place a restriction on the freedom of FADN to integrate with other data sources. Again, section 5 below provides more details. The ability to develop FADN in certain directions may face constraints as a result of these legal and quasi-legal restrictions.

National legislation is detailed in the online survey results, but is not contained in the summary of key information because it does not materially impact on the operation of the FADN network.
5. ORGANISATION OF FADN AND METHODS OF COLLECTING THE DATA

This section is concerned with the analysis of Theme 1 of this study (see section 1.1 above for a list of the Themes) and reports on the organisation of farm accounts surveys in Member States and their data collection methods. The analysis draws on evidence from our online survey, the case studies and the literature review. Where patterns can be identified in this evidence, these are described. The analysis covers all EU-28 Member States and culminates in the production of a typology by data collection method which is then used to structure the analysis from Chapter 6 onwards. A retro-fitting of the typology to the analysis in this Chapter reveals very little. On occasions where it appears that there is a pattern this is mentioned in a footnote.

5.1. Legal framework and background to the national farm surveys

Before the framework in which FADN operates at Member State level can be understood and its organisation appreciated, it is first necessary to set out the legal framework and, second, the circumstances in which the contribution by Member States to EU-FADN was established. Path dependency is a feature of decisions in public policy, not least in that relating to agriculture, and this is also a characteristic common in the collection of FADN data.

5.1.1. Legal framework

5.1.1.1. General legislation

The EU-FADN legislation is in the form of Regulations (rather than Directives) and therefore applies in each Member State without the need for additional national legislation. However, in 16 Member States there is additional national legislation. As a generality, national legislation is more common in Member States which joined the EU in 2004 or subsequently (it is found in Bulgaria, Croatia, Cyprus, Czech Republic, Hungary, Latvia, Lithuania, Poland, Romania, Slovakia and Slovenia). Only Austria, France, Germany, Greece and Luxembourg among the EU-15 Member States have national legislation. Estonia and Malta are the only relatively new Member States which do not have additional national legislation.

Our case studies in Bulgaria, Lithuania and Poland (and scrutiny of the legislation in the non-case study countries) revealed that national legislation was required to establish, prior to accession, the mandate for a national farm survey which accorded with FADN requirements. After accession the implementation of the national farm survey operated under the EU legislation. National legislation typically designated the Liaison Agency and established the composition and mandate of the National FADN Committee. Data-collecting organisations are also sometimes specified. Much of the national legislation, however, sets out definitions and clarifies operational aspects that are set out in the EU Regulations, such as that participation is voluntary and that data are not to be used for tax purposes. National legislation was not deemed necessary in Estonia, probably because a national farm survey was in use from 1997, i.e. sometime before accession.

The national legislation in Germany dates to 1955 (in the former Federal Republic of Germany) and established the national farm accounts survey. The national legislation in France merely makes reference to the EU Regulation and sets out the implementation of FADN in France; the Greek legislation performs a similar function. The legislation in Luxembourg is the general legislation on rural development and stipulates that the beneficiaries of investment aid may be required to provide accounting information; it is not clear whether this is within the framework of the national farm accounts survey or separate from it as in Germany.
There are legal constraints relating to the national farm survey in a number of Member States. In **France**, Romania and **Sweden** there are constraints on the data collection methods. (This is also the case in Norway.)

### 5.1.1.2. Legislation on national uses of existing data

Another aspect of the legal framework of relevance to this study relates to the potential use of existing data relating to individual farms. One form of this are the legal constraints on the use of various administrative data, by which we infer Integrated Administration and Control System (IACS) records, agricultural census material, etc. taken from registers held by the source organisations (printed output from these organisations supplied by the farmer is not included).

In the online survey six Member States reported constraints on the use of administrative records, though in practice the situation is not always clear cut; among non-case study countries, those reporting legal constraints were Belgium, Cyprus, Czech Republic, Slovenia (and Norway). However, the case study countries showed that the real situation concerning access can be more nuanced. In **Germany**, the strict position is that access to administrative records for completion of parts of the national farm accounts return is not permitted (although revision of this situation is under consideration). However, we were told in discussions with data collectors that, in practice, administrative databases such as IACS and cattle tracing systems (HIT) are used by bookkeepers/data collectors to verify data gathered from farmers, and access does not require the permission of farmers; these data are made available by Länder administrations. In the **Netherlands**, another case study country, the general laws on confidentiality mean that direct access to administrative data is not allowed, though in practice the legal constraint is not an issue; farmers there are asked for their permission to access administrative records and much else (such as bank records) which allows their use\(^{13}\). The only type of data used for which farmer permission is not sought explicitly is the use of agricultural census results.

It is not legally possible to use taxation records held by taxation authorities as a data source in nine Member States (plus Northern Ireland in the UK, and Norway), though of course farmers may voluntarily make what they submit available to data collectors. However, irrespective of the legal situation, our case studies revealed that taxation records would not be able to provide much of the data that are required under FADN because they are insufficiently detailed. There is also the suggestion that their contents may be influenced unduly by their purpose, with an inbuilt bias towards minimising income subject to taxation.

There are no legal constraints on the use of administrative or taxation data in well over half the Member States (17, including the UK (England, Scotland and Wales)). The issue of administrative records is revisited on a number of occasions in the analysis contained in this study.

### 5.1.1.3. National legislation on the use of results

Legal constraints on the use of results from national farm accounts surveys are more common. These exist in 13 Member States. However, the nature of the constraints in use is not clear from the survey, although it is a requirement of the FADN legislation that data remain confidential (and cannot be used by governments for tax purposes). Our case studies suggest that what is constrained is the access to individual data, as well as

\(^{13}\) A similar permissive approach to access to existing electronic data is taken in Germany where farmers can agree to have data made available to bookkeepers which reduces the burden they face in providing information themselves; the vast majority agree.
access to aggregated data where the number of data points falls below a certain level and could possibly be used to identify individual farms/holdings. It may therefore be that, when replying to our online survey, some Liaison Agencies were referring to this confidentiality issue rather than additional national restrictions. Nevertheless, our case studies found that there are circumstances in which individual data can be made available for research purposes, typically involving the removal of variables that would allow individuals to be identified (see later analysis under Theme 3 of the uses of data).

5.1.2. Establishment of national farm surveys and current rationale

The online survey showed that the first Member State to establish a national farm survey was Finland in 1912 (although Norway established its farm survey in 1911). Another Nordic country, Denmark, was also an early adopter of a national farm survey (1918). National farm surveys were established in the UK in 1936 and Sweden in 1939, in the Netherlands in 1940 and in Germany, Luxembourg and Austria in 1955, 1958 and 1959 respectively. The Belgian national farm survey was established in 1960. All these Member States therefore have national farm surveys which pre-date the introduction of the EU-FADN in 1965; the early roots of these surveys are a strong influence on the way in which the requirements of EU-FADN have been met subsequently and, in particular, our case studies demonstrate that the collection methods have proved to be remarkably durable. France and Italy established national farm surveys after the introduction of EU-FADN, Greece, Ireland and Portugal after accession and Spain after the introduction of FADN but 14 years before accession.

Amongst the more recent Members of the EU, national farm surveys were established in anticipation of accession in Bulgaria, Croatia, Malta, Lithuania, Romania and Slovakia. National surveys were established somewhat earlier in Cyprus, Czech Republic, Estonia, Hungary, Latvia and Slovenia. Our case study of Poland found that the roots of surveying farm accounts there go back to 1920, with a remodelling of the system in 1956, though the survey in its present form was established only in 2004 to meet the requirements of accession.

For all Member States the current rationale for maintaining the national farm survey has to be, at least in part, compliance with EU requirements. However, many countries also indicated a national rationale in responses to our online survey; only eight Member States (Belgium, Bulgaria, Croatia, Greece, Malta, Romania, Slovakia and Slovenia) did not cite national purposes as a current rationale (though for Slovenia the literature review found that its establishment in 1994 was in order to provide economic advice and as an input to agricultural policy). In the case of Belgium this is because there is a regional rather than a national purpose. This implies that, in the absence of the FADN requirement, these Member States without an explicit national purpose may not carry out a farm accounts survey and this could be seen as a defining characteristic (although Belgium probably would through the regional approach). (This issue is revisited in the analysis of benefits under Theme 3, where Germany, Lithuania and Poland indicated that they definitely would continue with a national survey; Bulgaria, Netherlands, Sweden and the UK were uncertain.)

5.2. Analysis of FADN organisation

5.2.1. Organisation of the national farm survey

5.2.1.1. Status of the Liaison Agency

The status of Liaison Agencies (LAO) falls into two main groups, Ministries and public research institutions. Atypically, in Denmark and Sweden the Liaison Agency is the government statistical body. Liaison Agencies are located in Ministries in 12 Member States (Austria, Belgium, Bulgaria, France, Greece, Luxembourg, Malta, Portugal,
Romania, Slovenia, Spain and the UK). Liaison Agency function is provided by public research institutions in 14 countries (Croatia, Cyprus\footnote{In 2015 (after the reference period for this study) responsibility for FADN in Cyprus was transferred from the Agricultural Research Institute to the Department of Agriculture.}, Czech Republic, Estonia, Finland, Germany (although only since 2012), Hungary, Ireland, Italy, Latvia, Lithuania, Netherlands, Poland and Slovakia). In terms of typology, it is more common for the Liaison Agency to be a Ministry rather than an institute in EU-15 Member States (eight c.f. five) while the selection of a public institute is more common in newer Member States (nine c.f. four).

The rationale for the selection of public institutes rather than Ministries as the Liaison Agency is usually a matter of history but, among the more recent Member States, related also to skill set and capacity at the time that the national survey was set up (among our case studies both Lithuania and Poland represent examples). It is rare for the LAO to change, and when it does the reasons seem to have little connection with the performance of the survey.

- **Germany** provides an example in which, according to information gathered in our case study, the Federal Ministry of Food and Agriculture (BMEL) handed over LAO responsibility to the Thünen Institute; the explanation appears to be linked to changes taking place within the BMEL.

- In Denmark, according to our literature review and a discussion with the Liaison Agency, the Danish LAO unit was moved from the University of Copenhagen to Statistics Denmark in 2009 as the result of a government decision to gather all official statistics in Denmark in one place. The intention was to maintain critical mass for agricultural statistics and make use of the synergies between FADN and other agricultural statistics. This relocation did indeed provide some advantages, for example Statistics Denmark has a Section of Survey and Methods, which has helped to improve the sample used for FADN and national farm statistics (Hækkerup, 2010). A disadvantage of this relocation has been the greater distance placed between the data collection process and the researchers who use the data.

There are also situations in which the nominated LAO is the head of a rather complex set of institutional arrangements. For example, in the **UK**, the ministry (Defra) which is the LAO has passed operational responsibility for supplying data to EU-FADN to the devolved governments of Wales, Scotland and Northern Ireland (while retaining responsibility for England). In **Sweden**, although Statistics Sweden is the LAO, the Board of Agriculture is heavily involved in both data collection and in dissemination, even though the main data collecting organisation (LRF Konsult) is under contract to the LAO.

In general, the status of the LAO seems to be primarily a matter of administrative convenience. Though a case could be made that communication between, on the one hand, the EU-FADN Committee and the administrators in the Commission and, on the other, national data collection systems might be affected by which organisation formed the LAO, any such problems could be minimised by good internal exchange of information. There seems to be no obvious association between the nature of the LAO and the functioning of the national farm accounts survey.

### 5.2.1.2. Organisation of the FADN supply chain

Although there is considerable variety in terms of the division of responsibilities along the FADN supply chain (by which we mean the relationship between organisations that undertake activities from sample selection, recruitment, data collection, validation, submission to RICA-1 and national dissemination and feedback), funding responsibility
rests almost universally with government ministries, with the exception of Finland where it is the Natural Resources Institute Finland (although as a public research body ultimately this receives government resources).

In response to our online survey, the summary rationales provided for the plethora of organisational structures varied little between Member States with most claiming both historic and practical reasons. Some 21 Member States (all except Croatia, Greece, Lithuania, Malta, the Netherlands, Portugal and Romania) said that the reason for the organisational structure was historic and all but Austria, Netherlands, Slovakia and Spain said the rationale was practical. In some Member States there is national legislation assigning responsibility for activities to various organisations; in these situations it is assumed that the rationale was practical. Rather fewer Member States said that the rationale was budgetary (in combination with historic and/or practical rationales) (Bulgaria, France, Germany, Latvia, Lithuania, Poland, Slovenia, Spain and the UK (England and Wales)). Ultimately most Member States cited at least two rationales. Perhaps the most useful way to distinguish Member States on this metric of the rationale for the present organisational structure is the citation of budgetary reasons, as this suggests some consideration of alternatives. Among case study countries, the Netherlands stands out in this analysis for stating that the organisational structure was designed to be independent and objective. However, many other Member States would no doubt also claim that their organisational structure is independent and objective; this was a factor in the UK’s selection of the universities as data collectors.

Discussion with the other case study countries frequently found that historic and practical factors were predominant in determining responsibilities along the data supply chain, and where there were national surveys that predated EU-FADN, the earlier structures have tended to continue or to evolve in minor ways.

The organisational structure is fairly stable, with 24 Member States reporting no change in the last ten years/since accession. The significant organisational changes that have been made include:

- **Denmark**, where in 2009 the government decided to gather all official agricultural statistics within Statistics Denmark (which involved a repositioning of the LAO). Until 2009 the Danish liaison “FADN office” was at a research institute. The board of directors of the research institute, which included representatives of farmers, also functioned as the National FADN Committee. As noted above this change was not directly linked to the performance of the farm accounts system but more to a governmental decision on agricultural statistics in general. It was done mainly to maintain critical mass for agricultural statistics and to make use of the synergies between other agricultural statistics and accounts (FADN) statistics.
- **France**, where the Ministry took over all tasks in 2007. The case study interviews found that, prior to 2007, the management of the national farm accounts survey was shared among the Service de la Statistique et de la Prospective (SSP – part of the ministry of agriculture), Institut national de la statistique et des études économiques (INSEE) and the INRA. These were respectively in charge of the collection phase, storage of the Farm Return, and scientific development. From 2007 the SSP has been in charge of all of these functions, and within SSP the Pôle RICA has the responsibility for all relevant aspects of the survey.
- **Germany** where the Liaison Agency moved from the Federal Ministry (BMEL) to the Thünen Institute in 2012. As noted above, this does not seem to have been brought about for reasons connected with the performance of the national farm accounts network (the TBN).
- The **UK (England)** where the case study discussions found that responsibility for data collection had moved from individual agreements between the ministry and a set of universities and colleges, each of which had collected data in their
respective provinces (regions) since the 1930s, to a single contract with a consortium of these academic institutions (Rural Business Research – RBR) led by the University of Nottingham (2009). This arrangement maintained the explicit separation and independence of the data collectors from government (which has traditionally been thought of value). In theory, because the contract with RBR is let by tender after open competition, there should be cost advantages as well as more straightforward management for the ministry.

**Box 5.1: Case Study of USDA’s ARMS: Organisation of the data collection**

The Agricultural Resource Management Survey (ARMS) is the primary source of information to the US Department of Agriculture and the public on production practices, resource use and costs of America’s farm businesses, the economic well-being of America’s farm households and the farm sector’s financial conditions. ARMS is a collaborative operation between two agencies of the USDA - The Economic Research Service (USDA-ERS) and the National Agricultural Statistics Service (USDA-NASS). ERS is a main initiator of the types of information to be collected and a principal user of the data, while NASS is responsible for the data collection process.

**5.2.2. National FADN Committees**

The National FADN Committees typically have representation from along the FADN supply chain and generally Government statistical bodies and farmers’ organisations are also represented. According to the results from our online survey, government statistical bodies are not represented on the Committee in only five Member States (Belgium, Finland, France, Luxembourg and the UK – though in the latter statistics generated by Defra often have the status of official national statistics).

Farmers appear not to be represented on the Committee in 11 Member States (Belgium, Cyprus, Denmark, Germany, Greece, Ireland, Malta, Netherlands, Portugal, Romania and the UK)

15 Various explanations have been encountered. In the case of Denmark, despite not now being represented on the Committee (they were under the arrangements that existed before 2009), there is close cooperation with the farmers’ organisation. According to correspondence with the Danish Liaison Agency it does not consider it particularly relevant to include farmers on the Committee because there is no direct contact with farmers during data collection in that country. With respect to Romania, it is simply the case that the national legislation does not permit the costs of travel, accommodation and subsistence incurred by attendance at meetings to be covered. In the UK the reasons for the non-inclusion of farmers is lost to history, but (according to our expert advisor from the UK, formerly in charge of the UK national farm accounts survey) the explanation is likely to lie in a much lower level of stakeholder engagement in government business at the time that the survey was established in the 1930s, combined with a desire for the survey to be independent from stakeholders with a vested interest in the results.

National FADN Committees are responsible for the approval of the selection plan

16, but many have additional functions, though these vary between Member States. According

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15 There is some relationship to the typology in that the UK is the only Member State where data collection is carried out by public advisory services not to have farmer representation on the FADN Committee.

16 Regulation (EC) No 1217/2009 states in Article 6 that "the National Committee shall be responsible for the selection of returning holdings. To this end, its duties shall, in particular, include approval of:

(a) the plan for the selection of returning holdings, specifying in particular the distribution of returning holdings per category of holding and the detailed rules for selecting the said holdings;
(b) the report on the implementation of the plan for the selection of returning holdings".
to replies by Liaison Agencies to our online survey, most common is a role in addressing problems and difficulties (all except Belgium, Finland (although recommendations can be made here), Greece, Ireland, Latvia and Luxembourg). In 11 Member States the Committee plays a role in reviewing the performance of data collectors (Bulgaria, Czech Republic, Estonia, France, Germany, Netherlands, Romania, Slovakia, Slovenia, Spain and the UK).

In some Member States the Committee approves the questionnaire and suggests amendments (Austria, France, Germany, Luxembourg, Romania and Slovakia) while in others the Committee only suggests amendments (Denmark, Ireland, Portugal, Slovenia and the UK). Finally, the Committee plays a guiding role in implementation in Austria, France, Germany, Greece, Hungary, Poland, Romania, Slovakia, Slovenia and the UK.

Taking an overview, the role played by the National FADN Committee can be used to distinguish two main groups; those Member States were it plays a major role, with multiple additional functions beyond its minimal legal requirements, and those where its function closely aligns with these minimal requirements. Austria, France, Germany, Romania, Slovakia, Slovenia and the UK fall into the first group and Belgium, Croatia, Cyprus, Finland, Greece, Ireland, Italy, Latvia, Lithuania, Malta and Sweden fall into the second group. Other Member States fall somewhere between the two.

Greece and Luxembourg are the only Member States where FADN Committee meetings do not take place in person (in Sweden the meetings occasionally take place in person). Ireland, Italy, Luxembourg, Malta, Sweden and the UK also all use online, video or phone conferencing and Denmark, Greece, Luxembourg, Malta and the UK also use correspondence.

In 21 Member States FADN Committee meetings are held annually with the others holding two or three meetings a year (Croatia, Denmark, Finland, Netherlands, Slovakia and the UK) or according to need (Austria and Greece). In Cyprus, Greece, Ireland, Latvia, Luxembourg and Malta meetings are held on an ad hoc basis; in all other Member States meetings are scheduled.

Regional Committees are found in Belgium (Flanders and Wallonia), Germany (each of the 16 Länder) and Spain (three). In Germany the Regional Committee meetings differ in frequency, but have a common representation and remit.

5.2.3. **Scope of national data collection**

5.2.3.1. **Number of national farm accounts survey cases**

According to the responses to our online survey, the sample size of the national farm survey is the same as the required FADN sample in most Member States. In eight Member States it is larger (Austria, Czech Republic, Denmark, Finland, Germany, Lithuania, Luxembourg and the UK). Often the reason for a larger sample is linked to the requirement to cover a broader range of farm types in the national farm accounts survey (for example, the literature review indicates that in Denmark there is interest in mink farming and the organic sector), and/or farms that are too small to be included in EU-

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17 No Member States where data collection is carried out the Liaison Agency fall into the first group and there is only one example (Sweden) where Member States which use accounting firms to collect data fall into the second group. This may suggest that greater Liaison Agency involvement in the FADN data supply chain replaces a need for involvement in the FADN Committee.

18 Member States need to have a slightly larger sample to allow for farms which do not ultimately fall within the typology or which are rejected.
FADN (for example, **Germany**, where in Bavaria there is also regional interest in specialist hop farms).

Discussions in case study countries showed that the judgement whether the national sample has more holdings than is required for FADN is not simple. It is common for some Farm Returns to be rejected when submitted to RICA-1 at Commission level, so Member States routinely collect more at national level to provide a safety margin. In the literature the European Court of Auditors was critical of the practices in some Member States of substituting farms from the surplus rather than identifying and correcting the reasons for rejection (ECA, 2004). Here we are more concerned with the size of the margin that Member States consider to be ‘normal’ so that when, under Theme 2, estimates are made of cost per completed Farm Return supplied to EU-FADN this only includes the normal safety margin. It should not include the costs of the (sometimes) substantial larger numbers of Farm Returns that some Member States collect for national purposes (for example, to give them coverage of farms that fall below the EU-FADN threshold).

Among case study countries with ‘larger’ samples, the **UK (England)** currently collects from about 1,900 farms in order to supply its required 1,500 EU-FADN Farm Returns; the size of the margin is being gradually reduced, but the judgement of the Liaison Agency is that to fall below 1,750 would cut the margin for error very fine. There would be an increasing danger of surveyed farms falling below the €25,000 SO threshold, leading to a focus on farms somewhat larger, which might leave no farms at the bottom of the size range. In **Germany** there is clearly a larger national sample than is required for EU-FADN (11,500 farms compared with the 8,800 holdings stipulated for EU-FADN), in part explained by the use of a lower national threshold and the need to have adequate numbers to explore issues of interest at Federal and regional levels. In **Lithuania** the larger numbers seem linked to the loss of holdings which through rapid structural change fall out of the typology required by EU-FADN.

### 5.2.3.2. Scope of coverage

In terms of scope of coverage (i.e. breadth of data collected to include variables such as household income and depth of data collected to include more detail of variables currently in the EU-FADN Farm Return), the national farm survey in 20 Member States exceeds the FADN requirements to some extent; mostly the additional scope and depth are found together, though in four countries (Croatia, Hungary, Lithuania and Poland) further depth is not accompanied by broader scope. The other eight countries in which the breadth of coverage is the same as EU-FADN are Bulgaria, Greece, Latvia, Malta, Romania, Slovakia, Slovenia and Spain.

The findings on depth of information in this study, based on responses to our online survey, are broadly in line with those of Delame and Butault (2010) who examined in detail the input and output categories used nationally and noted that only Bulgaria of the Member States they examined collected no additional data beyond the EU-FADN requirements (though another source claims that the Bulgarian national questionnaire is slightly more detailed than the EU-FADN questionnaire in terms of crops, assets and livestock). The literature review also indicated Member States where this extra breadth covered other sources of income received by the operator (such as Agra CEAS Consulting, 2007 and Hill, 2012) and, occasionally, more general additional categories. For example, in Ireland the data collected provides detailed information on economic, social and environmental aspects of the agricultural sector - see Kinsella, 2004). In Belgium the Walloon national farm survey covers additional technical, environmental and social data (Ministère de la Région wallonne, 2004).
Among the Member States selected as case studies, all except Bulgaria exceed in their national farm accounts surveys the requirements of EU-FADN. Information collected shows that there are different mixes of broader coverage and further depth, and some light is thrown on the reason for this additional coverage. In general it appears that broader coverage is primarily to provide information of national/regional policy interest, whereas greater depth is to enhance quality of results, though this should not be regarded as an absolutist assessment:

- The scope and depth of the national survey exceeds EU-FADN requirements in **France** with additional information on output variables collected and most headings further disaggregated, with feeds distinguished by type and livestock enterprise.
- Additional cost sub-headings are used in **Germany** and additional information on output variables is collected.
- In **Italy** the scope of the national survey is larger, as this includes additional variables mainly to investigate issues which have relevance specifically to Italy and in order to support national and regional policymaking. However, although the response to our survey states that the depth (of EU-FADN variables) is as required by the Farm Return, literature suggests that greater details are collected for some variables (for example, cost data by enterprise).
- In **Lithuania**, in contrast, the additional questions represent further depth of EU-FADN indicators, not broader scope. The extra data collected are necessary to produce the EU-FADN variables; the national farm survey has more checks and controls than operated by EU-FADN.
- In the **Netherlands** a feature of the broader scope of the national farm accounts survey is its coverage of many aspects of sustainability. This reflects the need to service national policy. Examples of where it exceeds EU-FADN requirements are in manure application, NPK application, mineral balances, energy use, antibiotics and pesticides, water quality, Other Gainful Activities and farm tourism. Core EU-FADN data alone probably would not be used much nationally; it is the additional material collected in combination with the core EU-FADN data that is considered by the Dutch government and Liaison Agency to make it really useful.
- In **Poland** the situation is similar to that of Lithuania. There is some additional detail not required by EU-FADN. For example, assets are recorded by type rather than just in aggregate, and there are data on the volume of fertiliser used. However, coverage of household income is no longer part of the national farm accounts survey; data on this is now collected by a separate voluntary survey distributed alongside the farm accounts survey.
- In **Sweden** the national farm survey goes beyond the detail required. The rationale for this is to improve the quality of the national survey (and hence EU-FADN) rather for any national need. The only additional information not required by EU-FADN is the gender of the workforce.
- In the **UK** the data collected exceed EU-FADN requirements on subjects such as the allocation of variable costs between enterprises and farm household incomes. In addition there are modules of questions (generally outside core EU-FADN coverage) introduced periodically to cover specific policy areas. As agriculture is a devolved policy, each country within the UK may use different additional questions, but with a common UK core.

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19 Although interviewees in France suggested that the scope matched EU-FADN, this is not actually the case according to our expert advisor in France.

20 There is a separate study on costs by enterprise which has been carried out on farms supplying data to the national farm accounts survey since 2004: [http://www.agrokoszty.pl/index.php?id=19](http://www.agrokoszty.pl/index.php?id=19)
There are regional differences in the information collected in Belgium and the UK. In the case of the **UK**, the collection of farming data is devolved, with each national government having responsibility for its own survey, and there are differences in the information collected as a result. For example, while all the countries collect financial data for enterprise gross margin data, in Northern Ireland this includes physical quantities of key inputs (feed, fertiliser, etc.) plus details on fertiliser/manure practices on around 100 farms. Scotland collects data on veterinary and (animal) medicine costs.

Although **Germany** and Spain take a regional approach to data collection, the national farm form used is common throughout.

### 5.2.4. The FADN sample

#### 5.2.4.1. Representation of the sector

The literature shows that the EU-FADN sample covers a high proportion of Standard Output of agriculture in each Member State; only in Lithuania (86%) and Romania (83%) does it fall below 90%. In 13 Member States coverage of Utilised Agricultural Area exceeds 90%. Coverage falls below 80% in five Member States and is lowest in Malta at 56%. In 16 Member States coverage of Annual Work Units equals or exceeds 75%; only in Hungary (46%) does coverage fall below half the agricultural workforce.

However, there is a substantial difference between Member States in terms of the coverage of number of holdings in their respective Farm Structure Surveys and, by implication, of their holders.

- In Hungary and Slovakia, the FADN sample represents less than 20% of farms in the Farm Structure Survey (FSS).
- In Bulgaria, Cyprus, Latvia, Lithuania, Malta, Portugal and Romania between 20% and 39% of FSS farms are represented.
- Between 40% and 59% of farms are represented in Estonia, Greece, Italy, Poland, Slovenia, Sweden and the UK.
- At least 60% of FSS farms are represented in Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Ireland (75% and the highest coverage), Luxembourg, Netherlands and Spain.

According to replies to our online survey, Cyprus is the only Member State currently to formally restrict the number of years that farmers can remain within the sample (although several Member States previously imposed restrictions). In **Italy** it is considered best statistical practice for farms to remain in the sample for not more than four to five years while in Denmark farms should rotate out of the survey after four years, although the farm can be reselected if no other farm can be found of the appropriate size, type and region to replace it.

This means that, by default, most Member States have a longitudinal panel (constant sample), the period of which is determined by the sample turnover rate. However, just over half of the Member States within this analysis (16) use this longitudinal panel routinely (a longitudinal panel has also been used by the OECD to analyse farm level risk and risk management strategies and policies - see for example Kimura, et al, (2010)).

#### 5.2.4.2. Sample turnover

In the literature on farm accounts surveys, comments on the turnover of its sample are usually made in the context of the impact of slow rates of replacement on the ability of the survey to remain representative. It is anticipated that farms in the survey will
benefit in various ways through participation, especially where feedback of their results and comparisons with benchmarks take place. Thus with the passing of time the nature of the farm business changes and is no longer representative of farms outside the survey sample. The representativeness of results based on participants of long-standing is likely therefore to come into question.

In this study the concern with turnover is not primarily one of data quality in EU-FADN, but rather of the way in which this affects the costs of the survey and is related to best practice in data collection. Higher turnover implies the use of greater quantities of resources to select and, more particularly, recruit farms into the national farm accounts survey.

Some turnover is inevitable. The dynamics of the agricultural community will mean that the occupiers of a small proportion of farms will change each year, and some of these successors will not wish to continue in the survey. Farms grow or shrink or change their enterprise mix, which can carry implications for whether they are suitable for inclusion. Such need for replacement is common to all Member States, so there will be some costs associated with this. What differs is the attitudes of countries to turnover beyond this, and the costs involved.

For Member States that are not case studies, the literature review shows that in several the sample is characterised by minimal turnover. For Belgium, Broekhoven (2007) reports that in Flanders (with a sample of 720) the turnover is around 5-6% annually, though Taragola (1999) claims that a characteristic of the Belgian FADN is that there is no rotation system of the holdings belonging to the sample. Broekhoven (2007) also observes that some farms have been participating in FADN for more than fifteen years and that sample turnover is a determinant of cost, with accountants spending more time collecting data from new participants because with established holdings the farmer is familiar with the forms and procedures and the accountant is familiar with the structure and peculiarities of the farm.

The lowest sample turnover rates are in Croatia, Hungary, Spain and the UK (Scotland, Wales and Northern Ireland) at 5% or less. Perhaps the most explicit example of a preference for sample stability is Finland, where there are incentives for not leaving the farm accounts survey, with prizes for 5, 10, 20, 50, 75, 90, 100 years in FADN. In Denmark selection contains a partial panel approach with around 80% of holdings retained from year to year. This implies a turnover rate of 20%, similar to the 20-25% in Italy; in both Member States there is view that sample turnover increases statistical robustness. The sample turnover rate in Slovenia is 29%, but this is partly explained by recent moves to better meet the sample frame. These extremes aside, just over a third of Member States have a turnover of around 10%.

Among case study countries discussions generated the following information on turnover:

- In Bulgaria a large number of holdings remain in the sample for several years with an annual turnover rate of less than 10% (8% between 2012 and 2013). Between 2007 and 2014 some 4,004 farms had been part of the FADN sample, meaning a retention rate over this period of 50%. According to the Liaison Agency, this low turnover simplifies the holdings to include in the sample each year and their recruitment.
- In Germany overall the national sample is rather stable with a low annual rate of drop-out (10%), mainly due to generation change (the children decide not continue farming). Of the Länder visited, the turnover is about 5% in Bavaria (where small farms predominate) and 10% in Sachsen-Anhalt, though even there many farms had remained in the sample for around 20 years.
• In **France**, there appears to be no limit on the period that farms can remain in the survey, though there is a longitudinal panel included in the sample from which they are removed after ten years. The annual turnover rate is 10%.

• In **Italy** sample turnover is between 20% and 25% in line with the perception that a dynamic sample results in greater statistical robustness.

• In **Lithuania** the annual turnover rate is about 20%, due to structural change and reluctance to participate. The sample of company farms is more stable.

• In the **Netherlands** the annual turnover rate is about 10%, but many farms remain in the sample for a number of years.

• In **Poland** the annual turnover rate is about 10% but many farms remain in the sample for a long time; some 4,500 (out of 12,100) have been in since 2004.

• In **Sweden**, according to the literature accessed before the case study visit, over time farmers have been remaining within the FADN sample for longer. Reinsson (2009) explained that in the 1990s it was unusual for farms to remain within the survey for more than six years, but that by 2007 some holdings had been contributing data for 18 years. The current rotation rate is 7-10 years and the annual sample turnover rate is around 11%. The case study discussions revealed some disagreement with regard to length of retention. The National FADN Committee takes the view that farmers should be in the sample for a long time, although the Ministry would prefer to replace smaller farmers with larger ones over time to match their area of policy interest.

• In the **UK** the annual turnover (England) is about 10%; formerly there was a limit of 15 years retention, but this had now been suspended. Some 1,257 farms have been in the England sample for at least five years (out of 1,500). Turnover in the other devolved regions of the UK is around 5%.

### 5.2.4.3. Sample recruitment

Another issue emerging from the case studies which has both data quality and cost implications is the manner in which recruits for the national farm accounts survey are obtained. While the numbers required by EU-FADN by region are set centrally by the Commission, there is substantial variation in the methods used to meet these obligations by recruiting farms of certain size and type to cells that are not fully populated by farms that are already in the national survey.

Two main approaches to family (non-corporate) farms are discernible from case study information; treatment of legal entities (corporations, which are far less numerous) may follow a different pattern. The first is where contacts with family farms are made at random, based on a list of farms derived from the Farm Structure Survey. Among case study countries, this is the procedure adopted in the **UK (England)**. Addresses are supplied by Defra (the agricultural ministry for England) and farms are contacted (in order) by letter, telephone and personal visit to explain the farm accounts survey and the nature of the commitment. There is a consent form to be signed by the farmer. The success rate is only 8% to 9%, though this varies between farming types; some sectors are particularly problematic (horticulture and granivores). (Separately Brown (2011) puts the recruitment success rate at 10% in England and notes that this is a difficult process, although retention is high at 90%.) The potential statistical superiority of random sampling is probably offset by the low recruitment rate, which the literature generated within the Liaison Agency (Woodend 2011) points to as a possible source of bias in the results. This approach also is expensive, both in terms of money and labour input. The UK estimates that one full-time equivalent (FTE) of labour input is required for recruiting each year (this is based on the larger UK sample; on a pro rata basis, 0.76 FTEs would be required for the FADN sample only).

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21 Suspension will allow a restriction to be brought back in should it be felt necessary.
In Sweden a similar process takes place. Statistics Sweden provides contact details for ten times the sample needed in each sampling cell. Then selected farmers are sent a recruitment letter setting out the purpose of the survey, followed up by telephone some seven to ten days later for a ten-minute interview to ascertain whether the farm is suitable for the survey (data based on the Farm Structure Survey can be out of date) and willingness to participate. Recruitment has been getting more difficult and, as with the UK, certain sizes and type are particularly problematic (in Sweden’s case those near the size threshold because they tend to be pluriactive and unwilling to give the time required, and granivores).

The other approach, while still respecting the selection plan, recruits only from farmers who are already in contact with data collectors.

- **In Poland**, where data collection is undertaken by the Agricultural Advisory Centres, selection by advisors is made from those farms that are already known to them through their role as advisors; they are free to approach any farms that meet the sample requirements. Even so more than 50% of farmers decline to participate, the two main reasons being (i) not wanting to spend time keeping records (accounts are not compulsory for taxation); and, (ii) unwillingness to disclose data, even though the data are confidential (this is especially so for farmers that are not VAT registered).

- **In Lithuania**, the situation is closely similar. Data collection is undertaken by the Lithuanian Agricultural Advisory Service (LAAS), which also provides accountancy (bookkeeping) services for farmers (who pay for this). Farms are recruited to meet the selection plan from those who are clients of LAAS for accountancy services and, for smaller farms which do not keep accounts, for other services. (To put this in perspective, there are about 61,000 farms above the economic size threshold, of which some 4,500 use bookkeeping. Some 10,000 are clients of LAAS for non-bookkeeping services). It is important to note that almost all farmers that are approached agree to participate; the cost of recruitment is therefore very low. The LAAS is working with farmers who rely on them for advice, so they are amenable to participation in the farm accounts survey. Trust is clearly important.

- **In Germany** data collection is done by private commercial accountancy firms which provide services to farmers in general. These are made aware of the nature and types of farms that need to be recruited and then identify farms among their clients which match the required profile. Farmers are approached by telephone and, if agreeable, complete a form providing basic farm characteristics; these are then used to check whether the farm meets the sample requirements. Of the farmers approached, there is a very high recruitment rate (virtually 100%), explained by the long-established relationship between the farmer and his accountant.

It is clear from these examples that recruitment that builds on established relationships between farmers and professionals providing services greatly facilitates the process and achieves a high success rate. Against this, there are potential threats to the ability of the sample to be representative of the farming sector. The issue of costs of recruitment is revisited in the analysis of Theme 2 where the evidence is presented.

**Box 5.2: Case Study of USDA’s ARMS: The sample**

ARMS is a nationally representative survey targeting about 5,000 fields and 30,000 farms each year. The sample, which is newly selected each year, is designed to provide coverage of all farms in the 48 contiguous States plus state level data for the 15 main producing states. The farm population includes all establishments which produced and
sold, or would normally have sold, at least $1,000 of agricultural products during the previous year. This makes ARMS rather more representative of the agricultural sector than EU-FADN which focuses on output rather than farms. A list frame is maintained by USDA-NASS, and the USDA-ERS selects a sample from this. The sample is stratified, with separate strata for state, commodity type and size, and there are different sampling probabilities for each strata. Furthermore, a sampling strategy is used that reduces the chances that a farm will be selected in consecutive years. The sample is thus not completely random. Respondents receive an initial mailing requesting their participation. This is followed by a postal questionnaire with non-respondents contacted by enumerators. Some very large farms, which receive multiple NASS questionnaires during the year, work directly with NASS field offices to manage their burden. Larger farms, where there may only be a few of each type, are over-sampled. There is no formal agreement between participating farmers and USDA-NASS.

5.2.5. Farmer participation and benefits

According to replies to our online survey farmers receive something in exchange for participation in their national farm accounts survey in all Member States with the exception of Denmark, France and Romania (where benchmarking data is to be introduced in the future). Monetary payments are made to farmers in 11 Member States (Austria, Cyprus, Estonia, Germany, Greece, Latvia, Malta, Poland, Slovakia, Slovenia and Sweden)\textsuperscript{22,23} In some cases farmers receive a sum equal to the EU fee paid per completed Farm Return accepted into EU-FADN (company farms in Lithuania), more than this in Slovenia (€175 according to the literature review), but in others they receive only smaller sums (€55 in Germany, ~€50 in Poland). The conventional rationale for making payments to farmers is to reflect the time required by them to maintain logbooks, keep receipts, etc. though what starts out as a valid argument when a survey is set up can be overtaken by changes in circumstances. Our case study for Poland throws some light onto its payments which may find resonances elsewhere.

- Firstly, the process of making payment to farmers is not a costless exercise. Payments made by the Liaison Agency (the Institute of Agricultural and Food Economics - National Research Institute, IAFE-NRI) directly into the participating farmer's bank account costs 10% (PLN 20) of the fee paid for bank transfer, sending tax forms to farmers and paying Agricultural Advisory Centre (AAC) officers to provide the additional information required.
- The receivers of the payments may have preferences for how they are paid. Some Polish farmers do not like bank transfers because they think the money can be used by the bank to repay debts. These farmers require payment by post which costs another PLN 12. This system is also labour intensive.
- The implementation of electronic data transfer is ongoing (with implications for the amount of effort required by farmers, and thus for the rationale for the payments).
- Lowering or removing payments needs a strategy. Efforts are underway to work with other departments to enhance the value of the information provided and to make farmers understand the value of the data with a view to removing the payment to farmers.

The rationale for making payments to farmers is revisited in the analysis of Theme 4.

Turning to other benefits, farmers are provided with a copy of their completed accounts in 14 Member States (see Figure 5.1). There is little overlap between the Member States

\textsuperscript{22} No monetary payments are made where data are collected by Liaison Agencies.

\textsuperscript{23} Company farms receive payment in Lithuania, but not family farms.
making payments to farmers and those giving copies of their accounts, which suggests that most Member States take an “either/or” approach to providing the farmer with benefits.

According to the online survey, most Member States provide farmers with benchmarking data (Figure 5.1). Farmers in Member States where the data are collected by advisory/extension agents also benefit from specific advice based on their documented performance. Among the case study countries, the Netherlands is an example where farmers receive considerable feedback which is considered to be of high value. Farmers in Poland, Lithuania and some regions of Germany (Sachsen-Anhalt, for example) also benefit from specific advice provided by the extension agency which oversees data collection by accounting firms. (This combination of data collection and giving advice is revisited in the analysis of Theme 3.)

![Figure 5.1: Farmer benefits from participation](image)

**Figure 5.1: Farmer benefits from participation**

5.3. Data collection methodologies

Data collection methodologies form a topic in which it is particularly necessary to draw from all three main sources of evidence (online survey, case studies and literature review). What is revealed is a very complex set of arrangements that frequently can only be understood by drilling down to include factors such as the structure of agriculture (in terms of farm size, legal status of businesses and the relationship of these to farming types), national taxation systems, structure of firms providing accountancy services, national forms of agricultural advisory service and relationships between the Liaison Agency, government and the data collecting organisation. Among Member States there are multiple combinations of these factors, and even within a single country there can be a range of possibilities.

5.3.1. Methods used

The online survey asked several questions, based on the literature review, about methodology of data collection. The first was about the ‘main’ data collection methodologies used, with the options of data collection from the farmer or farm secretary, data collection from private accountancy firms and data extracted from other
(secondary) sources. It is recognised that ‘main’ is subjective, but the intention was to gain an impression rather than a detailed account of all possibilities. Replies were an early indication of the complexity, with most Member States (23) indicating more than one option as being ‘main’ (of which the Estonia, Romania and Slovenia indicated three ‘mains’).

5.3.1.1. ‘Main’ methods of collecting data

Bearing in mind that many Member States use combinations of methods to collect data, in the online survey the most common ‘main’ method reported (only Denmark, France and Sweden did not indicate its use), and probably one used in all Member States to varying degrees, is collection from farmers/farm secretaries. The extent to which this methodology is used differs. In Denmark it is not used at all; this is supported by material in the literature review which explains that there is no need for direct contact with farmers as the Danish Liaison Agency collects data directly from farm accounts and supplements this with an annual survey to cover structural data for those units which contribute to FADN. This involves some matching of existing data with the greater detail required by FADN, a task that is facilitated by some 80% of Danish farms having an accountant known to Statistics Denmark (Hækkerup, 2010; Pedersen 2008).

Among case study countries, in Italy, Lithuania, Poland and the UK this is the primary form of data collection, with data collectors (who in Lithuania and Poland may also be advisors and who are termed ‘researchers’ in the UK) visiting farms to gather information and supporting evidence used to draw up an account which forms the basis of the national Farm Return. Where the main data collection methodology is via accountants, it is still necessary to collect some information directly from farmers relating to physical information which would not appear in financial accounts and greater detail which again is not required in accounts.

According to the online survey, data collection by private accounting firms that extract data from completed accounts to populate the national Farm Return were a ‘main’ method in ten Member States (Austria, Denmark, Estonia, France, Germany, Hungary, Romania, Slovenia, Spain and Sweden). In both of the case study countries in this group (France and Germany) the accountants, in addition to extracting data from existing accounts, assemble evidence to draw up accounts for sample farms which do not do so (because they are too small) and additionally collect data directly from farmers where this is not covered in the financial accounts.

Data extracted from other (secondary) sources such as registers and administration systems was a ‘main’ method of data collection in 19 Member States (Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Portugal, Romania, Slovenia, Sweden and UK (Scotland and Northern Ireland)). Among case study countries, this is the primary means of data collection in the Netherlands and Sweden. In Sweden, administrative sources are used to complete around 30% of the FADN Farm Return (this information is added to that provided by the accounting firm). In addition, several Member States used administrative sources as a minor source or as a way of checking data collected in other ways (Italy, Germany).

A prerequisite for the use of administration data is the ability to link records to farmers within the national farm survey sample. Most Member States use a unique identifier, but

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24 The online survey suggests that this is not a main source of data in Denmark, France or Sweden. The literature review supports this for Denmark where there is no need for any direct contact with farmers. However, our case studies in France and Sweden suggest that this is a source for some data, although not an important one.
this is not the case in Belgium, Cyprus, Germany, Hungary, Lithuania, Portugal, Slovenia and Spain which precludes the (straightforward) use of secondary data in these Member States. The need for a unique identifier is under active discussion in Germany.

The case studies also demonstrated that there are common technical reasons why administration data do not match well with data for the farm business; a farm business may contain more than one holding for which separate administrative returns are made and, conversely, what superficially appears as a complete business may be part of a larger entity which has been split for taxation or similar reasons. For example, Germany has particular problems associated with its large corporate farms, and accountants are paid additional fees to ‘consolidate’ sets of accounts into businesses that conform to national farm accounts survey requirements.

A second question in the online survey asked whether the data collection methodology differed by type of information and by the characteristics of the farm (size, legal status and type of farming). It frequently does, as the next sections illustrate.

5.3.1.2. Differences by type of information

According to the replies to the online survey, Member States tend to use a variety of data collection methodologies according to the type of information. Nine Member States (France, Germany, Greece, Hungary, Italy, Lithuania, Poland, Slovakia and Spain) replied that the type of information was not a determinant of the data collection methodology used. However, where data are taken from farm accounts drawn up for taxation purposes (at least for those farms that are required to keep accounts for tax purposes) as the basis for the FADN Farm Return (such as France, Germany, Lithuania and Spain), it is still necessary to obtain some data from other sources, principally by the direct questioning of farmers, about variables that are not covered in business accounts, even though this was not indicated in the survey responses. Even in the Netherlands, where every effort is made to utilise existing material (the records of commercial transactions, administrative data, bank accounts, taxation records (and more), almost all used with the explicit agreement of the farmer) some direct data collection from the farmer is still required. However, this is kept to a minimum; putting direct questions to farmers typically takes less than two hours per year, and this mainly relates to sorting out queries about data.

5.3.1.3. Differences by size of farm

According to the online survey, the methodology used differs by the size of farm in Austria, Estonia, France and Romania. Information from the case studies establishes that the real issue causing the difference is not size but the taxation status that is linked with size in national taxation systems relating to income or VAT; this link is not direct but reflects the amount of income or turnover generated. The implication is that, for farms below a certain national threshold, data for national farm accounts surveys (and hence for EU-FADN) are not in existing accounts but have to be collected direct from farmers. The case studies throw light on to this situation.

- In France farms below a certain turnover (receipts) threshold (a two year’s average under €76,000) do not need to produce accounts for tax purposes as below this level there is an option to be taxed under the régime du forfait collectif, a collective standard basis rather than on actual income. In our literature review, the OECD (2005) report on taxation in agriculture describes the rather complex arrangement in France and points to the need for caution when using the word ‘revenue’ which can mean receipts (=turnover) or income (net, after the
study on cost of and good practices for FADN data collection

deduction of costs), depending on circumstances\textsuperscript{a}. Accountancy offices already hold data for farms for which they draw up tax accounts, but for those below the threshold they have to act as data collectors.

- Farms below a certain size in \textbf{Germany} also have no obligation to produce accounts. According to OECD (2005) a “flat-rate” system applies below an area ceiling of 20 hectares; other ceilings are in place for animal production, vineyards and other activities. As in France, the implication is that accountancy firms (that supply data to the national farm accounts survey – the TBN) have to collect data in order to prepare accounts for these small farms before it can be extracted, for which an additional fee is paid.

- In \textbf{Lithuania} small farms similarly do not have to keep accounts. These represent about 10% of farms in the sample. As is the case for France and Germany, direct data collection has to take place in a different way for these farms by the (public sector) Lithuanian Agricultural Advisory Service (LAAS) using questionnaires.

\textbf{5.3.1.4. Differences by legal status}

Data are often collected from company farms (legal persons) in a way different from that used for family farms. In response to the online survey, ten Member States reported this (Austria, Czech Republic, Estonia, Finland, Germany, Hungary, Lithuania, Poland, Romania and Slovakia). The case studies point to the significance of the national taxation system, in that accounting appears to be mandatory for companies even where it is not for all private (‘family’) farms. For example:

- In \textbf{Germany} in-house accounting staff in company farms, predominantly in the East, complete the national accounts survey questionnaire themselves and submit this directly to the State body responsible for data collection; they are known as “self-bookers”.

- A similar situation prevails in \textbf{Poland}.

- In \textbf{Lithuania}, data from company farms are collected by the Liaison Agency rather than the advisory service which collects data from family farms. The Liaison Agency (LIAE) supplies companies with questionnaires once a year that contain provision for all the required data (including that which would not normally appear in company accounts). Unlike the occupiers of family farms, companies in Lithuania receive a fee (equal to the EU contribution per Farm Return, currently €160) for providing the information, that sometimes comes electronically and sometimes on paper.

Caution has to be exercised in making simplistic assumptions that a ‘family’ farm cannot also be a corporate farm. The literature points to the fact that, for example, many farms in the \textbf{UK} that are entirely owned and managed by single families and often also largely operated by them (in the sense of labour input), adopt the status of corporations for taxation convenience or as ways of equitably distributing farming assets and income. Though the proportion tends to increase with farm size, examples can be found throughout the size spectrum. Furthermore, in the way they function they often behave as if they were not corporations. In the UK no distinction results from corporate status in the way in which data are collected; a legal requirement to keep accounts for taxation purposes applies universally. In practice family farms run as companies are treated normally as if they were non-incorporated for the purpose of measuring family labour input.

\textsuperscript{25} This ambiguity, even within the WTO Agreement on Agriculture, has important implications for what forms of income stabilisation schemes are permitted; it appears not to have been tested by challenge.
5.3.2. Data sources used

A variety of sources are used to generate the data required to complete the national farm accounts surveys, and these are partly correlated with the methodologies employed.

Among the sources emanating from the farms themselves, or accountants working with them, in our online survey the most commonly reported source of evidence used to supply the data is farm accounts, whether drawn up for other purposes or specifically for the survey. According to the replies, only Belgium, Cyprus and Malta do not use accounts as an information source; it should be recalled that this includes data for company farms, which may represent only a small proportion of the total.

Twenty Member States use evidence from log books for at least some farms; this is usually used to supplement information available from accounts by providing greater detail. Entries in logbooks in both Poland and Lithuania are not universally backed up by documented evidence, so an element of recall is implied in their completion.

In 25 Member States at least some information is recalled by farmers with explicit documentary support, the exceptions being Cyprus, Denmark and Sweden; some 18 Member States also use farmer recall without documentary support, a group that almost completely lies within the previous one (the exception being Cyprus). Our case studies provided evidence that such methods relate primarily to variables that do not appear in conventional tax accounts but which are required by EU-FADN or for national purposes; even in the Netherlands, where efforts are made to utilise all existing data, the need to collect some material from farmers is not totally absent. Sweden (and Denmark) reported that they do not use farmer recall (with or without documentary support) as a source.

Turning to the sources of data that come from outside the farm business, external sources (banks, input suppliers, etc.) are used by 11 Member States. Among case study countries these are an important source of information (for accountants in compiling farm accounts, so before completion of the national survey) in Germany and in the Netherlands.

Administrative records were cited as an information source in our online survey by 22 Member States (the exceptions were Germany, Hungary, Lithuania, Poland, Slovakia, Spain and the UK (England)). The literature review underlined the importance of matching data sources by a unique identifier and the variation in the challenges this presents, from being relatively simple in Malta to being highly complex in the UK. However, our case studies suggested that there may be a subtle difference between, on the one hand, the use of such data to complete the national farm accounts survey and, on the other, to check or verify what has already been collected from farms. For example, in Germany though it is not possible to use administrative data in completing the national survey, it is possible to use some administrative data (IACS and cattle movement information) to verify data provided by farmers. In Lithuania data from IACS is provided to the data collector directly, but this is with the permission of the farmer. In Poland there is access to administrative data for checking purposes (though there are technical reasons why it may not match and legal constraints on its use). Among the case studies the greater use of administrative records in electronic form was frequently mentioned as something that is desirable (Germany, Italy, Lithuania, Netherlands, UK). This issue is revisited in the analysis of Theme 3.

5.3.3. Data recording methods

Many Member States use more than one method of recording data from the farm. The online survey asked about paper recording for subsequent electronic data entry, direct
electronic data entry online, the same but offline, extraction from other software packages and other. Those indicating only one method were Bulgaria, Malta and Spain (paper recording); Croatia, Greece and Slovakia (direct online entry) and Ireland (direct offline entry). The most widely used method of data entry remains paper recording for subsequent electronic entry (22 Member States); according to the online survey this method is used by all Member States with the exception of Croatia, Denmark, Finland, Greece, Ireland and Slovakia. Mostly it is used in parallel with other methods.

Data collectors in 16 Member States enter data electronically online (those in italics also enter data offline): Austria, Croatia, Czech Republic, Estonia, Finland, France, Greece, Hungary, Latvia, Lithuania, Netherlands, Portugal, Romania, Slovakia, Slovenia and Sweden. Data are entered electronically but only offline in Belgium, Cyprus, Denmark, Germany, Ireland, Italy, Luxembourg, Poland and the UK. According to the literature review, in Ireland farmers appear to contribute to the data entry; they are provided with a customised tool for this purpose (in Microsoft Excel). In Croatia the online tool developed for data collectors in accounting year 2013, which allows the submission of Farm Returns online and runs some preliminary data quality checks (limits, coherence test, etc.), was planned to be accessible to farmers as a replacement for their ‘log book’ (Jelaković, 2013); it may now be in use.

The only Member States not reporting the use of either online or offline electronic data entry are Bulgaria, Malta and Spain (clearly data are entered electronically at a later stage).

Finally, a group of 13 Member States extracts data from other software packages, although none do so exclusively: Cyprus, Czech Republic, Denmark, Finland, France, Germany, Lithuania, Netherlands, Portugal, Romania, Slovenia, Sweden and the UK (England, Scotland and Wales).

5.3.4. Reasons for the methods used

As part of the base on which to build up the inventory of national approaches to the organisation of the national farm surveys and the data collection methodologies, respondents were asked to indicate the importance of a number of reasons for the data collection processes used by means of a scale of “very important”, “quite important”, “not very important” or “not a factor”. Assigning these options a score of 3 for “very important”, 2 for “quite important”, 1 for “not very important” or 0 for “not a factor”, it is possible to weight the relative importance of the different rationales26. It is recognised that these can only be a perception by the respondent, but nevertheless might be useful in explaining the status quo and could be built on during discussions with case study countries.

According to the replies, the most important rationale for the data collection process used was “best practice” with an average score of 2.6. “Driven by data availability” was second (2.4) followed by a desire to “reduce the burden on farmers” (2.3). The need for robust data in order to make “evidence-based policy decisions” was fourth (2.1) followed by “least cost” and “robustness” (2.0). Perceived reluctance to change the data collection process by farmer organisations received the lowest scores and therefore is not generally regarded as an explanatory factor in the approach taken.

There were, however, some interesting exceptions. For example, Latvia and the Netherlands did not consider “best practice” to be a factor in their approach to data collection. Legal restrictions on the use of data, while not generally considered important, were “very important” in Belgium, Germany, Luxembourg, Slovenia and Spain. Also not considered generally important was “acceptance by farmer

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26 The average of the country responses was used in the UK.
organisations”, although this was “very important” in Estonia, France and Slovakia. In Italy reluctance to change the process by farmer organisations is seen as “very important”; this is also the case for stakeholders in Cyprus, Czech Republic, Greece, Italy and Portugal.

In summary, most Member States cite a number of important reasons to explain the way in which data are collected and it is not possible to identify specific groups of Member States using this metric. Also it might be noted that the response to the online survey to this qualitative question may not have represented the considered opinion of the Liaison Agency as an organisation, even less that of the supply chain as a whole.

5.3.5. Changes to methods used and rationale

The online survey asked whether there had been changes in the general collection methodologies in the last ten years (or since accession where appropriate). Explicitly, changes in scope of data collected or in sample sizes were excluded from consideration. In their replies, nine Member States indicated that they have made changes (some multiple) to the way in which they collect data in the last ten years/since accession (Luxembourg and Poland plan to make changes from 2015). Generally greater emphasis has been placed on secondary data sources. Greater use has been made of administrative data in five countries (Denmark, Estonia, Greece, Ireland and Italy and is planned in Luxembourg); accountancy packages used by farmers (Lithuania and the UK (England and Wales)); and, electronic bank data (planned in Luxembourg). However, greater use has been made of primary data collection from the farmer in Greece, Italy, Lithuania and Slovakia.

The Member States which have made changes (and also Luxembourg and Poland which are planning to) provided a number of explanations for them in the online survey. The two most common were to improve the quality of the data (eight Member States) and the adoption of best practice (seven Member States). A desire to reduce the burden on farmers and to improve timeliness were each cited four times. Only three Member States noted that the changes made were driven by a change in data availability, and two that it was due to a change in policy on data collection.

Of the case study countries, five reported changes in the online survey (Italy, Lithuania, Poland, Sweden and the UK (England and Wales)). Further discussion gathered the following information:

- **Italy:** the reply to the online survey indicated both the greater use of secondary data and of primary data collected from the farmer. The case study discussion found that there has been a change and improvement in software; the GAIA software, first launched in 2004 has been further improved since 2008. In 2009, an IT procedure allowing direct data checks by data collectors (GAIA-TEST) has been fully implemented in GAIA. In 2010, an IT procedure for verification of farm typology (CLASS-CE) has also been launched. The evolution of IT tools for the carrying out of data collection and validation has mostly been focused on time saving and improvement of final data quality. In addition, data checks have become the responsibility and direct management of the Istituto di Nazionale Economia Agraria’s (INEA) from 2005 onwards. As for the organisation of data collection, most of the protocols for carrying out FADN data collection activities between INEA and Regional Governments have been replaced by direct assignments to INEA’s regional offices. At present, the only protocols still in force are those with the Emilia Romagna region and with the Autonomous Provinces of Trento and Bolzano.
- **Lithuania:** there has been no change in the organisational structure of the national farm accounts survey, but the greater use of farmers’ own accounts
(software packages), and of primary data collected from the farmer. The data collector (Lithuanian Agricultural Advisory Service, LAAS) is aware of a general trend towards greater automation, which saves time and money and reduces the burden on farmers. On balance these represent evolution rather than a distinct change.

- **Poland**: the main change (which is not strictly within the period covered by this study) has been the introduction in 2015 of an online electronic data transmission system, after two years of tests with the 200 company farms in the survey. Previously data were entered by the advisors (data collectors) in the local offices of the Agricultural Advisory Centre and sent by email (attachments) to the Liaison Agency (IAFE-NRI).

- **Sweden**: there have been no organisational changes, but there is a greater use of administrative data (IACS, etc.). The Swedish Statistics Act provides the authority to access administrative records, and even specifies that existing information should be used where possible. In a matter of detail, there have been changes to the valuation of buildings and the calculation of depreciation.

- **United Kingdom**: the main organisational change in England has been the replacement of a set of agreements with separate universities and colleges to collect farm accounts survey data by a contract, awarded by tender, to a consortium of them (RBR) led by the University of Nottingham. This makes procurement and contract management less time consuming for both parties and has promoted a more consistent approach to data collection across the individual centres. Greater use of farmers’ own accounting packages is taking place, but this is an evolutionary rather than a discrete form of change.

### 5.3.6. Data validation

Data are generally validated at multiple points in the data supply chain and using a range of techniques from informal examination to deep scrutiny and by people or IT systems. The online survey asked whether validation took place at three discrete points: (i) when collected from the farm/accountancy firm, (ii) when entered into the regional/area data bases (this will in part reflect if there is a regional structure to the collection system) and then (iii) when entered into the national farm accounts system. Of course, all Farm Returns are subject to validation checks by the Commission when data are entered into RICA-1, but the focus here is what happens at national level; checking and correction here can be expected to reduce the number of rejections and queries generated at the RICA-1 stage.

According to the online survey replies, in Belgium, Finland, Germany, Italy, Netherlands, Portugal, Spain, Sweden and the UK data are validated at all three stages. At the other end of the spectrum, data are validated only on entry into the national system in Austria, Denmark, Greece, Romania, Slovakia and Slovenia. In Malta validation only took place when collected from the farmer and not at a later stage. Data are not confirmed with the farmer in Austria, Bulgaria, Denmark, France, Greece, Romania, Slovakia and Slovenia.

The case studies showed that validation is an activity that typically is taken very seriously by Member States, not least because it can lead to a reduction in rejections at the RICA-1 level and the subsequent need for correction involving investigation often going back to the farm level (with an implication for national costs). Most Member States, though not all, have a system to check data when it is first collected, often initially informal by experienced staff, but also with IT programmes that flag up inconsistencies and implausible figures.

IT programmes are also used, almost universally, to check at later stages in the data supply chain (only Bulgaria appears not to use such a programme). Several Member States specifically mention the procedures to update these programmes as issues
become evident – they are learning systems. However, these IT solutions use software that it seems are always designed nationally, with no examples encountered of international cooperation or integration at EU level (before the RICA-1 stage) other than the use by Luxembourg of accountancy software provided by Germany mentioned in the literature review. This issue is revisited when costs and best practice are considered under later Themes.

**Bulgaria:** checks are operated at different levels of the national FADN chain. A first control is made by the expert when inserting data in the Excel file from the paper format. A second control is made by the regional coordinator by a cross-checking with the national agricultural payment agency data, but the aggregated level of the data is not completely comparable so this is not seen as an efficient control system. A third (occasional) control is made by the Liaison Agency during the upload to RICA-1. Although each officer is capable of detecting anomalies in data when these are transmitted by them from one format to another, often anomalies are not picked up until the data are uploaded on RICA-1. As noted above, no national checks appear to be IT based.

**France:** data are mainly checked through a computer-based consistency control. As reported to the online survey, there does not appear to be validation when data are collected by accountancy offices (bookkeeper firms) from existing accounts or for ones drawn up especially for FADN by accountants. Rather, they are first checked by the Regional Officers, after accountancy offices have uploaded the data in the national software (called RICA-2 and not to be confused with the EU-level RICA-2 system). This check can take up to one working day per Farm Return. A second check is then implemented at national level by the Ministry of Agriculture (SSP), based on the same methods and tools (consistency control operated at national level). The inclusion of qualitative items in the scope of the FADN survey raised some concerns on the effectiveness of the checking process for this part of the data.

**Germany:** all returns to the national farm accounts survey (TBN) are checked by Winplausi, a plausibility check programme which highlights missing and suspicious values and flags these for investigation and ultimately correction or explanation. This programme also provides logical checks such as if there is milk production there must be dairy cows. Winplausi is used at multiple levels, first by bookkeepers and again by the regional organisation responsible for the TBN. The rationale for the use of Winplausi by bookkeepers is that it is best to identify and correct mistakes as early in the process as possible when it is easier to find explanations. The second check performed by the regional body responsible for the TBN is essentially to ensure that all of the necessary explanations have been provided. Additional checks are carried out by the BMEL before transmission of the data to the Liaison Agency. The use of Winplausi throughout the data supply chain acts as a form of due diligence, with each organisation involved being as sure as they can be that the data passed along are accurate. The Winplausi system is considered very effective and the Liaison Agency reported that the number of Farm Returns not accepted by RICA-1 for quality reasons is declining.

In addition to the Winplausi validation checks, the LfL in Bavaria (Institute responsible for implementing the TBN) carries out an annual control mission under which farms are visited in the presence of the accountancy firm responsible for their Farm Return. This is effectively an audit to assess the performance of the bookkeeper.

**Italy:** direct checks on individual items in Farm Returns are carried out by data collectors using the GAIA software (GAIA-TEST). Inter-farm checks and validation of completed Farm Returns is then carried out by INEA in the regional offices, prior to the upload of completed Farm Returns to RICA-1. A third and final set of checks and validation takes place at the INEA central office. These are statistical checks (e.g. detection of outliers)
on the entire set of completed Farm Returns (these checks do not concern individual items in completed Farm Returns).

**Lithuania:** the first stage of validation is at data collection. If data appear incorrect, the collector (LAAS staff) asks the farmer to explain or correct the information. Queries are raised on data entry and where document evidence does not seem correct. The software has a pop-up system for checking rogue data entry. Farmers are also required to sign a document to say that the data they have provided are correct. Data checking continues by the LAAS once the data have been transferred to the LIAE (the Liaison Agency) server. When LAAS is satisfied that a Farm Return is complete it is marked as such on the LIAE server. It is not possible to mark a Farm Return as complete if there are missing data or errors identified by the software. Once the record has been finalised by LAAS, the LIAE begins to validate the data. Queries are raised with the advisors. The national control programme is designed to suit the data collected, but also to be consistent with the RICA-1 checks to reduce the instances of these. For company farms (from which data are collected directly by the LIAE) queries are raised by the LIAE as these farms are less receptive to being questioned than private farmers and it therefore can take longer to resolve queries.

RICA-1 generates queries and these usually take around two weeks to justify and/or correct. The error rate is very low and most errors are warnings only.

**Netherlands:** the work flow management approach of the central server prompts questions when data are entered that are followed up by data collectors. There is a systematic programme of assurance of data quality, from the data entry stage using double entry bookkeeping, through RIA (relevance, integrity and actuality) rules, confirmation, feedback reports, visual inspection, farm comparison, all before the RICA-1 checks are run. Data are checked by sector specialists in their reporting. RICA-1 generates a few queries, usually to do with issues of odd holdings and with continuity (such as inventory changes).

**Poland:** data are checked in the first instance by the AAC advisor (the data collector organisation) in discussion with the farmer. The next check is online when the data are entered into electronic form; the software highlights possible entry errors. The regional coordinator then assesses the data and looks for outliers. A validation programme is then run on the data to check for anomalies and outliers. Mistakes are rectified or an explanation provided where the value is judged to be correct. Ultimately the regional coordinator must approve explanations. The Liaison Agency (IAFE-NRI) carries out further data checks when it receives the data including a comparison against average data from similar farms. All explanations provided by the AAC advisors are read and assessed by IAFE-NRI staff. This assessment identifies systematic explanations which may have been provided generically and therefore ensures that each explanation is specific. The farmer must sign the results (when returned) to say that they are accurate. Payment (to the AAC and the farmer) is only made when this has taken place, so this is a fourth level of testing/validation.

There is also an audit function. The IAFE-NRI identifies farms where the data do not appear to be correct. There is then an investigation with the farmer to see how frequently the extension officer has visited the farm and the farmer is asked to let the IAFE-NRI review the farmer’s books. Where an account is rejected the payment is not made.

**Sweden:** data validation begins on data entry where LRF-Konsult (the main data collector organisation) uses a check list developed by Statistics Sweden designed to reduce the number of subsequent queries (implemented from 2013, accounting year 2012). The IT application has an integral data validation system (including simple issues
such as if there are dairy cows there should be milk and checking for rogue data entry). Continual improvements are introduced as issues become apparent. Once data have been transmitted to Statistics Sweden, their system, which has a more sophisticated validation and control system, generates questions which are sent out to LRF-Konsult for explanation/amendment\(^\text{27}\). A record is retained of queries made for each farm. This allows systematic issues to be identified and further checks introduced as required. This also means that once a query has been addressed, it is retained for future reference and need not be asked again if a suitable explanation has been provided. This can be seen as good practice. When the data have been validated they are submitted by Statistics Sweden to RICA-1 which then automatically raises additional queries which are addressed.

**United Kingdom:** the process of validation is similar in each of the four countries that constitute the UK, but these are undertaken separately and with differences in detail.

**England:** Defra (as Liaison Agency) does not have a role in carrying out routine validation itself in England; the procedures are carried out by the data collector organisation (RBR). Defra’s current role is to specify additional systematic validation checks when analysis shows something that does not look right. Informal validation by RBR starts with the data collectors, whose background means that they understand what would be credible numbers. Formal validation starts when data are entered into Excel workbooks used as the first stage of data entry; there is a validation system within these workbooks. Some checks are based on ranges (data can be outside the range with an explanation); others require a balance that must be correct. The Duchy College, which brings the workbooks together for all the regional collector organisations into a single database, carries out validation as well.

**Scotland:** there are several steps in the data validation process. There are more than a thousand checks within the software used by Scotland’s Rural College (SRUC), which collects the data. These are essentially logical tests, stock reconciliations, etc.. Any specific issues are logged and addressed so that these can be communicated to the other analysts. One member of the team assesses all accounts before they are finalised; this picks up issues which are not of a technical nature, for example atypical enterprises/results which should not go forward into the averages (large changes in the size of enterprises, for example). Two to three days are set aside to review for errors before submission. RICA-1 also generates queries. These are declining year on year and can now be dealt with in a total time of three weeks. Atypical farms are not submitted to FADN, which reduces the queries to some extent; these include issues such as off-farm income from large wind turbine developments which result in a sudden increase in income.

**Wales:** validation checks first take place when data are entered into a laptop by the Institute of Biological, Environmental and Rural Sciences (IBERS) data collector, usually on the farm; there is a programme that flags up any queries. Another check takes place before the holding’s records are submitted to the country’s database (at Aberystwyth/IBERS). Then there are checks in the office by some staff whose job is to look for suspect entries and inconsistencies. Then Type 1 and 2 FADN-type tests are run, before sending to Duchy College/RBR, which also runs tests and sends any queries back to Aberystwyth, where they are directed to the member of staff who signed off the account. Queries have to be resolved and signed off; these include explanations for outlying figures. The data are then submitted to RICA-1 (via Duchy College), from which again there may be further queries.

\(^{27}\) This new system has generated some efficiency savings. It is also very flexible. New variables and controls can be added easily and at low cost.
Northern Ireland: there is now a system of macros to check the data, but this is relatively new; validation now takes place within Excel using macros rather than the previous Fortran system. Prior to its introduction validation was undertaken in a specific programme into which the Excel sheets (containing data transcribed from the paper Northern Ireland Farm Return) were uploaded. Now there is a validation programme run on the Liaison Agency (DARD) system which raises queries for the fieldstaff. This has reduced a step in the data chain. Any queries are passed back to the fieldstaff. After validation a programme then calculates the variables for the FADN return from the database which is uploaded to RICA-1.

Box 5.3: Case study of USDA’s ARMS: Data collection

ARMS data are collected in three data phases:

- **Phase I, the ARMS Screening survey, collects general farm data such as crops grown, livestock inventory and value of sales.** Screening data are used to qualify (or screen) farms for the other phases. Phase I screening is performed by post and phone; when replying to postal questionnaires, responses can be returned on the printed form or through electronic data reporting (EDR). Operators that are in business and/or have the commodity of interest are eligible to be selected for Phase II or Phase III. The commodity of interest is determined by the ERS.

- **Phase II collects data associated with agricultural production practices, resource use and variable costs of production for specific commodities.** Farm operators provide data on fertiliser and nutrient applications, pesticide applications, pest management practices and irrigation. Phase II data are collected by personal interview.

- **Phase III collects whole farm finance, operator characteristics and farm household information.** It is this Phase III element that most closely resembles EU-FADN in terms of the scope of its questions. Farm operators provide data on farm operating expenditures, capital improvements, assets and debt for agricultural production. In addition, operators provide data on farm-related income, government payments, the source and amount of off-farm income and characteristics of themselves and their household. The ARMS Phase III is very detailed, which requires the majority of interviews to be completed in person, being conducted by trained USDA-NASS enumerators. Farmers are requested to have their accounts (drawn up for tax purposes) available, from which data can be extracted. There is a detailed Interviewers’ Manual that establishes protocols for making contact with farmers and for collecting data. According to the 2013 Manual, it appeared that in 2013 recording was on paper, though transition to the use of iPads for data entry is underway; in 2014 only about 2% of data entry was electronic. Data collectors were recommended to interview the farmer (rather than another person) and to give an indication of the average length of time needed. No administrative data are currently used, although the secure use of such data is a topic under discussion.

At USDA-NASS, editing (validation) is first done manually on paper questionnaires and then electronically on individual reports as well as at the macro level. SAS computing procedures check for errors in coding, physical relationships (such as yield limits) and simple economic relationships between interrelated questionnaire cells. This is a similar validation process to that undertaken in EU-FADN in many Member States.

5.4. Typology of national farm surveys

As has been demonstrated above, there are lots of ways of categorising national farm surveys, but usually only by one metric at a time; there is little consistency in the

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groupings produced when categorisations by different metrics are produced. The focus of this study is on organisation, data collection, costs, use and best practice, so any typology needs to be oriented in these directions. For example, it is possible to produce a typology of Member States by coverage of holdings within FADN, but this is not directly relevant to the study objectives.

With the aims of this study in mind, and within Theme 1, specifically organisation and data collection, a typology based on data collection methodology appears to be the most relevant as this reflects organisation and is likely to be a key determinant of cost. This is set out in Table 5.1 where the status of the Liaison Agency is also identified. Our case study Member States are identified within the typology in bold and it should be noted that these are distributed well across this typology. Cluster analysis was used to validate this typology (see section 6.3.4.5).

It should be stressed that the typology does not always represent a neat division; while the situation in some Member States is clear, in others the reality is more complex than it at first appears. For example, in many eastern Member States (and in the former East Germany) legal entities (i.e. company farms) are treated differently from family farms. Thus while in Germany data collection is usually by accounting firms, institutions responsible for the TBN system in the Länder receive data directly from legal entities. The situation is similar in Lithuania and Poland with public advisory services collecting data from family farms and the Liaison Agencies receiving data from legal entities. This is because legal entities are required to produce accounts (Lithuania and Poland) and therefore have their own accountants to do this, or are of a scale where it is necessary to employ their own accounting staff (Germany).

In some other Member States (Czech Republic, Italy, Romania) data are collected using several data collector types. In Estonia half the number of Farm Returns are provided by accounting firms and half by public advisory services; there is a similar split in Slovakia. In Sweden, although the majority of data collection is by an accounting firm, the Liaison Agency and the responsible government agency also collect data from a sub-sample of holdings.

Finally, the UK appears to be a special case which could actually merit its own category. In England, Scotland and Wales data are collected by university researchers, but in Northern Ireland data are collected by the devolved government. While data collectors in England, Scotland and Wales most closely resemble accountants in their function, as they do not provide extension advice, the process they follow to produce national survey returns is closer to that of extension agents. It therefore seems more appropriate to place England, Scotland and Wales in the public advisory service typology. The data collection process in Northern Ireland is closest to collection by a ministry, even though the devolved government is not the Liaison Agency. The UK has therefore been split between two of the categories.

Data collection by Liaison Agencies is more common among EU-15 Member States than in Member States that joined the Union from 2004 onwards. Ten Member States (and Switzerland) use private accounting firms to extract data and seven (plus England, Scotland and Wales within the UK) use advisory service staff (who in effect provide a similar function to private accounting firms with the added benefit of being able to provide advice). The approach to legal entities is sometimes different, but for simplicity Member States with these organisations have been classified according to their approach to family farms. In Lithuania and Poland legal entities provide a completed national survey form directly to the Liaison Agency. In Germany legal entities provide completed survey forms to the State organisation which is responsible for the farm survey. In all three cases accountants employed by the legal entities extract the data required.
It should be noted that the distribution of other metrics within this typology lacks any discernible pattern. Member States with national legislation can be found throughout the three groups, as can those which introduced a national farm survey before or after FADN was set up and those which have national surveys which exceed the sample size and scope of EU-FADN. The only metric which has some resonance with this typology is payment to participating farmers; this is most common in Member States where data are collected by accountants and least prevalent where Liaison Agencies collect the data. 

**Table 5.1: Organisations carrying out data collection**

<table>
<thead>
<tr>
<th><strong>Type 1: Data collection by Liaison Agency (C-LA)</strong></th>
<th></th>
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<tbody>
<tr>
<td>Belgium</td>
<td>Cyprus&lt;sup&gt;29&lt;/sup&gt;</td>
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<tr>
<td><strong>Bulgaria</strong></td>
<td>Ireland</td>
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<tr>
<td>Greece</td>
<td><strong>Italy</strong></td>
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<tr>
<td>Luxembourg</td>
<td><strong>Netherlands</strong></td>
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<tr>
<td>Malta</td>
<td>(Norway)</td>
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<tr>
<td>Portugal</td>
<td><strong>UK (Northern Ireland)</strong></td>
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<tr>
<th><strong>Type 2: Data collection by public advisory services (C-AS)</strong></th>
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</thead>
<tbody>
<tr>
<td>Croatia</td>
<td>Lithuania</td>
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<tr>
<td>Czech Republic</td>
<td>Poland</td>
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<tr>
<td>Finland</td>
<td>Slovakia</td>
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<tr>
<td>Latvia</td>
<td><strong>UK (England, Scotland and Wales)</strong></td>
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<tr>
<th><strong>Type 3: Data collection by private accounting firms (C-AF)</strong></th>
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</thead>
<tbody>
<tr>
<td>Austria</td>
<td>Romania</td>
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<tr>
<td>Denmark</td>
<td>Slovenia</td>
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<tr>
<td>Estonia</td>
<td>Spain</td>
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<tr>
<td><strong>France</strong></td>
<td><strong>Sweden</strong></td>
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<tr>
<td>Germany</td>
<td>(Switzerland)</td>
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<tr>
<td>Hungary</td>
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</table>

Notes:

- The **UK** does not fit exactly into the three groupings. The Department for Agriculture and Rural Development (Northern Ireland) is a devolved government department; this is not a Liaison Agency although it acts as one. Data collection in England, Scotland and Wales is carried out by academic researchers rather than extension officers, although again, the role they perform has similarities.
- **Czech Republic**: data are collected by accountancy firms, universities, advisory offices and interest groups of agricultural holdings. All legal persons i.e. agricultural companies have to carry out double entry accounting for tax purposes and for their own management. The majority of FADN accounts are collected from these farms by accounting firms (~500 farms). Individual farmers (non-legal persons) have to run a very simple registration of sales for tax purposes which is not a sufficient basis for the FADN survey. Data collection is therefore carried out by agricultural advisers and other bodies which have contacts with farmers. Those are farmer interest groups (associations) and researchers from agricultural universities. The majority of data collectors provide some kind of advisory service to individual farmers so the Czech Republic has been categorised as public advisory service.
- **Estonia**: half the data collection is carried out by accounting firms and half by advisory services. Estonia is categorised in the private accounting firm grouping because not all farmers receive extension advice and if accounting firms are capable of data collection, accounts must be produced.
- **Italy**: The data collectors in Italy sign contracts with the Liaison Agency and are therefore considered to be employees. However, they are a heterogeneous group including freelance individuals, personnel of private organisations (usually farmers’ unions) with which INEA has signed an agreement, personnel of Regions/Autonomous Provinces with which INEA has signed a protocol, private contractors (Emilia Romagna, DINAMICA scarl). Private accounting firms (or similar organisations such as the Centres for Agricultural Assistance – CAA of the farmers’ unions) can also be data collectors.
- **Romania**: private data collectors are used. Romania has been categorised in the private accounting grouping because the data collectors more closely resemble accountants in function than extension officers, although the data collectors selected after public tender are drawn from a wide variety of backgrounds. All do, though, have an agricultural economics background.

<sup>29</sup> In 2015 (after the reference period for this study) responsibility for FADN in Cyprus was transferred from the Agricultural Research Institute to the Department of Agriculture.
Slovakia: data collection is carried out by both the Research Institute of Agriculture and Food (an Institute) and the Slovak Agriculture and Food Chamber (more closely defined as an advisory service). The Chamber provides data for 360 holdings, 64% of the total (562). Slovakia has therefore been categorised in the advisory services grouping.

We expect this typology to provide a useful distinction between different approaches to the organisation of national farm surveys which is likely to have bearing on costs; it is less likely that a typology based on data collection methodology will have bearing on benefits in terms of the use of the data. Without prejudice to later analysis, where the costs of data assembly are partly met by farmers in order to meet their legal obligations under taxations systems (use of private accounting firms), the net public cost of the farm accounts system should be less than where the total cost falls on the public purse, for example, where there is a need to produce accounts specifically for the farm survey either by primary data collection or through other means. It is also likely that the pattern of benefits will differ where data collection takes place alongside the provision of advice or research. The impact in terms of best practice is likely to be dependent on organisation with some approaches being lower cost while others potentially bring greater benefits.

Throughout the rest of this report, the typologies will be referred to as Type 1: C-LA; Type 2: C-AS; and, Type 3: C-AF with Tables and Figures grouped accordingly. Except where the devolved authorities are treated separately, the UK appears as Type 2 reflecting the combined weights of England, Scotland and Wales in the overall UK picture.
6. THE COSTS OF COLLECTING FADN DATA IN MEMBER STATES

6.1. Key issues

6.1.1. Stages in the data supply chain

A central purpose of the present study was to establish both overall costs and those for each stage of the FADN data supply chain between farm and RICA-1 (the entry point to the Commission’s FADN database). To do this the authors have used a detailed breakdown which reflects the information available in the Member States used as case studies. In particular the data collection stage can often be broken down into sub-stages which can assist with analysis and understanding. The breakdown is as follows:

<table>
<thead>
<tr>
<th></th>
<th>Description</th>
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<tbody>
<tr>
<td>A</td>
<td>Overall management</td>
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<tr>
<td>A1</td>
<td>National FADN Committee</td>
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<tr>
<td>A2</td>
<td>Regional FADN Committees (where applicable)</td>
</tr>
<tr>
<td>B</td>
<td>Design of selection plan</td>
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<tr>
<td>C</td>
<td>Recruiting participating farmers</td>
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<tr>
<td>D</td>
<td>Maintaining farms in the network (farmer feedback)</td>
</tr>
<tr>
<td>E</td>
<td>Data collection</td>
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<tr>
<td>E1</td>
<td>Administration, management, etc.</td>
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<tr>
<td>E2</td>
<td>Training</td>
</tr>
<tr>
<td>E3</td>
<td>Data collection</td>
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<td>E4</td>
<td>Data entry and collation</td>
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<tr>
<td>F</td>
<td>Data quality control</td>
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<tr>
<td>F1</td>
<td>Pre-submission validation</td>
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<tr>
<td>F2</td>
<td>Post-submission validation</td>
</tr>
<tr>
<td>G</td>
<td>Data storage (IT operation and management)</td>
</tr>
<tr>
<td>H</td>
<td>Data processing and transfer to RICA-1</td>
</tr>
<tr>
<td>I</td>
<td>DG AGRI FADN Unit time</td>
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</tbody>
</table>

6.1.2. Metrics of costs

Two metrics are used in our analysis of costs – money costs in Euro (for countries not using the Euro conversions are made from national currencies at the official ECB rate of exchange prevailing at the time) and labour time expressed in Full Time Equivalents\(^{30}\) or hours per completed Farm Return\(^{31}\), as appropriate. Costs in financial terms were obtained from our online survey while costs in labour time were estimated using the Standard Cost Model approach in our case study countries. Financial figures relate to the spending of public funds, i.e. both national and EU contributions.

The Standard Cost Model (SCM) is used by the Commission to assess the administrative burden of policy measures on the basis of the average cost of the required administrative activity (Price) multiplied by the total number of activities performed per year (Quantity). This approach represents a useful means to compare the cost of activities between Member States where the cost of labour differs and a comparison in unadjusted financial terms would therefore be misleading.

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\(^{30}\) National definitions of an FTE differ, see Brun-Schammé (2014) who requested actual average annual working time for all salaried workers from Eurostat’s Labour Force Survey; these data are not published by Eurostat. Actual annual time worked also fluctuates from year to year.

\(^{31}\) Figures presented in hours have been calculated from FTEs using the actual average annual working time (2013) for all salaried workers data series (Eurostat), i.e. adjusting for different FTE definitions.
Under the SCM approach, the cost is generally estimated by multiplying a tariff (based on average labour cost per hour including overheads) and the time required per action. However, it is not strictly necessary to multiply the time requirement by a labour cost because we are interested in a comparison between Member States and using a representative cost would only scale up the time allocations and would not alter the magnitude of any differences assuming that the same grade of staff is required to perform the same duties. While the SCM can take account of other types of costs such as equipment, this is not necessary in this application where the main cost is in data collection, which is dominated by labour cost.

When using the SCM it is important that the scope of the activities for which a time allocation is provided is the same across comparative groups; this is why we have divided the task of supplying FADN data into discrete activities and requested from Member States a breakdown of time requirements against these activities.

It should be noted that the purpose of the SCM methodology is to produce estimates that allow an order of magnitude of the time commitment required to be identified. In practice, case study respondents found it difficult to separate out the robust data on overall time requirements into the different activities, and the results should be considered an indicative rather than definitive guide to the allocation of time (see further detail below).

6.1.3. Confidence in money cost figures

Money costs of the FADN data supply chain have been taken from what is shown in government budgets, and a high degree of confidence can be attached to them. These costs generally cover the entire national farm accounts survey activities, though in some Member States (such as where data collection is undertaken by a separate organisation) money costs for individual stages may be available from the same source and with the same reliability. For countries which are case studies, the total cost (and, where appropriate, costs for data collection) have been confirmed as part of discussions.

For some Member States in which data collection is undertaken by organisations under contract awarded by competitive tender from the relevant government department, this cost of data collection is a matter of commercial confidence and is not in the public domain, though the overall cost of the national farm accounts surveys is. This applies in the UK (England, Wales and Scotland). In the Netherlands, while the total cost of the institute that carries out the farm accounts survey is a matter of public record, this also covers additional activities; the cost of the survey (data collection and other related functions) is again a matter of commercial sensitivity and, while an approximation in money terms has been provided by a government source, it should not be regarded as definitive as it too may cover more than the collection of farm accounts survey material. Where work on farm accounts surveys is undertaken as a commercial operation under contract, VAT may be chargeable. Of course, VAT will be received by the treasuries of Member States and its charging therefore represents a redistribution. To improve comparability between Member States we have endeavoured to measure costs before VAT is applied.

In many Member States, some actions that are essential to the data supply chain are undertaken by government departments other than the one that finances the national farm accounts survey or by parts of the relevant department that are not covered by the survey budget. Examples are statistical advice and the drawing of the sample. While in some cases an estimate of the amount of labour input into such activities is possible, their monetary cost will not be covered in the figures declared by Member States as the cost of the survey.
Costs are taken gross, that is, before funding contributed by the EU in the form of the standard fee per completed Farm Return accepted by the Commission is deducted. This is to enable the operating costs of the farm accounts survey to be fully reflected. As the fee is known, it is not difficult to make estimates net of the Commission payment if this is needed, although given that the fee is the same per completed Farm Return across all Member States such an estimation would not alter cost differences in absolute terms. Very occasionally, and for specific purposes, national costs net of the fees received from the Commission are cited; these circumstances are made clear.

Costs covered in the estimates here are those borne by public budgets alone. Where farmers are obliged to keep accounts in order to satisfy national taxation requirements, and pay accountancy firms to help prepare them, and these accounts are used as the basis for data extraction, the private costs borne by the farmer are not counted within our estimates given that they would have to be incurred in the absence of EU-FADN. The rationale is that, if a farmer is recruited to the survey and he is already paying for the drawing up of accounts, there is no additional cost to the farmer attributable to the survey; alternatively, if the farm accountancy survey were discontinued, the private costs of producing accounts would continue. A case could be made that, if farms would not provide information because of the additional private costs incurred in doing so, then payment to offset these costs should be made from public funds; in reality a number of Member States make payments to farmers, but these are within public budgets and are included in our cost estimates. So too are the additional costs of producing accounts for farmers who are not obliged by tax regulations to keep accounts (as happens for small farms in several Member States). However, private costs per se do not form part of our costs estimates (the time input required by farmers or their accountants is separately considered in our estimations of time requirements – see below).

No Member State was able to give direct information on the monetary cost of each of the various stages (described above) of the data supply chain in the national farm accounts survey, and some could not distinguish even the data collection cost. In the absence of this information, an estimate has been made using information contained in the Standard Cost Model, in which known labour inputs for each stage (or groups of stages) are used as a distribution key for costs.

6.1.4. Confidence in labour input figures

As with money costs, greatest confidence is attached to the overall FTEs associated with the national farm accounts survey. Within case study countries, the picture of FTEs used at each stage was built up (usually in hour terms) by questioning respondents in organisations along the data supply chain (typically the ministry responsible for funding, the Liaison Agency, and the data collecting organisation, which in some countries are the same). Confidence is also generally high when considering the data collection stage, in that respondents have been able to give with some certainty the numbers of individuals working on this activity and their full-time or part-time status. However, problems arise when data collection is combined with other functions, such as the provision of advice (for example, in Lithuania). When data collection and the provision of advice may take place simultaneously rather than consecutively, the two might be considered as 'joint products' of the attendance of the fieldworker (in the economic sense). In such circumstances an estimate of the time allocation by the organisation involved has to be relied upon. In the absence of a detailed work-study exercise, such estimates have to be taken at face value; only occasionally are alternative views of such proportions available.

It should be noted that data collection accounts for the large majority of the overall FTEs used in national farm accounts surveys. Less certainty surrounds the FTEs allocated to

32 The production of wool and meat in sheep production is a classic example from agricultural economics.
other stages. Again there are problems of ‘joint products’; for example, in many countries data entry is combined with the first (pre-submission) validation check, in the form of a warning generated by the software alerting the person entering data of possible mistakes or things to check for plausibility. Only in a few Member States (such as the Netherlands) was the national source capable of providing a carefully worked out set of estimates (a by-product of the project-type approach employed there). In other case study countries the breakdown has been determined after careful questioning of national officials and, though subject to scrutiny and tests of what seems reasonable (both in relation to the national data chain and from comparisons with other countries) there was no way of checking independently the validity of responses for individual items. The results should therefore be treated as indicative rather than definitive.

For completeness, the time input of farmers (or their representative) has been included in some analyses, based on their involvement with data collectors. As with the money cost estimate, the time spent by farmers in activities required by national taxation regimes (such as drawing up accounts) is not included. At the other end of the supply chain, time spent by the Commission in raising queries arising from RICA-1 testing is also allowed for because this will differ according to the quality of the national validation programme. Inclusion or not of these two categories in our analysis depends on circumstances.

6.1.5. Separability

Costs related to FADN data collection need to be distinguished from those of other activities of the operators. A point of principle adopted in this work is that the legal requirement to collect data for the FADN under Council Regulation (EC) No 1217/2009 of 30 November 2009 means that the costs of doing so are core costs. The implication is that, when asking Member States for information, FADN costs have to be extracted from total costs of national farm accounts surveys by deducting the marginal costs associated with the additional material contained in the national accounts survey. This can take the form of additional questions, depth of questions, additional holdings, or any combination of these.

When dealing with national accounts surveys that use a broader scope than FADN (such as the coverage of off-farm income or for greater depth required for national purposes), online survey respondents and case study interviewees were asked for the saving that would be achieved by not requiring these non-FADN questions to be asked. Because national questionnaires differ greatly, the potential time saving is specific to individual countries. Again reliance had to be placed on the professional expertise of the representatives of the data collecting organisations; some case study countries found the question very hard to answer (not least because to them what is a FADN variable and what a national one is not usually evident), while the range of responses among those that attempted an answer went from 0% time saving in data collection by omitting national questions to 25%. Where figures have been given, they have been used as adjustment factors (see section 6.3.4.1). In some Member States sometimes additional questions of a more detailed nature are asked, the purpose of which is to provide a more robust answer to FADN questions; the point was made that a saving in time by not collecting this data would have to be spent on additional validation.

When the national survey has a larger sample than is required by FADN, there is a prima facie case for making a pro-rata reduction in the total cost. However, this is too simplistic an approach due to the presence of fixed as well as variable costs. In addition

33 This is the basic regulation in operation during the period to which this study relates. It can be traced back to Council Regulation 79/65/EEC of 15 June 1965 which established the legal basis for the organisation of the network.
to this, Member States typically maintain a somewhat larger number of farms in their sample to ensure that their commitment to FADN in terms of Farm Returns is met fully, so some margin is ‘normal’ and does not represent an attempt to have a larger national survey. Hence, in our analysis we have only considered larger national samples where they meet explicit additional national needs.

6.2. Resource (time) costs of supplying FADN

It is possible to build up the time resource requirements necessary to supply data to FADN from the labour required at various stages in the FADN supply chain. This has been done in two ways: first based on total time requirement and allocation to main activities (for all EU-28 Member States using evidence gathered via our online survey); and, second through more detailed discussions in our case study Member States which have allowed us to break the FADN supply chain down by stage and also by the organisations involved. This methodology follows the Standard Cost Model approach. Our findings are presented in section 6.2.1 and section 6.2.2 respectively.

6.2.1. Total time requirement and allocation to main activities

Our online survey asked Liaison Agencies to provide the number of full-time equivalent (FTE) staff employed on the key tasks\(^\text{34}\) related to the national farm accounts survey in:

a) data organisation and processing (including validation);
b) data collection (where this is a task of the Liaison Agency); and,
c) data collection where this is carried out by other organisations (if known).

The findings are reported in Table 6.1. The final column provides the time in hours per completed FADN Farm Return to allow comparisons between Member States taking into account different sample sizes. This table should not be directly compared to later investigations of time requirements in case study countries because the information here only relates to the major time requirements for the Liaison Agencies and data collectors (where different) and is therefore a (slight) underestimation of total time requirement. Detailed discussions in the case study countries allowed estimations to be produced where the exact number of FTEs involved in data collection were either not known or could not be provided in our online survey for reasons of commercial confidentiality.

The total number of FTEs required to provide data to FADN varies enormously by Member State, although this is heavily influenced by the sample size (the use of our typology is only meaningful after adjustment for sample size, i.e. the final column in the Table). The lowest number of FTEs required (not including Member States for which not all FTEs are known) is Sweden at 5.0, followed by Latvia and Cyprus with 8.0 FTEs each. The highest number of FTEs is required in Poland (375.3), followed by Italy (97.1) and the UK (83.8).

In terms of labour input used (in hours) per completed Farm Return, not including farmer time and again excluding Member States with only partial information, the greatest labour requirement is 80 hours in Luxembourg, followed by 75 in Belgium, 71 in Lithuania, 59 in Poland and 55 in the UK. However, in Luxembourg, Lithuania and the UK the national sample size exceeds FADN requirements and dividing the time requirement by the national sample size reduces the time requirement per completed national questionnaire to 40, 54 and 42 hours respectively. This leaves Belgium (75 hours per completed EU-FADN Farm Return) and Poland (59 hours) as the most labour intensive

\(^{34}\) Some additional time is required for activities not covered under these headings and other organisations besides the Liaison Agencies and data collectors are involved, but as will become apparent in section 6.2.2 in both cases this is relatively marginal.
systems. At the other end of the spectrum, only seven hours are required per completed Farm Return in Germany (five if total time is divided by the larger national sample size) and Sweden, eight in Spain and ten in France. All four of these Member States fall into Type 3: C-AF where data collection relies on already completed accounts which reduces the time requirement per completed Farm Return considerably.

Table 6.1: Labour requirements for supplying national farm accounts survey data

<table>
<thead>
<tr>
<th>Year</th>
<th>Year</th>
<th>Type 1: Data collection by Liaison Agency</th>
<th>Type 2: Data collection by public advisory services</th>
<th>Type 3: Data collection by private accounting firms</th>
</tr>
</thead>
<tbody>
<tr>
<td>Belgium</td>
<td>2014</td>
<td>10.5</td>
<td>46.6</td>
<td>0.7</td>
</tr>
<tr>
<td>Bulgaria</td>
<td>2013</td>
<td>3.5</td>
<td>19.1</td>
<td>0.9</td>
</tr>
<tr>
<td>Cyprus</td>
<td>2013</td>
<td>2.4</td>
<td>5.6</td>
<td>1.0</td>
</tr>
<tr>
<td>Greece</td>
<td>2013</td>
<td>2.0</td>
<td>1.0</td>
<td>Yes</td>
</tr>
<tr>
<td>Ireland</td>
<td>2014</td>
<td>2.0</td>
<td>13.0</td>
<td>N/A</td>
</tr>
<tr>
<td>Italy</td>
<td>2013</td>
<td>10.2</td>
<td>20.5</td>
<td>Estimated</td>
</tr>
<tr>
<td>Luxembourg</td>
<td>2013</td>
<td>2.0</td>
<td>19.8</td>
<td>N/A</td>
</tr>
<tr>
<td>Malta</td>
<td>2013</td>
<td>1.4</td>
<td>0.6</td>
<td>No</td>
</tr>
<tr>
<td>Netherlands</td>
<td>2013</td>
<td>0.9</td>
<td>39.2</td>
<td>N/A</td>
</tr>
<tr>
<td>Norway</td>
<td>2013</td>
<td>5.8</td>
<td>1.0</td>
<td>No</td>
</tr>
<tr>
<td>Portugal</td>
<td>2014</td>
<td>3.2</td>
<td>32.8</td>
<td>N/A</td>
</tr>
<tr>
<td>Croatia</td>
<td>2014</td>
<td>4.0</td>
<td>14.5</td>
<td>N/A</td>
</tr>
<tr>
<td>Czech Republic</td>
<td>2014</td>
<td>11.0</td>
<td>N/A</td>
<td>No</td>
</tr>
<tr>
<td>Finland</td>
<td>2013</td>
<td>7.0</td>
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<td>No</td>
</tr>
<tr>
<td>Latvia</td>
<td>2013</td>
<td>5.0</td>
<td>N/A</td>
<td>Yes</td>
</tr>
<tr>
<td>Lithuania</td>
<td>2014</td>
<td>4.6</td>
<td>1.0</td>
<td>Estimated</td>
</tr>
<tr>
<td>Poland</td>
<td>2013</td>
<td>5.5</td>
<td>9.0</td>
<td>Estimated</td>
</tr>
<tr>
<td>Slovakia</td>
<td>2014</td>
<td>4.0</td>
<td>2.0</td>
<td>Estimated</td>
</tr>
<tr>
<td>UK</td>
<td>2013</td>
<td>4.0</td>
<td>N/A</td>
<td>Estimated</td>
</tr>
<tr>
<td>Austria</td>
<td>2013</td>
<td>4.0</td>
<td>N/A</td>
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<tr>
<td>Denmark</td>
<td>2014</td>
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<td>No</td>
</tr>
<tr>
<td>Estonia</td>
<td>2014</td>
<td>6.0</td>
<td>N/A</td>
<td>Yes</td>
</tr>
<tr>
<td>France</td>
<td>2013</td>
<td>14.2</td>
<td>2.0</td>
<td>Estimated</td>
</tr>
<tr>
<td>Germany</td>
<td>2013</td>
<td>1.3</td>
<td>N/A</td>
<td>Estimated</td>
</tr>
<tr>
<td>Hungary</td>
<td>2013</td>
<td>5.0</td>
<td>N/A</td>
<td>No</td>
</tr>
<tr>
<td>Romania</td>
<td>2013</td>
<td>5.0</td>
<td>N/A</td>
<td>No</td>
</tr>
<tr>
<td>Slovenia</td>
<td>2013</td>
<td>2.1</td>
<td>N/A</td>
<td>Yes</td>
</tr>
<tr>
<td>Spain</td>
<td>2013</td>
<td>5.0</td>
<td>N/A</td>
<td>Estimated</td>
</tr>
<tr>
<td>Sweden</td>
<td>2013</td>
<td>0.7</td>
<td>0.2</td>
<td>Estimated</td>
</tr>
<tr>
<td>Switzerland</td>
<td>2013</td>
<td>3.6</td>
<td>N/A</td>
<td>No</td>
</tr>
</tbody>
</table>

Source: Online survey, literature review and case study material.
Notes:
- N/A means not applicable.
- FTEs converted to hours per FADN Farm Return using actual average annual working time for all salaried workers in 2013 (Eurostat) for all EU Member States with the exception of Slovenia where an
FTE was defined in the survey response; Eurofound (2015) for Norway and Swiss Federal Statistics Office for Switzerland.

- France: For consistency, data collection includes a large allowance for validation which Liaison Agencies in other Member States allocated to data collection.
- Germany: Data collectors include accounting firms and regional institutions.
- Slovakia: estimated based on ratio between Farm Returns collected by the Liaison Agency and those by the external data collector and the FTEs required in the Liaison Agency.
- Spain: FTEs calculated using 250 cases per data collector (mid-point of 200-300 range).
- UK: Data collectors include university researchers and Department of Agriculture and Rural Development in Northern Ireland.
- Where this figure is an underestimation because the time spent on data collection by other organisations is not known to the Liaison Agency, the cell is unshaded.

The proportion of total time resource required for data collection (where full information is available) is presented in Figure 6.1. The EU average (for those Member States for which there is full information) shows that 92% of total labour requirement is for data collection. Member States where labour requirements for data collection form a substantial proportion of the total include those with very large samples such as Germany and Poland. In contrast, Member States with smaller samples, such as Cyprus (500 holdings), Slovakia (562 holdings) and Estonia (658 holdings) show a lower proportion of data collection costs in total costs, probably reflecting the greater relative importance of fixed costs. There are also examples where the data collection method is very labour intensive, for example, the UK. As the Figure shows, there is no discernible pattern by data collection type.

![Figure 6.1: Importance of data collection time requirement in total time requirement](image)

Source: Online survey.
6.2.2. Time requirements along the FADN supply chain

Our case study countries allowed a more detailed investigation of the resource costs of producing data for EU-FADN. They provided a somewhat more extended view of the data supply chain than could be formed on the basis of replies to the online survey given above, to cover for example staff in ministries who oversaw the organisation of the complete national accounts system. Figures for this more detailed approach and its analysis are therefore generally marginally larger than those in the previous section though the two are, of course, fully compatible. For completeness an estimate of the time spent by the farmer in supplying data is also included, but this is easily excluded for analyses when only the stages involving public resource use are considered.

A Standard Cost Model approach was used (see section 0). This apportioned total time requirements by both the stage in the supply chain (see section 6.1.1) and by the actors/organisations involved. Some Member States had high quality data on overall time requirements from time sheet recording systems and were able to allocate this overall resource by task with a high degree of confidence. In others it was necessary to build up an overall estimation of resource requirements from the bottom up through a series of discussions with the Liaison Agency and other involved actors. In all cases this was a complex and iterative process, necessarily involving varying degrees of estimation and approximation.

Data were provided in a variety of formats, from total number of hours and/or FTEs to an estimation of time per completed Farm Return. The format depended on the stage in the chain. All data have been converted to time requirement per completed Farm Return to allow comparison between Member States with different FADN sample sizes.

Where the national farm accounts survey has a larger sample size than is required by EU-FADN (Germany, Lithuania and the UK), values have been calculated in the first instance per national Farm Return. This provides more accurate information on variable costs and allows the total time commitment for just the EU-FADN sample to be calculated with greater precision. Activities in the data supply chain which are considered to form fixed costs (comprising A: overall management; B: Design of the selection plan; E1: Data collection - administration, management, etc.; E2: Data collection - training; and, G: Data storage (IT operation and management)) have been recalculated when considering the time requirement strictly to fulfil the requirements for EU-FADN, with all these costs allocated to the EU-FADN sample. This is because (a) providing data to FADN is an EU requirement; and, (b) interviewees did not feel that any savings would be made to fixed costs if the sample size did not exceed EU-FADN requirements. Variable costs have been summed for only the EU-FADN sample (these comprise C: Recruiting participating farmers; D: Maintaining farms in the network (farmer feedback); E3: Data collection - data collection; E4: Data collection - data entry and collation; F: Data quality control; and, H: Data processing and transfer to RICA-1).

It is accepted that the data supply chain ends with the DG AGRI FADN unit and that the time required to raise RICA-1 queries will differ by Member State. However, DG AGRI is not able to report on the precise time required for this activity in respect of each individual Member State. The amount of time is influenced by the size of the sample, quality of the data delivered and language used by a Member State to reply. Under normal circumstances the data check takes the EU FADN unit one month for Member States with large samples (amongst our cases study countries France, Germany, Italy and Poland) and for Member States with methodological issues (such as Bulgaria), and less than one month for Member States with smaller sample sizes (Lithuania, Netherlands, Sweden and the UK). A second round of clarifications is sometimes necessary for Member States with large sample sizes. DG AGRI time has not been added to our estimations.
The figures for **Germany** have been extrapolated from those obtained in Bavaria and Sachsen-Anhalt. Bavarian figures were weighted by the EU-FADN sample in former West German states and Sachsen-Anhalt figures were weighted by the EU-FADN sample in former East German states. The figures for the UK have been weighted by the EU-FADN sample in the four constituent **UK** countries.

Table 6.2 presents a summary of the aggregate time resources by stage in the FADN supply chain to allow a comparison between case study Member States. Cells with 0.00 indicate a very small value; blank cells indicate that there is no time allocation at all. There is some simplification of the stages in the supply chain as set out above in section 6.1.1. E1: Data collection - Administration, management, etc. is included in A: Overall management where data collection is carried out by the Liaison Agency. E4: Data collection – data entry and collation was often considered inseparable from the data collection activity itself.

The key point to note is that data collection accounts for the vast majority of total time requirement. In those countries where data are extracted from existing accounts by accountants (Type 3: C-AF: **Germany**, **Sweden** and **France**) the data collection process is short, at between eight and nine hours including farmer time and five and six hours net of this. France has a relatively substantial data validation requirement at five hours, most of which is required to validate the information in the accounts and which could also be considered part of the data collection process. The **German** Winplausi system provides validation on data entry (and hence is effectively incorporated within the data collection process) so the only separable validation activity here is dealing with RICA-1 queries.

Data collection accounts for a similar proportion of total time in **Poland** and the **UK** (89% and 82% respectively) and for 76% of total time required in **Lithuania**. Given that data collection in these Type 2: C-AS Member States is relatively time intensive, this might be expected. Although the **Netherlands** also has a relatively high requirement for time to gather data (37 hours per Farm Return), the Liaison Agency explained that this results from the additional information that is collected and which cannot be separated.

Data collection times in **Bulgaria** and **Italy**, where data are collected under the auspices of the Liaison Agencies (Type 1: C-LA), are comparable at 19 and 17 hours (66% and 63%) respectively.

There are some interesting differences in the time required for recruitment per completed Farm Return. At one end of the scale, this is negligible in **Germany** and **Poland**, where recruitment is made from existing clients of accounting firms/advisory services (Type 3: C-AF/Type 2: C-AS)\(^\text{35}\). In **Germany** this is because accountants are well aware of the typology of their clients’ farms and have very good relations with their clients which means that (a) ensuring a farm meets the selection criteria is very straightforward; and, (b) when approached farmers are easily persuaded to participate. Another key factor here is a relatively low sample turnover which reduces the need to find replacements. The situation in **Poland** may well be similar in terms of the knowledge of farm typologies, but here it was also impossible to separate recruitment activities from other contact with farms in the context of providing advice.

In other case study countries, recruitment accounts for 9% of the total time requirement per Farm Return in **Bulgaria** and 10% in **Italy** (both Type 1: C-LA), 3% in **Lithuania** and **Sweden** and only 1% in the **Netherlands** and the **UK**.

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\(^{35}\) In **Sweden** holdings are selected without this constraint which may be a factor in higher recruitment costs as not all have their accounts produced by the main data collecting organisation.
While the proportion of time used for management in the data supply chain is generally low overall, it is more substantial in Sweden (20%) and Germany (12%) and France (5%, including regional management of data collection). These three Member States all collect data through accounting firms (Type 3: C-AF) and the relatively high management requirement is a function of the low overall time requirement for data collection (a variable cost) and, as a consequence, the relatively high central fixed cost. In the case of Germany the regional structure also adds a layer of central (non-variable) management. In absolute terms the time required for overall management in Poland is comparable to that in Sweden, but this is spread over a much larger sample and is further diluted by the intensive data collection process. Overall management in the UK is also relatively high in absolute terms. As in Germany the devolved structure adds an additional “overhead”.

Time spent per Farm Return on maintaining farmers in the network (producing and providing feedback to farmers and processing payments, etc.) varies from a high of 4% of total time requirements in Bulgaria, Lithuania and the UK to a low of virtually nothing in Poland. In Lithuania this activity requires just less than two FTEs in the Liaison Agency, but this level of input is fairly marginal in per Farm Return terms and is not especially significant compared to data collection requirements. There is no clear relationship with data collection typology.

It is sometimes difficult to separate out data validation, at least pre-submission, from data collection because the two activities are often heavily linked (post-submission validation is easier to separately identify). As mentioned above, in Germany data are checked on entry; this is also the case in the UK (albeit relatively recently in the case of Northern Ireland). There is a low time requirement to check data in the Netherlands because they are extracted from existing registers. Data validation in the other case study countries is both more separable as an activity and more significant in terms of time requirement. In France data validation accounts for a third of the total time requirement, although, as mentioned above, given that the pre-submission validation checks comprise verifying account data it would be possible to think of data validation and data collection as facets of the same activity. Data validation accounts for 26% of total time requirement in Italy. Here checks are carried out by the data collector and also centrally within the Liaison Agency; this duplication of activity is a partial explanation for the relatively high time requirement. Again, there is no clear relationship with data collection typology.

In Bulgaria the total time requirement for data validation is 9% of the total time requirement and here there is a slightly higher requirement in relation to Farm Returns derived from double entry bookkeeping systems because it is necessary to check the accounts; this is not necessary where the data collector has compiled the account. Again this shows that the two activities are inter-related and hard to divide.

Data storage (IT operation and management) was generally considered to constitute a fairly insignificant time requirement, especially in per Farm Return terms. However, this might be a less visible cost in most situations, with separate identification only possible when a database manager or similar (or fraction thereof) is employed within the Liaison Agency (for example Lithuania, Netherlands, Poland, UK (England and Scotland)), where there is a clear requirement for a certain number of days of IT input (for example, UK (Northern Ireland)) or where there is a task which is clearly related to this category (for example, data archiving in Germany). Again, this is a difficult category to

36 There is a time cost for the Liaison Agency in making payments to farmers of 0.17 FTE, but the extension service cannot separate out other aspects of this activity from the general provision of advice. The large Polish sample means that the time input is insignificant in per Farm Return terms.
separately identify, as IT operation is necessary throughout the FADN supply chain and usually integrated with other activities.

Data processing and transfer to RICA-1 (not including time required to respond to queries, which is addressed under validation) is also usually a marginal activity in terms of time requirement. In many cases Liaison Agencies likened this activity to “pushing a button”. This activity amounted to less than 2% of total time requirement in all case study countries except **Sweden** where it accounted for 4% of total time requirement, mainly because of the overall low time requirement by the data supply chain and the fact that the Board of Agriculture requires just over a third of an FTE to calculate the EU-FADN variables from the Swedish national variables.
### Table 6.2: Time requirements to supply FADN (hours and percentage of total hours per holding)

<table>
<thead>
<tr>
<th>Activity</th>
<th>Type 1: Data collection by Liaison Agency</th>
<th>Type 2: Data collection by public advisory service</th>
<th>Type 3: Data collection by private accounting fund</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>BG</td>
<td>IT</td>
<td>NL</td>
</tr>
<tr>
<td>A: Overall management</td>
<td>2.88</td>
<td>10.2%</td>
<td>0.02</td>
</tr>
<tr>
<td>A1: National FADN Committee</td>
<td>0.05</td>
<td>0.2%</td>
<td>0.02</td>
</tr>
<tr>
<td>A2: Regional FADN Committee</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>A3: Stuttgart Programme</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>B: Design of selection plan</td>
<td>0.10</td>
<td>0.4%</td>
<td>0.01</td>
</tr>
<tr>
<td>C: Recruiting participating farmers</td>
<td>2.50</td>
<td>8.8%</td>
<td>2.75</td>
</tr>
<tr>
<td>D: Maintaining farms in the network (farmer feedback)</td>
<td>1.00</td>
<td>3.5%</td>
<td>0.25</td>
</tr>
<tr>
<td>E: Data collection</td>
<td>18.75</td>
<td>66.2%</td>
<td>0.75</td>
</tr>
<tr>
<td>E1: Admin, management, etc.,</td>
<td>-</td>
<td>-</td>
<td>0.00</td>
</tr>
<tr>
<td>E2: Training</td>
<td>3.00</td>
<td>10.6%</td>
<td>1.50</td>
</tr>
<tr>
<td>E3: Data collection</td>
<td>13.25</td>
<td>46.8%</td>
<td>15.75</td>
</tr>
<tr>
<td>E4: Data entry and collation</td>
<td>2.50</td>
<td>8.8%</td>
<td>0.00</td>
</tr>
<tr>
<td>F: Data quality control</td>
<td>2.50</td>
<td>8.8%</td>
<td>7.26</td>
</tr>
<tr>
<td>F1: Pre-submission validation</td>
<td>1.25</td>
<td>4.4%</td>
<td>0.75</td>
</tr>
<tr>
<td>F2: Post-submission validation (RICA-1 queries)</td>
<td>1.25</td>
<td>4.4%</td>
<td>0.01</td>
</tr>
<tr>
<td>G: Data storage (IT operation and management)</td>
<td>0.10</td>
<td>0.4%</td>
<td>0.00</td>
</tr>
<tr>
<td>H: Data processing and transfer to RICA-1</td>
<td>0.50</td>
<td>1.8%</td>
<td>0.00</td>
</tr>
<tr>
<td><strong>Total hours per holding</strong></td>
<td><strong>28.33</strong></td>
<td><strong>27.53</strong></td>
<td><strong>41.48</strong></td>
</tr>
<tr>
<td></td>
<td>Type 1: Data collection by Liaison Agency</td>
<td>Type 2: Data collection by public advisory service</td>
<td>Type 3: Data collection by private accounting firms</td>
</tr>
<tr>
<td>-------------------</td>
<td>------------------------------------------</td>
<td>--------------------------------------------------</td>
<td>--------------------------------------------------</td>
</tr>
<tr>
<td></td>
<td>BG</td>
<td>IT</td>
<td>NL</td>
</tr>
<tr>
<td>Total FTEs (national sample)</td>
<td>32.27</td>
<td>187.40</td>
<td>45.85</td>
</tr>
<tr>
<td>Total FTEs excluding farmer (national sample)</td>
<td>29.99</td>
<td>146.56</td>
<td>43.91</td>
</tr>
<tr>
<td>TOTAL FTEs (FADN sample)</td>
<td>32.27</td>
<td>187.40</td>
<td>45.85</td>
</tr>
<tr>
<td>Total FTEs excluding farmer (FADN sample)</td>
<td>29.99</td>
<td>146.56</td>
<td>43.91</td>
</tr>
<tr>
<td>Total hours per holding excluding farmer (FADN sample)</td>
<td>26.33</td>
<td>21.53</td>
<td>39.73</td>
</tr>
</tbody>
</table>

Source: Case study investigations.
Figure 6.2 provides a comparison between the total time required per completed Farm Return for the EU-FADN sample in our case study Member States. These Member States fall clearly into our three typological groups: **Germany, France** and **Sweden** have the lowest time requirements, 10.23, 14.16 and 15.31 hours respectively including farmers’ time and 7.23, 11.16 and 12.81 hours excluding this. These data collection systems employ accountants who extract the required data from completed accounts (Type 3: C-AF).

The time requirements in **Bulgaria** and **Italy**, where data collection is managed by the Liaison Agency (Type 1: C-LA) are also similar to one another. The Liaison Agency also undertakes data collection in the **Netherlands** using largely secondary sources and so it is perhaps surprising that the time requirement here is so relatively high. However, considerably more information is collected in the Netherlands than is required by FADN and this is likely to at least partially explain the high time requirement.

Data collection in **Lithuania** and **Poland** is via public advisory services (Type 2: C-AS) and time required, not including farmer input, is similar at 63.16 and 68.20 hours per Farm return respectively. A key difference though is in the time requirement on the part of the farmer which is much more substantial in the case of Poland. It is recognised that it is difficult to apportion farmers’ time when they are both providing data and receiving advice, and this time might in fact be dual purpose. Another potential reason for the difference in farmer time is that in Lithuania farmers are required to have accounts for taxation purposes and so may be more likely to have necessary information available, whereas in Poland they do not face the same requirement and so may be less organised. The **UK** appears comparable in terms of time requirement to Lithuania and Poland (53.93 hours not including farmer time), which is consistent with the rationale behind the placing of England, Scotland and Wales in the same typology, even though the UK is hard to categorise. It should be noted though that Northern Ireland accounts for 13% of the UK aggregate time calculation and, with data collection there being carried out by the devolved government, this could offer an explanation for the slightly lower time requirement compared to Lithuania and Poland. However, an investigation of the time requirement in Northern Ireland reveals that it is actually very similar to that in Scotland and Wales.

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The time requirement per national farm return is slightly lower for Germany, Lithuania and the UK because fixed costs are spread over a larger sample.
6.3. Monetary costs of supplying FADN

This section considers the total monetary costs (at the Member State level) of supplying data to FADN (section 6.3.1). Estimations are then made of the monetary costs at different stages in the supply chain (section 6.3.2). A final section examines the drivers of costs and provides adjustments to the nominal costs where this is possible to facilitate a more meaningful comparison between Member States.

6.3.1. Total monetary costs

Our literature review revealed very little information on the costs of FADN. Poppe et al. (1997) noted that it is striking that costs are not clearly reported and suggested the creation of a tool to carry out annual benchmarking between (at the time) the EU-15 FADN systems which would include an estimation of actual costs. No evidence has been found to suggest that this tool was ever actually introduced; an estimation made in the early 1990s by the European Commission’s FADN unit produced results that were considered hard to interpret. The importance of cost effectiveness and the ability to
demonstrate this was reiterated in the context of the recent financial crisis and the associated need for governments to find ways of reducing their budgets (Vrolijk, 2012). The information gathered here should be useful to Member States by allowing a comparison between countries which relates costs to the data collection methods used.

Some cost elements are discussed very occasionally in the literature. Amongst these is the comparison of open source and bespoke software solutions (Westerhof, 2013). The former offers cost savings, but implies some compromises in terms of suitability. For example, Pesti (2012) notes that the costs of commercial software solutions are in the region of €40,000 to €60,000 per year compared to free open source solutions. There are though advantages of commercial software, not least a support function and lower programming costs (although it is easy to find programmers). Open source software requires additional time to fix problems, but is low cost, whereas commercial solutions save time, but cost more. Pesti (2012) also reports on the switch towards the use of open source software from 2011 in Hungary. However, though software costs are clearly important, they are very minor compared to labour costs which account for by far the greatest cost element in data collection across the EU.

Even where national farm accounts survey data collection methodologies look the same, differences at a more operational level can still be important in terms of costs. For example, different methods of calculation of the value of assets can impact on them. Reinsson (2009) noted that the calculation used to value buildings in Sweden prior to 2007 (which included a declining balance approach to depreciation) was time consuming and complicated and, as a result, costly. Changes made (including a linear approach to depreciation) should have resulted in greater cost effectiveness without compromising accuracy. Del'Homme and Aamiseep (2009) also draw attention to differences in accountancy methodology. Again though, these cost elements are relatively minor.

The only known example of an EU-wide study on costs is that undertaken by Agra CEAS Consulting (2007) which collected information on the costs of EU-FADN (both average and marginal costs) as part of its feasibility study for Eurostat on re-establishing its Income of the Agricultural Households Sector statistics on a uniform, microeconomic basis for all EU-28 Member States. National farm accounts surveys were seen as a possible source of data as it was known that, in some countries, they went beyond what was required for FADN and already collected household income data.

According to the information supplied by national government sources at the time of the study, average costs ranged downwards from €3,000 per completed Farm Return in the Netherlands, with typical figures in the range €300 to €650 (see Table 6.3, which also includes these figures inflated to 2012 values, see below for analysis). These differences reflect, inter alia, the collection mechanism but will also reflect differing national labour and other costs. Limited cost information was also presented in ECA (2003), but these figures predate the Agra CEAS Consulting work and formed part of its evidence base.

The wide variation in cost is partly explained by disparities in what was covered and in particular the degree to which data analysis was included. For example, the Netherlands probably included much of the Liaison Agency core costs in the figure provided. Perhaps as a consequence there is little correlation with our typology.
### Table 6.3: Total cost of implementing national farm accounts surveys (2007 and inflated to 2012)

<table>
<thead>
<tr>
<th>Type 1: Data collection by Liaison Agency</th>
<th>Total cost 2007</th>
<th>Cost per sample farm 2007 (€)</th>
<th>Total 2007 cost in 2012 terms</th>
</tr>
</thead>
<tbody>
<tr>
<td>Belgium</td>
<td>n.a.</td>
<td>n.a.</td>
<td>-</td>
</tr>
<tr>
<td>Bulgaria</td>
<td>€140,000</td>
<td>€70</td>
<td>€175,278</td>
</tr>
<tr>
<td>Cyprus</td>
<td>n.a.</td>
<td>n.a.</td>
<td>-</td>
</tr>
<tr>
<td>Greece</td>
<td>€7,000,000</td>
<td>€1,273 (marginal cost €500)</td>
<td>€8,055,675</td>
</tr>
<tr>
<td>Ireland</td>
<td>€1,680,000</td>
<td>€244</td>
<td>€1,727,712</td>
</tr>
<tr>
<td>Italy</td>
<td>€8,000,000</td>
<td>€400</td>
<td>€9,013,641</td>
</tr>
<tr>
<td>Luxembourg</td>
<td>n.a.</td>
<td>n.a.</td>
<td>-</td>
</tr>
<tr>
<td>Malta</td>
<td>€46,000</td>
<td>€115</td>
<td>€52,900</td>
</tr>
<tr>
<td>Netherlands</td>
<td>€4,500,000</td>
<td>€3,000</td>
<td>€4,938,476</td>
</tr>
<tr>
<td>Portugal</td>
<td>€1,358,532</td>
<td>€567</td>
<td>€1,493,155</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Type 2: Data collection by public advisory services</th>
<th>Total cost 2007</th>
<th>Cost per sample farm 2007 (€)</th>
<th>Total 2007 cost in 2012 terms</th>
</tr>
</thead>
<tbody>
<tr>
<td>Czech Republic</td>
<td>€600,000</td>
<td>€300</td>
<td>€686,166</td>
</tr>
<tr>
<td>Finland</td>
<td>n.a.</td>
<td>n.a.</td>
<td>-</td>
</tr>
<tr>
<td>Latvia</td>
<td>€266,247</td>
<td>€286</td>
<td>€333,976</td>
</tr>
<tr>
<td>Lithuania</td>
<td>n.a.</td>
<td>n.a.</td>
<td>-</td>
</tr>
<tr>
<td>Poland</td>
<td>€7,931,110</td>
<td>€656</td>
<td>€9,510,422</td>
</tr>
<tr>
<td>Slovakia</td>
<td>n.a.</td>
<td>n.a.</td>
<td>-</td>
</tr>
<tr>
<td>UK</td>
<td>n.a.</td>
<td>n.a.</td>
<td>-</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Type 3: Data collection by private accounting firms</th>
<th>Total cost 2007</th>
<th>Cost per sample farm 2007 (€)</th>
<th>Total 2007 cost in 2012 terms</th>
</tr>
</thead>
<tbody>
<tr>
<td>Austria</td>
<td>n.a.</td>
<td>n.a.</td>
<td>-</td>
</tr>
<tr>
<td>Denmark</td>
<td>€1,208,201</td>
<td>€577</td>
<td>€1,360,102</td>
</tr>
<tr>
<td>Estonia</td>
<td>n.a.</td>
<td>n.a.</td>
<td>-</td>
</tr>
<tr>
<td>France</td>
<td>n.a.</td>
<td>n.a.</td>
<td>-</td>
</tr>
<tr>
<td>Germany</td>
<td>€4,400,000</td>
<td>€400</td>
<td>€4,800,026</td>
</tr>
<tr>
<td>Hungary</td>
<td>€1,200,000</td>
<td>€632</td>
<td>€1,521,100</td>
</tr>
<tr>
<td>Romania</td>
<td>n.a.</td>
<td>n.a.</td>
<td>-</td>
</tr>
<tr>
<td>Slovenia</td>
<td>€94,000</td>
<td>€145</td>
<td>€107,230</td>
</tr>
<tr>
<td>Spain</td>
<td>€3,000,000</td>
<td>€360</td>
<td>€3,356,304</td>
</tr>
<tr>
<td>Sweden</td>
<td>€900,000</td>
<td>€878</td>
<td>€987,689</td>
</tr>
</tbody>
</table>


Notes:
- National currencies converted using ECB rates for 2007 (DKK 7.4506 to €1; LVL 0.7001 to €1; PLN 3.7837 to €1).
- Bulgaria: total cost is calculated from the average and the number of sample farms, the cost provided by the respondent was net of staff salaries.
- Germany: costs are for data collection only.
- Poland: total calculated from average cost and number of sample farms.
- Portugal: total cost calculated using average cost and number of sample farms in 2000.
- Inflated using Eurostat’s Harmonised Index of Consumer Prices (HICP) series.

In order to update and expand this previous information, our online survey for the current project (2015) asked Member States for the total expenditure in the public accounts on the national farm accounts survey for 2012, 2013 and 2014 (including spending on central staff, overheads, data collection, data processing, payments to farmers, etc.). This information is presented in Table 6.4 alongside the average cost per completed FADN Farm Return. However, before turning to these findings in detail it is of interest to compare them with the previous results for 2007.

As a general observation, the total cost of supplying EU-FADN data in 2012-14 corresponds well to that collected in 2007, as can be seen by applying Eurostat’s Harmonised Index of Consumer Prices (HICP) series to the 2007 figures (Table 6.3) and comparing the result with Table 6.4. However, the relationship between the current total costs as found in this study and the 2007 estimates expressed in real terms requires further exploration.

In eight Member States the total cost in 2012 was lower in real terms than in 2007 (Greece, Ireland, Italy, Latvia, Netherlands, Poland, Portugal and Spain). In some this is undoubtedly due to differences in the information collected on total cost. For example, it seems likely that the figure provided for Greece in 2007 was a significant overestimation, and this is probably also the case in Spain. In the Netherlands it seems likely that the 2007 cost included VAT whereas we have excluded VAT from the 2012-14 figures. Other Member States require different explanations, a general one of which is likely to be both an increase in computing power and the increased use of IT in data collection/processing. This may have been a factor in Italy, for example, where a response in the online survey stated that the data collection methodology was altered in 2008 (greater use of administrative data), as have been the tools for processing data. The online survey also reported that there has been a greater use of administrative data in Greece (from 2010, but this cannot on its own explain the large difference; according to the EU-FADN unit, new software was introduced to reduce manual data processing from accounting year 2011) and in Ireland (also from 2010). In addition our literature review notes that the Economic Size threshold was increased in 2012 in Ireland, which allowed a decrease in sample size from 1,300 to 900 Farm Returns and the number of data collectors required decreased from 17 in 2007 to 12 in 2014.

In six Member States the cost of supplying data to FADN has increased in real terms (Bulgaria, Czech Republic, Denmark, Malta, Slovenia and Sweden). In some cases these increases have been marginal and may have been influenced by factors such as exchange rates; in others wage inflation has been higher than the HICP.

In two Member States (Germany and Hungary), the total cost of supplying FADN has remained virtually the same in real terms. This may be because the budget is increased by the government broadly in line with inflation, although this is not known with certainty.

The total expenditure reported in Table 6.4 is clearly not directly comparable between Member States because the number of Farm Returns in the sample differs. However, the cost per completed FADN Farm Return can be compared, subject to two important caveats. First, a minority of Member States stated in our online survey that they have a national sample size which exceeds the requirements of EU-FADN and simply dividing the total cost of the national farm survey by the EU-FADN sample size will result in an overestimation of cost per Farm Return because the costs associated with the larger national sample will be apportioned to the FADN sample (Type 1: C-LA: Luxembourg; Type 2: C-AS: Czech Republic, Lithuania and the UK; Type 3: C-AF: Austria, Denmark and Germany). This is adjusted for in further analysis below. The other important caveat is that all Member States collect data from slightly more holdings than are actually required by FADN to ensure that sufficient numbers are left for submission after national quality controls. Member States differ in the proportion of additional holdings collected, but this margin for error is included in our figures and no adjustment is made.

39 This has been done (a) to maintain consistency; and, (b) because charging VAT represents a distribution between government departments and not a true cost of supplying FADN. VAT was also excluded from Finnish figures.

40 Considerably so in the case of Bulgaria and the Czech Republic, more marginally so in the case of Denmark and Sweden.
Table 6.4 shows that the total annual combined cost to the public purse across Member States of the national farm accounts surveys which supply EU-FADN (not including costs incurred at the EU level or private costs such as the value of farmers’ time) averaged just over €58 million for the 2012-14 period. This amounts to a (weighted) average cost at the EU-28 level of €678 per completed Farm Return. However, average costs in specific Member States deviated considerably from this EU-28 average, with a range from €107 per completed Farm Return in Bulgaria and €156 in Romania to €2,905 in Belgium. The cost to the EU budget is currently €160 per completed Farm Return, i.e. just under €14 million, just under a quarter of total public cost, plus the costs incurred centrally by the FADN unit.
| Study on cost of and good practices for FADN data collection |

<table>
<thead>
<tr>
<th>Table 6.4: Total expenditure on national farm accounts surveys and average expenditure per FADN Farm Return</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Type 1: Data collection by Liaison Agency</strong></td>
</tr>
<tr>
<td><strong>Country</strong></td>
</tr>
<tr>
<td>Belgium</td>
</tr>
<tr>
<td>Bulgaria</td>
</tr>
<tr>
<td>Cyprus</td>
</tr>
<tr>
<td>Greece</td>
</tr>
<tr>
<td>Ireland</td>
</tr>
<tr>
<td>Italy</td>
</tr>
<tr>
<td>Luxembourg</td>
</tr>
<tr>
<td>Malta</td>
</tr>
<tr>
<td>Netherlands</td>
</tr>
<tr>
<td>Norway</td>
</tr>
<tr>
<td>Portugal</td>
</tr>
<tr>
<td><strong>Type 2: Data collection by public advisory services</strong></td>
</tr>
<tr>
<td><strong>Country</strong></td>
</tr>
<tr>
<td>Croatia</td>
</tr>
<tr>
<td>Czech Republic</td>
</tr>
<tr>
<td>Finland</td>
</tr>
<tr>
<td>Latvia</td>
</tr>
<tr>
<td>Lithuania</td>
</tr>
<tr>
<td>Poland</td>
</tr>
<tr>
<td>Slovenia</td>
</tr>
<tr>
<td>UK</td>
</tr>
<tr>
<td><strong>Type 3: Data collection by private accounting firms</strong></td>
</tr>
<tr>
<td><strong>Country</strong></td>
</tr>
<tr>
<td>Austria</td>
</tr>
<tr>
<td>Belgium</td>
</tr>
<tr>
<td>Estonia</td>
</tr>
<tr>
<td>France</td>
</tr>
<tr>
<td>Germany</td>
</tr>
<tr>
<td>Hungary</td>
</tr>
<tr>
<td>Romania</td>
</tr>
<tr>
<td>Slovenia</td>
</tr>
<tr>
<td>Spain</td>
</tr>
<tr>
<td>Sweden</td>
</tr>
<tr>
<td>Switzerland</td>
</tr>
<tr>
<td><strong>EU-28</strong></td>
</tr>
</tbody>
</table>

Source: Online survey.

Notes:
- National currencies converted to Euros using ECB annual rate for 2012, 2013 and 2014 for Czech Republic, Denmark, Hungary, Poland, Sweden, Switzerland and UK41. All other figures provided in Euros.
- The figure for Portugal is an average of the range provided (€1.0-€1.3 million).
- EU-28 figures assume the same cost in Belgium in 2012 and 2014 as in 2013 and in Luxembourg in 2012 and 2013 as in 2014.
- Figures for Finland, Hungary and the Netherlands have been adjusted to remove VAT.

41 http://sdw.ecb.europa.eu/browse.do?node=2018794
Average total costs are also presented in Figure 6.3 where they are ranked within typology by value in descending order. As a general rule, average costs are lowest where data are collected by accounting firms (Type 3: C-AF) and highest where data collection is by public advisory service (Type 2: C-AS), although there are exceptions in both cases. It is also noticeable that, as a generality, EU-15 Member States have higher average costs than the other Member States, although again there are exceptions linked to the typology (Type 3: C-AF: France, Germany, Spain) and to a generally low-cost environment (Greece and Portugal). Poland, Slovakia, Lithuania and the Czech Republic (Type 2: C-AS) are the only non-EU-15 Member States with average costs higher or approximately equal to the EU average.

![Figure 6.3: Average total cost per completed Farm Return (2012-14 average)](image)

Source: Online survey.

Figure 6.4 shows the average cost per completed Farm Return plotted against FADN sample size. Member States where data collection is carried out by Liaison Agencies (Type 1: C-LA) are shown in blue triangles, those where data are collected by public advisory services (Type 2: C-AS) in green squares and those where data are collected by private accounting firms (Type 3: C-AF) in red diamonds. This Figure again shows that the Member States with higher unit costs tend to be those which are generally higher labour-cost countries and which fall predominantly into Type 1: C-LA, but the addition of the FADN sample size suggests that there may be some scale economies (as would be expected) with Member States with the largest EU-FADN samples tending to have lower unit costs as fixed costs are spread over more holdings (although data collection method also offers an explanation – many of these are Type 3: C-AF). Only Italy and Poland (Type 1: C-LA and Type 2: C-AS respectively) have average unit costs higher than the EU-28 weighted average and a FADN sample size over 3,000 (although obviously Member States with large sample sizes have greater influence over the EU-28 weighted average).
Figure 6.4: Average total cost per completed Farm Return vs FADN sample (2012-14 average)

Source: Online survey.
**Box 6.2: Case Study of USDA’s ARMS: Costs of the data collection**

The USDA’s Economic Research Service (USDA-ERS) pays the National Agricultural Statistics Service (USDA-NASS) $7 million annually for the survey. ERS also devotes three staff full-time to the survey, and parts of the time of several other staff. The in-house ERS commitment to survey and database development (which cannot be separated identified) amounts to approximately $750,000. NASS also contributes some resources beyond the ERS commitment to support NASS products from the survey. This budget is unknown. Based on the coverage of 30,000 farms and the cost information above, the unit cost of ARMS amounts to $258 (€19442), although this does not include the staff costs within the ERS or the cost to NASS of supporting products and is therefore a (slight) underestimation.

6.3.2. Allocation of monetary costs to activity

Respondents to the online survey were asked to allocate the total cost to the Liaison Agency of the national farm accounts survey into the following activities:

- a) data organisation and processing (including validation and IT maintenance);
- b) data collection (when carried out by the Liaison Agency);
- c) payments to farmers (if applicable); and,
- d) data collection carried out by other organisations.

The results are shown in Table 6.5 and Figure 6.5. As would be expected *a priori*, and as noted in the consideration of time requirements in section 6.2, data collection accounts for the majority of total cost in most cases. Where this is not the case, partial explanation at least is likely to be offered by the method of collection or the relative cost of labour. For example, in Denmark and Sweden the relatively low proportion of data collection costs reflects the extraction of data from accounts and in Finland and Malta from secondary data sources. In the cases of Latvia and Estonia, however, the explanation for the relatively low importance of data collection cost in total cost is likely to reflect lower wages amongst data collectors compared to those paid to staff in the Liaison Agencies.

There is also a relationship between the size of the sample and the relative importance of data collection costs because fixed costs will be spread over a larger number of Farm Returns as the sample size increases, meaning that the average cost per Farm Return will be lower. For example, France, Germany and Spain all have a high proportion of data collection cost, even though FADN Farm Returns in these Member States are based (largely) on completed accounts (Type 3: C-AF).

The importance of the cost of payments to farmers is a function of both sample size and the payment rate as the overall amount will be determined by the product of the two. Hence, although there is a large sample in Germany, participating farmers are only paid €55 each, tending to reduce the relative importance of the cost of these payments within the overall total. In contrast, in Slovakia, payments to farmers average €290 each. In Lithuania the EU contribution per completed Farm Return is only paid to legal entities in the sample (50 at €160 in 2014 = €8,000). The EU weighted average payment to farmers is €83 (€85 without the Lithuanian payments).

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42 Converted using the ECB annual rate for 2014 ($1.3285: €1).
Table 6.5: Allocation of total cost to different activities

<table>
<thead>
<tr>
<th>Type</th>
<th>Data collection by Liaison Agency</th>
<th>Data organisation and processing (including validation and IT maintenance)</th>
<th>Data collection (by Liaison Agency or other organisations)</th>
<th>Payments to farmers (if applicable)</th>
<th>Cost to other organisations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type 1: Data collection by Liaison Agency</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Belgium</td>
<td>€3,486,152</td>
<td>€972,352</td>
<td>€2,513,800</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Bulgaria</td>
<td>€265,110</td>
<td>€19,371</td>
<td>€245,739</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Cyprus</td>
<td>€260,000</td>
<td>€60,000</td>
<td>€140,000</td>
<td>€60,000</td>
<td>-</td>
</tr>
<tr>
<td>Greece</td>
<td>€2,000,000</td>
<td>€50,000</td>
<td>€1,280,940</td>
<td>€669,060</td>
<td>-</td>
</tr>
<tr>
<td>Ireland</td>
<td>€1,100,000</td>
<td>€150,000</td>
<td>€950,000</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Italy</td>
<td>€7,600,000</td>
<td>€3,700,000</td>
<td>€3,700,000</td>
<td>-</td>
<td>€200,000</td>
</tr>
<tr>
<td>Luxembourg</td>
<td>€1,135,000</td>
<td>n.a.</td>
<td>n.a.</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Malta</td>
<td>€91,000</td>
<td>€6,000</td>
<td>€24,000</td>
<td>€31,088</td>
<td>€29,912</td>
</tr>
<tr>
<td>Netherlands</td>
<td>€3,305,785</td>
<td>n.a.</td>
<td>n.a.</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Portugal</td>
<td>€1,150,000</td>
<td>€125,000</td>
<td>€1,025,000</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

| Type 2: Data collection by public advisory services | | | | | |
| Croatia | €356,200 | €132,200 | €224,000 | - | - |
| Czech Republic | €909,674 | €292,300 | €617,374 | - | - |
| Finland | €1,524,634 | €990,492 | €534,142 | - | - |
| Latvia | €284,591 | €135,292 | €76,139 | €73,160 | - |
| Lithuania | €680,842 | €140,680 | €532,162 | €8,000 | - |
| Poland | €9,037,626 | €1,251,517 | €6,842,670 | €694,721 | €248,718 |
| Slovakia | €370,566 | €67,000 | €140,476 | €163,090 | - |
| UK | €6,186,143 | n.a. | n.a. | - | - |

| Type 3: Data collection by private accounting firms | | | | | |
| Austria | €3,400,000 | €700,000 | €2,100,000 | €240,000 | €360,000 |
| Denmark | €1,568,806 | €777,699 | €791,107 | - | - |
| Estonia | €258,152 | €115,024 | €77,628 | €65,500 | - |
| France | €4,000,000 | €70,000 | €3,930,000 | - | - |
| Germany | €4,911,000 | €391,130 | €3,887,370 | €632,500 | - |
| Hungary | €586,578 | €74,521 | €512,057 | - | - |
| Romania | €950,000 | €350,000 | €600,000 | - | - |
| Slovenia | €288,047 | €68,252 | €156,620 | €63,175 | - |
| Spain | €1,857,000 | €157,000 | €1,700,000 | - | - |
| Sweden | €1,202,104 | €361,903 | €677,339 | €162,862 | - |

Source: Online survey.
Notes:
- Figures for CZ, EE, HR and LT are for 2014.
- Accounting firms in the Czech Republic make payments to farmers, but the value of these is not known.
- Costs to other organisations have been inferred as the difference between the total cost and the Liaison Agencies expenditure on the specified activities.
- No breakdown could be provided for Luxembourg, the Netherlands or the UK. In the case of the UK this is for reasons of commercial confidentiality.
6.3.3. **Reconciliation between money costs and labour time utilisation**

This ‘monetised’ approach to costs in the various stages of the FADN data supply chain, as well as being informative in its own right, also provides a useful cross-check on the allocation of time resource to different activities (see section 6.2.2 above). Where the cost of labour is broadly the same, and where there are no payments to farmers, the proportion of cost required for data collection should be approximately the same as the proportion of total labour time required. This is indeed the situation. For example, the proportion of cost required for data collection in Ireland is 86% and the proportion of time 87%. In Portugal the respective proportions are 89% and 91%. After an adjustment to remove payments to farmers, the proportion of monetary and time cost required for data collection is the same in Cyprus (70%) and very similar in Latvia (36% c.f. 38%).

There is, however, a greater disparity between the proportions in some Member States. For example, in Germany, while 91% of total cost after adjustment for farmer payments is required for data collection, the equivalent proportion of time required is 97%. This is likely to reflect the fact that bookkeepers do not consider the payment they receive to sufficiently cover costs, in other words, the monetary cost does not quite meet the time requirement.

Under the simplifying assumption that labour requirements are closely related to financial resource requirements, it is possible to provide a more detailed disaggregated estimate of the monetary cost of the different stages in the FADN data supply chain for the case study countries. This has been done by using the allocation of time as a key with which...
to distribute the known total cost (net of payments made to participating farmers which are shown separately). The results are shown in Table 6.6 and Table 6.7. These are provided for completeness, though the basic information behind them (the proportional allocation) is no more than what has been described above (money costs and time utilisations).
Table 6.6: Estimation of costs for specific activities along the FADN supply chain

<table>
<thead>
<tr>
<th>Type</th>
<th>Data collection by Liaison Agencies</th>
<th>Data collection by public advisory services</th>
<th>Data collection by private accounting firms</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>BG</td>
<td>IT</td>
<td>NL</td>
</tr>
<tr>
<td>A:</td>
<td>Overall management</td>
<td>€25,695</td>
<td>€6,423</td>
</tr>
<tr>
<td>A1:</td>
<td>National FADN Committee</td>
<td>€487</td>
<td>€6,423</td>
</tr>
<tr>
<td>A2:</td>
<td>Regional FADN Committee</td>
<td></td>
<td></td>
</tr>
<tr>
<td>A3:</td>
<td>Stuttgart Programme</td>
<td></td>
<td></td>
</tr>
<tr>
<td>B:</td>
<td>Design of selection plan</td>
<td>€893</td>
<td>€1,927</td>
</tr>
<tr>
<td>C:</td>
<td>Recruiting participating farmers</td>
<td>€22,327</td>
<td>€983,553</td>
</tr>
<tr>
<td>D:</td>
<td>Maintaining farms in the network</td>
<td>€8,931</td>
<td>€89,414</td>
</tr>
<tr>
<td></td>
<td>(farmer feedback)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>E:</td>
<td>Data collection</td>
<td>€149,591</td>
<td>€4,023,625</td>
</tr>
<tr>
<td>E1:</td>
<td>Administration, management, etc.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>E2:</td>
<td>Training</td>
<td>€26,792</td>
<td>€536,483</td>
</tr>
<tr>
<td>E3:</td>
<td>Data collection</td>
<td>€100,471</td>
<td>€3,487,142</td>
</tr>
<tr>
<td>E4:</td>
<td>Data entry and collation</td>
<td>€22,327</td>
<td>€983,553</td>
</tr>
<tr>
<td>F:</td>
<td>Data quality control</td>
<td>€22,327</td>
<td>€2,595,058</td>
</tr>
<tr>
<td>F1:</td>
<td>Pre-submission validation</td>
<td>€11,163</td>
<td>€2,593,003</td>
</tr>
<tr>
<td>F2:</td>
<td>Post-submission validation (RICA-1</td>
<td>€11,163</td>
<td>€2,595,058</td>
</tr>
<tr>
<td>G:</td>
<td>Data storage (IT operation</td>
<td>€893</td>
<td>€122,708</td>
</tr>
<tr>
<td></td>
<td>and management)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>H:</td>
<td>Data processing and transfer to</td>
<td>€4,465</td>
<td>€21,832</td>
</tr>
<tr>
<td></td>
<td>RICA-1 queries</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Payments to farmers</td>
<td>€8,000</td>
<td>€694,721</td>
<td></td>
</tr>
<tr>
<td>TOTAL (2012-14 average)</td>
<td>€235,122</td>
<td>€7,700,000</td>
<td>€3,305,785</td>
</tr>
</tbody>
</table>

Source: Online survey and case study investigations.
## Table 6.7: Estimation of costs for specific activities along the FADN supply chain (average costs/Farm Return)

<table>
<thead>
<tr>
<th>Activity</th>
<th>BG</th>
<th>IT</th>
<th>NL</th>
<th>LT</th>
<th>PL</th>
<th>UK</th>
<th>DE</th>
<th>FR</th>
<th>SE</th>
</tr>
</thead>
<tbody>
<tr>
<td>A: Overall management</td>
<td>€11.67</td>
<td>€0.58</td>
<td>€38.41</td>
<td>€15.24</td>
<td>€33.11</td>
<td>€176.85</td>
<td>€84.82</td>
<td>€30.43</td>
<td>€240.23</td>
</tr>
<tr>
<td>A1: National FADN Committee</td>
<td>€0.22</td>
<td>€0.58</td>
<td>€6.79</td>
<td>€1.55</td>
<td>€0.04</td>
<td>€1.17</td>
<td>€2.83</td>
<td>€0.50</td>
<td>€1.51</td>
</tr>
<tr>
<td>A2: Regional FADN Committee</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>€6.62</td>
</tr>
<tr>
<td>A3: Stuttgart Programme</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>€1.74</td>
</tr>
<tr>
<td>B: Design of selection plan</td>
<td>€0.41</td>
<td>€0.17</td>
<td>€43.66</td>
<td>€17.15</td>
<td>€0.32</td>
<td>€0.39</td>
<td>€0.79</td>
<td>€0.53</td>
<td>€3.02</td>
</tr>
<tr>
<td>C: Recruiting participating farmers</td>
<td>€10.14</td>
<td>€88.31</td>
<td>€25.09</td>
<td>€21.95</td>
<td>€0.00</td>
<td>€26.98</td>
<td>€2.09</td>
<td>€7.74</td>
<td>€30.23</td>
</tr>
<tr>
<td>D: Maintaining farms in the network (farmer feedback)</td>
<td>€4.06</td>
<td>€8.03</td>
<td>€3.99</td>
<td>€29.40</td>
<td>€0.27</td>
<td>€112.42</td>
<td>€5.26</td>
<td></td>
<td>€10.58</td>
</tr>
<tr>
<td>E: Data collection</td>
<td>€67.93</td>
<td>€361.28</td>
<td>€1,964.84</td>
<td>€505.93</td>
<td>€571.69</td>
<td>€2,044.81</td>
<td>€369.75</td>
<td>€261.84</td>
<td>€499.66</td>
</tr>
<tr>
<td>E1: Administration, management, etc.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>€9.51</td>
<td></td>
<td>€9.07</td>
</tr>
<tr>
<td>E2: Training</td>
<td>€12.17</td>
<td>€48.17</td>
<td>€17.95</td>
<td>€25.30</td>
<td>€149.18</td>
<td>€6.12</td>
<td>€14.51</td>
<td></td>
<td>€36.28</td>
</tr>
<tr>
<td>E3: Data collection</td>
<td>€45.63</td>
<td>€313.11</td>
<td>€1,964.84</td>
<td>€438.94</td>
<td>€291.17</td>
<td>€1,585.33</td>
<td>€363.63</td>
<td>€237.82</td>
<td>€394.95</td>
</tr>
<tr>
<td>E4: Data entry and collation</td>
<td>€10.14</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>€59.37</td>
</tr>
<tr>
<td>F: Data quality control</td>
<td>€10.14</td>
<td>€233.01</td>
<td>€31.50</td>
<td>€58.38</td>
<td>€48.28</td>
<td>€44.29</td>
<td>€13.09</td>
<td>€228.30</td>
<td>€136.58</td>
</tr>
<tr>
<td>F1: Pre-submission validation</td>
<td>€5.07</td>
<td>€232.83</td>
<td>€30.61</td>
<td>€45.70</td>
<td>€39.51</td>
<td>€32.73</td>
<td>€11.63</td>
<td>€218.79</td>
<td>€58.32</td>
</tr>
<tr>
<td>F2: Post-submission validation (RICA-1 queries)</td>
<td>€5.07</td>
<td>€0.18</td>
<td>€0.88</td>
<td>€12.68</td>
<td>€8.77</td>
<td>€11.57</td>
<td>€1.46</td>
<td>€9.51</td>
<td>€82.75</td>
</tr>
<tr>
<td>G: Data storage (IT operation and management)</td>
<td>€0.41</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>€21.16</td>
</tr>
<tr>
<td>H: Data processing and transfer to RICA-1</td>
<td>€2.03</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>€50.86</td>
</tr>
<tr>
<td>Payments to farmers</td>
<td>€8.00</td>
<td>€57.41</td>
<td>€71.88</td>
<td>€158.89</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TOTAL (2012-14 average)</td>
<td>€106.78</td>
<td>€691.39</td>
<td>€2,203.86</td>
<td>€677.48</td>
<td>€732.46</td>
<td>€2,572.29</td>
<td>€558.07</td>
<td>€530.98</td>
<td>€1,151.22</td>
</tr>
</tbody>
</table>

Source: Online survey and case study investigations.
6.3.4. Investigation of factors explaining differences in cost

Differences between Member States in cost per completed FADN Farm Return can arise for a number of reasons. Some result from the structure and nature of the national farm accounts surveys, for example:

- relative scale and scope of national farm accounts surveys; and,
- different requirements for labour (largely reflecting different approaches to data collection).

Others result from external factors such as:

- different wage levels between Member States; and,
- different size distributions of farm businesses and average farm size (partly influenced by the FADN field of observation).

The impact of these factors is discussed in the following sub-sections.

6.3.4.1. Relative scale and scope of national farm accounts surveys

A key issue when considering the costs of the FADN system, as mentioned above, is the complication caused when Member States have:

- a larger national sample (beyond a reasonable ‘safety’ margin to allow for rejection);
- greater scope in terms of the data collected; and/or,
- greater depth in terms of the data collected.

Our online survey provided information on these characteristics, shown in Table 6.8. Eight Member States said that their national farm accounts survey exceeded the requirements of FADN in terms of scale; with the exception of Luxembourg, these Member States are found in the Type 2: C-AS and Type 3: C-AF groups. Although the over sample is not large in Denmark, farms below the FADN economic size threshold are included in the national typology.

Sixteen Member States reported that their national farm accounts survey exceeded the scope of EU-FADN and 18 said that it went beyond the depth required. Although there is little relationship to our typology in terms of additional scope, it does appear as though Member States where data collection is undertaken by accounting firms (Type 3: C-AF) are least likely to collect a greater depth of coverage.
### Table 6.8: National farm accounts survey scale and scope

<table>
<thead>
<tr>
<th>Type 1: Data collection by Liaison Agency</th>
<th>Larger national sample</th>
<th>Greater scope of coverage</th>
<th>Greater depth of coverage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Belgium</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Bulgaria</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Cyprus</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Greece</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>Ireland</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Italy</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Luxembourg</td>
<td>Yes (900/450, 100%)</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Malta</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Netherlands</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Portugal</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Type 2: Data collection by public advisory services</th>
<th>Larger national sample</th>
<th>Greater scope of coverage</th>
<th>Greater depth of coverage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Croatia</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Czech Republic</td>
<td>Yes (1,475/1,417, 4%)</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Finland</td>
<td>Yes (1,195/1,100, 9%)</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Latvia</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Lithuania</td>
<td>Yes (1,300/1,000, 30%)</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>Poland</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>Slovakia</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>UK</td>
<td>Yes (3,300/2,500, 32%)</td>
<td>Yes</td>
<td>Yes</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Type 3: Data collection by private accounting firms</th>
<th>Larger national sample</th>
<th>Greater scope of coverage</th>
<th>Greater depth of coverage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Austria</td>
<td>Yes (2,250/2,000, 13%)</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Denmark</td>
<td>Yes (2,200/2,150, 2%)</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Estonia</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>France</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Germany</td>
<td>Yes (11,500/8,800, 31%)</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Hungary</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>Romania</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Slovenia</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Spain</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Sweden</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
</tr>
</tbody>
</table>

Source: Online survey.

Where the national farm accounts survey exceeds the scale, scope or depth of EU-FADN, then, in principle, some correction should be made to the total cost as not all of it is incurred by the requirements of FADN. For this reason, Liaison Agencies were asked to separately identify the costs of only the FADN component where this was known. However, none were able to do so; this figure was claimed either to be unknown or not capable of calculation. This issue was probed in more depth in our case studies and these confirmed that it is not possible to split total cost between EU-FADN and purely national requirements with any degree of precision.
In **Germany** and the **UK** the sample, scope and depth of the national farm accounts survey exceeds EU-FADN requirements. In Germany the point was made that, while the FADN sample is 77% of the national sample, costs include a fixed as well as variable element and it does not follow that the true cost of FADN is 77% of the cost of the national farm accounts survey. In the UK (England) the organisation responsible for data collection explained that an over sample is required to ensure that the selection plan can be met after allowing for rejections. The national sample in England has been around 1,900 in recent years (1,500 completed Farm Returns are required by EU-FADN), but this will be reduced to 1,800 from 2015. The data collector felt that it would not be possible to reduce the sample below 1,750 (17% surplus) to guarantee the supply of 1,500 Farm Returns which fulfil the selection plan.

In terms of greater scope and depth, in **Germany** it was explained that the time required to collect individual variables differs and, where these are simply extracted from electronic secondary data sources, the number of variables being collected makes very little difference to the task. In **Lithuania** the Liaison Agency pointed out that there would be little or no difference in data collection costs if the depth of coverage did not exceed FADN. In fact, the extra depth of coverage is claimed to result in a reduction in validation effort which offsets any small additional cost. Interviewees in the **Netherlands** stated that it is not possible to estimate the cost of meeting the EU-FADN requirements alone with any certainty.

In **Poland** we were told that there would be no saving from only collecting the data required by EU-FADN; the additional information collected there is considered to be very marginal.

However, in **Italy** the Liaison Agency estimated that around a quarter of the current employment cost could be saved if the national farm accounts survey matched the coverage of EU-FADN. This is in line with the perception in the UK (England and Scotland) where a saving of around 20% was estimated. That said, the point about fixed and variable costs was also made in England and the collection of additional data is only a marginal cost, given that the data collector would still have to visit holdings and the same infrastructure would be required.

The data collector in the **UK (Wales)** took a different view and suggested that the collection of additional detail does not incur additional cost as it is required to produce the EU-FADN variables in any case; information on off-farm income is required anyway to reconcile accounts and there would be no net saving from not collecting the data not required by FADN.

In summary, it is not possible to make a precise correction for increased scale and scope in national farm accounts surveys. However, it is possible using some assumptions to make some effort in this regard. In terms of scale, this is easiest in **Germany** where accounting firms are paid a fee per completed national farm accounts survey questionnaire of €250 and farmers receive €55. An additional fee of €410 is paid where the farm does not require accounts for tax purposes, but the majority of these farms fall below the FADN economic size threshold. It is therefore reasonable to conclude that the additional national sample is provided at a cost of approximately €823,500 (2,700 * €305, no adjustment to fixed costs is made). This would reduce the cost per completed FADN Farm Return in Germany from €558 to €464, a reduction of some 17% (c.f. the 23% reduction of sample size).

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43 This will be the case for all Member States.
44 The data collector in Wales corroborated this and stated that a 20% surplus is required.
Without knowing the variable cost per completed Farm Return in any of the other Member States with additional national sample it is not possible to perform similar adjustment calculations. Different data collection methods make it unwise to expect a similar percentage decrease in unit cost, although any reduction will be less than the reduction in sample size because of the effect of the fixed costs. An estimation of the impact of increased scale is provided in section 6.3.4.5.

In terms of scope, an estimation of the saving possible in Italy and the UK (England and Scotland) can be made using the breakdown of time requirements presented above. The 20% saving in time in England and Scotland would translate into a saving of 14% of total cost after adjustment to variable costs. In Italy, using the same process, the saving of 25% data collection costs translates into a total cost saving of 23%.

6.3.4.2. Different labour requirements

Labour requirements are heavily influenced by the type of data collection system used, and so differences in labour requirements largely reflect this. The total cost of labour for the data supply chain is also influenced by the mix of labour required, with differences expected in the wages of accountants, temporary data collectors, extension agents and Liaison Agency staff, although it is not practicable to consider this here. Ultimately there will still be differences in labour costs between Member States, even after the adjustments explored below, as a result of structural differences and labour productivity.

With reference to Table 6.1 and Table 6.4 above, some Member States with relatively high unit costs do, as expected, have relatively high labour usage. Within Type 2: C-AS where data are collected by public advisory services, the UK, Lithuania and Poland all have relatively high unit costs and relatively high labour requirements, although with the exception of Poland, this is partially explained by having a larger national sample than required to supply FADN.

Some Member States with relatively low unit costs, as a result of collecting data via accounting firms (Type 3: C-AF) again as expected, have low labour requirements, for example, Denmark, Germany (and Switzerland).

6.3.4.3. Different wage levels

Another factor which confounds a simple comparison of unit cost between Member States is the differential cost of labour. Differential wage levels will therefore be a key driving factor behind the different level of costs. Total hourly labour costs are presented in Table 6.9. Whilst these do not necessarily in absolute terms reflect the labour costs faced by Member States in providing data to EU-FADN, this is the most appropriate dataset available and it is expected that the relative levels are indicative of general differences in wages between Member States. High labour cost countries include Belgium and Luxembourg, which have high Farm Return unit costs and labour intensive approaches to data collection (Type 1: C-LA). Denmark and Sweden have high hourly labour costs, but moderate Farm Return unit costs as a result of their (labour efficient) extraction of data from accounts (Type 3: C-AF). Countries with low hourly labour costs tend to have low Farm Return unit costs irrespective of data collection methodology, for example Bulgaria, Latvia and Romania, all from different typological groups.
Table 6.9: Total hourly labour costs (including employment costs)

<table>
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<tr>
<th></th>
<th>2012</th>
<th>2013</th>
<th>2014</th>
<th>Average</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Type 1: Data collection by Liaison Agency</strong></td>
<td></td>
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<tr>
<td>Belgium</td>
<td>€38.00</td>
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<td>€14.60</td>
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</tr>
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<td>€56.30</td>
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<td>€13.20</td>
<td>€13.10</td>
<td>€13.20</td>
</tr>
<tr>
<td><strong>Type 2: Data collection by public advisory services</strong></td>
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</tr>
<tr>
<td>Croatia</td>
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<td><strong>Type 3: Data collection by private accounting firms</strong></td>
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<tr>
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<td><strong>€24.60</strong></td>
<td><strong>€24.23</strong></td>
</tr>
</tbody>
</table>

Source: Source: Eurostat (lc_ici_lev).
Notes: Industry, construction and services (except public administration, defence, compulsory social security).

6.3.4.4. Different average farm size

Interviewees in our case study countries explained that producing data for larger farms is more time consuming than for smaller farms. In fact, in Germany (Sachsen-Anhalt), bookkeepers explained that farmers are charged between €500 and €12,000 to produce an account depending on scale, which illustrates the different potential time requirement. Where accounts need to be produced as the basis for the FADN Farm Return, labour requirements and hence cost will tend to increase with farm size. However, this is unlikely to be a factor in data collection systems which draw on accounts that have already been completed for tax purposes.

It should be noted that the Economic Size threshold which defines the lower boundary of the EU-FADN field of observation is not uniform across the EU and, reflecting this and
differences in structural characteristics, farm sizes covered by the national survey vary. FADN data were used to examine the average Economic Size of farms (Figure 6.6). It can be seen that many Member States with high unit costs also have relatively large farms within their FADN sample (Type 1: C-LA: Belgium, Luxembourg and Netherlands; Type 2: C-AS: Czech Republic and the UK). Many of those with relatively small farms have low unit costs (for example, Type 1: C-LA: Cyprus, Greece, Malta, Portugal; Type 3: C-AF: Romania).

Farm size, on its own, cannot explain variations in unit costs between Member States. Average farm size in the Lithuanian and Polish FADN sample is relatively small, and yet unit costs are high (Type 2: C-AS); the same is true, to a lesser extent, of Hungary (Type 1: C-AF). At the other end of the spectrum, average farm size in the FADN sample is relatively high in Denmark, France and Germany and yet cost per completed FADN return is relatively low, partly due to the extraction of data from accounts (Type 3: C-AF).

![Figure 6.6: Economic Size of farms within the FADN sample (2010-12 average)](image)

Source: DG AGRI EU-FADN.

**6.3.4.5. Cumulative impact of factors explaining differences in cost per FADN Farm Return**

This section brings together the preceding analysis and provides an adjustment to the nominal costs per completed Farm Return to allow a more meaningful comparison of resource usage between Member States. Labour costs have been adjusted by calculating the ratio between the average wage in each Member State and the average for the EU-28 and then multiplying this ratio by the nominal cost in each Member State. Using an index based on wages rather than other measures such as price indices is appropriate.

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45 Total hourly labour costs (including employment costs): Industry, construction and services (except public administration, defence, compulsory social security). Eurostat (lc_ici_lev).
because (a) wages, not the prices faced by employees, account for the majority of costs incurred; and, (b) a wage index reflects different productivity levels which are not reflected in a price index. This wage adjustment has the effect of increasing average resource costs in Member States where wage costs are below the EU average and decreasing average resource costs in Member States where wage costs are above the EU average and allows a comparison having controlled for this key explanatory variable. In principle, a distinction should be drawn between the type (and therefore cost) of labour used for different activities, but such a distinction goes beyond the data available and, in any case, there will be a division of labour in all Member States which, while not the same, is not likely to be sufficiently different to alter the findings substantially.

As a check on this approach a similar analysis was undertaken using a ratio derived from a Eurostat price index series\(^6\). This showed the same overall pattern of results by typology as presented below, although countries with higher wages indices relative to price indices became comparatively more expensive and those with lower ones became comparatively cheaper under this alternative adjustment reflecting different levels of disposable income.

The other key difference between Member States which can be controlled for is the size of the national farm accounts sample compared to the FADN requirements. In the case of Germany this has been done by reference to the marginal cost paid to accountants per Farm Return as explained above. In the other Member States where the national sample exceeds the FADN sample this has been done more crudely by dividing the total cost by the national rather than the EU-FADN sample (i.e. spreading the total cost over more holdings and presenting cost per national survey response in these cases). While this does not allow for fixed costs, it is the most accurate method possible with the data available. We have not adjusted for increased scope or depth of coverage in those two countries which provided an estimate of the cost saving possible because (a) comparable information was not available across all relevant Member States and (b) the adjustments provided were qualitative estimations only; this should be borne in mind when interpreting results, particularly for Italy and the UK.

After adjustment for different sample sizes and different wages, the average total cost per completed Farm Return is shown against the FADN sample in Figure 6.7. Member States where data collection is carried out by the Liaison Agency (Type 1: C-LA) are shown in blue triangles, those where data collection is carried out by public advisory services (Type 2: C-AS) in green squares and those where data collection is carried out by accounting firms (Type 3: C-AF) in red diamonds. The Figure shows some interesting redistributions. First, and as expected, Member States with lower wage levels move to the right (for example, Type 1: C-LA: Bulgaria; Type 2: C-AS: Croatia, Czech Republic, Lithuania and Poland; Type 3: C-AF: Romania and Hungary) and some Member States with higher wage levels move to the left (Type 1: C-LA: Belgium and Netherlands; Type 2: C-AS: Finland and Type 3: C-AF: Austria). Although not EU Member States, the very high labour costs in Norway (Type 1: C-LA) and Switzerland (Type 3: C-AF) explain their respective moves to the left after this adjustment.

When comparing specific Member States, the nominal cost per completed Farm Return is important. For example, Belgium and Sweden have similar labour rates\(^48\) and therefore

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\(^{46}\) Prices tend to converge in a single market under the law of one price whereas wages are more ‘sticky’ due to impediments to movement such as language and mutual recognition of qualifications. Wages therefore differ more between countries than prices.

\(^{47}\) "Comparative price levels of final consumption by private households including indirect taxes": [http://ec.europa.eu/eurostat/tgm/table.do?tab=table&tableSelection=1&labeling=labels&footnotes=yes&language=en&pcode=tec00120&plugin=0](http://ec.europa.eu/eurostat/tgm/table.do?tab=table&tableSelection=1&labeling=labels&footnotes=yes&language=en&pcode=tec00120&plugin=0)

\(^{48}\) Belgium 1.59 times EU-28 average and Sweden 1.56 times.
the percentage adjustment is also similar. However, the higher nominal cost in Belgium leads to a greater adjustment in monetary terms.

Member States for which adjusted costs are little different from nominal costs include Italy (Type 1: C-LA), the UK (Type 2: C-AS) and France, Germany and Spain (Type 3: C-AF). In the case of Italy, Spain and the UK this is mainly because labour costs are close to the EU-28 average; in the case of Germany and France a data collection system (largely) based on already completed accounts provides an additional explanation.

An examination by typology (the weighted averages for the three groups are shown in the Figure) shows that Member States where data collection is based on completed accounts (Type 3: C-AF) tend to have both above average sample size and lower than average adjusted costs. In contrast, Member States in which data collection is carried out by public advisory services (Type 2: C-AS) tend to be clustered in the quadrant with below average sample size, but above average adjusted costs (Poland is an exception with a very large sample size). There is less of a discernible pattern to the distribution of adjusted costs in Member States where data collection is carried out by the Liaison Agency (Type 1: C-LA), but these Member States also tend to have relatively small sample sizes and costs that are, on average, slightly lower than the EU average, although there are some notable exceptions.

Cluster analysis was used to validate our typology. While this did not create groupings that were meaningful outside the parameters used to generate the clusters (i.e. costs of data collection and sample size), it did confirm that different data collection methodologies are associated with different average costs. The weighted adjusted average costs per completed national Farm Return for each typology fall into three distinct clusters, even though individual Member States within the typology are more scattered.

One cluster included Bulgaria, Croatia, Denmark, France, Germany, Greece, Italy, Malta, (Norway) and Spain as well as the weighted average for Member States where data are collected by accounting firms (Type 3: C-AF). Forty percent of the Member States (4/10) in this cluster (in bold) fall into this typology. A second cluster included Austria, Cyprus, Estonia, Finland, Hungary, Ireland, Latvia, Luxembourg, Portugal, Romania, Slovakia, Slovenia, Sweden and (Switzerland) as well as the weighted average for Member States/countries where data are collected by Liaison Agencies (Type 1: C-LA). Some 29% of Member States/countries in this cluster fall into this typology (4/14). A third cluster included Belgium, Czech Republic, Lithuania, Netherlands, Poland, UK (England, Scotland, Wales) and UK (Northern Ireland); this group included the weighted average for Member States where data are collected by public advisory services (Type 2: C-AS). In this case 57% of Member States in this cluster also fall into this typology (4/7). All Member States/countries where data collection is carried out by accounting firms (Type 3: C-AF) fall into the first two clusters suggesting a clearer difference in costs between this grouping and the grouping where data are collected by public advisory services (Type 2: C-AS).

Although the choice of data collection approach adopted in each Member State rarely seems to have been the result of the conscious consideration of a number of alternatives (see Theme 1), it should be noted that it does appear sensible for Member States with large samples to adopt a labour-efficient approach to data collection such as via accountants (Type 3: C-AF), although this approach relies on accounts being required for taxation purposes. Poland, Italy and Greece stand out as Member States with large

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49 Because these are all Member States with large populations it follows that their labour costs will be heavily reflected in the EU-28 figures so it is expected that labour costs are not substantial different from this average.
samples which do not fall into this grouping, but it should be noted that Poland, and to a lesser extent Greece, have relatively low labour costs. This is not the case in Italy.

Member States may benefit from a trade-off between data collection costs and the provision of advice. For example, relatively high unit costs in Member States using public advisory services to collect data may consider this worthwhile given the greater ability to provide advice linked to the data provided and thereby to achieve impact from the information generated at public cost. In other words, the rationale for a data collection system can be seen as part of a cost-benefit relationship rather than simply as a cost. For example, in Poland, while most data are collected by advisors (Type 2: C-AS), a small number of data collectors are dedicated to this activity and do not provide advice. These are considered more efficient at data collection, but clearly less able to deliver benefits to farmers.

The analysis of adjusted data collection costs also provides a guide to the future development of the costs of the FADN system. There are still differences in unit costs after adjustments have been made, with labour intensive systems appearing more expensive, and this reveals underlying differences in productivity. Where labour is inexpensive it is possible to have labour-demanding data collection systems without excessive cost. Where labour is more expensive then it is substituted (to varying extents and according to technical possibility) by capital in the form of greater use of secondary data and IT solutions (for example, in the Netherlands). As the costs of labour increase it will become increasingly sensible for Member States with labour intensive systems to use less of it. That said, the use of accounts as the basis for FADN requires as a prerequisite that accounts have to be produced. It is expected that Member States will increasingly consider labour efficient solutions as labour costs rise, although wholesale changes in approach are likely to be difficult to enact, at least in the short-term.

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50 Although, as noted above, there is a risk that this leads to a biased sample, especially where sample turnover is low.
51 There will also be differences in labour requirements for data validation which will also impact on cost, but these will be more marginal.
Figure 6.7: **Adjusted average total cost per completed Farm Return vs national sample (2012-14 average)**

Source: Agra CEAS Consulting calculations based on online survey and Eurostat.
6.4. Costs of change or adaptation

The FADN evolves with changing policy needs and marginal adjustments to its coverage are sometimes required. An indication of the costs involved in changing or adapting the data collection process is possible based on our analysis of the collection systems found in Member States, but it is first necessary to consider the nature of the adaptations required. Changes under consideration have to be relatively minor and feasible within the present collection architecture. This would rule out from our coverage shifts in the main methods of data collection (such as towards the use of data taken from accounts prepared for taxation purposes where this is not currently done; changes of this nature would involve transition costs and hiatuses in the supply of data). It would also exclude certain methodological harmonisations that could carry implications for the quality of results, but which would represent major change, such as requiring all recruits to be selected at random from the entire population of farms (while some Member States attempt to do this, others currently recruit from existing clients of data collecting agencies, which makes the task considerably easier and less costly, though possibly introducing a degree of selection bias).

From our review of the literature, the evidence gathered from our online survey and case studies and consultation with our team of experts, the most likely forms of change to which national farm accounts surveys may be expected to adapt are:

a) Changes to the scope of EU-FADN questions (such as the addition of questions on the other incomes accruing to the operators of farm businesses, disaggregation of variable inputs to allow the calculation of gross margins at the enterprise level, and on metrics of sustainability and the environment). The evolving focus of the CAP inevitably means that the data required from EU-FADN has to develop, with its main response being in the form of questions added; without this, EU-FADN runs the danger of obsolescence and disuse by policymakers at EU level. While reductions in the number of variables required by EU-FADN (in the form of simplification) is also possible, these face less constraints than do increases.

b) Changes in the number of completed Farm Returns required by EU-FADN. While reductions linked to, for example, increases in the size threshold for inclusion, are the more likely, nevertheless a greater policy attention to the incomes of the operators of farms (in contrast to the present focus on production and area of land used) may require EU-FADN to extend its coverage into smaller farm size group and thereby increase total numbers (although the long-term trend towards fewer and larger farms will work in the opposite direction).

We consider the feasibility and costliness of adaptations to these changes in this section. In addition, implementation of many of the ‘best practices’ we identify under Theme 4 (Chapter 8) below imply change which is minor rather than major, and their feasibility is indicated at that stage in our report.

6.4.1. Changing the scope of variables collected for EU-FADN

The feasibility and costliness of extending the scope of variables will depend on the nature of these variables and will vary between Member States. Already over half of EU countries collect more than is needed for EU-FADN (16) in the online survey), but the nature of this additional material is not known in detail. Extending coverage where the data are already collected would not appear to be costly, though there would be issues over the exact nature of the variables’ specification. Our case studies and the literature indicates that the main additional areas covered were greater detail for variables covered by the EU-FADN Farm Return and, outside the Farm Return, household income variables and environmental/sustainability variables. An analysis of what potential new EU-FADN variables are already covered would require a detailed scrutiny of each Member State’s
national questionnaire, an activity that is beyond the scope of the present study. However, it is known from the literature and our case studies that coverage of household income in the national farm accounts survey is a regular feature of Member States across all three data collection types: Austria, Denmark, Finland, Germany, Italy, the Netherlands, Sweden (formerly), and the UK, though there are known to be differences in the nature of the information (for example, the UK uses ranges for off-farm income in order to provide an indication of the relative importance of these other sources of income without placing an undue burden on the respondent farmer or appearing too intrusive, whereas some other countries may use exact figures). Some other Member States include these questions periodically or arrange links with external data sources (Ireland and France).

However, perhaps as a general principle, data should be collected only in as much detail and precision as is needed to meet the analytical requirement (for example, by using ranges rather than seeking exact figures where there is a desire only to form an impression of the order of magnitude of an issue such as off-farm income that might warrant further investigation while wishing to minimise the burden on both the data collector and the data provider). In addition, there are benefits in maintaining as much flexibility as possible in the scope of the variables collected so that the national survey can be adapted without too much trouble to meet occasional or ad hoc needs and address issues which arise or to provide information that might not be needed on a continuous/annual basis.

An extension of questions by Member States which do not already cover this basic material is more problematic. Sometimes that data may exist in administrative sources (for example, the detail of subsidies) so the feasibility of securing this information may depend on obtaining access (consent by farmers to this is best practice) and of ensuring correct matching between units. Costs may be small once the initial investment of set up is made. For additional data that can only be obtained by direct collection from farms, there are no doubt real costs, both to the agency that collects the data and to the farmer in the time used to supply it. This is particularly the case where the additional material is not part of the normal financial accounting framework, such as some environmental indicators. However, it must be recognised that collecting this additional information will be marginal to the basic collection infrastructure and might be justified in view of changing policy priorities.

It must also be recognised that a move to collect additional data in many Member States involves transactions costs. New or changed contracts with data collection agencies may be required which involves negotiation costs. Sometime the additional material disturbs the established relationship between the collector and the farmer (questions on income from outside the farm were initially resisted by some UK universities because of the fear (proved to be largely unfounded) that these might lead to a sharp drop in participation). However, senior DG AGRI staff noted that it may be possible to use some of the already existing additional information for groups of Member States which already collect it, even though a full EU picture could not be presented.

Reductions in the EU-FADN requirements, such as from simplification, while superficially feasible and not involving extra cost, are unlikely to lead to substantial savings. The point has been made in the case studies that, where the current scope is broader than that required by EU-FADN, reducing the coverage to that level would not necessarily save resources (various estimates ranged from zero to 20%). Some Member States might also prefer to continue collecting the data for national purposes.
6.4.2. Changing the number of EU-FADN completed Farm Returns

A similar set of arguments surround changes in the number of EU-FADN holdings. Some Member States already collect data from substantially more holdings for national purposes; in some, and across all data collection types (Finland, Germany and Italy for example), some of these are below the EU-FADN size threshold. Depending on the nature of the extra sample required by EU-FADN, in such countries enlarging the sample might not involve collecting from any more farms than at present. However, in other countries more would have to be recruited and data collected; costs would depend on the present costs of recruitment and the data collection system employed. Average costs would not necessarily be an adequate guide; what would be needed would be information on the marginal cost of collecting data from additional holdings (at least up to the point where changes in the fixed costs might prove necessary).

Within Type 3: C-SF, Germany provides an example where already there is a nationwide system of fees paid to accounting firms for the supply of data, with one level (€250) for holdings that already keep accounts with the firms and a higher fee (€660) for farms that do not keep accounts.52 Though these fees are set rather than negotiated with each firm, accountants seem broadly content to operate with them, so they represent the marginal cost of expanding the size of the survey under the economic and technical conditions found in Germany. These figures are rather lower than the fees paid in France which are €450 per holding where accounts are kept and €1,100 where they are not. It is not clear why there is such a difference in this cost. Comparable data are not available where data collection is via Liaison Agencies (Type 1: C-LA) or via public advisory services (Type 2: C-AS).

Similarly, reductions in the size of EU-FADN samples, while saving some costs, would not be expected to lower them by the average cost. There would not be savings in the fixed costs of central administration, but only in the marginal costs of collection.

In summary, analyses of change are properly required to be undertaken at Member State level, with adequate information on fixed and variable costs so that an assessment of the marginalities can be made. It must also be recognised that there will usually be transactions and transitional costs and non-financial aspects to adjustments. This does not necessarily mean that such adjustments should be avoided.

52 According to our estimates, the average total costs per case of the national farm survey (i.e. dividing the total cost by the national sample) for Germany was €464.
7. THE BENEFITS OBTAINED FROM FADN DATA TO MEMBER STATES

The benefits that are the focus of this study and reported in this section are only those accruing to Member States. The implication is that benefits to EU institutions and, through them, to EU policies and activities and wider benefits to the international community outside the EU are not covered here. Some consideration has already been given to uses as revealed by requests to the Commission’s FADN unit (see section 2.6 above) and in discussions with senior staff in the European Commission and other organisations, but this was primarily to place FADN within its broader policy context. This means that the benefits considered at this point are only partial and will thus be an underestimate of the totality. This important point should be noted.

7.1. Key issues

Our third study Theme is concerned with the benefits obtained from FADN data by Member States.

7.1.1. Benefits to actors in the data supply chain

Data systems, of which EU-FADN is an important agricultural example, form only part of the overall information system (see Fig. 2.1 of Hill 2012). For data to be turned into information, they need interpretation and analysis (which form part of the role of professional statisticians and other analysts), and to be put in the hands of decision makers who are in positions to make use of the information. By having this information decisions can be reached that in some way are superior to those that would be reached in its absence. Thus the benefit from information coming from EU-FADN and national farm accounts surveys is dependent on the impact it makes on decisions by users compared to the outcomes that would occur without it. If this information is unused or ignored, there is no benefit. It follows that key to detecting the presence of benefits flowing from FADN data (and that from national accounts surveys where these have greater scope than is required by EU-FADN), and where possible their measurement, is the identification of users and their uses of the output of the farm accounts data system.

Our analysis of the data supply chain has identified a range of actors, starting from the individual farm (a private sector institution), through collecting organisations (which, depending on which Member State is considered, may be private sector bodies or public sector institutions), through Liaison Agencies (universally public sector, but taking various forms such as government departments or institutes), to, finally, the transfer of data to the Commission (RICA-1). When considering the use of data and the benefits this brings, the notion of the chain can be put into reverse. The institutions at the fount-head of the information system, which at Member State level will be the national governments and their statistical authorities, can use it for improved policy decisions. Organisations that interact with farmers can use it (for example as inputs when providing advice). Farmers can use it to improve their individual farm performances. While individual farmers may make direct use of economic results, often this comes via extension agents (including ones supported under Pillar 2 of the CAP) who facilitate knowledge transfer and provide management advice to farmers, including benchmarking based on information generated by national farm accounts surveys. In some Member States the organisations that collect data from farmers also provide management advice, though more often advisors are separate but with good knowledge of what results are available through the national farm accounts survey.

Our research for this project has involved an inventory of the uses made of the results of national farm accounts surveys, and this is reported below.
7.1.2. Estimating the benefits

The benefits obtained from making use of farm accounts survey information take two main economic forms. First, there are the private benefits, of which the main example will be those accruing to farm businesses in the form of increased competitiveness, higher farm incomes, more stable incomes, greater business resilience and enhanced viability and so on. Benefits accrue not only to those farmers that take part in farm accounts surveys and who receive feedback as part of the package of involvement, but also to the much larger numbers of non-participants who can apply the lessons learned from the information generated by the survey, such as the factors that distinguish high performance from low performance. A secondary example will be private extension agents who use the results as a tool in their professional work. In principle the value of these are measurable, though a recurring problem with evaluations of the impact of advice and knowledge transfer is to establish the counter-factual.

Recent experience in Wales (see Hill, Bradley and Williams, 2015) suggests that, while farmers may declare that advice and better information has had an impact (the conventional method for assessing impact in evaluations), this is not necessarily a reliable guide to the actual impact. The innovation chain that starts with awareness, moves through intention to change to, finally, actual implementation, contains several links before impacts are delivered in terms of changed farm practice and income levels. In the Welsh example, a quasi-experimental approach using samples of participants and non-participants could not detect a significant difference in actual farmer behaviour, which suggests a considerable bias in the perception of reporting impacts, possibly linked to the need of farmers to justify to themselves the time spent in participating in advice and knowledge transfer activities and their desire to give a positive picture of advisory systems provided currently at public expense.

A problem with valuing the private value of information derived from farm accounts survey data is that frequently this is delivered as part of an extension package which also includes economic, technical and other information taken from a range of other sources. Separating the impact made by the farm accounts component may be not only infeasible from a practical standpoint, but indefensible from a theoretical perspective where individual causality cannot be assigned. In addition there are other potential impacts at farm level of a non-financial nature, such as improved environmental performance, which the valuation of impacts should embrace.

Second there are the public benefits. The history of development of national farm accounts surveys emerging from our online survey, the case studies and literature review suggests that the driving force in countries that set them up before the start of EU-FADN was to serve national policy purposes; in these countries they are still seen as contributing to this end. While a list of uses has been built up, and is presented below, measuring the benefit arising from the information in a quantitative fashion is highly problematic. While some decisions could be made that are cost-saving as a result of the information, others will be more strategic. Some uses of farm accounts results will be to assess the potential impacts of policy options or stances in CAP negotiations or to confirm decisions made primarily for political reasons. The rationale for spending public money on farm accounts surveys will bear a close relationship to those for maintaining public statistics of any type; while there may be closely argued cases for extending coverage in certain areas to reflect emerging policy needs, and this may involve retrenchment elsewhere, this does not mean that there is well-supported evidence of the overall benefits of the complete system. This makes the measurement of public benefits very difficult beyond the identifying and listing of uses.

Beyond these benefits, results from farm accounts surveys bring benefits to a range of users less intimately connected to the data supply chain. For example, the research
community makes use of them, which brings both private benefits to the direct users and public benefits though their research output. The results are published widely, mostly without charge, and are thus in the nature of a public good, in common with official statistics on agriculture. While an attempt can be made to assess the volume of such communications (for example, numbers of hits on websites containing the results), measuring the impact in terms of private and public benefits is far more difficult.

7.1.3. The approach taken here

The first step to assessing the benefits of EU-FADN is to identify the pattern of uses of national farm accounts surveys found in EU-28. As is described below, this is well supported by our online survey, is augmented by our nine Member State case studies and backed up by our literature review. An analysis by data collection typology was carried out, but there appears to be no clear relationship between this and the uses to which data are put, as might be expected logically. There are occasional exceptions which are highlighted where appropriate. A separate typology of uses is considered in section 7.3.1.

The second step is to consider the extent to which uses are dependent on the core FADN variables and to what extent this reflects the broader scope found in some countries.

Thirdly, an attempt has been made to measure the extent of the benefit at Member State level by posing a set of questions to the government department responsible for its funding within the context of our case studies. These are designed to establish:

a) whether Member States have at any time evaluated the benefits resulting from their spending on the national accounts surveys. Where such evaluations can be found, these will be the most authentic valuations;

b) the current perceived value to the government in relation to the current cost of their farm accounts survey; and,

c) what governments of Member States would do if they no longer were required by EU legislation to conduct a survey to service FADN.

7.2. Publication of results at Member State level

Before moving to uses it is necessary to consider the form in which data from national farm accounts surveys and results based on them are made available outside the confines of the data system. Only Malta and Slovenia appear not to publish national results from their national farm accounts surveys (Table 7.1); of course the EU-FADN publications and its associated public database contain contributions from these two countries, along with equivalent results from all other Member States.

Publication is sometimes both in hard copy and in an online version. There appears to be a preference for electronic publication, with the Liaison Agencies of 12 countries (not including those that do not publish) indicating in their replies to the online survey that they no longer produce standard results in hard copy. Among the case study countries, in Germany the federal structure means that publication are issued at Länder level by the government agency responsible for the national farm accounts survey there; in the examples visited (Bavaria and Sachsen-Anhalt) hard copy was produced. In the UK electronic publication takes place in all four countries but hard copy now only in two (Wales and Northern Ireland). Also emerging from the case studies is that publication can come in a variety of forms; while results can be issued in publications devoted exclusively to this source, or parts of it (such as for single farming types, or those operating particular systems such as organics or in areas of natural handicap), they can also appear in more general publications on the state of agriculture and its development.
over time. The answer to interpreting such diversity seems to lie in the clear identification of the national farm accounts survey as the data source.

According to the online survey, public databases are available in 15 countries; this should greatly facilitate access, though quite what this gives access to varies. For example, in Austria the database is in Access and does not appear to be online. Among the case studies some sophisticated examples were found. In the UK (England) the ‘Data Builder’ is an online tool that allows interrogation of the basic individual farm anonymised data to produce aggregated results for the England part of the Farm Business Survey. The Netherlands has a tool (agrofoodportal.com) that, while not giving access to individual farm data, draws on other statistics sources to provide a comprehensive online public resource. Italy has a tool (cruscotto aziendale) which allows online consultation by surveyed farmers of the farm balance sheet and of techno-economic indicators benchmarked against those of groups of comparable farms. Poland and Sweden have a national farm survey database similar to the FADN database on the DG AGRI website. Finland (not a case study) is known to have ‘EconomyDoctor’ which presents both results for that country and for other Member States.

In all Member States which said that they have an online database, access is free, but in Denmark, Germany and Greece users must be approved. Liaison Agencies were asked whether access to specific variables is restricted. Most interpreted this question as referring to data rather than variables and explained that access to individual data is not permitted. However, in Belgium and the UK access to location variables is restricted. In France results below the NUTS 2 level are not made available and in Ireland the county code and spousal income variable are restricted. The rationale for the restrictions was always confidentiality. Access to spousal income variables in Ireland is restricted because this is not related to farm income; an agreement was reached historically with the Farmer Organisation that these data can be collected, but not published.

Access to farm-level data obviously adds greatly to its value as a research tool. The general principle of maintaining confidentiality has already been mentioned. However, there are circumstances in which access is possible, and our case study countries illustrate this. Firstly, research may be carried out by organisations that collect the data which will obviously have access, though clearly steps are necessary within these organisations to maintain confidentiality. In the UK the universities in England and Wales that collect farm data also use it, as does the collecting institute in the Netherlands (Landbouw Economisch Instituut, LEI). Second, researchers can be given access to farm-level data (with identifying elements removed) upon application and approval or provided with extracted data (France, Poland, Slovenia and the UK provide examples). Third, access can be given via a dedicated terminal in the Liaison Agency, with suitable safeguards to maintain security (Germany and Poland).
### Table 7.1: Format in which results are made available

<table>
<thead>
<tr>
<th>Type: Data collection</th>
<th>Hard copy standard results</th>
<th>Online standard results</th>
<th>Online national farm accounts survey database</th>
<th>Other</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Type 1: Data collection by Liaison Agency</strong></td>
<td></td>
<td></td>
<td></td>
<td>Each regional Ministry has its own publication in which one or more chapters are based on FADN data</td>
</tr>
<tr>
<td>Belgium</td>
<td>Yes</td>
<td>Yes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bulgaria</td>
<td>Yes</td>
<td>Yes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cyprus</td>
<td>Yes</td>
<td>Yes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Greece</td>
<td>Yes</td>
<td>No</td>
<td>R</td>
<td></td>
</tr>
<tr>
<td>Ireland</td>
<td>Yes</td>
<td>Yes</td>
<td>U</td>
<td></td>
</tr>
<tr>
<td>Italy</td>
<td>No</td>
<td>Yes</td>
<td>U</td>
<td></td>
</tr>
<tr>
<td>Luxembourg</td>
<td>Yes</td>
<td>Yes</td>
<td></td>
<td>Public meeting concerning the economic results</td>
</tr>
<tr>
<td>Malta</td>
<td>Yes</td>
<td>Yes</td>
<td>R</td>
<td></td>
</tr>
<tr>
<td>Netherlands</td>
<td>No</td>
<td>Yes</td>
<td>U</td>
<td>Agrofoodportal.com</td>
</tr>
<tr>
<td>Norway</td>
<td>Yes</td>
<td>Yes</td>
<td></td>
<td>Seminars, papers, press releases</td>
</tr>
<tr>
<td>Portugal</td>
<td>No</td>
<td>Yes</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Type 2: Data collection by public advisory services</strong></td>
<td></td>
<td></td>
<td></td>
<td>Online access to a database for individuals</td>
</tr>
<tr>
<td>Croatia</td>
<td>Yes</td>
<td>Yes</td>
<td></td>
<td></td>
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<tr>
<td>Czech Republic</td>
<td>Yes</td>
<td>Yes</td>
<td>U</td>
<td></td>
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<tr>
<td>Finland</td>
<td>No</td>
<td>Yes</td>
<td>U</td>
<td></td>
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<tr>
<td>Latvia</td>
<td>No</td>
<td>Yes</td>
<td></td>
<td></td>
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<tr>
<td>Lithuania</td>
<td>Yes</td>
<td>Yes</td>
<td></td>
<td></td>
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<tr>
<td>Poland</td>
<td>Yes</td>
<td>Yes</td>
<td>U</td>
<td>Report on selected results of the sample farms (not weighted)</td>
</tr>
<tr>
<td>Slovakia</td>
<td>Yes</td>
<td>Yes</td>
<td>U</td>
<td>Data Builder, benchmarking, enterprise reports</td>
</tr>
<tr>
<td><strong>Type 3: Data collection by private accounting firms</strong></td>
<td></td>
<td></td>
<td></td>
<td>Database in Access</td>
</tr>
<tr>
<td>Austria</td>
<td>Yes</td>
<td>Yes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Denmark</td>
<td>Yes</td>
<td>Yes</td>
<td>R</td>
<td></td>
</tr>
<tr>
<td>Estonia</td>
<td>No</td>
<td>Yes</td>
<td>U</td>
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<tr>
<td>France</td>
<td>No</td>
<td>Yes</td>
<td>U</td>
<td></td>
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<tr>
<td>Germany</td>
<td>Yes</td>
<td>Yes</td>
<td>R</td>
<td></td>
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<tr>
<td>Hungary</td>
<td>Yes</td>
<td>Yes</td>
<td>U</td>
<td></td>
</tr>
<tr>
<td>Romania</td>
<td>No</td>
<td>Yes</td>
<td></td>
<td></td>
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<tr>
<td>Slovenia</td>
<td>Yes</td>
<td>Yes</td>
<td></td>
<td></td>
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<tr>
<td>Spain</td>
<td>No</td>
<td>Yes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sweden</td>
<td>No</td>
<td>Yes</td>
<td>U</td>
<td></td>
</tr>
<tr>
<td>Switzerland</td>
<td>Yes</td>
<td>Yes</td>
<td></td>
<td>Detailed Excel files containing aggregated results are available online. The level of detail of this database is almost the same as of the FADN Database.</td>
</tr>
</tbody>
</table>

Source: Online survey.
Notes: Hard copy results will be discontinued at the Federal level in Germany with the last publication in 2015. R: Restricted to approved users; U: unrestricted access.

#### 7.3. Uses of results of the national farm accounts survey

##### 7.3.1. A typology of data uses

Our literature review found some descriptions and analysis of uses. Concerning use at EU level, Hradiský (2013) reports on the use made of FADN data in policy evaluation and
analysis and in negotiation on CAP reform. The European Commission (2014a) has provided us with an analysis of the types of organisation from which requests for analysis of FADN data have emanated (principally the EU Institutions, research institutes and universities) and the purpose of such data uses. Types of use are reviewed (see section 2.6 above). Uses associated with JRC initiatives are also evidenced (Espinosa et al., 2011), including FADNTOOL53. The OECD’s farm-level analysis network, founded in 2008 and which meets twice a year, includes 21 Member States and provides another example of use at the supra-national level (Moreddu, 2015). A report on high-value datasets from EU institutions awarded FADN publications two stars (out of five using Tim Berners-Lee’s 5-Star Schema of Linked Open Data) for value and the FADN database three stars (European Commission, 2014n). However, all these supra-national uses are beyond our research focus.

Our concern here is specifically the use made of FADN by Member States at the national level. There is a plethora of papers which report their use of FADN data. A significant number of very specific uses are set out in the series of papers from the Pacioli workshops which have taken place annually since 1995. These cover a wide range of current uses, uses in development and potential future uses. Some of the papers report on the conclusions of investigations of certain topics, while others are more methodological in nature. However, in this context it is the type of use that is important, not the specifics. Drawing on Pacioli papers and information generated by FADN missions by staff of the European Commission to selected Member States, the literature review contains some evidence on uses from 24 EU countries (the exceptions being Estonia, Spain, Latvia and Austria).

Some papers relating to general issues are worth noting. Del’Homme and Aamisep (2009) explain that it takes time for Member States to understand the data use possibilities of FADN; as a result, the uses to which FADN data are put nationally can be expected to be more limited amongst those Member States with shorter involvement in FADN. Vrolijk (2012) considered possible future users of FADN in the context of the increasing need to demonstrate value for money; these included uses by the agricultural industry, bankers and advisory services. The author also noted that FADN could be used more by farmers if the value to them could be better communicated. Van Lierde and Taragola (2000) point to the increasing demand for environmental data and the potential for FADN to supply this and the software needed; made with reference to the situation in Belgium, a similar point about broadening environmental use is made for the Netherlands (Ministry of Economic Affairs, 2015). The supply of environmental data (for Life Cycle Assessments) was also highlighted by Poppe and Meensen (2000).

Our literature review provided sufficient information from both generic studies and those for individual countries to enable a general framework of uses to be developed that proved valuable in the construction of our online survey and the topics to be discussed in missions to the nine countries selected as case studies. While the literature did not cover uses in all Member States and to the same level within them, the survey and case studies were designed to take a more uniform approach, leaving no major gaps.

According to the literature, types of use to which FADN can be put can be broken down into a number of categories and sub-categories. A broad typology of uses is as follows:

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53 FADNTOOL (Integrating Econometric and Mathematical Programming Models into an Amendable Policy and Market Analysis Tool using FADN Database) is a 3-year project (April 2011 to March 2014) co-funded by the European Commission under the Framework Programme 7 (FP7), addressing the Strategic theme: KBBE.2010.1.4-02 "Development of modelling tools based on Farm Accountancy Data Network data adapted to assess the dynamic impacts of the Common Agricultural Policy" - Call: FP7-KBBE-2010-4.
1. **Government:**

- monitoring farmers’ incomes;
- analysis of European policies (especially the CAP’s agricultural and rural development elements) – including modelling and forecasting;
- developing national policies that have connection with farming (economic, environmental, social etc., including ex-ante evaluations);
- monitoring impacts of policies (including on-going and ex-post evaluations);
- informing government of impact of changes in policy (national and EU);
- negotiation of EU legislation;
- negotiation in WTO;
- agricultural and national statistics;
- assessing production costs (for use in policy analysis); and,
- contribution to the work of OECD and other international organisations.

2. **Other public sector:**

- farm planning and budgeting services to agriculture;
- technical articles for the farming industry;
- programme development for extension services;
- updating knowledge of extension and advisory staff and industry personnel;
- developing farm plans for farmers;
- benchmarking farm performance;
- PhD studies and other research (such as modelling) with public good output; and, 
- teaching institutions, especially those in agricultural education.

3. **Private sector**

- consultancy provision of advice to farming;
- use by farmer unions and other stakeholders;
- direct use by some farmers in planning/benchmarking; and,
- commercial firms supplying or buying from agriculture.

7.3.2. **The uniqueness of farm accounts survey data**

The uses of farm accounts survey results are intimately connected with their nature as being microeconomic. For some purposes alternative sources of information exist, such as developments of income from agricultural production over time, which can be observed not only in farm level results, but also by using aggregate income indicators developed from the Economic Accounts for Agriculture (EU or national). However, for other purposes only data taken from observation at farm business (or household) level will suffice. At Member State level the national farm accounts survey is usually the only source of microeconomic data. Indeed, senior DG AGRI staff outside the FADN unit consider the microeconomic nature of FADN its main advantage.

The uniqueness of this source of information was confirmed by almost all of our nine case studies, (in Italy the discussion did not deal with this issue explicitly, but literature implies currently a similar situation) with usually no other existing data system being capable of generating it. **UK (England)** went as far as indicating that, if it were not to exist, then bespoke surveys would be needed to tackle specific issues, but these would not provide the time series available from the present farm accounts system. Similarly, interviewees in **Poland** pointed to the limitations of small-scale university research
projects as an alternative source of farm level data. In UK (Wales) we were told that the survey is a relatively rare example of high quality (agricultural) data and is therefore invaluable to that part of the UK. Interviewees in the Netherlands cited alternative ways of collecting the data, but the concept of a single survey to collect a wide range of economic and other data was deeply embedded there and accepted by the government as a cost-efficient way of meeting multiple needs and which respected national aims, such as minimising the burden on farmers. In Germany the farming unions have their own survey, which sometimes has a sample larger than the TBN, but the scope is not as comprehensive and the published results, which can differ from those from the TBN, must be seen in the context of the interests of the unions.

Only in Sweden was the impression of uniqueness significantly challenged, with other sources (such as the business register) potentially capable of generating some of the information contained in the farm accounts survey. But even there actual replacement was regarded as being ‘difficult’, lacking the same depth of information; the data could not be used to investigate the agricultural sector in any detail. Another source of information in Sweden is derived from a database of between 16,000 and 20,000 holdings maintained by the farming union LRF-Konsult (the main data collector for FADN). Information is provided from accounts produced by this organisation and is supported by analysis. This database is used by LRF-Konsult to produce an early estimate of profitability in the sector and for lobbying purposes. This is not as comprehensive in coverage as FADN. Although the Board of Agriculture and academic researchers do not make substantial use of this database, it is considered to be useful for farms which fall below the FADN size threshold and for which there would otherwise be no available information. This database is used in the production of the Economic Accounts for Agriculture because it is more representative of the sector as a whole given the inclusion of small farms.

### 7.3.3. Use by national or regional governments of Member States

It is clear from the evidence gathered from our three main sources that, in addition to its use at EU and international level in the form of FADN, the data collected by national farm accounts surveys are widely used by the national (and where appropriate regional) governments of Member States. According to senior DG AGRI staff, FADN has utility in being an accepted source of data from which the Commission, European Parliament and Member States can build positions without the need for the underlying data to be questioned. In case study countries where the national survey has a broader scope than EU-FADN, the pattern of use reflects this wider coverage; this is most noticeable in the Netherlands where, in the opinion of interviewees, core EU-FADN data alone probably would not be used much and where the additional material collected in combination with the core EU-FADN data is what makes it really useful. A similar but less extreme situation was found in Italy, Germany, and the UK where coverage is also wider.

As noted above, in general there seems to be no link between the typology of data collection systems this research has developed (see Theme 1) and the pattern of uses, nor is there any strong rationale as to why there should be such a link. The exception is in the provision of advice to farmers and benchmarking, where the data collectors may also provide these services; this issue is explored below.

Our online survey of Liaison Agencies in Member States asked about such uses of the national farm accounts survey data and results; respondents were not generally in a position to answer for the data required by EU-FADN alone. Uses were identified by means of a predetermined list, which included categories related to policy making and forecasting (including in CAP negotiations), to acting as a source of data for aggregate accounting and statistics, to drawing comparisons between regions and countries, to estimating costs of production and margins, and to providing a source of information for
extension purposes. As Liaison Agencies are responsible for FADN in their respective Member State this study anticipated that the respondent would have a good knowledge of how their national results were used. This was borne out by the completeness of answers. However, it must be recognised that, in Member States where the Liaison Agency was not the government department responsible for agricultural policy, there may have been some gaps in detailed knowledge. In case study countries this could be offset by direct questioning of the respective ministry. The literature review was also helpful in this regard with, for example, establishing evidence for particular uses that had been missed by respondents to the survey.

Table 7.2 presents a consolidated version of the online survey results. Analysis is provided in the following sub-sections.
**Table 7.2: Use made of national farm accounts data by national/regional governments**

<table>
<thead>
<tr>
<th>Type 1: Data collection by Liaison Agency</th>
<th>Policy use</th>
<th>Forecasts</th>
<th>Use in accounts</th>
<th>Economic/statistical publications</th>
<th>Measures of productivity</th>
<th>To inform CAP negotiations</th>
<th>Farmer extension and advice</th>
<th>Public database</th>
<th>Comparisons</th>
</tr>
</thead>
<tbody>
<tr>
<td>Belgium</td>
<td>F, E</td>
<td>X</td>
<td>m, N</td>
<td>X</td>
<td>P, SO</td>
<td>X</td>
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<td>MS</td>
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<tr>
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<td>X</td>
<td>X</td>
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<tr>
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<td>Luxembourg</td>
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<tr>
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<td>Portugal</td>
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<tr>
<td>Norway</td>
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<td>R, MS, non-EU, S</td>
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</tbody>
</table>

| Type 2: Data collection by public advisory services |

| Croatia                                  | F, A, E    | (X) | m | X | P | X | R, MS |
| Czech Republic                           | F, A, E    | (X) | m | X | GM, SO | X | X | MS |
| Finland                                  | F, A, E    | X | m, N | X | P | X | X | X | R, MS, S |
| Latvia                                   | F, A, E    | X | M, N | X | P, SO | X | X | R, MS |
| Lithuania                                | F, A, E    | X | m, (N) | X | P, SO | X | X | MS |
| Poland                                   | F, A, E    | X | m | X | P, SO | X | X | R, MS |
| Slovakia                                 | F, A, E    | X | SO | X |       |   |   |   |
| UK                                       | F, A, E    | X | M, N | X | P, GM, SO | X | X | R, MS, non-EU, S |

| Type 3: Data collection by private accounting firms |

| Austria                                  | F, A, E    | M, N | X | X | X | R, MS |
| Denmark                                  | F, A, E    | X | M | X | P, GM, SO | X | X | MS, non-EU, S |
## Study on cost of and good practices for FADN data collection

<table>
<thead>
<tr>
<th>Policy use</th>
<th>Forecasts</th>
<th>Use in accounts</th>
<th>Economic/statistical publications</th>
<th>Measures of productivity</th>
<th>To inform CAP negotiations</th>
<th>Farmer extension and advice</th>
<th>Public database</th>
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<td>Switzerland</td>
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<td>P, GM</td>
<td>X</td>
<td>X</td>
<td></td>
<td>E, S</td>
</tr>
</tbody>
</table>

Source: Online survey.

Notes: **F**: Policy formulation (agricultural policy, rural development policy, environmental policy, other); **A**: Appraisal of alternative policies; **E**: Policy evaluation; **M**: Major source of the data supplied to Eurostat for the aggregate Economic Accounts for Agriculture; **m**: Minor source of the data supplied to Eurostat for the aggregate Economic Accounts for Agriculture; **N**: For aggregate national accounts (economic and/or environmental) at the Member State level; **P**: Cost of production analysis; **GM**: Calculation of Gross Margins at the national level; **SO**: Calculation of Standard Outputs; **R**: Comparisons between regions; **MS**: Comparisons with other Member States; **non-EU**: Comparisons with other (non-EU) countries; **S**: Comparisons with other sectors of the economy. The use of parentheses indicates no online survey response, but a known use in the literature.
7.3.3.1. Policy analysis

It is clear that the national farm accounts survey is a resource heavily used by governments, irrespective of data collection typology. Respondents to the online survey indicated that it was almost universally used in policy formulation (agricultural policy, rural development policy, environmental policy, or other); 26 Member States indicated this use, though it should be noted that in Belgium there is no use of data at the national level, and responses related to regional level. The only examples of non-use in the online survey were Croatia, where the explanation is probably that of lack of experience so far in having this sort of information, and Greece. Although the Literature Review suggested that Malta does not use FADN for policy analysis, the online survey suggests that this is now the case. Some 26 Member States used the data for policy evaluation (Croatia and Romania being the exceptions) and 19 countries used it for the appraisal of alternative policies. Some 19 reported that the data informed CAP negotiations; among EU-15 the exceptions were Austria, Greece and Sweden. Nineteen Member States also used the results within forecasting, and Austria, Greece, Spain and Sweden were EU-15 exceptions. However, it seems highly likely that there is interest in forecasts in all four, so there may be some under-reporting.

Among the case study countries the additional information revealed an apparent lack of use for forecasting in Sweden; this may reflect the way in which policy issues are explored there where the Ministry does not use the data directly, but makes requests to the Board of Agriculture which then carries out analysis on its behalf.

Among the other case studies the information gathered is in line with what was reported in the online survey. In Bulgaria the main uses of FADN data by government are related to policy planning and evaluations. The agency for direct payments makes use of the data in its calculation of subsidies, as does the agency for rural development. France uses the data to formulate and evaluate policies, in forecasts and to implement economic models. Ministries may use their own expertise when using EU-FADN or national farm accounts survey data (for example the Ministry of Agriculture in its study Prospective Agriculture Energïe 2030) or contract researchers; in general the reports from these appear in the series Notes et Études Socio-Economiques. Some use the EU-FADN results while others adopt the somewhat more detailed national survey (where there is more information on, for example, energy). Examples concern the possibility of reducing pesticide use, and the performance of organic farming (for details of these and others see the case studies). In Germany, in addition to federal uses for policy design and implementation purposes, the Länder Ministries make use of the larger-than-FADN sample to investigate issues of regional interest (such as types of farming that are important locally). In Lithuania the case study interviews revealed multiple uses beyond general policy analysis and evaluations, including justification for voluntary coupled support for the livestock and crop sectors, differentiation of support for organic producers, calculation of payments for farming in areas with natural handicaps; these specific operational uses are likely to be common among Member States though rarely surface in discussions.

In the Netherlands the extended coverage of the national farm accounts survey into variables not required by EU-FADN (especially those concerned with sustainability) means that it is used to meet a wide range of statutory tasks under EU and national obligations (of which derogation under the Nitrates Directive is of particular importance). The case study material sets out a list of policy analysis articulated in detail (including CAP impact analysis and position determination, manure policies, crisis resilience analysis and calculation of compensation for animals slaughtered in disease outbreaks, trade-off

54 Regional samples are also often larger than required under the national farm accounts survey which itself exceeds FADN.
between policies that affect sustainability, such as the economic impact of animal welfare policies, animal health policies, environmental policies), together with uses for foresight studies, risk management etc.

Again, other Member States may replicate such uses within the narrower constraints of their national accounts surveys. A particular use mentioned in Italy, the Netherlands and Poland is to answer questions raised in their national parliaments on many topics related to agriculture and its support; again this form of use is likely to be widely experienced. A reminder from the Poland case study is that the farm accounts survey is also drawn upon to inform national (as opposed to EU) agricultural policy; for example it is used in connection with the income safety net under national legislation. In the UK (England) a detailed list of uses by the government is available which, in addition to similar analysis in other countries, covers the impact of grants on farm economic performance and of a range of management practices using additional information collected using modules added to the basic national questionnaire.

There is a clear link between the organisation of the data supply chain and way in which national farm accounts data are used for the purpose of policy analysis, and the case studies can be used to illustrate this. The key to understanding this seems to be the relationship between government and the organisation that collects and processes the data, which are mostly separate. At one extreme is the situation in which the government has direct access to farm-level data. In Northern Ireland (UK) the data are collected by civil servants who are employees of the devolved government, which gives it direct access for the purpose of policy-related analysis. In the remainder of the UK data are collected by universities/colleges under contract to the government; these pass data to EU-FADN, but also provide it in a raw form to the respective government departments for use in its own analysis for its own purposes (in England and Wales the collecting bodies also perform some analysis, but in Scotland this is less evident as the data are treated as the property of the government department). Nevertheless, confidentiality of results is respected, and apparently information which would allow individual farms to be identified is removed when data are made available to governments.

At the other extreme is where governments do not have direct access to raw data, but where requests for analysis have to be processed via the independent institute/organisation responsible for the farm accounts survey. In Sweden the national farm accounts survey is part of Official Statistics, and therefore is subject to robust confidentiality requirements. Where a Ministry inquiry requires the use of raw or micro-data, a request must be made to the Board of Agriculture’s Statistical Unit and the data are then produced where this is possible (even if the analysis required is complex). However, it is not always possible to do this because of disclosure issues. The fact that the Ministry and researchers cannot use the raw data themselves is considered an irritation.

Most other case studies appear to fall between these two positions, but generally nearer the second. In the Netherlands the close relationship between the LEI (the Liaison Agency and also the data collector and processor) and its funding government department (Ministry of Economic Affairs) means that the required analysis is developed in collaboration; it is perhaps significant that there is no Ministry of Agriculture in the Netherlands.

In Poland requests by the Ministry for analysis that goes beyond standard aggregated results are made to the Liaison Agency (IAFE-NRI) which processes data, but does not

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55 Access to data is also problematic for the OECD which has to use a network of national experts to provide analysis rather than being able to access data directly via the Commission’s FADN unit.
collect it (this is the task of the Agricultural Advisory Centres). Similarly in Lithuania requests from the Ministry beyond the standard published results which require data access are responded to by the Institute of Agricultural Economics (LIAE, the Liaison Agency and responsible for data processing, but which is not the main data collector, which is the Lithuanian Agricultural Advisory Service). The Ministry explicitly does not have access to the raw data. In Italy requests by the Ministry for additional information are handled by INEA\(^ {56} \). In Germany the Federal Ministry (BMEL) has access to the raw data but only occasionally carries out its own analysis; mostly this is done by the Thünen Institute (the Liaison Agency) to which the data are passed, using the German variables (which are more extensive than those of EU-FADN). At the State level, the State ministries of agriculture do not have access to raw data, but analyses of regional importance is carried out by their agencies that are responsible for the TBN in their Länd; again these are at arm’s length from the State ministry and also do not themselves collect data (which is done by private accountancy firms).

There is no evidence that direct access to raw data by government departments responsible for agriculture (UK devolved administrations, the BMEL in Germany and Ministries of Agriculture and of Environment in France) leads to a different pattern of use. However, this carries a potential disadvantage of a lack of trust by participating farmers in the confidentiality of farm-level data (because it is available to the authorities), though these countries have for many years managed to maintain systems without, it appears, compromising their positions.

### 7.3.3.2. Economic accounts and statistics

According to the online survey, results from the national farm accounts survey are a significant source for the drawing up of aggregate Economic Accounts for Agriculture (EAA). Within EU-28 only six countries did not mention this survey either as a source of data supplied to Eurostat for the EAA or for similar accounts at the national level. There were more countries in which it was a minor source of EAA data (12 Member States) than where it was a major source (nine examples). The exceptions were Bulgaria, Croatia, Romania, Slovakia, Spain and Sweden. Reasons are not apparent, but in the case study example of Sweden there are clearly alternative sources of information available which may prove preferable. Ireland claimed that its results contribute to national accounts, but not to Eurostat’s EAA, which is possible, but unlikely. Contributions to other economic and/or statistical publications were reported by 22 Member States; of the six exceptions Ireland, Italy and Sweden were of the EU-15 group and Croatia, Estonia and Slovakia were EU-N13. There is no relationship with data collection typology.

In the case study countries the discussions did not reveal details of uses within statistics additional to those given in the online survey. In the Netherlands it emerged that their use within EAA and the national economic accounting is minor, but they are occasionally useful in responding to parliamentary questions on issues such as trade balances. In the UK costs taken from farm accounts feed into the national calculation of aggregate income. However, in all case study countries the use of results from the farm accounts survey within aggregate accounting received far less attention than their uses for purposes to which their microeconomic nature are uniquely suited.

Similarly, the literature review is quite reticent on this area of use. Only in three countries (Italy, Ireland, and Hungary) could specific mention of the use within national accounting be found, with the Czech Republic also alluding to their uses within other statistics.

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56 Now merged to form the CREA – Consilio per la recerca in agricoltura e l’analisi dell’economica agrarian.
Despite the lack of attention generated by the use of farm accounts statistics in aggregate accounting, personal experience (reported in Hill, 2012) of working with Eurostat’s EAA methodology, in particular its inventories of detailed items in the accounts, suggests that this may be an understatement of their importance. While the EAA may mainly depend on industry-level information (such as volumes of output and prices to calculate the value of production), on the costs side there are often gaps in the detailed information that can only be met by microeconomic sources, including data from the national farm accounts surveys. This is an example of a use that is important yet attracts little attention.

7.3.3.3. Difference between regions and countries

Drawing comparisons between regions or between countries was a strongly reported group of uses, with 23 Member States indicating one or both in our online survey. The only exceptions were Greece, Malta, Slovenia, Slovakia and Sweden. It would seem highly likely that international comparisons would draw on EU level FADN results published by the Commission rather than national farm accounts surveys, though within-country comparisons could use either depending on the purpose and coverage of variables required.

7.3.3.4. Costs of production, gross margins and other indicators

Estimating costs of production is clearly another common use. It was cited in the online survey as a use by government in 20 Member States. However, cost of production analysis by other organisations was cited in Cyprus and in 15 other countries where it overlaps with government activity. As these other organisations are likely to belong to the public sector, again it is probably appropriate to aggregate the responses. Similarly, the case study for France revealed work on the costs of production in dairy farms, undertaken by the livestock institute and sponsored by government ministries. The calculation of Standard Output was reported by 24 Member State governments, exceptions being Austria, Croatia, Finland and Sweden.

The calculation of gross margins using the survey was only undertaken by 13 countries. There was some ambiguity concerning whether this referred to gross margins at the farm level (which standard EU-FADN variables should provide) or gross margins of individual types of crop and livestock (enterprise gross margins), which requires a deeper level of information to allow variable inputs to be allocated. This implies a positive response to the online survey question on the scope of questions being larger than needed for EU-FADN, though this was not necessarily the only reason for this difference. Among case study countries the UK has had the additional information to calculate enterprise gross margins for about a decade (and now net ones too).

Net margins are just one example of the use of other indicators that are of national interest among case study countries. The Netherlands has a range of additional indicators that cover sustainability. Italy uses additional variables to produce indicators of national interest, as does Germany (where there are 7,000 variables in the national survey, of which 2,500 are subsequently transmitted to EU-FADN). In contrast, in Bulgaria and France the close correspondence between variables collected and those required for EU-FADN suggest that additional indicators are not produced.

However, in France the national farm accounts survey has proved very useful in terms of merging with other databases. The French case study found that the national farm account survey was being merged with data from the French social fund (Mutualité Sociale Agricole, MSA) for the purpose of considering reforms on farm taxation. Merging with tax records (carried out in 1991, 1997, 2003 and 2010) had made it possible to assess the extent of off-farm revenues. Other examples are the merging with the
Census for some studies, and with the plot-level database “Crop practices” ("Pratiques Culturales"). (References to these studies are given in the French case study.)

7.3.3.5. Extension, advice, feedback and benchmarking

In terms of the government providing extension and advice to farmers, in our online survey 20 Member States cited this as a use for data from the farm accounts survey. All Member States collecting data via public advisory services (Type 2: C-AS) use data in this way. The exceptions comprised Member States collecting data from Liaison Agencies (Type 1: C-LA): Bulgaria, Cyprus, Greece and Malta and those using accounting firms (Type 3: C-AF): Denmark, France, Romania and Sweden. Caution has to be exercised before drawing premature conclusions from the online survey about this sort of use; for example, in Sweden there is use of the data by farm advisors and the farmers themselves, but the former may not be part of the government service. This applies in particular to benchmarking, which is listed among the uses made by other organisations rather than by the government as part of advice.

The implication is that, when looking at the benefits received by farmers, attention has to be paid to users other than national or regional government. In 12 Member States non-governmental organisations use farm accounts data to provide extension services and advice. For benchmarking, which can be considered a specialist form of advice, 18 Member States provide this by non-government organisations (see Table 7.3 in section 7.3.3.6).

Among case study countries use for advice and for feedback to participating farmers is universal, though the mechanisms differ.

- In the Netherlands LEI uses the data for benchmarking and feedback reports to farmers which includes a sustainability report.
- In Germany extension advisors make use of the data when providing specific advice. The accountancy offices (the data collectors) also use national farm accounts survey results for feedback to farmers on performance. Feedback systems to cooperating farmers vary between Länder. Bavaria has a unique web-based comparison of farm accounts, and there is a web-based database for specific groups to which agricultural advisors and teachers/lecturers can have access. In Sachsen-Anhalt feedback to participating farmers is seen as a necessary additional incentive to cooperation, as the payment to farmers is not a sufficient inducement. Also in this Länd the agency responsible for the national farm accounts survey also includes units that provide extension services.
- Italy has a sophisticated tool (cruscotto aziendale) which allows online consultation by surveyed farmers of the farm balance sheet and of techno-economic indicators benchmarked against those of groups of comparable farms.
- However, in Poland a range of situations is experienced; while some farmers are keen to understand their relative performance and changes over time, others are less interested (reflecting the point made earlier that availability does not necessary imply use and/or impact). Moreover, while a farmer’s own results are provided and explained by the Agricultural Advisory Centre (ACC) staff (who collect the data), the dynamic and comparative reports are available only on request and after choices by the farmer of indicator and comparator group. The AAC staff can be somewhat reluctant to tell farmers about these possibilities because their use implies some additional work by the AAC staff in providing explanations.
- In Lithuania results are fed back to participating farmers though the Liaison Agency, a service seen as being in lieu of payment (as used in some other Member States) and by the Lithuanian Agricultural Advisory Service (LAAS –
which is also the main data collector) which uses both personal information and benchmarking data to provide business advice.

- In **Sweden** the Board of Agriculture provides feedback reports to the farmers from which it collects data (100) using a reporting format which requires substantial transformation of data. Statistics Sweden provides feedback reports to the farmers from which it and LRF-Konsult collect data; these reports present the data in the form it is collected and are therefore cheaper to produce.

The **literature review** provides support for much of these findings, but what it contains may be out of date. According to the review, Malta and Romania do not provide feedback to participating farmers, while in Spain there was little feedback to farmers (such as benchmarking) and little perceived interest among farmers in receiving this sort of information. One explanation offered for the apparent lack of national use was unsatisfactory data quality, although data should be considered to be of acceptable quality if they pass RICA-1 checks. However, quality interpreted in this way does not address issues relating to sample selection, coverage, etc. which can also be considered to be quality issues. Portugal provides feedback and benchmarking, Slovenia’s feedback tends to be provided rather late. Greece also provides feedback, as does Croatia (with benchmarking on request).

An issue of importance to this report is whether the structure and organisation of the data supply chain has an impact on this group of particular uses (covering the provision of extension, advice, feedback and benchmarking). The most likely circumstances to foster this use might be anticipated to be where the same organisation not only collects farm accounts data but also provides advice. However, the high (almost universal) use of this information found in Member States for extension and advice does not suggest that the other arrangements hamper its use to an extent that can be detected. Again, feedback to participating farmers is very normal, with benchmarking only a little less so (though there occasionally impediments are found, such as the requirement for resources to discuss results with farmers and the need to specially request benchmarking, which also seems to be linked to resource adequacy).

What may be more significant is the impact on participating farms that a combined approach to data collection and the provision of advice may give rise to, where there is opportunity to discuss the potential and realised impacts of actions by the farmer based on information coming from the farm accounts survey in general and the result of the individual farm in particular. Advisors may also be more adept at the first round of informal validation by speedily recognising inappropriate data. The combined approach may also open up the opportunity to collect data on the impact of changes made after adopting advice though, as noted above, this advice may be drawn in part from sources other than the farm accounts survey.

Two case study countries (**Lithuania** and **Poland**) combine, in some way, data collection and the provision of advice (Type 2: data collection via public advisory services). In both cases this arrangement appears to have been chosen because of the previous existence of the advisory organisations at the time that collecting data for EU-FADN became a requirement, and they were perceived as the most appropriate vehicle. The Lithuanian Agricultural Advisory Service (LAAS) also acts as an accounting firm and prepares accounts for farmers for taxation purposes for a fee (some 90% of non-corporate farms have such accounts drawn up). The individual advisors spend approximately some 30% of their time on farm accounts survey data collection; the remainder is on providing advice (both to farms in the survey and others). The view in Lithuania is that trust between farmers and data collectors is very important. This is important both to the reliability of results and to the ability to recruit existing clients into the survey.
In **Poland** the Agricultural Advisory Centres collect farm accounts survey data. Unlike in Lithuania there is no taxation reason for keeping accounts, and farmers are provided with sets of accounts without charge (participating farmers also receive a fee). In contrast with the norm in Lithuania, where staff combine data collection with extension activities, the latter are marginal. However, the AACs work with about 60% of all the farmers receiving subsidies in Poland, so many are known to the organisation and this facilitates recruitment.

While this close relationship between extension and advice provision and data collection is conducive to the impact of the results on farm management, we have not been provided with empirical evidence. Nor have we encountered evidence on the downside of using data collectors who also provide advice; at least in theory there could be some loss of efficiency in attempting to fulfil both roles. An obvious concern is that in collecting data from farmers receiving advice, in part derived from the data provided, the results may not be reflective of the typical farmer. This may be of particular concern where farms remain in the farm accounts survey for long periods.  

### 7.3.3.6. Uses by other organisations (other than advice and benchmarking)

Another general finding is the widespread use of farm accounts survey data by organisation outside the national and regional governments. In the online survey, almost all Member States reported them to be using the results. A distinction should be made between drawing on published results (as noted above, publication at national level is almost universal, with Malta and Slovenia the only exceptions) and more in-depth analysis using them or by accessing databases. A minority of Member States (11) referred to the use of results specifically for independent policy analysis and rather fewer (7) to the production of forecasts by non-government organisations (Table 7.3). This is likely to be an underestimate because of the difficult demarcation between these activities and research. Use for research purposes outside the government is extremely common; some 22 Member States pointed out that research is carried out by other institutions which are not part of the data supply chain, and additional literature suggests that this is an underestimate when external bodies such as research institutes and universities are included.

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57 Only Cyprus now has restrictions on how long a farm can stay in the sample (Denmark and Italy have aspirations which can be relaxed if no alternative farms are found). Our literature review shows that Finland even has prizes for farms that stay in its survey for many years, with awards extending to periods of 100 years (two farms have remained in the sample since its introduction in 1912).
### Table 7.3: Use by other organisations and farmers involved in the national farm accounts survey system

<table>
<thead>
<tr>
<th>Type 1: Data collection by Liaison Agency</th>
<th>Research projects</th>
<th>Source of data for public database</th>
<th>Cost of production analysis</th>
<th>Farmer extension and advice</th>
<th>Independent policy analysis</th>
<th>Benchmarking</th>
<th>Production of forecasts</th>
<th>Lobbying</th>
<th>If you selected “other”, please specify</th>
</tr>
</thead>
<tbody>
<tr>
<td>Belgium</td>
<td></td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bulgaria</td>
<td>X</td>
<td></td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cyprus</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Greece</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ireland</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td>F</td>
<td></td>
</tr>
<tr>
<td>Italy</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Luxembourg</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Malta</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Netherlands</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>F, O</td>
<td>Sector covenants; strategic planning, business plans, agricultural papers/press</td>
</tr>
<tr>
<td>Norway</td>
<td></td>
<td></td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>F, O</td>
<td></td>
</tr>
<tr>
<td>Portugal</td>
<td></td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>F, O</td>
</tr>
</tbody>
</table>

### Type 2: Data collection by public advisory services

<table>
<thead>
<tr>
<th>Country</th>
<th>Research projects</th>
<th>Source of data for public database</th>
<th>Cost of production analysis</th>
<th>Farmer extension and advice</th>
<th>Independent policy analysis</th>
<th>Benchmarking</th>
<th>Production of forecasts</th>
<th>Lobbying</th>
<th>If you selected “other”, please specify</th>
</tr>
</thead>
<tbody>
<tr>
<td>Croatia</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Czech Republic</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Finland</td>
<td>(X)</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>F, O</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Latvia</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lithuania</td>
<td>X</td>
<td>X</td>
<td>(X)</td>
<td>X</td>
<td></td>
<td>X</td>
<td></td>
<td>(X)</td>
<td></td>
</tr>
<tr>
<td>Poland</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
<td>X</td>
<td>Typology of farms</td>
</tr>
<tr>
<td>Slovakia</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### Study on cost of and good practices for FADN data collection

<table>
<thead>
<tr>
<th></th>
<th>Research projects</th>
<th>Source of data for public database</th>
<th>Cost of production analysis</th>
<th>Farmer extension and advice</th>
<th>Independent policy analysis</th>
<th>Benchmarking</th>
<th>Production of forecasts</th>
<th>Lobbying</th>
<th>If you selected &quot;other&quot;, please specify</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>UK</strong></td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td><strong>Type 3: Data collection by private accounting firms</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Austria</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>F, O</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Denmark</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Estonia</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td>F, O</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>France</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Germany</td>
<td>(X)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>F</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hungary</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td>X</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Romania</td>
<td>X</td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Slovenia</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td>F</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Spain</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td>X</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sweden</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Switzerland</strong></td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td>X</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: Online survey.

Notes: **F**: Lobbying by farmer organisations; **O**: Lobbying by other organisations. (X) indicates a response provided during case study or from the literature in the case of the Czech Republic.
7.3.3.7. Uses by farmers

Much of the use by farmers of results from national farm accounts surveys for management purposes and benchmarking will be in association with public extension services and/or private consultants and is therefore covered by earlier sections. However, for completeness some reference must be made to the use of this material by the farmers themselves, using material produced in completing the FADN Farm Return (accounts where not already available), material published by the surveys or reported by newspapers and other media. This present research did not involve primary data collection from farm businesses or farm operators, so reliance has to be placed on literature and elements emerging from case studies.

It is not appropriate to include here a major review of the way in which farmers access information, only a small proportion of which may be in the form of financial results based on national farm accounts surveys. However, an example based on analysis of data from supplementary questions added to the Farm Business Survey in England (which contributes to EU-FADN) may be informative (Defra 2013). Key points of relevance here (together with our added comments) are:

- Nearly 80% of UK (England) farm businesses in the Farm Business Survey (FBS) undertook one or more of the following activities: business planning, benchmarking and management accounting (suggesting that the farming community, or at least that part of it represented by the national farm accounts survey, contains many willing users of results).
- The most common sources of advice on business management and technical issues were the farming media, advice supplied freely (rather than paid for from consultants) and through talking to other farmers. (This shows the importance of an effective publications and communications policy for disseminating results from farm accounts surveys.)
- Smaller farms and older farmers were less likely to access business management advice. (The links found between different channels of communication and farmer/farm characteristics also indicate that care has to be taken to employ a range of methods appropriate to the target group of farmers.)
- Nearly half of England’s FBS farm businesses did not wish to know any more about key business management areas. This response was more likely from older farmers, small farms and owner-occupied farms. (Other literature suggests that information is more keenly taken up where it can be demonstrated that this leads to an improved financial performance.)

There may be benefits that extend beyond better farm performance. Our Germany case study indicated that, where accounts are provided for farmers who are not legally required to keep them, these can be used as evidence to obtain bank loans and as a useful template if a farmer’s tax situation changes and accounts have to be submitted. Such farmers are also able to use the accounts for management purposes. Finally, it should be noted that in some Member States farmers participating in national surveys that contribute to EU-FADN have their accounts completed as a priority; again this will have an intangible benefit to the farmer.

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58 It should be noted that the Commission-funded PRO AKIS project (Prospectives for Agricultural Knowledge and Innovation Systems) has just been completed (May 2015). This includes national reports on advisory support in individual Member States.
Box 7.1: Case Study of USDA’s ARMS: Uses of data

The Agricultural Resource Management Survey (ARMS) is the primary source of information to the US Department of Agriculture and the public on production practices, resource use of America's farm businesses, costs, the economic well-being of America’s farm households and the farm sector's financial conditions. The ARMS is the only source of information available for objective evaluation of many critical issues related to agriculture and the rural economy and therefore provides a set of unique data in a similar manner to EU-FADN. Farm organisations, commodity groups, agribusiness, Congress and the USDA use information from ARMS to evaluate the financial performance of farm businesses and to make policy decisions affecting agriculture. The Bureau of Economic Analysis (BEA) uses ARMS data to calculate the farm sector portion of the Gross Domestic Product (GDP) for the nation. In addition to statistical uses, which implies public benefit, in general ARMS data are seen to benefit farmers indirectly (that is, to provide some private benefits) through contact with extension advisors, in reports issued by USDA-ERS, USDA-NASS, State colleges and universities, etc.. Participating farmers used to be provided with feedback (some benchmarking data) as a marketing tool. However, there was little apparent use made of the information and this was discontinued. In addition, the Interviewers Manual for 2013 contains descriptions of over 40 recent research projects and policy analyses that use ARMS data.

7.4. Valuing the benefits from use of the national accounts survey data and results

No estimations of the value of the benefit of FADN at the national level have been identified in the literature. This is probably partly a function of the general difficulty in valuing the utility of public statistics, partly the general difficulty in observing impacts of change and assigning causality to specific information/actions, and partly the contributory role that FADN information plays, complemented by other data sources, in the context of wider support and advice delivery.

Our approach to valuing the benefits at Member State level of the availability and use of data has been to request information from case study countries on what estimates have been made of the value of such benefits. No Member State apart from the Netherlands had made an estimate of the value of its farm accounts survey (see Table 7.4). The evaluation for the Netherlands (Ministry of Economic Affairs, 2015) lists the multiple uses of the data (which corresponds closely to those cited in our case study for this Member State), but does not provide any calculation of benefits; its only observation based on quantitative information is to compare the costs of the national farm accounts survey with the value of CAP subsidies paid to agriculture in the Netherlands (about €1 billion), leading to the comment that "This means that the costs of monitoring to assess the effectiveness of the policy are less than 0.7% of the support provided. Given the multitude of objectives of the data collection, the actual percentage to be attributed to the monitoring of the CAP is even lower" (translated from the Dutch original). It follows that there is no evidence in official sources of the value in quantitative terms of the benefits provided by national farm accounts surveys in any of the case study countries that responded to our questions.

In the absence of work of this nature, a set of contingency questions were posed to government departments responsible for funding the national farm accounts survey to establish the level of present benefits in relation to the known costs. First, it was asked whether, if there was no EU requirement to produce data for FADN, the government would still operate the national farm accounts survey; various degrees of response were allowed. Changes in terms of scope in such circumstances were explored. Government representatives were also asked to rank given types of beneficiary according to those that received the greatest benefit. Finally, questions were posed on how the perceived benefits at Member State level from using the national farm accounts survey compared
with the costs, expressed as several different degrees of value for money. In the absence of explicit estimates of the benefits, and of the complex range of uses and potential benefits to many actors, it was considered that the government was in the best position to judge the national interest, which would embrace both public benefit and the perception by the government of the national worth of private benefits bestowed on particular groups, especially to farmers.

In terms of the ranking of types of beneficiary, national or regional government was ranked first or second in six out of seven case study Member States (Table 7.5). By simple summing of scores, governmental use was clearly seen to be the principal beneficiary. Academic institutions and research bodies came next, followed by farmers through advisors and extension activities. Farmers benefitting directly and farmers’ lobby groups were seen as benefitting the least.

There was a wide range of responses to the perception of the benefits as compared with the total cost, from ‘lower’ in Sweden and the UK (England and Scotland) to ‘much higher’ in Germany and Poland. It should be borne in mind that countries have different levels of costs, so that the benefits of a given absolute size would appear relatively smaller in a high cost country such as the UK. When compared to the national cost (that is, after taking into account the fee paid by the Commission) the UK still considered the benefits to be lower, but other countries perceived them as higher.

If there were no longer a requirement to provide data to EU-FADN, Bulgaria, the Netherlands, Sweden and the UK (England and Scotland) were each uncertain whether the national survey would continue. Factors behind this view differ by country, but include resource constraints, the availability of alternative data sources and the perceived value of the EU-FADN variables. In contrast, for Germany, Lithuania and Poland the answer was definitely yes, though in all three there was a suggestion that the scope, amount of detail or coverage of farms would be adjusted. Overall, Bulgaria, Germany, the Netherlands and Poland regarded their farm accounts surveys as representing good value for money, and the UK (England) reasonable value. The UK (Scotland) considered the survey to represent reasonable/poor value for money when considered against the other surveys operated in the sector.

Though far from perfect, and with not all case study countries represented, this approach does suggest that the perceived value of benefits relate to costs in a way that would cause Member States to at least consider continuing with them in the absence of a requirement to supply EU-FADN with data. But the bigger benefits are the public ones to government rather than the private ones accruing to farmers.

It was pointed out by one respondent that as supplying data to EU-FADN is a requirement of EU membership, not providing it would incur a fine. The difference between the size of the fine and the costs of supplying the data could be thought of as the value of the benefit provided, although this is not of course the line of thinking behind this question.
### Table 7.4: Responses to questions on the perceived value of benefits from national farm accounts surveys

<table>
<thead>
<tr>
<th>Has any estimate been made of the value of the benefits of the national farm accounts survey in your Member State?</th>
<th>Type 1: C-LA</th>
<th>Type 2: C-AS</th>
<th>Type 3: C-AF</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>BG</td>
<td>IT</td>
<td>NL</td>
</tr>
<tr>
<td>No</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
</tr>
</tbody>
</table>

**Perception of the value of the benefits to the Member State of the national farm accounts survey with respect to the TOTAL cost of operating it.**

| Higher | Higher | Higher | Approx. equal | Much higher | E: Lower | S: Lower | Much higher | Lower |

| Higher | Higher | Higher | Approx. equal | Much higher | E: Lower | S: Lower | Much higher | Lower |

**Perception of the value of the benefits to the Member State of the national farm accounts survey with respect to only the NATIONAL cost of the survey.**

| Higher | Higher | Higher | Approx. equal | Much higher | E: Lower | S: Lower | Much higher | Lower |
If there was no EU requirement to produce data for FADN, would the Member State still operate a national farm accounts survey?

<table>
<thead>
<tr>
<th>Type 1: C-LA</th>
<th>Type 2: C-AS</th>
<th>Type 3: C-AF</th>
</tr>
</thead>
<tbody>
<tr>
<td>BG</td>
<td>IT</td>
<td>NL</td>
</tr>
<tr>
<td>Uncertain</td>
<td>Uncertain</td>
<td>Yes, in some format</td>
</tr>
</tbody>
</table>

If yes, would the national survey retain all the information currently required by FADN?

<table>
<thead>
<tr>
<th>Type 1: C-LA</th>
<th>Type 2: C-AS</th>
<th>Type 3: C-AF</th>
</tr>
</thead>
<tbody>
<tr>
<td>BG</td>
<td>IT</td>
<td>NL</td>
</tr>
<tr>
<td>Probably yes</td>
<td>NI: Yes, but may be less robust for cost reasons</td>
<td>Main indication retained</td>
</tr>
</tbody>
</table>

Which elements would not be retained?

<table>
<thead>
<tr>
<th>Type 1: C-LA</th>
<th>Type 2: C-AS</th>
<th>Type 3: C-AF</th>
</tr>
</thead>
<tbody>
<tr>
<td>BG</td>
<td>IT</td>
<td>NL</td>
</tr>
<tr>
<td>Less detail</td>
<td>Smaller scale and only some farm types</td>
<td>Data on volume of minerals, among others</td>
</tr>
</tbody>
</table>
## Study on cost of and good practices for FADN data collection

<table>
<thead>
<tr>
<th></th>
<th>Type 1: C-LA</th>
<th>Type 2: C-AS</th>
<th>Type 3: C-AF</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>BG</td>
<td>IT</td>
<td>NL</td>
</tr>
<tr>
<td>Perception of value for money of benefits from using the results</td>
<td>Good</td>
<td>Good</td>
<td>Good</td>
</tr>
</tbody>
</table>

Source: Additional questions put to national Ministries.
Table 7.5: Perceived ranking of which organisations derive benefits from the national farm accounts survey

<table>
<thead>
<tr>
<th>Who do you consider to derive benefits from the national farm accounts survey?</th>
<th>Type 1: C-LA</th>
<th>Type 2: C-AS</th>
<th>Type 3: C-AF</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>BG</td>
<td>IT</td>
<td>NL</td>
</tr>
<tr>
<td>National and/or regional government</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Farmers directly</td>
<td>3</td>
<td>6</td>
<td>4</td>
</tr>
<tr>
<td>Farmers indirectly through advisors or farm extension services</td>
<td>5</td>
<td>5</td>
<td>2</td>
</tr>
<tr>
<td>Academic institutions or other research bodies</td>
<td>2</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td>Farmers' lobby groups</td>
<td>4</td>
<td>3</td>
<td>6</td>
</tr>
<tr>
<td>Other – NL banks, advisors</td>
<td>2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other - PL advisory services as accounting offices</td>
<td></td>
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</tr>
<tr>
<td>Other – UK (NI) Other commercial organisations e.g. banks, journalists, agricultural feed firms, food processors, supermarkets etc.</td>
<td></td>
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<tr>
<td>NGO’s and people interested in the development of the farming sector</td>
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Source: Additional questions put to national Ministries.
8. BEST PRACTICES IN FADN DATA COLLECTION AND USE THAT CAN BE SHARED AMONG MEMBER STATES

8.1. Key issues

Best practice forms the fourth of the Themes of this study. A key issue is how the term 'best practice' is to be interpreted. This is not purely one of semantics, but impacts on the objective of the analysis and the way in which information is assembled and interpreted. 'Best' practice can imply actions and processes that are at the leading edge, and among Member States there will be a single country whose methods are superior to all the others in terms of one or more criteria. Those mentioned by the European Commission in the tendering process for this study included practices that help improve sustainability and performance of EU-FADN by, for example, reducing costs, increasing benefits, improving the ratio between benefits and costs, enhancing data quality and timeliness, and reducing the burden on farmers (such as by using administrative data where available and/or adopting the principle of asking an individual holding for a particular piece of information only once). In contrast, another interpretation is that a best practice is a method or technique that has consistently shown results superior to those achieved with other means, and that is used as a benchmark. Perhaps 'good practice' would be a more accurate description as this implies that these actions and processes that, while not being unique, stand out as providing an advantage. We use 'best practice' in the second, broader sense.

We also put the emphasis on best practice that can be adopted by Member States in which it is currently not employed. Thus a practice that depends on the particular and unique conditions found in a single Member State would not be covered. For example, in the Netherlands the centralised system of recording and paying invoices (EDI-CIRCLE), while not confined to agriculture, seems to be unique to this country. This system accumulates much of the data needed to construct accounts, and LEI has access to it for cooperating farmers, thereby minimising the time required in direct contact between data collectors and farmers, enhancing data quality and promoting timelines. However, this not a system that it is within the control of the farm accounting surveys of Member States to initiate; it is therefore beyond our coverage.

A much more pertinent issue is that of the legal requirement for farmers to keep accounts. This is strongly linked to the national taxation system, in particular whether private farmers are taxed on an accounted income basis or on some flat rate that does not require bookkeeping (legal entities are taxed on an accounting basis). Evidence from the case studies and the literature review finds that some countries tax entirely on an accounted income basis and thereby require all individual farmers to keep income and expenditure accounts, others entirely tax on a flat rate basis so accounts are not required, while others have mixtures, usually applying a threshold above which account keeping is mandatory. The importance to this study is that, where accounts are kept, these are a basis for extracting data for the national farm accounts survey. Data may or may not be taken from accounts drawn up for taxation purposes; the important point is that the activity of drawing up accounts involves the systematic assembly of information which then can be used for national farm surveys among a range of other purposes. However, the choice of the national taxation system and therefore the requirement to keep accounts, is beyond our coverage. Consequently, our approach to best practice must accept the existing pattern, which implies that best practice may have to be brigaded into circumstances in which accounting is normal and where it is not.

59 A system with some similarities exists in Germany whereby data companies bring together information which accountants can purchase to facilitate the process of producing accounts. This is not though used universally and there are multiple companies offering this service.
The literature review found little explicit material on best practice at the stage of data collection or dissemination, though there was consideration of collection when applied to farm household incomes and wealth (which, of course, EU-FADN does not currently cover) and of software solutions in individual countries and at EU level. The online survey was not considered an appropriate vehicle for the identification of best practice and therefore our methodology comprised two approaches. The first is the response in case study countries to what the Liaison Agency considers is best practice (or at least good practice). The second is the evidence gathered on the criteria mentioned above and assessed by the research team, including our expert advisors, and drawing on our literature review where appropriate. In reality, the latter is the dominant provider of useful information.

8.2. Case study responses on best practice

Interviews in case study countries contained, at several points in the discussion (on the conclusion of sections on organisation, on data collection mechanisms and on use), questions on aspects of best practice. When it came to best practice on uses, this engendered such inadequate results that formal analysis is not worthwhile. Even on matters of organisation and data collection, with which interviewees could be expected to be more familiar, staff were surprisingly reticent on the issue of best practice. Possibly this was because they often lacked experience of systems other than their own and hence could not easily identify what was 'best'. There seemed to be a tendency for respondents to cite what they feel may be unique to their situation, an interpretation that approaches the 'narrow' view of what is 'best' outlined earlier.

In addition there was a question on which aspects of the present data collection system would be changed if it were to be designed from first principles; this can also throw light on what is seen as the preferred ways of doing things.

What emerges is a mix of what is best, ranging across organisation, data collection and uses; some suggestions are mainly specific to single Member States though others suggest a more common recognition of general principles. Among the latter several mention the importance of a stable staff and the need for Continuous Professional Development of data collection staff; the benefits of involving data collectors with the use of results for advice and research (Italy and the Netherlands (Type 1: C-LA) and Poland (Type 2: C-AS)); the combining of extension and data collection also assists with recruitment, though Poland recognises that there may be drawbacks too. Good collaboration between institutions was mentioned by more than one country, as was the use of administrative data in producing the Farm Returns.

However, some suggestions, while being unique, may have applications elsewhere. For example, the 'Data Builder' tool used in UK (England), whereby access to (anonymised) data of individual businesses can be given to external users for the purposes of interrogation (with appropriate safeguards on security and confidentiality) appears to be possible elsewhere and is superior to access via a single dedicated terminal in an institute or to feeding requests via administrators. In Sweden the use of three separate channels for collecting data (though one predominates) offers an opportunity for administrative monitoring of performance (and cost) of the system and enables farmers to exercise a choice in the collectors with which they interface. It is suspected that some of the points made by individual Member States are already in common use, for example the linking of data over time mentioned by Bulgaria, easy access to (standard) results mentioned by France, and the flexibility of national farm accounts surveys to reflect evolving policy issues mentioned in the Netherlands.

60 For example, a decrease in data collection efficiency.
### Table 8.1: ‘Best practice’ as emerging from discussion in case study countries

<table>
<thead>
<tr>
<th>Country</th>
<th>Best Practices</th>
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| Bulgaria    | • The collaboration of local authorities when organising meetings with regional experts and farmers in public spaces of the municipalities, to meet more than one farmer in a single field mission.  
             | • Also best practice, which is widespread at regional level, is to directly ask the farmer the combination of crops during the planting season. This reduces the time needed to verify that the farm fits the sample plan. |
| France      | • National FADN results are considered to be easily accessible.  
             | • National FADN results are considered highly reliable.                                             |
| Germany     | • The Liaison Agency noted that all information collected is supported by receipts and other documentary evidence. This means that the data quality is very high.  
             | • There is a systematic control system (100 pages) which validates farm data. Validation is necessary to continue to receive subsidies (so it is in the farmer’s interest to ensure that data are accurate). The German control system is focused on economic figures rather than physical figures on which the FADN control system is largely based. |
| Italy       | The most notable examples of transferable best practice are:                                           |
|             | 1. Interconnection with administrative databases to validate data collected from other sources (documentation available on the farm or provided by accountants, farmers’ organisations, etc.). |
|             | 2. Involvement of data collectors in the diffusion of FADN outputs and in their use (e.g. in farm advisory services), in order to improve the quality and user-friendliness of outputs.  
             | 3. Involvement of individual surveyed farms in the use of FADN outputs (e.g. through “cruscotto aziendale” which allows online benchmarking) to increase the motivation to participate given that there are tangible benefits to farm management.  
             | 4. Even if not necessarily representative of Italy as a whole and probably not replicable in full in other regions, the model used in Emilia Romagna has some notable examples of good practice, especially for time (and hence cost) saving solutions: |
|             | • Emphasis on achieving the widest coverage possible of the required data through links with other databases (instead of relying on visits to farms or requests for documentation).  
             | • Emphasis on the preliminary use of available data and information to simplify data collection requirements on farm.  
             | • Use of a flexible and user-friendly web application (RETECONTABILE-ER). |
| Lithuania   | • Good cooperation between the organisations involved without the need for bureaucracy. Lithuania is usually one of the first Member States to deliver data to FADN as a result of good cooperation from the Ministry. |
downwards. The Ministry is very helpful. For example, census data are provided before they are officially published. Subsidies are paid on time and the payments agency makes data available to the LIAE very early.

- Farmers validating the data and signing to say that they are accurate is a useful means of ensuring that they pay attention to quality.

Netherlands:
- The strong link between data collection and research, so that collectors can see how their data are used and researchers can use the knowledge of data collectors.
- The benefits of the data are already highly valued. There is also the principle that what is collected has to adapt to the emerging needs of policy.

Poland:
- Combining the knowledge held by the extension officers about individual farms with the collection of data is considered to be an example of good practice. This allows the collector to identify values which seem incorrect which reduces the possibility of error and the need for subsequent data validation. This is especially important because farmers do not generally consider the FADN results useful and this means that they do not pay as much attention to data quality as they might otherwise do.
- The information provided for FADN is a useful input into the advice provided and, where farmers value this advice, they will understand the importance of providing accurate data. Joining the data collection and extension functions therefore increases the data quality.
- There are advantages and disadvantages of the current mix of extension and FADN data collection. The main advantage is the agricultural knowledge which helps make data collection easier and more accurate. Where staff focus only on data collection they become very good at it.
- The independence that the system has from taxation, subsidies, etc. ensures that the results accurately reflect the situation.
- The research access provided to individual data is considered to be best practice. Also considered good practice is the fact that there is no charge for data.

Sweden:
- The involvement of the Board of Agriculture and Statistics Sweden in data collection (in addition to the main data collector, LRF-Konsult) is considered good practice in that new methods of data collection, validation and processing can be developed independently. This arrangement also provides farmers a choice of data collecting organisation so that they do not have to use LRF-Konsult to compile their accounts.
- An advantage of using farm accountants to collect data is that they know the farms and have a good reputation in the industry. This is considered to result in more straightforward recruitment and sample retention. On the other hand, there will always be some farmers who do not want to use LRF-Konsult, hence the alternatives offered by the Board of Agriculture and Statistics Sweden.
- Another advantage of the involvement of the Board of Agriculture is its ability to easily cooperate with colleagues in different departments when additional topics are investigated and other data sources are required (fertiliser use, for example).
**Study on cost of and good practices for FADN data collection**

| **Farmers** | Farmers are keen to only provide data once and housing the farm survey within the official statistics allows this by permitting the use of other registers. Data delivery over a period of time could be considered best practice as it reduces the potential for bottlenecks both at LRF-Konsult and Statistics Sweden. Continuous validation is also an example of good practice for the same reason. The collecting of data from a limited number of holdings by Statistics Sweden and the Board of Agriculture is considered best practice in that this provides a check on the data collection process undertaken by LRF-Konsult and provides objective evidence on the time and resource requirements; downward pressure on the LRF-Konsult price can therefore be exerted. |
| **UK** | The Data Builder tool (England) is an example of best practice in that it allows far greater interrogation of the data by researchers and other interested parties than is possible using only aggregated data. |

Source: Case studies.
Responses to questions on how things might be altered if the systems were designed from first principle gave an indication of what were seen as improvements to present practice, and by implication what is considered good practice. A common response across the three data collection typologies related to more or better use of existing administrative data. This was mentioned in Germany, together with greater use of electronic data collection and transmission. Lithuania also mentioned the greater use of administrative data, though there were technical problems in doing so, a point also made by the UK (England). Interviewees in the Netherlands cited increasing its use still further. Interviewees in Bulgaria cited the need for software to validate at the stage of data entry (the German Winplausi system provides an example where this approach is used). The UK (Northern Ireland) would replace the use of paper forms to collect data by electronic entry, whereas in England there was an indication that a re-engineered approach in which farmers (or farm secretaries) entered data directly (rather than ex-post collection by university researchers) might be worth considering, though it carries issues (not least that of management). Interviewees in Sweden looked to a way to improve the validation process to apply EU rules at the national level (and thereby reduce the number of queries raised by RICA-1).

Overall, there was little surprising in the responses to the specific questions on best practice and to alternative designs of the present data collection systems.

8.3. Assessment of best practice by the research team and its expert advisors

While direct questions to organisations in Member States on best practice can provide some insights, the greater contribution to the identification of best practices and their assessment is likely to come from being able to take an overview in which practices in individual countries are put into a broader perspective. The various bodies of evidence (online survey, case studies and the literature review) were reviewed by the immediate project researchers and by the team of experts that supported them.

However, fundamental to improving performance of national farm accounts surveys is the periodic carrying out of evaluation with associated monitoring exercises. Few recent examples of formal monitoring and evaluation systems have been identified in the course of this study. It would be best practice for all Member States to introduce appropriate systems to examine both the costs of data collection and analysis, the variability within this, and the reasons for this, and the uses to which the results are put. Collaboration at the EU level to introduce a common and consistent framework would be appropriate. It should be noted that a similar proposal to introducing benchmarking between national farm accounts surveys supplying FADN was raised by Poppe, et al. (1997), but apparently not acted upon.

Earlier in this section (8.1 Key issues) a number of criteria were mentioned by which best practice could be identified. In the following sections these are considered in turn.

8.3.1. Reducing costs

The levels of cost of national farm accounts survey have been considered extensively in earlier analysis (Theme 2, Chapter 6). From this it is clear in broad terms that there is a

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61 According to the Dutch case study, in the Netherlands the national farm survey is subject to an annual evaluation and 5-yearly evaluations linked to the renewal of the contract issued to the Liaison Agency by the Ministry of Economic Affairs. In the UK (England) formerly there was a contract for quality assessment, but this was discontinued in 2011 due to budgetary pressure. However, some changes were made in line with recommendations, such as improving feedback. In Italy, a Commission within the Ministry of Agriculture evaluates INEA’s annual plan for FADN activities, and this constitutes de facto an assessment of the overall performance of INEA in carrying out FADN activities. Sweden and France mentioned some ad hoc methods of assessment.
link between the costs per completed Farm Return and the collecting system employed. Lower costs are associated with the provision of data from accountants who draw up accounts for the private use of farms in meeting national taxation requirements. In essence, part of the monetary cost of providing survey data is thus borne by the farmers, the cost to public funds being only the extraction process, the collection of data not contained in financial accounts (such as some physical variables and further details not required for taxation purposes) and data validation and processing. Thus a distinction has to be made between the cost to public budgets and the total resource costs, which would include both public and private costs. For the purposes of analysis in this section we will confine our consideration to public costs to national governments, private costs being placed in the section below on the burden to farmers. Public costs should be first considered gross and later net of the fee paid by the EU per holding accepted by EU-FADN (in most Member States this fee is only a contribution to national budgetary costs).

An example of **best practice, from this costs standpoint, is to make use of data already in accounts where these have to be kept for taxation purposes.** Where this is not currently done, although accounts are required (as in the UK), there may be offsetting factors (such as the desire to construct accounts that are fully reconciled with bank statements and hence be of high quality, and the wish to avoid bias in accounts to serve tax requirements rather than for more neutral management ends). However, the national political system might well wish to examine whether the higher costs resulting are in the interest of the country as a whole. Certainly a large number of Member States manage to use extraction from farm accounts, drawn up primarily for tax purposes, as a basis for supplying EU-FADN without raising issues of quality or bias that lead to their rejection by RICA-1. Liaison Agencies seem adept at making appropriate adjustments where taxation and FADN regimes differ (as may happen with provisions for depreciation/capital consumption).

A similar situation pertains to the use of administrative data (physical or financial). A majority of Member States (21) in the online survey reported the extraction of data from such secondary sources. Where countries had made recent changes to their data collection methods, a common feature was the greater use of administrative data. However, this change was only seen for Member States collecting data via the Liaison Agency (Type 1: C-LA: Greece, Ireland, Italy and Luxembourg) and via accounting firms (Type 3: C-AF: Denmark and Estonia). This was not a recent change made by any Member States collecting data via public advisory services (Type 2: C-AS); a possible explanation is that this is not seen as a means of saving cost given that advisors are in frequent contact with farmers anyway. The issue is not that this form of information is used at all (data collectors will usually have this information in paper or electronic form as part of the farm records), but whether these are used direct from the sources (IACS, etc.). Again, some Member States have direct access for completing part of the national Farm Return while others use such access to check the data collected from the farmers\(^\text{62}\). Undoubtedly there are technical issues in making sure that the production unit in the administrative source corresponds fully with that in the farm accounts survey (a farm business may comprise more than one holding), but clearly some countries have managed to clarify such situations.

Where there are legal restrictions on the use of such administrative data, ways to avoid such problems may be found across our typology which do not test the legal boundaries. For example, in **Lithuania** and the **Netherlands** the permission of each farmer surveyed is sought to have access to this information (with high rates of consent). Such consent is seen as a way of reducing the burden on the farmer’s time and of ensuring accuracy. This is also the case in **Germany** where farmers have to give their consent for accountants to use the data held by aggregation companies; failure to provide this

\(^{62}\) It is not always possible to use this information. For example, in Lithuania the IACS crop classification does not comply with the EU Eurostat classification.
consent implies greater time and cost in compiling accounts, so it is in the farmers’
interest to provide it. Access by consent is seen as an example of best practice.
Already the large majority of Member States have formal agreement with the farmers
that participate in the national farm accounts survey (16) and its modification to include
consent to access would seem to be appropriate (at least for newly recruited farms) in
those Member States that do not currently do this.

A similar situation obtains over the use of private records. In the Netherlands the
access agreements also cover taxation records and bank statements (it is not required
for agricultural census data). While this may not be universally appropriate (taxation
records may not tie up completely for both technical reasons and because of under-
reporting, and banks may not enjoy complete trust) the same access by consent would
seem to be useful to reduce overall costs.

The issue of reducing costs by not paying farmers a fee for their cooperation is
considered in a following section that looks at the benefits/costs ratio.

8.3.2. Increasing benefits

Previous analysis has shown that governments use the results from their national farm
accounts surveys for a wide range of purposes. In general, the public benefits seem to
exceed the public costs (see section 7.3.3.7 above); the European Commission,
European Parliament, international organisations such as the OECD, non-governmental
organisations and the research community also use the results. Historical development
suggests that, in countries that operated national farm accounts surveys before they
were required to supply data to EU-FADN, the initial purpose was to answer policy
questions. The use of the results to inform farm management decisions (and hence
deliver private benefits to farm operators) and to contribute to education, are uses that
were added, albeit at an early stage.

In the UK this process of adding value by expanding services to the farming industry has
continued with the introduction of benchmarking (now a common feature in a number of
Member States and a tool that is recommended by the World Bank in its initiative
Benchmarking the Business of Agriculture for application in a wide range of circumstances).
There is a substantial literature on techniques behind benchmarking
for farm businesses. Much of this is reviewed in Franks and Collis (2003), where the
essential features of a system of benchmarking are set out, including the need for
accurate data taken from a reliable sample and presented in a form that facilitates
comparisons with individual farms. Clearly results from EU-FADN fit this model well and
its potential use for benchmarking is obvious. However, while the literature states that
the aim is to increase farm profits and competitiveness (and increasingly to improve
environmental practice and animal welfare), there is very little evidence of actual impact
of benchmarking on the incomes and wealth of farm operators that could be interpreted
as private benefits flowing from this use of EU-FADN data.

Nevertheless, it is clear that a good practice is increasing benefits though making
access to results free in electronic form. Where a fee is currently charged,
consideration should be made to removing this, given that the marginal cost of making
this information available to one more user is zero. Whether special analysis that
requires the use of resources by Liaison Agencies or their agencies should be provided
free is not self-evident; where there is private benefit a charge could be justified,
although in Poland the administrative cost involved in raising a charge was considered
disproportionate to the cost of providing the analysis. However, a preferred solution is

63 A time saving of around 20%-25% can be achieved. Consent rates run at around 90% in Bavaria and
Sachsen-Anhalt.

that offered by the **UK (England)** in which access to the basic raw data is provided while still maintaining safeguards for confidentiality. This may be facilitated more widely in the EU by international cooperation in the design and use of appropriate software.

Discussions with senior DG AGRI staff and senior staff within the OECD and the UK’s EU and International Directorate revealed that a closer alignment between the variables covered in FADN and EU policy objectives would increase the benefits of operating the system. It was noted that moves to increase the coverage of environmental variables go some way towards this and will allow future assessments to be made of greening policies and the impact of policy measures on Carbon sinks. The central tension is between a data system focused on production and policies increasingly focused on the environment, rural development and income. Other cited changes which would increase benefits included the coverage of household income, the treatment of subsidies within FADN to allow these to be linked to policies, linking investments in innovation to productivity, and an increased field of observation to allow a better analysis of structural change.

### 8.3.3. Improving the benefits/costs ratio

Improvements in the benefits/costs ratio will flow from reductions in costs with benefits unchanged, or from increases in benefits (such as from greater usage) with costs unaltered. In addition, improvements can flow from situations in which both benefits and costs rise but the relationship between them improves. An example is the **Netherlands** where the farm accounts survey uses a relatively expensive approach, but covers such a wide range of variables that it serves monitoring functions across multiple policies and obviates the need to carry out multiple focused surveys. The Ministry of Economic Affairs (there is no agricultural ministry) regards this arrangement as very satisfactory, implying it is getting good value for its expenditure.

It is also possible that the value of both benefits and costs could fall and the ratio could improve. No concrete examples were encountered in case study countries or in the literature, though in the **UK** there is at least the technical possibility of a change in collection methodology which could lower costs, but which might also imply the loss of some of the current uses (it should be stressed that no move in this direction is currently planned in the UK).

The key point is that, while there is an obligation for all Member States to supply the data corresponding with the current FADN Farm Return, the collection of additional material for national purposes, or the use of a greater sample than is necessary to provide the required number of completed Farm Returns (including a safety margin), must be taken in the light of the national additional costs and additional benefits.

One potential change that should be analysed in terms of its marginal benefit to marginal costs ratio (and which may have an impact on the ratio of the average benefits to average cost\(^6\)) concerns the national convention of paying a fee to participating farmers. According to the online survey, 12 countries make such payments to family farms, ranging from (on average) less than €75 in Germany, Latvia, Malta, Poland and Slovenia, to €159 Sweden and €290 in Slovakia\(^6\); in this group only Malta collects data via the Liaison Agency (Type 1: C-LA). The fact that most countries do not make payments to their farmers raises the question of whether these are necessary to maintain the flow of

\(^6\) Although this is effectively a transfer payment, there is an opportunity cost to this use of scarce resources and the money may be better spent in other areas. There are also transaction costs incurred in making the payments.

\(^6\) Calculated per FADN case submitted the average payments per case are Austria €120; Cyprus €120, Estonia €100, Germany €72 (the actual payment per farm is €55 but for a larger national sample), Greece €122, Latvia €73, Malta €58, Poland €57, Slovakia €290, Slovenia €70, Sweden €159. In Lithuania 50 legal entity farms within the sample receive €160.
data. The rationales originally used to justify payments may no longer be valid to present circumstances; path dependency and an expectation on the part of the farmer may be the main explanation for current payments. Consequently it would be best practice to review these payments, examining the possibility of removing them and the implications (technical, political and economic) for doing so. There may be a relationship with data collection methodology in that Liaison Agencies (government ministries or public institutes) do not, Malta excepted, pay farmers. There may be a perception that payment is necessary when the data collector does not have an ‘official’ status.

Of the case study countries, fees are paid in **Germany** (€55 per farm in the national survey) and **Poland** (PLN 200 ~ €50). In **Lithuania**, while no fees are paid to family farm, company farms are paid the same as the national fee received from the Commission for the work by their accountants in providing the data required by FADN; in this case there is a clear service associated with the payment, though whether the fee is appropriate is not self-evident.

In **Poland** (where accounts are prepared by a publicly-funded organisation at no private costs to the farmer) farmers benefit from having their accounts delivered and explained to them, and it is not clear what the farmer does in exchange for the fee other than agreeing to take part in the survey and making information available. Furthermore, there is an identifiable public cost in running the system that makes payments to individual farmers.

In **Germany**, where farmers bear some of the costs of supplying data through private accountancy charges, the government payments can be seen as a partial recompense for providing the additional data required (actual charges by accounting firms are in the order of €2,000 in Bavaria and range from €500 to €12,000 in Sachsen-Anhalt, depending on scale, so the fee of €55 farmers receive is relatively minor), though there is no clear link to the additional effort that may be needed to meet the requirements of the national farm accounts survey. In addition to feedback on their accounts, our literature review suggested that participating farmers in Germany also receive priority treatment by the accountancy firms doing their bookkeeping. In short, there appears to be little fundamental reason for payments to farmers in these countries; other case study countries manage to secure data without them and there is no evidence that making payments has an impact on relative sample turnover rates. However, removing a payment where one exists currently may result in a short-term impact on sample retention. **It would therefore be best practice to periodically review the necessity of paying these fees** in those Member States that currently make these payments.

### 8.3.4. Increasing quality and timeliness of databases

A distinction must be drawn between the quality of the databases, which is within the coverage of this research, and the quality of individual data, which is linked but is tangential to the main issue. Best practice in actions that increase the quality of the database will be reflected in a lower number of Farm Returns rejected when submitted to the Commission’s RICA-1 and fewer queries raised. Quality in databases of national accounts surveys that have a broader scope than FADN may have additional dimensions that are not the prime consideration here. The Commission has indicated that quality at the national level is one of the factors that determine the amount of time it has to spend communicating with Member States to obtain an acceptable set of completed Farm Returns. Among case study countries it is evident that steps are being taken to reduce the number of Farm Returns rejected by RICA-1 by identifying the chief factors linked to

67 The farmer would have to incur the fee for the production of accounts in any case.
rejection, and this learning process has been successful, though rejections are not eliminated completely.

Best practice concerns the stages at which validation of data is carried out, and the means by which this is done. Our online survey showed that most countries have validation procedures before data are entered into the national farm accounts system. Subject to the avoidance of unnecessary duplication, what appears to be best practice is to have validation checks at multiple points along the data supply chain; in Germany the Federal structure leads to validation procedures that can look rather excessive, though we would not wish to see these reduced if experience has found them to be justified.

We have found examples of the following best practice:

- At the earliest point of data collection we consider it best practice to have access to the experience and expertise of staff familiar with farming systems and accounting to detect and eliminate elementary errors and incompatibilities. This is most easily achieved by data collectors who are also management advisors, though where data are collected from accounts the bookkeeping staff should also be encouraged to develop these observatory skills.
- Another example of best practice is to use electronic data entry on the farm that can flag up potential quality issues so that they can be dealt with immediately at source. Such systems are probably facilitated by online data entry.
- In Germany the existence of Winplausi, a dedicated validation system that is accessible by a wide range of users at different points in the data supply chain, is an example of best practice that facilitates data quality (similar systems exist elsewhere, for example in the UK). Winplausi is regularly updated to reflect changes in Commission requirements (and those of the national farm accounts survey – TBN) and users receive training.
- Linked to Winplausi, but not dependent on it, is a means of categorising data quality issues into various degrees of seriousness, ranging from the need to check with the source certain data (that may well be correct but unexpected or an outlier) to severe and needing the replacement of the entire Farm Return. We recognise this as an example of best practice.

A related example of best practice is to have a system which learns from past experience. For example, where suitable clarifications to queries have been provided, these should remain on record both in case of query in subsequent years and to improve validation programmes. Elements of this are evident in Germany and Sweden, but may be less developed in other countries.

Timeliness of results is a factor that affects the ability of decision-makers (both public and private) to use them, and surveys of farm accounts typically involve delays. Within the EU, timeliness was acknowledged as something that has limited the utility of FADN (see for example European Parliament (2015); Hill, 2012; Hill, Bradley and Williams, 2015); this was confirmed more recently by senior DG AGRI staff outside the FADN unit. Our online survey found delays between the end of data collection and the time at which national validated results are released ranging from one month to two years. The publication of results at EU level cannot proceed in a complete form at a pace faster than the slowest country.

68 The European Court of Auditors has expressed concern that some practices, such as substitution of rejected cases, carry implications for the representative nature of the FADN sample (ECA, 2004). It is also of concern that Member States may be focusing on reducing the number of rejections rather than identifying other issues with data that may not be identified by the RICA-1 checks. As data quality was not a focus of our research we did not explore these issues with Member States.
Timeliness is affected by factors such as the method used for data collection, national legislation on the ending of financial years (results from Germany are delayed for this reason), the need to plan and spread staff workloads of data collecting, processing, sample recruitment, etc. throughout the year (specifically mentioned in the Netherlands case study), the degree to which internal reconciliation is required, and the resources that have to be put into following up queries raised at national and EU levels. Within these constraints a number of best practices have been encountered:

- The elimination of various stages in the data supply chain. The most elementary is the removal of paper entry of data and its replacement by electronic entry. This eliminates opportunities for errors in transcription though, of course, there is still the imperative to enter data correctly. Only six Member States in our online survey did not report paper recording to subsequent electronic data entry at some point in their systems (Type 1: C-LA: Greece and Ireland; Type 2: C-AS: Croatia, Finland and Slovakia; Type 3: C-AF: Denmark), though this may have only applied to part of the survey (such as farms that do not keep accounts). Online data entry takes this a stage further. In the online survey 14 Member States reported off-line data entry and 16 online data entry (five reported both). Extraction from farm-level software packages was reported by 13 Member States in the online survey. Among Case Study countries such extraction from farm accounts software packages (or spreadsheets) was encountered for only a small minority of family farm holdings, though there are complications arising from the way farmers use them (for example their bundling together of items that need separation for FADN purposes, and the accuracy of data entry) which restricts the potential at present.

- Among case study countries Germany provides a financial incentive (higher fee to accountancy firms) for data provided by a deadline one month earlier than the main deadline. This is considered best practice to both improve timeliness and smooth out bottlenecks in data processing and generally applies in Member States basing their Farm Returns on accounts (although the principle could apply more widely).

- In a related point, timeliness could be improved by treating data collection as a continuous process. In the Netherlands and Germany centralised systems of data handling (EDI-CIRCLE and data processing companies respectively) that supply data to the national farm accounts surveys are not confined to an end-of-year exercise. The UK has also considered a more continuous approach. The implication is that results could be produced in a more timely way in some other Member States.

### 8.3.5. Reducing the burden on farmers

The burden on farmers can be reduced through the increased use of administrative databases and/or through the principle of asking a particular holding the same thing only once.

According to the Dutch Liaison Agency (LEI), the Netherlands has as a national objective the minimising of the administrative burden on farmers and of collecting data only once, but using it multiple times. Closely allied with this is the aim of using available (electronic) data as much as possible, the aim of collecting farm level data on a wide range of sustainability issues to provide policy- and research-relevant data. As a consequence of the extensive use (with the permission of the farmer) of administrative, environmental, taxation, banking, commercial data (via EDI-CIRCLE) and other existing records, the burden on the time of the farmer in responding to questions is reduced to an average of less than two hours a year for a coverage of topics in excess of those required by EU-FADN. We consider it best practice for Member States to actively seek to reduce the burden on farmers, in particular through the multiple use of data sources.
It is clear from the responses to the online survey, our case studies and the contents of the literature review that other countries are tending to move in the same direction in their use of administrative data. Previously the point was made that such use is facilitated by asking the permission of farmers to do this, something that avoids the need to test the strict legislative position. Where this permissive access can be seen as a way of reducing the burden on their time, farmers appear generally willing to accede to the request across the data collection typology; in addition to the Netherlands, high levels of agreement are seen in Germany (in terms of using data processing companies) and Lithuania.

Clearly, this way of reducing the burden on farmers requires technical difficulties to be circumvented. There has to be a reliable way of linking data sources (a unique identifier) and confidence that the units correspond. Sorting out such problems should be seen as an investment by the national administration, as the benefits are likely to flow for a considerable period of operation.

The principle of asking a particular holding for a piece of information only once, embedded in the Netherlands and another example of best practice, seems to be less commonly encountered in other Member States. Within the farm accounts surveys it obviously makes sense to carry data over for individual holdings from one year to the next where they remain in the sample and where this is appropriate; the relatively low turnover of sample in national farm accounts surveys and the generally unrestricted time that farms can remain in them suggests that this is good practice that national farm accounts surveys may already employ. Pre-filling parts of the Farm Return is facilitated when this is in electronic form. However, applying this principle more generally implies reciprocity among databases. Not only would farm accounts surveys draw from administrative data sources, but other users would be able to draw on data in farm accounts surveys. There is what appears to be a direct conflict with the assurance of confidentiality built into the FADN Regulation. We have not been made aware of situations where data sharing of this nature has taken place and are not in a position to speculate on the safeguards that might be needed to enable it to happen.

8.4. The applicability of best practice in other Member States

The applicability of best practices clearly has to reflect what is technically possible. However, this has also to acknowledge that there may be political, social and economic impediments that may inhibit their use. The point has already been made that, while data collection that draws on accounts constructed for purposes of submission to taxation authorities have cost advantages, where farmers do not currently have to submit accounts it is unrealistic to envisage a change in national taxation system to improve best practice in FADN data collection.

However, the greater use of existing administrative data appears to offer some cost-saving possibilities and enhancements to quality. Coupled with seeking the permission to use the data, and perhaps other datasets, the applicability of their use would seem widespread, though there are undoubted technical issues that would need investment to overcome. Even so, some Member States may find this unattractive. Similarly, making use of accounts already being drawn up for taxation purposes appears to be a potential cost saving (to national public expenditure), though again there are technical impediments to overcome. Phasing out fees currently paid to farmers obviously could only apply where such fees are paid, and individual Member States may still prefer not to do so, but they should at least examine the issue.

69 In our online survey 20 Member States indicated that they already have a unique identifier that can, in theory, be used to link data sets.
While the use of farm accounts data and the benefits this can bring is widespread, not all possibilities are fully exploited, and those Member States with further potential should be encouraged to realise it. Even among countries with a wealth of experience, there are ways of making more use of the basic data without compromising confidentiality. The limiting factor seems to be capacity in the software support available.

Disparities have been encountered in the procedures used to collect and validate data. There seems little reason beyond constraints of financial resources and adequate skilled professional input why better IT systems should not be applied. There may, of course, be real limitations, at least in the short-term, but international collaboration should be able to loosen the constraints.

A somewhat surprising finding among the case study countries is that they each appear to operate largely in a national silo. While the senior producers of data in Member States can often attend meetings of the Pacioli network and the EU FADN Committee, and they may know about what happens in some other countries, this is a step away from operational collaboration in ways that reduce costs or increase benefits. In our case studies we explicitly asked if collaboration currently took place, to universally negative responses\(^70\). This is not to overlook the fact that new Member States have in the past been mentored by countries more experienced with FADN (for example, in the early stages of setting up its farm accounts survey Lithuania was advised by Denmark, and the shape of the data collection system there acknowledges the Danish influence), and the transformation of data from Luxembourg into the EU-FADN Farm Return was, for a time, carried out in Germany (see the literature review).

Based on the apparent lack of collaboration, there appears to be an information gap despite the existence of the Pacioli network and the EU FADN committee. Maybe cooperation between Member States in the practicalities and costs of data collection and dissemination requires a forum outside the Pacioli network and the main meetings of the FADN Committee in Brussels. The use of technical groups or task forces might be used to allow the exchange of experience and information and the exploration of issues in which both problems and solutions can be aired in a way that does not commit administrations.

A further surprise was that the software used for validation is apparently specific and designed only for the individual farm accounts system. While we are not qualified to make more than an innocent inquiry, it does seem strange that what appear to be common problems of data quality that need to be tested (by plausibility checks, incompatibilities of logic, range outliers, etc.) cannot be tackled by common programmes that share a great deal of similarity, but which can be tailored for the specific characteristics of each Member State. Direct cooperation between countries, especially those with similar structures and collecting mechanisms, would seem to be a way to reduce costs and enhance effectiveness.

### Box 8.1: Case Study of USDA’s ARMS: Best practice

Elements of practice in the ARMS process of data collection that might be considered for application in EU Member States include:

- The use of a phased approach with matched methods of data collection. For gathering information on production practices and cost data for commodities postal

\(^70\) Occasionally we heard about specific advice provided from one Liaison Agency to another such as from the Netherlands to Lithuania on how to deal with exceptional cases on FADN holdings within the weighting system such as when disease results in the slaughter of livestock on a large farm. Also the German case study encountered an exchange of information between Brandenburg and Poland.
and telephone collection seem to predominate. In the EU the feasibility of doing this might be considered.

- Farmers have the option of entering their replies to postal questionnaires electronically (electronic data recording – EDR). This is a facility (used in the EU outside agriculture) that could form part of cost-reducing best practice in the EU-FADN.
- For visits in person, ARMS routinely records the length of interview. This enables a farmer burden to be established. This is something that national farm accounts surveys should consider if not already done.

There are several best practices that affect the quality of the results and their usability:

- The uniform size threshold for inclusion allows valid comparisons between US States and regions across the full range of farm sizes. This is a different approach from that taken in the EU where the focus is on market-oriented holdings and different economic size thresholds are applied.
- The broader scope of questions (such as covering household income and assets) coupled with the relatively low threshold for inclusion enables a fuller explanation for economic behaviour and provides information on the income and wealth position of farmers and their families to be established and compared with the rest of society in a robust manner (something that is of relevance to the stated aims of the EU’s Common Agricultural Policy).
- A greater statistical robustness flows from the use of a sample that is random.
- The combination of coverage and statistical robustness enables the ARMS results to be used widely within economic statistics to an extent that EU-FADN results apparently are not, giving them an added value to their use as a tool within the design and monitoring of agricultural policy.
- The use of external assessors of ARMS methodology underpins the quality of its results in a way that processes in the EU-FADN do not. Improvements in evaluation of the national farm accounts surveys in Member States and at the EU level would represent best practice.
9. CONCLUSIONS

9.1. Overarching conclusions

Some Member States initiated their national farm accounts surveys prior to the establishment of FADN, or before their accession to the EU. FADN requirements are set out in a Regulation, but this does not require specific organisational structures to be used and there is considerable variation among countries in the organisation of the FADN data supply chain as a result. There is little evidence that this has any impact on either the costs of data collection or the uses to which data are put and therefore the benefits derived. The relative stability in varied organisational structure reinforces this conclusion, and only minor restructuring has taken place in a small number of Member States.

The composition and function of national FADN committees varies, although the core functions are prescribed by the Regulation. There appears to be no discernible impact on performance of the data supply chain according to either the committee’s composition or function.

While organisational structure is not likely to have an impact on sample turnover, data collection methods which imply a low burden on farmers are likely to reduce turnover and make recruitment easier and less costly as a result. Recruitment from the existing clients of data collectors has a higher success rate and is therefore cheaper than from random lists. There is no evidence that paying participating farmers improves sample retention.

Data collection methods are not specified in the Regulation and Member States employ a range of methods, use a range of data sources and record data in various ways. The methods used have an impact on costs, with data collection by accounting firms from existing completed accounts cheaper than collection using other methods. A key factor here is that the cost of completing the accounts is not borne by the FADN system where farm operators are required to produce these by law for taxation purposes. Although the basic data collection methods used are stable, there is a degree of evolution, with Member States increasing the use of secondary data and electronic data recording over time. Data validation takes place at a number of stages in the data supply chain and some Member States have more sophisticated, IT based approaches than others. While validation at multiple points will increase costs, this approach may also improve data quality and reduce the number of queries raised by the Commission’s RICA-1 system.

Because of the different approaches to data collection, the time required to complete each Farm Return varies considerably between Member States. However, a common factor is that the data collection activity is the most time consuming element within the data supply chain. Even after adjustment for different wage levels across Member States and adjustment where the national sample exceeds the requirements of EU-FADN, there is still considerable variation in cost. As noted above, a key explanatory factor is the type of data collection system employed, with the use of accounting firms the most cost effective method and data collection by public advisory bodies the most expensive method, although there are additional benefits from this latter approach in terms of the provision of advice to farmers.

The costs of change or adaptation will be specific to each Member State. However, the cost of collecting additional information/increasing the sample size would be marginal to the basic data collection infrastructure in place and would be further reduced where Member States already collect this additional information for national purposes. Similarly, savings from a reduction in scope/sample size would also be marginal.
The main conclusion concerning the benefits obtained from the FADN system is that it is hard to quantify these in monetary terms and only one (cursory) attempt had been made to do this previously by a Member State. That said, there are both private benefits to participating farmers and public benefits linked to the use of data by governments. Benefits are contingent upon access to the data and this is generally good in relation to aggregated results; there are additional benefits associated with access by analysts and researchers to individual farm data and, though this faces issues of disclosure, there are examples of such databases at the national level, including ones in the Netherlands and the UK (England), which allow users to interrogate the raw data, subject to confidentiality being maintained.

The results from national farm surveys are widely used by the EU, international organisations and national governments and by other organisations. The high use of the data suggests that neither the organisational structure or the data collection methodology impacts on data utility.

Member State governments value the benefits of the FADN system and would certainly consider continuing data collection in the absence of the EU requirement to do so.

A number of examples of best practice were identified. Fundamental is the principle of evaluation of performance which appears to be rare in relation to farm accounts surveys. In terms of the collection of data, best practice would be to make use of existing information, whether in accounts or administrative databases, shorten and simplify the data supply chain and to use validation systems that at multiple points along the supply chain to identify issues in the data as close to source as possible. In terms of data use, improving access by removing fees where these apply would increase the potential benefit.

Our conclusions are presented in greater detail and by study Theme in the following subsections.

9.2. Organisation of FADN and methods of collecting the data

Legal framework

The EU-FADN legislation is in the form of a Regulation and therefore applies within each Member State without the need for national legislation. However, there is additional national legislation in 16 Member States. As a generality, national legislation is more common in Member States which joined the EU in 2004 or subsequently. National legislation in these cases typically established the Liaison Agency and the National FADN Committee and set up the mandate for a national farm accounts survey in anticipation of accession. Only five EU-15 Member States have additional national legislation and in some cases this merely references the EU-FADN Regulations. Our conclusion is that the prime legal framework is provided by the Regulation (the relevant legislation for the period covered being Council Regulation (EC) No 1217/2009) and the presence of national legislation, where it exists, appears largely to allocate tasks to institutions.

The use of existing administrative records can offer a potential way of reducing costs and of minimising the burden on farmers. Six Member States reported legal constraints on the use of administrative records in compiling the FADN Farm Return, although in practice these do not always constitute practical constraints, with administrative records used in Germany to check data from farms and administrative data used in the Netherlands as a data source with the permission of the farmer. The use of taxation records as a data source is more constrained by legislation (in nine Member States and Northern Ireland in the UK) or convention, although of course farmers can voluntarily
make available to data collectors the same information they have submitted to the tax authorities. Taxation records themselves are of limited value in compiling the FADN Farm Return because the information is not usually sufficiently detailed and it may be costly (especially in terms of time) to link/allocate a household record to a farm business. It has also been suggested by some observers that taxation records may have an inbuilt bias towards minimising income subject to taxation, although the implication is that this is not considered to be a problem by Member States where taxation accounts are used as a basis for their national farm accounts survey. Our conclusion is that legal constraints to the use of administrative records do not apply in most Member States. Even where such restraints are found, access on a permissive basis often offers a way by which this information can be used.

Legal constraints can also extend to uses of data. The main such constraint is that, according to the Regulation Preamble and Article 16, farmers must be given the assurance that data collected for EU-FADN ‘will not be used for taxation purposes or for purposes other than those provided for in this Regulation or divulged by persons participating or having participated in the Community farm accountancy data network’. To maintain confidentiality, access to individual data is not permitted, a restriction that also applies to aggregated results where the number of farms is small enough to risk disclosure. In practice, there are some circumstances where anonymised individual data can be used for research purposes (see Theme 3). Our conclusion is that these legal restrictions on use do not constrain access to results at the national level in a way that impacts significantly on the public benefits obtainable (see section 9.4 below).

Establishment of national farm accounts surveys and current rationale

Our finding is that for many Member States the establishment of national farm accounts surveys predated their requirement to supply data to EU-FADN and was to serve national purposes. Our conclusion is that, while EU Membership carries the obligation on all Member States to supply data to EU-FADN, national purposes are often still relevant and form part of the rationale for national farm accounts survey.

The oldest established national farm accounts survey this study encountered in current EU Member States was that of Finland (set up in 1912). Farm accounts surveys had been established in nine Member States prior to the introduction of EU-FADN. In seven countries national farm accounts surveys were set up immediately prior to accession to the EU while in another seven Member States farm accounts surveys were established rather earlier; in the case of Poland a survey was introduced in the 1920s, remodelled in 1956 and later brought in line with EU-FADN requirements prior to accession.

Clearly compliance with the obligations of EU Membership is a key part of the rationale for conducting national farm accounts surveys. However, in our online survey only eight Member States did not also cite national purposes as a current rationale.

Status of the Liaison Agencies

Liaison Agencies fall into two main groups: Ministries (12 Member States) and public research institutions (14 Member States). In Denmark and Sweden the Liaison Agencies are the government statistical offices. Ministries are more commonly designated as Liaison Agencies in the EU-15 (53% Ministries c.f. 33% public research institutes) while the selection of a public research institute is more common in newer Member States (69% c.f. 31% Ministries).

Our conclusion is that the status of the Liaison Agency is primarily a matter of administrative convenience and there seems to be no obvious association
between this and the functioning of the national farm accounts survey, including the costs of running it.

**Organisation of the FADN supply chain**

We find that there is considerable variety in terms of the division of responsibilities along the FADN supply chain, though with the exception of Finland, funding is always the responsibility of a government ministry. **Our conclusion is that this variety of organisational structure is explained primarily by history and practical considerations (21 and 24 Member States respectively).** Only in nine Member States is the organisational structure influenced by budgetary considerations. The Netherlands and the UK are the only Member States where independence and objectivity were cited as rationales for the organisational structure (although there is no suggestion that independence and objectivity are compromised elsewhere).

**Organisational structure is stable** with significant organisational change in the last ten years/since accession taking place in only four Member States and only related to operation/performance in two of them.

**National FADN Committees**

We observe that the National FADN Committees typically have representation from along the FADN supply chain and generally Government statistical bodies and farmers’ organisations are also represented. However, the former are not represented in five Member States and the latter are absent in 11 Member States. We have not been made aware of problems arising from these gaps in formal representation and expect that informal consultation takes place.

Many National FADN Committees have additional functions beyond those set out in the EU-FADN legislation, though these vary by Member State. Two main groups can be distinguished: those Member States where the Committee plays a major role with multiple additional functions beyond its legal requirements (seven Member States); and those where the Committee’s function closely aligns with the minimum legal requirements (11 Member States). The remaining Member States fall somewhere between these extremes. **Our conclusion is that there is no discernible impact on performance within these groups.**

Regional Committees are only found in Belgium, Germany and Spain.

**The sample of the national farm accounts surveys**

Several aspects of the sample are reported upon by this study as relating to costs and best practice.

**Representativeness**

As currently constituted, agricultural production and area are well represented by the EU-FADN sample, but this applies far less to the proportion of holdings (and by implication holders) within the FADN field of observation; several Member States use lower thresholds for national purposes to increase coverage. In 26 Member States the FADN field of observation exceeds 90% of Standard Output; in 13 Member States the field of observation exceeds 90% of Utilised Agricultural Area and in 16 Member States the field of observation exceeds 75% of Annual Work Units. However, there is a substantial difference between Member States in terms of the coverage of numbers of holdings in the Farm Structural Survey (FSS). Less than 60% of holdings in the FSS are covered by the FADN field of observation in 16 Member States; of these, 12 joined the EU in 2004 or
subsequently. Given this divergence, FADN is probably rather better suited for policy analyses relating to the economics of agricultural production than it is to the more social aspects of the wellbeing of the wider agricultural population – or at least of those who occupy the land and derive some part of their livelihood from it. **Our conclusion is that any change in the current EU-FADN sample orientation towards a greater coverage of holdings (and holders) for example, for the purposes of the appraisal of rural development policy) would carry cost implications, but may also bring additional benefits.** We recommend that should any change be made, the relationship between these costs and benefits should be carefully considered. These have not been explored in detail, but it is to be noted that there is evidence that cost per completed Farm Return tends to be lower among smaller farms, and that the marginal cost of enlarging the sample can be expected to be lower than average costs.

**Sample turnover**

Unlike the situation in the USA, where the ARMS sample is, in principle, selected anew each year, universal practice among EU Member States is to retain the large majority of the samples in their national farm accounts surveys (and hence among the farms whose data are sent to EU-FADN) from year to year. Sample turnover is typically 10% or less and often arises primarily from structural change. While a small number of Member States have in the past operated a maximum retention period, only Cyprus appears currently to formally restrict farmer participation over time, though this is considered to be good statistical practice in Italy. **We conclude that there is an implication for the costs of data collection if turnover were to be increased in that costs would rise. It is recognised by Member States that replacing participating farmers increases costs** (both of recruitment and through loss of familiarity with the farm and diminishes benefits (long-term analyses cannot be performed with high turnover rates).

**Sample recruitment**

Though only a minority of new farms are recruited each year to meet the EU-FADN obligations, there is substantial variation in the methods used by Member States to add fresh farms to their national farm accounts survey. For family farms the two main approaches are: (i) selection at random from a list of farms derived from the Farm Structure Survey; and, (ii) selection from existing clients of data collectors. The first approach offers potential statistical superiority, but a lower recruitment rate which may itself suggest that the sample is not fully representative. The second approach may introduce selection bias (by focusing on farmers receiving advice), but by building on existing relationships offers a higher success rate and therefore cheaper recruitment (which in some countries may be virtually zero). **Our conclusion is that the approach used to recruit farms will carry cost implications, and that there may be a trade-off with statistical quality, though this is by no means certain.**

**Farmer participation incentives**

Farmers receive something in exchange for participation in their national farm accounts survey in all Member States with the exception of Denmark, France and Romania. Farmers receive financial payments (at various rates) in 11 Member States. Payment in kind, in the form of a set of completed accounts, is provided in 14 Member States. There is minimal overlap between these groups suggesting that Member States take an “either/or” approach to compensation. Participating farmers are provided with benchmarking data in 21 Member States and those in Member States where data are collected by advisory/extension agents also benefit from specific advice based on their documented performance (see also section 9.4). **In conclusion, participating farmers receive different incentives, but it is not evident to what extent these**
are actually required to induce cooperation or to improve sample retention. However, withdrawal of established incentives could be expected to impact on participation.

**Data collection methods and sources used**

A main conclusion is that data collection is a complex process with most Member States (23) indicating more than one 'main' method. This reflects the heterogeneity of the information needed to complete the national questionnaire, the relationship between farms and their national taxation systems, the diversity of legal forms that farm businesses can take, and the available sources of data. Even within a single Member State there may be different methods for small farms who are not obliged (by national tax legislation) to keep accounts, for larger ones who keep accounts, for large farms arranged as companies whose staff accountants supply data directly, for types of information that are not routinely part of accounts drawn up for taxation purposes (such as some physical information), for existing data that may be extracted from administrative sources, and so on.

That said, collection from farmers/farm secretaries is considered to be a main data collection method in all Member States except for Denmark, France and Sweden (although even where data are taken from accounts, some data need to be derived from the farmer). Extraction of data by private accounting firms from completed accounts is the main data collection method in ten Member States (in France and Germany accounts are drawn up for participating farmers who are not obliged by law to produce accounts). Data extracted from secondary sources such as registers and administration systems is a main data collection methodology in 19 Member States.

A related conclusion is that data collection methods used are fairly stable. There has, however, been a degree of evolution with nine Member States making changes in the last ten years and a further two making changes from 2015. Generally changes involved the increased use of administrative data, data from farm-level accountancy packages and data from banks. Changes were made to either improve the quality of data or to adopt what Member States perceive of as best practice. A desire to reduce the burden on farmers was also cited as a rationale for change.

**Data recording methods**

We conclude that Member States use a range of data recording methods and the balance between them will have cost implications; many Member States use more than one method of recording data from the farm. However, the most widely used method remains paper recording for subsequent electronic entry into national farm accounts survey databases (22 Member States). Online entry is used in 16 Member States and offline entry in 14 Member States. Some 13 member States extract data from farm accounting software packages, though there is evidence that this does not necessarily carry advantages because of the way in which these are compiled by farmers. It is worth noting that in the USA, the ARMS data collection phase most similar to EU-FADN has until recently depended on paper entry at the farm level, but this is changing to an online system.

**Data validation**

Our conclusion is that data are generally validated at national level before entry to RICA-1, the collection and verification system for the Commission’s EU-FADN database, and that, for the majority of Member States, this takes place at multiple points in the data supply chain. A number of techniques are used, ranging from informal examination to deep scrutiny. Validation is undertaken by people and IT
systems. There are three stages when data can be validated before uploading to the Commission’s RICA-1 (which then generates additional queries). Nine Member States employ validation when data are (i) collected; (ii) entered into regional databases; and, (iii) entered into the national farm accounts system. At the other end of the spectrum, six Member States validate data only on entry into the national system. Information on the time required within the DG AGRI FADN unit to raise and deal with queries was not available, but a logical conclusion is that there is a relationship between the number and quality of validation checks at the national level and the quality of the data delivered to EU-FADN and hence the number of queries raised by RICA-1.

Typology of national farm accounts surveys

Although it is possible to distinguish groups of Member States with respect to various metrics, there is little consistency in these groups when different categorisations are used. The most relevant typology in the context of this study is by data collection methodology. This reflects organisational structure and is likely to be a key determinant of cost. Although this division is not always neat, our conclusion is that Member States can broadly be divided into three types: those where the Liaison Agency collects data (Type 1: C-LA); those where data collection is carried out by public advisory services (Type 2: C-AS); and, those which collect data through a network of accounting firms (Type 3: C-AF).

9.3. The costs of collecting FADN data in Member States

A comparison of resources and costs required to collect data for FADN at the Member State level needs to bear in mind the different sample sizes and the fact that some Member States have an additional national sample.

Resource requirements

Resource requirements (labour usage) per completed Farm Return were calculated for Liaison Agencies and data collecting organisations (where different) for all Member States for which sufficient data were available (21), covering data collection, data processing and organisation (including validation). The conclusion is that the number of hours required by Liaison Agencies and data collectors per completed Farm Return varied considerably between Member States; for example, they ranged from five in Germany (adjusted for additional national sample), eight in Sweden and ten in France to 54 in Lithuania (adjusted for the additional national sample), 59 in Poland and 75 in Belgium.

The data collection process is the most time-intensive activity in the FADN supply chain accounting for 91% of total time for the EU as a whole. Our conclusion is that the share taken by this activity tended to be higher where the sample size was larger (because fixed costs were spread over a larger number of holdings) and/or where the data collection methodology was more labour intensive.

A more exhaustive coverage of the complete data supply chain, including additional elements not covered in the above analysis (such as time contributed by the farmer), was possible for case study countries. All actors and activities were included in these calculations from the design of the selection plan through to submission of completed Farm Returns to RICA-1. This again confirmed the wide diversity of labour requirements. Total time required per completed FADN Farm Return ranged from eight hours in Germany to 63 in Poland.
Monetary costs

A similar conclusion of diversity can be drawn from the analysis of monetary costs. The total cost for the EU-28, averaged for the 2012-14 period, was just over €58 million. This amounts to a (weighted) average cost at the EU-28 level of €678 per completed Farm Return. In line with the different time requirements, the monetary cost of carrying out national farm accounts surveys per Farm Return varied considerably between Member States. The extremes are illustrated by findings that a completed FADN Farm Return cost an average (2012-14) of €107 in Bulgaria and €156 in Romania, but €2,905 in Belgium.

Factors explaining differences in cost

We conclude from our analysis that a number of factors can be identified that explain, at least in part, the differences observed in monetary costs. Some of these explanatory factors relate to the structure and nature of the national farm accounts survey, for example relative scale and scope and different resource requirements resulting from different data collection methods. Others relate to external factors such as different wage levels between Member States and different average farm sizes (although this is partly influenced by the EU-FADN field of observation).

While it is possible to make adjustments where the national farm accounts survey exceeds the requirements of FADN in terms of sample size, it is much harder to make meaningful adjustments with any accuracy where the scope and/or depth of data collection exceeds FADN requirements; in most cases Liaison Agencies considered national and FADN data collection requirements to be inseparable, although estimations of possible savings were attempted by the Liaison Agencies in Italy and the UK.

As part of our analysis to explore what lay behind different nominal costs per Farm Return, wage levels were adjusted using an index so that resource costs in high labour cost countries could be reduced and those in lower labour cost countries increased. The high cost per completed Farm Return in some Member States, for example, Belgium, is explained by a combination of the data collection methodology and relatively high labour rates. In contrast, other Member States with relatively high labour costs, such as Denmark and Sweden, do not have high costs per completed Farm Return because they employ more labour-efficient data collection methods.

The cost of completing accounts increases with farm size and therefore the cost of data collection in Member States where the same data collection methodology is used tends to be higher in those with larger average farm sizes within the FADN field of observation. However, unit costs are not influenced by farm size where data are extracted from existing accounts.

The choice of data collection methodology can therefore offset, at least to some extent, higher costs arising from greater wage levels and from increased farm scale. We conclude that the most efficient form of data collection in terms of public cost is from existing accounts, which have been produced at private cost, (Type 3: C-AF) and this approach is therefore most suited to Member States with a large sample, large average farm size or high labour costs or any combination of these. Of course, not all Member States require the production of accounts for tax reasons, or at least not for all farms, and so cannot produce national farm accounts survey data on this basis.
**Costs of change or adaptation**

National farm accounts surveys will be required to adjust the scope or scale periodically to meet the changing needs of the policymakers who form their main group of clients (see below). While we conclude that the costs of adaptation will be specific to each Member State, some general principles are evident. The cost of changing the variables collected under national farm accounts surveys will be related to the extent to which Member States are already collecting this information for national purposes. Some 16 Member States already collect more information than is required under EU-FADN, although the exact nature of the additional material is not known and will not be consistent between Member States. However, eight Member States already collect data on household income as part of the national farm accounts survey, two investigate this issue periodically and through links with external data sources and one Member State used to collect this information, so could presumably do so again. Although extending the collection of any type of data to the Member States that do not currently collect it would incur costs, these would be marginal to the basic data collection infrastructure already in place. There may also be transaction costs from changing contracts with data supply organisations. In the other direction, savings from reducing the scope of EU-FADN coverage would be marginal, again as a result of the existing data collection infrastructure. In both cases changes would have impacts on benefits which would need to be taken into account.

Adjustments to sample size involve similar considerations. Any increase, for example to increase coverage of farmers or holdings, would incur additional costs, but these would be marginal rather than average as the existing fixed costs would be spread over a greater number of Farm Returns. Conversely, a reduction in sample size, while saving some costs, would not lower the total by the average cost, but rather by the marginal cost as fixed costs would be spread over fewer Farm Returns.

9.4. **The benefits obtained from FADN data to Member States**

A main conclusion concerning the benefits obtained from farm accounts survey data is that these are hard to quantify in monetary terms that might be compared with the costs of carrying out the surveys. The benefits to Member States from information coming from EU-FADN and national farm accounts surveys is dependent on the impact it makes on decisions by users. While a first key step to detecting the presence of benefits is the identification of users and their uses of the output of the farm accounts data system, and this study has gathered much information of this sort, the subsequent stage of attributing monetary value to the impact of this information is much more problematic.

The benefits obtained from making use of farm accounts survey information take two main economic forms. First, there are the private benefits, of which the main example will be those accruing to farm businesses in the form of increased competitiveness, farm incomes, more stable incomes, greater business resilience and enhanced viability and so on. These are, in principle, measurable, though there are substantial practical problems in doing so. Second there are the public benefits linked to the use of the results to assist in decisions by government on issues of policy; the need for information coming from national farm accounts surveys was a prime reason why accounts surveys that pre-dated the requirement to supply data to EU-FADN were originally set up, and for most Member States this still forms part of the reason for maintaining them (see above). Better policy decisions should in turn lead to better and more appropriate outcomes. The rationale for spending public money on farm accounts surveys will be similar to those for maintaining public statistics of any type. Similarly, the value to research of farm accounts results is difficult to determine.
Access to results and data

The use of results in Member States is dependent on their being made accessible. **Our conclusion is that, with a few exceptions, availability of the results of national farm accounts survey results is good, although access to farm-level raw data for research could be improved.** Almost all Member States publish results from their national farm accounts surveys, and these national results will reflect the broader scope and larger sample where these are employed. Only Malta and Slovenia appear not to do so. Of the other 26 Member States, all provide results in an online electronic form which implies ready access for users. There appears to be a preference for electronic publication, with 15 countries indicating in their replies to the online survey that they no longer produce standard results in hard copy; this does not appear to present a significant impediment to users. Public databases are available in 15 countries; this should greatly facilitate access, though quite what this gives access to varies. Of course, the EU-FADN publications and its associated public database contain contributions from these countries, along with equivalent results from all other Member States.

In contrast to the availability of standard results, access to farm-level data, a feature that obviously adds greatly to its value as a research tool, is universally restricted, respecting the general principle of maintaining confidentiality. However, often there are circumstances in which this may be relaxed while at the same time safeguarding precautions are applied, or technical solutions devised that makes access to anonymous data accessible and costless (for example, remote access to the Netherlands national farm accounts survey database and the Data Builder tool in England within the UK).

Users and uses

A clear conclusion from the evidence gathered from our three main sources is that, in addition to its role at EU level in the form of FADN, the **data collected by national farm accounts surveys are widely used by the national (and where appropriate regional) governments of Member States.** The data are almost universally used in policy formulation and evaluation (agricultural policy, rural development policy, environmental policy, or other); 26 Member States indicated these uses. The only examples of non-use in the online survey were Croatia, where the explanation is probably that of lack of experience so far in having this sort of information, and Greece for policy formulation and Romania for policy evaluation. The national farm accounts survey results are also a common source (22 countries) of data supplied to Eurostat for the Economic Accounts for Agriculture or for similar accounts at national level. Estimating costs of production is clearly another common use; this was cited in the online survey as a use by government in 20 Member States.

**Another conclusion is that results are widely used as the basis of providing extension and advice to farmers,** though this has to take into account both services provided by government and by other organisations. In terms of the government, in our online survey 20 Member States cited this as a use for data from the farm accounts survey (the exceptions were Bulgaria, Cyprus, Denmark, France, Greece, Malta, Romania and Sweden). Farm advisors who are not part of the government service may also draw upon the results, as may the farmers themselves. This applies in particular to benchmarking, which in our survey is listed more frequently among the uses made by other organisations than it is by the government.

An issue of importance to this report is whether the structure and organisation of the data supply chain has an impact on this group of particular uses that lead to private benefit to farmers (covering the provision of extension, advice, feedback and benchmarking). The most likely circumstances to foster this use might be anticipated to be where the same organisation not only collects farm accounts data but also provides
advice. **However, our conclusion is that the high (almost universal) use of this information found in Member States for extension and advice does not suggest that the other arrangements for data collection hamper its use to an extent that can be detected.** What may be more significant is the impact on participating farms that a combined approach to data collection and the provision of advice may give rise to, where there is opportunity to discuss the potential and realised impacts of actions by the farmer based on information coming from the farm accounts survey in general and the result of the individual farm in particular. Advisors may also be more adept at the first round of informal validation by speedily recognising inappropriate data.

**Valuing the benefits**

Mention has already been made of the difficulty of attributing a money value to public statistics, such as results from national farm accounts surveys. No estimations of the value of the benefit of FADN at the national level have been identified in the literature review and the only example emerging from the case studies that ventured into this area of study (the Netherlands) merely compared the cost of its survey with the value of CAP subsidies, leading to the comment that the costs of monitoring represented less than 0.7% of the support provided. It follows that there is no evidence in official sources of the value in quantitative terms of the benefits provided by national farm accounts surveys in any of the case study countries.

In the absence of work of this nature, a set of contingency questions was put to government departments in case study countries responsible for funding the national farm accounts survey to establish the perceived level of present benefits in relation to the known costs. There was a wide range of responses to the perception of the benefits as compared with the total cost, from ‘lower’ in the UK (England and Scotland) to ‘much higher’ in Germany and Poland. Overall, Bulgaria, Germany, the Netherlands and Poland regarded their farm accounts surveys as representing good value for money, and the UK (England) reasonable value. The UK (Scotland) considered the survey to represent reasonable/poor value for money when considered against the other surveys operated in the sector. In terms of who received the benefits, governmental use was clearly seen to be the principal beneficiary. Academic institutions and research bodies came next, followed by farmers through advisors and extension agents. Farmers benefitting directly and farmers’ lobby groups were seen as benefiting the least. Though far from perfect, and with not all case study countries represented, **this approach leads us to the conclusion that the perceived value of benefits relative to costs would cause Member States to at least consider continuing with national farm accounts surveys in the absence of a requirement to supply EU-FADN with data.**

**9.5. Best practices in FADN data collection and use that can be shared among Member States**

This study has identified example of best practices in FADN data collection and use that can be shared among Member States and has considered their applicability in different Member States/data collection systems. This emphasis on what is appears to be feasible has automatically ruled out major changes such as the introduction of mandatory keeping of accounts for taxation systems where farmers were not currently taxed on this basis.

Within this framework **our conclusion is that, based on the types of evidence available to this study, a number of best practices exist that should be considered for general adoption among Member States.** Without wishing to duplicate the analysis presented above, it is worth briefly reviewing the principal examples.
Few recent examples of formal monitoring and evaluation systems have been identified in the course of this study. We recommend that it would be best practice for all Member States to introduce appropriate systems to examine both the costs of data collection and analysis, the variability within this, and the reasons for this, and the uses to which the results are put. Allied to this, we recommend that collaboration at the EU level to introduce a common and consistent framework would be appropriate.

In terms of the collection of data, there are several specific examples (more are mentioned in the analysis of Theme 1):

- **Best practice is to make use of data already in accounts where these have to be kept for taxation purposes.** Though there may be a need to be watchful over bias in such accounts, a large number of Member States manage to use extraction from farm accounts as a basis for supplying EU-FADN without raising issues of quality or bias that lead to their rejection by RICA-1.

- **Similarly, the use of administrative data (physical or financial) can reduce costs.** Undoubtedly there are technical issues in making sure that the production unit in the administrative source corresponds fully with that in the farm accounts survey (a farm business may comprise more than one holding), but clearly some countries have managed to clarify such situations.

- **Where there are legal restrictions on the use of administrative data, taxation records or other commercial sources (such as bank statements), access by consent may avoid the testing of legal boundaries.** Access by consent is seen as an example of best practice. Already the majority of Member States have formal agreements with the farmers that participate in the national farm accounts survey (16) and its modification to include consent to access would seem to be appropriate (at least for newly recruited farms) in those Member States that do not currently do this.

- **The elimination of various stages in the data supply chain can reduce costs, remove the causes of transcription error, speed the process and assist with validation.** The most elementary is the removal of paper entry of data and its replacement by electronic entry.

- **Validation is important to both data quality, costs of collection and timeliness of results.** Best practice concerns the stages at which validation of data is carried out, and the means by which this is done. The online survey showed that most countries have validation procedures before data are entered into the national farm accounts system. Our conclusion is that best practice is to have validation checks at multiple points along the data supply chain and to have a system that learns from past experience. A related point is that there may be the opportunity for international cooperation in the design of programmes for this purpose.

- **Payments to participating farmers represent a cost to data collection in the 12 Member States that use them; there is also an administrative transaction cost.** We conclude that, in case study countries that make such payments, there appears to be little fundamental reason for them. Other case study countries manage to secure data without payment, although usually some form of feedback is involved. It would therefore be best practice to periodically review the necessity of paying these fees in those Member States that currently make these payments.

We have found that results from national farm accounts surveys are widely published and **we conclude that the information is used by almost all Member State governments in a variety of ways linked to their needs to inform policy and to assist in the generation of statistics.** In addition to these public benefits there are private benefits to farm operators when the results are used as the basis of advice and benchmarking, whether these services are provided by the public or private sectors. However, some two-thirds of Member States collect more information than they are...
required to submit to EU-FADN (broader scope and/or deeper detail) and their patterns of national use will reflect more than just the variables collected for EU-FADN. Making changes to the requirements of EU-FADN would imply adjustments in surveys that would be less costly in some Member States than in others, depending on what is already collected for national purposes. However, as pointed out by senior DG AGRI staff, it may be possible to use some of this additional information for groups of Member States which already collect it, even though a full EU picture could not be presented.

The relatively low level of sample turnover allows panel data (longitudinal sample) to be used to investigate issues such as exposure to risk and productivity growth and to enhance the evaluation of responses to policy interventions. However, the availability of panel data is currently by accident rather than design and this imposes limits on its utility. For example, there is no weighting system available to researchers to ensure that panel data are representative which reduces the benefits of analysis for policy purposes. **We conclude that an explicit longitudinal panel within the overall sample, suitably weighted, would increase the value of FADN as a research tool** as it would allow the better evaluation of important policy issues such as structural change and income variability over time.

In terms of encouraging use, we recommend that, where a fee is currently charged, consideration should be made to removing this, given that the marginal cost of making this information available to one more user is zero. However, a preferred solution is that offered by the UK (England) in which access to the basic raw data is provided while still maintaining safeguards for confidentiality. This may be facilitated by international cooperation in the design and use of appropriate software.

Finally, given the different practices across Member States, frequent lack of awareness of what happens in other countries and a silo attitude to some developments (such as in IT), **we conclude that there are currently impediments to the free flow of information on data collection.** We recommend that consideration is given to how this might be improved and cooperation fostered to reach solutions to common problems. These may involve building on the existing framework provided by the EU-FADN Committee and its associated working groups and the Pacioli network, but may also need to go beyond them to form technical groups or task forces with the specific aim of sharing information and spreading good practice.
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