



The Irish Statistical System: The Way Forward
and
Joined Up Government Needs Joined Up Data

National Statistics Board

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The Irish Statistical System: The Way Forward

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Chairperson's Preface

The National Statistics Board's (NSB) Strategy for Statistics 2009-2014 is focused on the development of the Irish Statistical System (ISS)¹. The Strategy set out a vision for the ISS, built on five priorities and nineteen recommendations to ensure that the potential of the Irish Statistical System to underpin evidence-informed policy is fully realised.

Significant progress has been made since the NSB first set out to develop a coherent whole-system approach to official statistics in 2003. Many new outputs have been produced and formal relationships have been developed between the CSO and a number of key custodians of administrative data (see Appendix 1 for details). However progress has been uneven and a number of practical, ethical and legal issues have surfaced concerning data protection, data sharing and adherence to best practices in the production and dissemination of official statistics (particularly where they are required for EU purposes). While the advancements are welcome, there has been little of the institutional or structural change which the NSB regards as essential to facilitate the future development of the ISS.

This paper was developed to review the current situation; to clarify and restate a longer term vision for the development of the Irish Statistical System; and to identify a number of priority areas for action in the short to medium term. The Board has prepared a second paper entitled *Joined Up Government Needs Joined Up Data* to outline in more detail how the ISS can support the achievement of the Government's key reform objectives. In this context, we welcome the commitments in the 2011 Public Sector Reform Plan regarding the further development of the Irish Statistical System, particularly in relation to the development and use of person-centred, business, and geo-spatial identifiers.

Patricia O'Hara
Chairperson

¹ The National Statistics Board's Strategy covering the period 2003–2008 recognised the need to exploit administrative data sources in conjunction with statistical sources to meet the ever-growing demand for information. The exploitation of administrative data was set in the context of a new vision for official statistics namely the Irish Statistical System (ISS).

1. Current situation – some achievements but significant challenges

Although progress across the ISS has been uneven, there have been some significant advances in various parts of the administrative system. Small statistical units have been established in a number of key Government Departments and the administrative data holdings of twelve Departments have been examined and recommendations made for the development of those data holdings to support evidence-informed decision-making. Formal relationships (through the establishment of Memoranda of Understanding) between the CSO and a number of key custodians of administrative data have also been established.

These initiatives have resulted in an improvement in the analytical capacity of the system. They have also eliminated duplication of certain activities through the development of joint surveys between the CSO and a number of public-sector organisations (e.g. Forfás). Of particular relevance has been the focus on the provision of new analysis and outputs that are of significant importance in the context of policy development and evaluation.

The exploitation of administrative data – a practical example

Jobs churn data source is a new data source that has the potential to provide useful insights into the dynamics of the Labour Market. The data source is generated by linking the P35 file from the Revenue Commissioners with the Client Records System from the Department of Social Protection and the Central Business Register from the Central Statistics Office. The data source can be used to:

- Profile new entrants to the labour market by age, gender, sector of the economy in which they work, income level, where they live, and location of where they work;
- Profile those who have lost their jobs by age, gender, sector of the economy in which they previously worked, previous income level, where they live, and location of where they worked;
- Similarly profile those who have lost employment and subsequently found another job; and
- Profile those who have remained in employment over time.

The type of analysis outlined above could not have been generated from any existing data source (on its own) and the creation of this new source, through data “linking”, was only possible due to the existence of the unique personal identifier (PPSN) and the required business identifiers on the relevant files.

Remaining challenges

Despite these achievements, significant challenges remain. These may be summarised into three broad areas as follows:

- There is a lack of uniformity in the level of engagement with the ISS. The clearest example of this is the wide variation across Departments and Agencies in the preparation of Data Strategies – with some bodies lacking the capacity and/or motivation to respond to this requirement in a meaningful manner;
- Restrictions on the use of administrative data for statistical purposes due to data protection concerns have emerged, particularly where such work is not directly covered by the provisions of the Statistics Act, 1993. Since the latter applies almost exclusively to the work of the CSO, Departments and other Agencies cannot always readily exploit administrative data under their control for statistical purposes;
- The absence of formal arrangements governing statistical work in many Departments/Agencies hampers the adoption by them of statistical standards, such as the standards for professional independence, objectivity, and quality of official statistics set out in the European Statistics Code of Practice.

In order to address these challenges and to ensure that the priorities set out in the NSB Strategy 2009-2014 are realised, the NSB believes that it is appropriate at this time to provide a more focused and comprehensive vision of the ISS to guide its development over the short to medium term.

2. Developing the Irish Statistical System – Vision and Principles

The NSB believes that it is necessary to optimise the use of data holdings in the ISS for both statistical and practical purposes. This should lead to cost savings and greater efficiency, avoid duplication and facilitate effective analysis to inform policy decisions and assist monitoring. This focus on data and metrics to support intelligent decision-making has the potential to play a central role in the broader public sector reform strategy. To achieve this, the development of the ISS should be underpinned by the following principles:

- 1) Promotion of the use of statistical information to support evidence-based policy-making: holders of official statistics must see that the ISS is relevant to their core business and facilitate its development;
- 2) Optimal usage of all potential data sources (statistical and administrative) is the key priority and this requires a strong focus on data integration involving, inter alia, the use of unique identifiers;
- 3) Adherence to best international standards in relation to the development, production, and dissemination of Official Statistics. This involves the development of a coordinated framework within the ISS to enable statistical units and managers in public authorities to undertake their role in a consistent manner that is in accordance with best statistical practice;
- 4) Development of a partnership approach within the ISS between CSO and public authorities where the work is undertaken in the most cost-effective manner having regard to the respective capabilities and capacities of the partners.

The full realisation of this vision of the ISS may be considered as a medium to long-term project in that it will require careful preparation; full consultation with all relevant stakeholders; Government agreement and support; and, perhaps, revision of the national legislation on statistical matters.

It may not be possible to progress all of these issues simultaneously and therefore in the next chapter four priority areas for action are outlined.

3. Priority areas for action

3.1 Develop the infrastructure to maximise all available data sources

As the NSB has consistently emphasised, and its Strategy 2009-2014 makes clear, a prerequisite for the optimal usage of all potential data sources (statistical and administrative) is the requirement to have the necessary infrastructure in place to link various sources. While individual data sources have significant analytical potential, when two or more sources are linked the analytical potential increases very considerably. There are three key elements of national data infrastructure which are required to facilitate greater linkage and analysis:

- More widespread usage of the Personal Public Service Number (PPSN);
- Development of a Unique Business Identifier and associated public sector business register (which is included in *Government for National Recovery 2011-2016*);
- Use of a standard approach to geo-spatial coding across all public data holdings.

Having this infrastructure in place is also central to supporting the concept of sharing and reuse of data in order to provide more efficient and more customer-centred public services.

In addition to developing data infrastructure, there is a need to focus on building capacity in data organisation (e.g. integration of individual data sources, use of standard classification and coding systems) and analysis (e.g. through the promotion of statistical competence across the broader system).

3.2 Developing a professionally independent framework for the ISS

The establishment of an agreed organisational structure for statistical units/activities within government departments, that would clearly create a professionally-independent environment, is a key challenge for the development of the ISS. This needs a focus on compliance with well-established international standards for Official Statistics such as the European Statistics Code of Practice and the UN Fundamental Principles of Official Statistics. The global economic downturn and the experience in Greece has led to a growing pressure at EU level for increased compliance and monitoring of European (Official) Statistics regardless of whether the data are compiled by National Statistical Institutes (NSIs) or are derived from so-called upstream data sources. As a consequence the Commission (i.e. Eurostat in this case) is putting proposals forward which will strengthen the role of NSIs in defining the quality requirements of administrative data sources.

3.3 Data Protection issues

There are two important data protection issues to be addressed in the context of further exploiting administrative data sources for statistical purposes. The first relates to the need to address data protection concerns that serve as constraints on secondary or further processing (including data matching) for statistical purposes. The second relates to the curtailment of the collection of the PPSN (or other personal identifiers), unless fully justified by the primary purpose for which the data are collected, so as to minimise to the greatest extent the risk of unlawful data disclosure.

In relation to the first of these, data protection legislation (both national and EU) facilitates the processing of personal data for statistical purposes subject to appropriate safeguards being in place. In relation to the CSO, the Data Protection Commissioner has accepted that the confidentiality provisions in the Statistics Act, 1993 provide the necessary safeguards for its work. However, in the absence of corresponding legislation governing statistical activities in other public authorities, he has deemed that the safeguards are not always sufficient to allow the secondary processing, in particular data matching, to take place.

In the longer term an amendment to the Statistics Act, 1993 to explicitly address the organisation of data linkage, integration and analysis in the ISS may be the most appropriate course of action. In the interim it may be useful to discuss other alternatives with the DPC such as whether the application of voluntary Codes of Practice etc. covering such work would provide sufficient safeguards in specified cases.

In regard to the second issue i.e. the curtailment of the use of the PPSN, current experience suggests that opportunities to provide insight and analysis at a macro-level are being lost, due to an approach which emphasises risk avoidance over risk management. The issue arises in instances where the collection of personal data (or specific elements of what could be considered personal data) is not deemed essential for a specific administrative purpose – but where that information could add significantly to the capacity to analyse data and provide knowledge in support of policy development and assessment.

While the reason for this caution is appreciated, it is a significant impediment to the implementation of a strategy that sees the widespread use of the PPSN as an essential element in maximising the statistical potential of administrative data. It is appropriate at this time to explore the possibility of developing a protocol or suite of procedures that would provide the required safeguards in a data protection context and therefore facilitate subsequent statistical processing in support of evidence-based policy-making.

In short, this would acknowledge statistical use as a priority use that should generally be accommodated through the application of an explicit risk-management approach towards data protection.

3.4 Engagement with policy makers

The NSB believes that creating a shared understanding of what the ISS actually constitutes, and in particular what it can deliver for policy and practice, is a critical and fundamental issue that needs to be addressed. There is a need to highlight the tangible benefits to policy-makers and the broader public service that can accrue from an efficiently-functioning ISS, so that they recognise its relevance and importance. To achieve the objectives of the ISS, the Board believes that government departments and agencies need to take ownership of the statistical system and their role in it.

The following initiatives could support the efforts to create a shared vision:

- Promoting the value of data to inform policy;
- Highlighting practical and relevant examples of how administrative data can be used to support intelligent decision-making;
- Networking between CSO Directors and senior management in Departments and Agencies to promote the objectives and underlying principles of the ISS;
- Continuing engagement with Departments to identify and respond to their policy data needs.

4. Conclusions

The NSB regards the development of an Irish Statistical System that can effectively link all relevant available data (statistical and administrative sources) as being crucial to Ireland's ability to understand and respond to current national and international challenges. Policy and practice can no longer operate effectively without a body of timely and relevant statistical information based on practice as well as empirical investigation. This requires effective compilation and use of administrative data.

The approach to the development of the ISS, to date, could be described as opportunistic or pragmatic and in many ways it was informal and adaptive. While acknowledging the significant progress that has been made, further advancement of the ISS needs a more focused and direct approach.

To achieve this, the NSB believes that the following are urgent priorities:

1. Strong institutional commitment to the development of the ISS led by policy makers and implemented by government departments and agencies in partnership with CSO;
2. Data infrastructure development to facilitate data-sharing for statistical purposes, lessen response burden, and provide an efficient and customer-centred public service;
3. Professionalise the ISS by introducing standards based on agreed Codes of Practice and protocols;
4. Address data protection concerns in consultation with the Data Protection Commissioner and seek amendment of the Statistics Act, 1993 if this is considered necessary.

Unless these priorities are tackled urgently, the Board believes that the ISS will continue to operate significantly below its potential and fail to effectively meet the needs of users.

Appendix 1: Progress on implementation of the Irish Statistical System

Brief summary of progress made to date:

- In September 2003 the CSO produced its first SPAR report "The Statistical Potential of Administrative Records – An Examination of Data Holdings in Six Government Departments";
- In December 2006 the CSO produced its second SPAR report "Statistical Potential of Business and Environment Enterprise Data Holdings in Selected Government Departments";
- The latest SPAR report was published in February 2009 "Statistical Potential of Administrative Records An Examination of Data Holdings in the Office of the Revenue Commissioners";
- A formal Memorandum of Understanding was signed with the Revenue Commissioners in 2009. The signing of the MOU marked the commencement of enhanced data cooperation between the two Offices and formalised the flow of information from the Revenue Commissioners to the CSO. The relationship with the Revenue Commissioners was further strengthened through the establishment of a CSO-Revenue Liaison Group in 2009. The Revenue Commissioners are custodians of some of the most important administrative data sources for both enterprises and individuals and the current agreement marks a significant milestone in the exploitation of administrative data and the development of the ISS;

The development of a common identifier between the CSO and the Revenue Commissioners (essentially the development of a Unique Business Identifier (UBI) between the two organisations) represents a significant achievement in the context of the ISS and should be used as a catalyst/example as to what can be achieved through collaborative processes;

- Significant progress has also been made with the Department of Social and Protection (DSP). A Memorandum of Understanding was signed with the DSP in November 2008 putting the provision of the Client Record System data by the DSP to the CSO on a formal footing;

Some work remains to be done with the DSP (e.g. broadening the MOU to cover all data flows) but similar to the situation with Revenue, DSP are key custodians of administrative data on individuals and the current level of engagement puts the CSO in a stronger position to move forward;

- The CSO signed a Memorandum of Understanding (MOU) with the Department of Agriculture, Food and Marine (DAFM) in 2009 which formalises the provision of a number of key agriculture related administrative data files to the CSO. The MOU also establishes a CSO/DAFM Liaison Group which provides a formal environment to address issues such as data quality and the SPAR recommendations;
- Memoranda of Understandings have been signed with Forfás for the conduct of the Community Innovation Survey (CIS) and the Business Expenditure on Research and Development (BERD) survey;
- A formal agreement between Central Bank and Financial Authority Services of Ireland (CBFAI) and CSO is also in place and deals with the

collection, compilation, quality and transmission of BOP and IIP statistics for Ireland. It sets out appropriate mechanisms of cooperation to ensure a permanent structure of data compilation and transmission. The most recent version of the agreement dates from 2003 and is now in need of updating to reflect more recent developments. In particular, we have moved further in the light of the SPAR recommendations to formalise and regularise data exchange and to make data collection more efficient. A secure link is also in place. Data collection for a range of financial institutions is now carried out by the Bank with CSO processing the data and compiling the outputs to meet the requirements of the CBFSAI in addition to its own national and international needs. There are agreed deadlines at each stage. The arrangements are geared towards eliminating duplication of data collection, etc.;

- A Memorandum of Understanding was signed between the CSO and An Garda Síochána in 2007 which formalises the provision of administrative data by the Gardaí to the CSO to support the compilation of official crime statistics;
- CSO and Sustainable Energy Authority of Ireland (SEAI) conduct a joint survey on energy statistics and signed a Memorandum of Understanding covering this activity during 2009;
- A Memorandum of Understanding has been agreed between the Environmental Protection Agency and the CSO in relation to areas of mutual responsibility and shared interest;
- In April 2004 the CSO published *Best Practice Guidelines for the Development and Implementation of formal Data/Statistics Strategies in Government Departments*;
- Agreement of the CSO Data Protocol with the Data Protection Commissioner;
- A range of new outputs have been compiled and published on the basis of administrative data (or “linked” administrative and statistical data) in recent times including:
 - ❖ Foreign Nationals Release
 - ❖ Live Register Flow Analysis
 - ❖ Airport Pairings
 - ❖ Aviation Statistics
 - ❖ Rail Statistics
 - ❖ Vehicle Registrations
 - ❖ Total Road Vehicle Kilometres
 - ❖ Structural Business Statistics - Insurance
 - ❖ Structural Business Statistics - Banking
 - ❖ Structural Business Statistics - Enterprise Demography

Joined Up Government Needs Joined Up Data

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1.1 Introduction

The National Statistics Board has focused on the development of the Irish Statistical System (ISS) since 2003². The current NSB Strategy 2009-2014 sets out a vision for the ISS, built on five priorities and nineteen recommendations to ensure that the ISS potential to underpin evidence-informed policy is fully realised.

Administrative data, collected by government departments to enable delivery of government programmes, are held within departments and agencies. In recent years, significant progress has been made in using this information to produce statistics that can be used to develop policy and monitor impacts. These developments have been based on the establishment of formal relationships between the CSO and a number of key holders of administrative data (e.g. Revenue Commissioners, Department of Social Protection). However, progress has been uneven and largely opportunistic, rather than systematic, with the result that there has not been enough institutional or structural change which the NSB regards as essential to facilitate the future development of the ISS.

This short paper is a follow up to the NSB's paper *The Irish Statistical System: The Way Forward* which restated a longer-term vision for the ISS and identified a number of priority areas for action. Our purpose here is to outline briefly how the ISS can support the achievement of the Government's key reform objectives.

1.2 Joined-up data can facilitate effective decision-making

Government policy priorities for reform can be achieved more effectively when decisions and assessments of progress are based on sound evidence. Consideration of policy options as well as monitoring and evaluation of the impact of programmes requires good relevant analysis based on quality data.

Key government priorities are: a) the achievement of significant cutbacks in public expenditure, while preserving frontline services; and b) structural reform in the operation and functioning of the public service. Central to this is an identified need to move towards joined-up government administration – eliminating policy and operational silos by making policy and practice more focused and integrated across departments and agencies. This will deliver a more efficient, cost effective public service by cutting costs, and eliminating waste, duplication, and fraud.³

However, the integrated information required to assess the effectiveness of existing policies and the implications of cutbacks or cessation of programmes is not readily available to decision-makers i.e. politicians and policy-makers, while

² The National Statistics Board's Strategy 2003-2008 recognised the need to exploit administrative data sources in conjunction with statistical sources to meet the ever-growing demand for information. The exploitation of administrative data was set in the context of a new vision for official statistics namely the Irish Statistical System (ISS). The NSB Strategy 2009-2014 focuses on the further development of the ISS.

³ Indeed, the *Programme for Government 2011* refers to the need for better sharing of data across government departments and agencies in an anti-fraud context.

the implications of getting policy decisions wrong have never been more significant. This situation makes it imperative that a platform for **linking data** across the administrative system is expedited and taken seriously at the highest levels.

Traditionally, data supporting administrative systems and decision-making have been based on input and output information (e.g. how much was spent, how many benefited) that are available within the various unconnected systems. As a consequence, policy evaluation and decision-making has often been based on limited information, and has relied on costly surveys or estimates to provide a more holistic overview. Once administrative data are linked, more effective checks and balances and measurement of impact can be applied within and across many of the existing programmes, particularly those that account for significant expenditure such as Education, Health, and Social Protection. This will result in better targeting of programmes across the life-cycle. There are also potential additional administrative benefits, not of direct relevance to the ISS, such as reduction of waste and avoidance of duplication.

1.3 What is needed to join up the data

In order to undertake statistical analysis to inform policy, it is necessary to compile datasets (based on information already collected for administrative purposes) that are linked through the use of identifiers. The objective is to produce aggregated analyses that protect citizens' privacy and do not disclose individual information, but provide decision-makers with relevant data to assess where government expenditure can have the best impact.

Such datasets need to be based on three comprehensive national lists or registers:

- **all persons** (with a unique ID);
- **businesses/institutions** (with a unique ID);
- **buildings/dwellings** (with a unique geo-spatial ID or location coordinate).

The linkages between these registers can facilitate more refined statistical analyses which are essential to the running of an efficient administrative system.

For statistical purposes, the CSO are currently attempting to develop a **Person Activity Register** (summarising persons' activity using CSO data and administrative sources) and have made some progress towards compiling a **Business/Institution Register** aligned to administrative sources. A comprehensive **Register of Dwellings/Buildings**, which is in the public domain, is provided to CSO by the GeoDirectory and will be updated by them based on observations from enumerators during the fieldwork phase of the 2011 Census of Population.

The key to providing information and analysis to underpin the necessary checks and balances for joined-up government are the linkages between such registers.

This requires the ability to:

- attach a location indicator to buildings using x,y coordinates;
- link persons and businesses to buildings/location (via personal and business identifiers and location codes);
- use a unique personal identifier (PPSN) to record individuals interaction with the State;
- link individuals to activity (work, school, income support, etc) using a personal identifier; and
- use unique business identifiers to track businesses in a similar way.

An opportunity to link persons and buildings may be available with the introduction of property taxes and water charges if sufficient and careful consideration is given to information requirements from the outset. In short, the administration of these charges could provide an unprecedented opportunity to compile a complete list of dwellings and those normally resident in them (households) that can be updated annually. If this is done, it can help to provide the vital link between individuals and where they live.

1.4 How linked data makes better policy

Another example of the value of integrating diverse pieces of information is using linked datasets to track the effectiveness of policy on targeted population sub-groups over time. For example, in relation to social protection, assessing the effectiveness of a policy to incentivise single parents back to work with a view to reducing dependency on welfare payments requires measuring how many single parent families reduce their dependency on welfare payments and the factors that influence this. This can only be done by tracking this cohort of the population over time and across administrative data systems. The information that will determine the effectiveness of this policy and related programme will be along the lines of:

- How many programme participants were identified as having a reduced dependency on welfare payments after 1, 3 and 5 years?
- What are the factors that have an impact on the effectiveness of this policy: age/number of children, educational attainment, location attributes (childcare availability/ transport) etc.?
- Can the policy or programme be adapted to control for these factors and hence increase its effectiveness?

A further example of the value of joined-up data would be the ability to monitor in detail the outcome of a policy change such as the impact of the re-introduction of third level education fees on young people's life course, their parents' socio-economic situation and on the education infrastructure.

1.5 Other public data holdings

Local Authorities and State Agencies also have significant data holdings which are being made available for analysis or as open data, often in an uncoordinated way (although there are some notable exceptions such as the *Fixyourstreet* initiative or *Dublink*). There is considerable potential to integrate these data and use them effectively for policy monitoring and more effective service delivery. It is also essential that information generated as a result of outsourcing be retained in State ownership to facilitate data linking. Universities and other bodies are increasingly using CSO material and data from government departments to build interactive websites and conduct analyses, but we believe that greater value added could be achieved if this were happening in a broader strategic context.

1.6 A joined-up data strategy

The need for better integration of administrative data is widely recognised across the public service system. What is needed is a strategic initiative from Government to make this happen – to integrate the Irish Statistical System. In 2003 the Government recommended the adoption of data strategies in government departments. However, it is now clear to the NSB that a national cross-government data strategy is central to achieving the Government's reform priorities, as set out above. Such a strategy should encompass more than the use of data for statistical purposes; by including administrative data it would also assist in achieving policy objectives of more efficient service targeting and delivery, cost savings, better regulation, and effective policy-monitoring. This is consistent with the recommendations in the 2008 OECD review *Towards an Integrated Public Service* and the commitments in the Government response *Transforming Public Services*.