



Northern Ireland Audit Office

# Public Service Agreements – Measuring Performance



REPORT BY THE COMPTROLLER AND AUDITOR GENERAL  
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Northern Ireland Audit Office

Report by the Comptroller and Auditor General for Northern Ireland

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# Public Service Agreements – Measuring Performance



This report has been prepared under Article 8 of the Audit (Northern Ireland Order 1987 for presentation to the Northern Ireland Assembly in accordance with Article 11 of that Order.

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Comptroller and Auditor General

Northern Ireland Audit Office  
11 February 2009

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## Abbreviations

DARD	Department of Agriculture and Rural Development
DCAL	Department of Culture, Arts & Leisure
DE	Department of Education
DETI	Department of Enterprise, Trade and Investment
DFP	Department of Finance and Personnel
DHSSPS	Department of Health, Social Services and Public Safety
GVA	Gross Value Added
ha	Hectare
NAO	National Audit Office
NIAO	Northern Ireland Audit Office
NICS	Northern Ireland Civil Service
NISRA	Northern Ireland Statistics and Research Agency
NITB	Northern Ireland Tourist Board
OFMDFM	Office of the First Minister and Deputy First Minister
PfG	Programme for Government
PSA	Public Service Agreements
R&D	Research and Development
RDP	Rural Development Programme
TSN	Targeting Social Need

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# Executive Summary



## Executive Summary

### Background

1. Since 1998, Northern Ireland departments have been required to publish Public Service Agreements (PSAs) covering each three-year government spending cycle. These specify the targets to be used to measure performance against key departmental objectives. Their primary purpose is to provide accountable public service delivery. Progress in achieving all departmental PSA targets is reported annually in a Northern Ireland Civil Service (NICS) wide publication and is available on the Programme for Government and Budget website ([www.pfgni.gov.uk](http://www.pfgni.gov.uk)).
2. The Northern Ireland Audit Office (NIAO) assessed the data systems underpinning 13 targets selected from four departments. Our study aimed to identify system risks which could result in any material misstatement of performance and evaluate the adequacy of the departmental controls to address each risk.
3. Each of the targets we selected for review was in place during the financial year 2006-07. The Office of the First Minister and Deputy First Minister (OFMDFM) told us that, following devolution in May 2007 and subsequent to our detailed fieldwork, a radically different approach to the development of PSAs has been adopted. We were told that steps were taken throughout the development process to ensure that robust arrangements are in place to monitor and report on delivery and that the relevant data systems are fit for purpose.
4. While we welcome these new developments, we nevertheless consider that our findings in relation to the previous set of PSAs remain valid, and that the same type of data system issues which we have identified in our study will continue to require more effective management control.

### Designing Robust PSA Data Systems

5. A strong corporate control environment is key to the establishment and operation of robust PSA data systems and senior management has a role in ensuring that appropriate controls are put in place to mitigate risks to data quality. We found that Departmental Management Boards were primarily concerned with ensuring that PSA targets were in place and monitoring progress towards achievement. We were unable, however, to find evidence that they took an active and ongoing interest in the underlying data systems or issues relating to quality control and data accuracy.
  6. PSA data systems also need to be clearly and comprehensively documented and departments are required to publish Technical Notes. In GB, HM Treasury guidance indicates that, for each target, Technical Notes should: set baselines; provide definitions of key terms; set out clearly how success will be assessed; describe the data sources that will be used; and outline any known and unavoidable significant weaknesses or limitations in the data system.
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7. In our view, the general quality of the Technical Notes we reviewed was inadequate. We found evidence in some cases that baselines were not being set and key terms not being defined. We found it difficult to establish how success would be assessed and the overall data sources and systems were not clearly described. Given these limitations, there is a risk that targets will not be properly measured and data users will have difficulty understanding and interpreting outturn results.
8. Technical specialists, such as statisticians, can play an important quality control role in overseeing PSA data systems. Overall, we found that use of specialists across the departments we reviewed was variable. Departments should therefore ensure that statisticians and other relevant specialists are given a specific and proactive role and they should be involved at all stages of the PSA process. In this context, we welcome the undertaking given by departments that statisticians are being more formally integrated into the design and monitoring process for newer PSA targets.
9. The data systems developed by departments to measure performance and to report progress against PSA targets must be sound and fit for purpose. We found that departments tended to rely on existing data sources, such as administrative databases or established surveys, to measure PSA performance and there were a number of examples where these were not fully adequate for PSA purposes. These include cases where the data system was not measuring all aspects of performance specified in the PSA target; where the data system had not been established at the time the target was established; and where the system was not likely to produce sufficiently accurate data to measure achievement. Where it is not feasible to develop bespoke PSA data systems, the correct balance should be struck between maximising the use of existing resources and tailoring these for PSA purposes.
10. It is also essential that departments disclose details of known, unavoidable and significant weaknesses in data systems. Where such weaknesses are known, the impact on the reliability and accuracy of the data should be assessed as far as possible. We found a general failure to fully disclose limitations in PSA data systems.

### Operating Robust Data Systems and Reporting Performance

11. PSA data systems should include appropriate controls to mitigate data risks. Risks to data accuracy should be assessed and resulting controls and validation procedures actively managed. We identified, for some PSAs, an absence of documented operational procedures and formal checking practices and a lack of guidance to help staff with data collection, processing and analysis.
12. Methods for the collection, processing and analysis of data must be appropriate to produce valid estimates of target

## Executive Summary

- achievement. We identified a number of PSA targets which suffered from methodological weaknesses, such as the data system not measuring all aspects of the stated target, the use of sampling techniques that are prone to bias and the failure to disclose that alternative methodologies were available for use.
13. Where data has been obtained from external sources, it is important that operational managers appropriately assess the risks associated with the data. We recommend more pro-active management, monitoring and control of the risks associated with external data sources.
  14. Departments should aim to ensure that their PSA data systems can produce performance results in a regular and timely manner. For some PSAs, we identified substantial time lags associated with the data systems which prevent timely reporting. Long delays in the production of outturn data carry the risk that performance against targets will either not be reported, or will be reported at a time when results are no longer relevant or useful.
  15. PSA targets should be consistently stated and should not be subject to unnecessary change. We found a number of cases where departments have made a number of changes – to the PSA target itself, to the dates for achieving the target or to the means of measuring achievement – without any documented explanation of the need for and nature of the changes. In our view, failure to fully justify and document changes to published targets undermines user confidence. Once PSA targets are published, they should not be changed unless it is essential to do so and the reasons are made explicit in target documentation including Technical Notes.
  16. The introduction of PSAs has formalised the process for reporting performance to the Assembly and the public. OFMDFM co-ordinates and produces an annual compendium progress report on achievement against PSA targets. We found that the format of this report did not allow for the adequate reporting of target performance. We found instances where performance had not been compared with baselines; actual outturn and historical data had not been provided; and there had been inadequate interpretation of results. OFMDFM's composite report should be enhanced in order to provide more comprehensive and transparent reporting. It should present timely and well presented outturn data, with a clear baseline. Data for interim years should also be reported so that readers can more meaningfully interpret performance.
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## Part One: Introduction and Summary



**This part of the report sets out the background to our examination of PSA data systems, outlines our audit approach and provides checklists for developing robust, 'fit for purpose' data systems.**

## Part One: Introduction and Summary

### From 1998, all Northern Ireland government departments have been required to publish annual Public Service Agreements (PSAs) setting out performance targets

- 1.1 Since 1998, Northern Ireland departments have been required to publish Public Service Agreements (PSAs) covering each three-year government spending cycle. Each PSA specifies targets to be used within the period to measure performance against key departmental objectives. The primary purpose of the targets is to provide accountable public service delivery.
- 1.2 PSA targets are accompanied by Technical Notes which aim to define key terms; describe data sources and systems; and detail data limitations which could undermine accuracy.
- 1.3 Progress in achieving all departmental PSA targets is reported and published annually in an NICS-wide publication and is available on the Programme for Government and Budget website ([www.pfgni.gov.uk](http://www.pfgni.gov.uk)). Departments also have an obligation to separately report performance against their own targets.
- 1.4 The PSA process is centrally co-ordinated by the Office of the First Minister and Deputy First Minister (OFMDFM). Its Economic Policy Branch:
- ensures that each department has a PSA in place;

- co-ordinates and oversees the production of Technical Notes; and
- produces annual progress reports.

### It is important that departments have sound data systems for the purposes of monitoring and reporting progress against their PSA targets and supporting better performance management

- 1.5 The Northern Ireland Executive Committee, in considering the Sharman Report<sup>1</sup>, agreed that *“The Comptroller and Auditor General should be invited to take responsibility, under his existing powers, for the validation of systems used by departments to report published PSA targets, where the measurement of performance depends on data”*.
- 1.6 In taking forward this PSA data systems validation work, our aim is to:
- provide the Assembly and the public with assurance that departments are operating sound data systems for the purposes of monitoring and reporting progress against their PSA targets; and
  - help departments improve the quality of their data systems and support better performance management.
- 1.7 It is not the purpose of this report to comment on the actual performance of departments. The objective is to assess the risks in their data systems which could

<sup>1</sup> *“Holding to Account – Audit and Accountability for Central Government”* (The Sharman Report) was published in February 2001 by HM Treasury. The report recommended that *“there should be external validation of departmental information systems as a first step in a process towards validation of key published data and that this work should be done by auditors”*.

result in any mis-statement in performance, and to validate the quality and robustness of those data systems.

- 1.8 Our approach is broadly in line with that adopted by the National Audit Office (NAO)<sup>2</sup>. NAO's approach is based on HM Treasury's guidance for data systems validation and on the performance measurement criteria outlined in "FABRIC"<sup>3</sup>.

**This study assesses the robustness of departments' PSA data systems and identifies good practice in designing and operating such systems and reporting performance**

- 1.9 This review assesses the data systems underpinning 13 targets selected from four departments – the Department of Enterprise Trade and Investment (DETI), the Department of Health, Social Services and Public Safety (DHSSPS), the Department for Agriculture and Rural Development (DARD) and the Office of the First Minister and Deputy First Minister (OFMDFM). Details of each of the 13 selected targets and our findings on their compliance with good practice is provided at Appendix 1.
- 1.10 Our report sets out our findings on departmental compliance with good practice in relation to:
- specifying PSA targets and designing the data systems (Part 2); and
  - operating PSA data systems and reporting on performance (Part 3).

- 1.11 As part of this study, we have also developed a good practice checklist for departments (see Appendix 2). We hope that they will use this as a self-assessment tool for current PSA data systems and that it will also help with the development of new targets. We have also summarised the principal recommendations made by the NAO for improving the management and control of PSA data systems (Appendix 3).

- 1.12 Each of the targets we selected for review was in place during the financial year 2006-07. OFMDFM told us that following devolution in May 2007 (and therefore subsequent to our detailed fieldwork) a radically different approach to the development of PSAs was adopted. The revised approach includes a move from individual departmental targets to a greater number of "cross-cutting, issue focused PSAs". We were told that steps were taken throughout the development process to ensure that robust arrangements are in place to monitor and report on delivery and that the relevant data systems are fit for purpose. Further detail on the revised arrangements is provided at Appendix 4.

- 1.13 We also note the assurances given by the departments we examined of increased involvement of professional staff, including departmental statisticians, in the development of their new PSA targets. This should also help to develop more robust, fit-for-purpose systems.

- 1.14 While we welcome these new developments, we nevertheless consider

2 *Fourth Validation Compendium Report: Report by the Comptroller and Auditor General HC 22-I Session 2007-08, 19 December 2007*

3 *Choosing the Right FABRIC : A Framework for Performance Information – HM Treasury, Cabinet Office, National Audit Office, Audit Commission and Office for National Statistics 2001*

## Part One: Introduction and Summary

that our findings in relation to the previous set of PSAs remain valid and that the same type of data system issues which we have identified in our study will continue to require more effective management control.

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## Part Two: Designing Robust PSA Data Systems



This part of our report identifies good practice for the design of robust data systems and gives our assessment of current departmental PSA data systems.

## Part Two: Designing Robust PSA Data Systems

### Senior management involvement in designing and overseeing PSA data systems is not sufficient

- 2.1 A strong corporate control environment is key to the establishment and operation of robust PSA data systems. Senior management has a role in ensuring that material risks to data quality are assessed and appropriate controls put in place to mitigate those risks. The strength of the corporate control environment is characterised by the extent to which management has:
- **communicated the importance of data quality to staff** –by establishing clear data quality standards and procedures;
  - **allocated clear roles and responsibilities for data quality management** –by ensuring adequate documentation and by separating data control functions from target achievement/delivery; and
  - **actively monitored the results of PSA data systems** –by requiring timely production of PSA data for management purposes and scrutinising outturn data for reasonableness/credibility.
- 2.2 The importance of corporate control is reinforced in a 2007 Audit Commission publication<sup>4</sup> which distils existing standards, guidance and good practice in this area. It notes the need for organisations to put in place:
- a comprehensive corporate framework of management and accountability for data quality and a drive to secure data quality throughout the organisation; and
  - a comprehensive and current set of policies in relation to data collection, recording, analysis and reporting, covering all business areas.
- 2.3 Senior managers within individual departments are ultimately responsible for the quality of PSA data systems. They must therefore take an active role in the specification of PSA targets and put controls in place to quality-assure reported achievement.
- 2.4 We found that Departmental Management Boards were primarily concerned with ensuring that PSA targets were in place and monitoring progress towards achievement. We were unable, however, to find evidence that Management Boards took an active and ongoing interest in PSA data systems or issues relating to quality control and data accuracy. There was no evidence that departments had put in place formal guidance or policies specifically in relation to the standards expected from PSA data systems.
- 2.5 OFMDFM has a central co-ordination role in relation to PSAs. It is responsible for ensuring that departments adopt appropriate PSAs and associated targets. As part of its function, it co-ordinates and oversees the production of Technical Notes and annual progress reports on performance. However, OFMDFM

does not currently provide guidance on the design and operation of PSA data systems nor does it monitor departmental compliance with best practice.

- 2.6 Insufficient management oversight of PSA data systems increases the risk that poor data systems and output go unchecked. We recommend that Departmental Management Boards actively review quality and accuracy issues relating to PSA data systems on an on-going basis. OFMDFM, in its central co-ordination role, should develop central policy/best practice guidance specifying minimum standards for data quality controls and monitor application of these standards.
- 2.7 Several of the PSA targets we examined relied on statistics which are labelled as 'National Statistics' (e.g. PSA Targets 1, 4, 5, and 7 use data classified as National Statistics). These data must meet certain criteria - for example, they must be methodologically sound, transparently produced and fit for purpose. All these statistics are produced in accordance with a standard framework and code of practice and are reviewed every five years. In such cases, the data systems are clearly and comprehensively documented and we can take assurance from this. However it is also important to note that, while a National Statistic source may be appropriate for monitoring long term economic trends, it may not provide data which are sufficiently precise for monitoring and reporting progress against a year-on-year PSA target. Therefore, even if a PSA target is based on a National Statistic, it needs to be assessed to ensure

it can measure the targeted change with a sufficient degree of statistical confidence.

### **PSA targets and their underlying data systems are not comprehensively and consistently documented**

- 2.8 PSA data systems need to be clearly and comprehensively documented. Failure to do so creates risks to data quality and may compromise the quality of reported achievement. For example, a poorly specified system may:
- not address all aspects of performance expressed by the PSA target;
  - exclude items relevant to the target;
  - create difficulties for data users in interpreting results; and
  - increase the risk of incorrectly reporting actual performance.
- 2.9 In order to ensure that reported performance can be clearly understood, departments are required to publish Technical Notes. These specify how performance against PSA targets will be measured. In GB, HM Treasury guidance indicates that, for each target, Technical Notes should:
- set baselines;
  - provide definitions of key terms;
  - set out clearly how success will be assessed;

## Part Two: Designing Robust PSA Data Systems

- describe the data sources that will be used; and
  - outline any known and unavoidable significant weaknesses or limitations in the data system.
- 2.10 We assessed each of the Technical Notes accompanying our sample of 13 PSA targets against the best practice requirements set out by HM Treasury. We found that all were deficient in at least one of the criteria specified (see Figure 1 and Appendix 2). We also found that a number of the Technical Notes were factually inaccurate.
- 2.11 Examples of specific limitations associated with the Technical Notes included:
- a. DARD set a target to create net increase of 1,000 jobs in disadvantaged areas through the Rural Development Programme (RDP). However, the related Technical Note failed to provide baseline figures or describe how a net increase in jobs would be calculated (Appendix 1 PSA 2);
  - b. Forest Service (an Agency within DARD) set three targets for the supply of timber, the number of paying visitors to Forest Service facilities, and the area of forested land in Northern Ireland. We found that in two cases the Technical Note provided incorrect baseline figures. In the third case, we found that the data system used to determine baseline information was not subsequently used to measure performance (Appendix 1 PSA 3);
  - c. DETI set a target to reduce the gap in research and development expenditure as a percentage of GVA<sup>5</sup> and productivity (GVA per hours worked) compared with UK. However, the actual level of percentage decrease was not specified and consequently it was not clear how success against this target would be assessed (Appendix 1 PSA 5);

**Figure 1: Weaknesses identified from our review of 13 Technical Notes against best practice**

No, or inappropriate, baseline	6
Inadequate description and definition of key terms	6
No, or inadequate, quantification of success	7
No, or inadequate, description of data system	11
No description of quality control arrangements	13
No assessment of data systems limitations or inherent risks to accuracy.	13
<i>Source: NIAO</i>	

5 GVA measures the contribution to the economy of each individual producer, industry or sector in the United Kingdom.

- d. Invest NI (an Agency within DETI) had a target to support the establishment of 10,000 “sustainable” new businesses. However, the Technical Note did not define “sustainable” nor explain how the sustainability of a new business would be measured. DETI explained to us that there is an element of risk in relation to the durability of a proportion of business starts. For that reason, it did not intend to include the word “sustainable” in its target and has confirmed that the word was incorrectly included in some versions of this target. (Appendix 1 PSA 6);
- e. Invest NI set a target to measure export sales by its client companies. From the outset, the target excluded a number of client companies (hotels) on the basis that they do not export. However, the Technical Note did not make this clear. DETI agrees that it would have been useful to provide clarification in the Technical Note (Appendix 1 PSA 7);
- f. DHSSPS set a target to reduce smoking by four percentage points over an 11 year period. The related Technical Note was brief, at 2 sentences, and did not contain all the required information. Although baseline information was supplied, there was no definition of the key terms, description of the data system, quality controls or assessment of data limitations. DHSSPS has accepted that the Technical Note was inadequate (Appendix 1 PSA 12).

2.12 In our view, the general quality of Technical Notes is inadequate. From the examples above, there is evidence in some cases that baselines are not being set, key terms are not being defined, it is difficult to establish how success will be assessed and the overall data sources and systems are not being described.

2.13 Given the limitations with PSA Technical Notes, there is an increased risk that targets will not be properly measured and data users will have difficulty understanding and interpreting outturn results. We recommend that Technical Notes comprehensively document the data systems underpinning each departmental PSA target as outlined at paragraph 2.8.

### Departments have access to the advice of experts yet we found instances where their concerns were ignored

2.14 Technical specialists, such as statisticians, can play an important quality control role in overseeing the specification of PSA targets; the design and operation of data systems; and the processing and checking of outturn estimates. All government departments have access to such expertise. Appropriate involvement of technical specialists can help ensure the selection, design and operation of appropriate data systems and reduce the risk that outturn data will be inaccurate.

2.15 Overall, we found that use of specialists across the departments we reviewed was variable and often limited. In DHSSPS

## Part Two: Designing Robust PSA Data Systems

and Invest NI, statisticians were integrated to the PSA process; in DARD specialist input was minimal. Even in cases where professionals were directly involved, their concerns surrounding data systems were not fully addressed.

- 2.16 For example, we noted that DARD's economists had expressed concerns regarding the target to reduce the gap in Northern Ireland's agricultural GVA per full-time worker compared with the UK. The basis of the economists' concerns related to the lack of departmental control over the outcomes and the suitability of the estimates which it proposed to use. Despite these concerns, OFMDFM encouraged DARD to retain the target and it did so.

- 2.17 We recommend that departments ensure that statisticians and other relevant specialists are given a specific and pro-active role. They should be involved at all stages of the PSA process, offering advice and guidance on target specification and the fitness for purpose of data systems; ensuring the use of appropriate methodology; and overseeing adequate and appropriate quality control procedures. In this context, we welcome the undertaking given by departments that statisticians are to be more formally integrated into the design and monitoring process for PSA targets and that due weight will be given to their concerns.

### Some data systems are not fit for purpose and do not cover all aspects of PSA targets

- 2.18 We recognise that, in selecting targets and developing data systems, departments should ensure that the effort taken in producing the required information is commensurate with the likely information gain, and confirm that it does not involve undue burden in terms of cost. Equally, each PSA is meant to provide a clear commitment to the public on what they can expect for their money and to measure headline performance against an agreed target. Given this, it is clear that the data systems developed by departments to measure performance and report progress against PSA targets must be sound and fit for purpose. Data systems should be defined so that there is a good match between the measures expressed in the PSA target and the data sources used to monitor and report progress. Data sources must be relevant and should cover all significant aspects of the target.
- 2.19 We found that departments tended to rely on existing data sources, such as administrative databases or established surveys, to measure PSA performance. We found no evidence that, in establishing PSA targets, departments had formally assessed whether the existing data systems were consistent with the target. In the absence of such an assessment, it is possible that data systems will be used which are not fit for purpose. Departments should therefore have controls in place to verify that use of the data source is appropriate. We identified

a number of examples where weaknesses in the data system undermined fitness for purpose:

- a.** Forest Service set a target to sustain the annual supply of timber from existing forests at 2002-03 levels. The accompanying Technical Note defined supply as the “quantity of roundwood (logs) produced from forests for use in the timber processing industries”. In reporting performance, Forest Service defines the volume of timber specified in agreed sale lot schedules as representing the quantity of roundwood produced and supplied to the wood processing industry. We understand and accept that this is a UK –wide system of measurement for the industry. However we consider that the Technical Note does not make it sufficiently clear to the reader that “supply” is defined in this manner. In our view, expansion of the Technical Note, to define supply more precisely, would eliminate confusion. (Appendix 1 PSA 3);
- b.** Two of DETI’s and one of DARD’s targets relied on regional GVA estimates to measure changes in performance. Regional GVA estimates rely on data from a wide variety of data sources, which may be susceptible to measurement bias and statistical error. A number of recent reviews have identified the limitations of regional GVA estimates as a measure of the impact of interventions at a regional level. We accept that, nevertheless, HM Treasury has

continued to use regional GVA per head growth rates and that these are currently the best measure of regional economic performance. DETI is in agreement with HM Treasury in advocating the continued use of GVA measures. Nevertheless, a statistical confidence interval cannot be calculated for GVA. As the margin of error surrounding these estimates is unknown, we consider that the documentation should make clear the limitations of the data sources and provide any associated quality information. Where available, other proxy measures should be considered to address the timeliness issues. (Appendix 1 PSAs 1 and 4);

- c.** DHSSPS set a target to reduce the levels of obesity amongst children by 2010. However, at the time the target was set, it had no baseline information and had not developed a system for measuring child obesity. DHSSPS intends to extract information from future Health and Well-being Surveys. These surveys are only run once every four years and no results will be available for 2010. In our view the 2009 survey will not produce sufficient estimates to accurately measure target achievement. The effects of sampling error on estimates also undermine the ability of the data system to measure changes in obesity. DHSSPS accepts that there are limitations in monitoring this target exclusively through survey data. It intends to cross-check the results against trend information on

## Part Two: Designing Robust PSA Data Systems

obesity levels among both Primary 1 and Year 8/9 pupils generated from the Child Health System (Appendix 1 PSA 12);

- d. DHSSPS's target to increase life expectancy in deprived areas between 2000 and 2012 depends on a calculation relating to deprived areas. In setting the baseline figure (for 2000), it applied an index to the 2005 data. No actual information is available in relation to 2000. We consider that those areas identified in 2012 as deprived will not be directly comparable. DHSSPS is also of this view and told us that it intends to use planned updates from NISRA<sup>6</sup> in 2009 and 2013 to underpin like-with-like comparisons. (Appendix 1 PSA 9);
- e. OFMDFM intended to use 1998-99 child poverty figures to measure success in one of its PSA targets. However, collation of child poverty data in Northern Ireland did not commence until 2002-03. In the absence of accurate, regional data, it applied GB trends to available NI estimates to produce a "plausible" estimate. The Department accepts that it is not possible to demonstrate the accuracy of these estimates. (Appendix 1 PSA 13).

2.20 The examples above indicate a number of ways in which existing PSA data systems are not fit for purpose. These include cases where the data system is not measuring all aspects of performance

specified in the PSA target; where the data system had not been set at the time the target was set; and where the system was not likely to produce sufficiently accurate data to measure achievement.

- 2.21 We recommend that departments review current PSA targets, ensure that they are clearly defined, that there is an appropriate data system in place for each target and that the data system captures all aspects of performance necessary to measure achievement against the PSA target.
- 2.22 National Statistics' quality systems are in place for some of the data used in PSAs such as DETI's Sales and Exports and Research and Development Surveys, and the GVA figures used by both DARD and DETI. While all these data meet National Statistics' standards, we would note again (see paragraph 2.7) that, while a National Statistic source may be appropriate for monitoring long term economic trends, it may not provide data which are sufficiently precise for monitoring and reporting progress against a year-on-year PSA target.

### **Weaknesses in data systems, which could affect data accuracy, are not fully documented or disclosed**

- 2.23 It is essential that departments disclose details of known, unavoidable and significant weaknesses in data systems. Where such weaknesses are known, the impact on the reliability and accuracy of the data should be assessed as far

<sup>6</sup> NISRA –An Executive Agency within the Department of Finance and Personnel which acts as the principal source of official information on Northern Ireland's population and socio-economic conditions.



as possible. An open and transparent evaluation of data weaknesses enables data users to form an opinion on the reliability of outturn data and to better interpret the results.

2.24 In our view, none of the Technical Notes for the 13 targets adequately assessed data limitations or weaknesses. Furthermore, 11 of the targets relied on data systems that had significant weaknesses that could undermine the accuracy and reliability of outturn data. We found several instances where known weaknesses and resulting impacts were not revealed. Some examples are provided below:

**a.** Invest NI set a target to increase client export sales. Supporting data was extracted from the DETI Sales and Exports Survey. However, the survey response rate was only 75 per cent. Where possible, Invest NI used information which had been provided separately by Invest NI and for the remaining cases, figures were estimated (representing about 10-15 per cent). In our view, it would have been prudent for Invest NI to disclose full details of the system limitations. DETI told us that estimation for non-responses is an important component of survey-based methodology and that Invest NI will, in future, record levels of estimation in reports against targets and explain the issue of non-response in Technical Notes. (Appendix 1 PSA 7);

**b.** Northern Ireland Tourist Board (NITB) set a target to increase visitor spend in Northern Ireland. However, information used to measure achievement was extracted from four separate surveys. An internal review of Tourism Statistics, carried out in 2005, reported risks of bias in three of these surveys. Weaknesses in the data sources were not disclosed but DETI told us that they will be disclosed in Technical Notes in the future. (Appendix 1 PSA 8).

2.25 In our view, the above examples illustrate a general failure to fully disclose limitations in PSA data systems. These failures include issues such as response errors and bias not being disclosed; data systems being only partial in nature and not fully measuring the PSA target; and the use of estimation techniques to deal with missing data.

2.26 We recommend that, when choosing and developing data systems to underpin PSA targets, departments should assess potential limitations and weaknesses. Where data system limitations and weaknesses are unavoidable, the impact should be fully disclosed and appropriate and proportionate action taken to mitigate known risks.



## Part Three: Operating Robust Data Systems and Reporting on Performance



This part of our report provides good practice guidance for operating data systems and reporting on performance. It identifies issues arising from our examination of a sample of departmental data systems.

## Part Three: Operating Robust Data Systems and Reporting on Performance

### Data systems are not risk-assessed and procedures to validate data accuracy are not well documented

- 3.1 PSA data systems should include appropriate controls to mitigate data risks. Risks to data reliability and accuracy should be assessed and resulting controls and validation procedures actively managed.
- 3.2 Our review identified a number of areas in which controls to validate data could be strengthened:
- a. DARD's target for measuring jobs created under the Rural Development Programme relied on figures from the European Union Structural Fund database. Internal audit checks identified significant discrepancies between actual jobs and those reported. DARD is currently assessing the extent of inaccuracies and reviewing its quality control procedures. There is a high risk that performance reported by DARD contained inaccuracies (Appendix 1 PSA 2);
  - b. Forest Service measured the supply of recreational services using monthly returns from Forest Officers of tickets and permits sold. Forest Service told us that it makes every effort to ensure that errors are not made and that it has control processes in place. However, our examination of the spreadsheets used, revealed some noticeable errors indicating weaknesses in the quality control procedures (Appendix 1 PSA 3);
  - c. There were no formal documented methodological procedures or quality controls for the complex production of estimates for the DHSSPS target to increase life expectancy in deprived areas. Our audit of the production process identified that one deprived area<sup>7</sup> had been omitted from the analysis. Although the omission did not have a significant effect on reported estimates it did indicate an absence of adequate controls (Appendix 1 PSA 9).
- 3.3 The results of our review indicate the need to establish appropriate quality controls for PSA data systems. We identified an absence of documented operational procedures, a lack of formal checking practices, a lack of guidance to help staff with data collection, processing and analysis, and the existence of identified errors within data systems.
- 3.4 Poorly managed and undocumented processes and inadequate controls can result in errors which affect the accuracy of the reported outturn data and undermine user confidence in data accuracy. We recommend that data managers ensure that all risks to data accuracy are assessed and appropriate quality control procedures developed, documented, implemented and monitored.

## Methodologies must be appropriate and any underlying limitations should be explained

- 3.5 Methods for the collection, processing and analysis of data must be appropriate to produce valid estimates of target achievement. Methodological weaknesses can result in the production of unreliable performance estimates and undermine confidence in the results. Invalid results may be obtained from surveys or statistical sampling if inappropriate methods or weightings are used which introduce bias to data. Similarly, where there are alternative, equally valid, methodologies available, and particularly where these might provide different results, departments should fully disclose the rationale behind the selection of a given methodology.
- 3.6 We identified several targets where weaknesses in methodologies or in disclosure risked undermining the reliability and interpretation of results.
- a. DARD had a target to create a net increase of 1,000 RDP funded jobs in rural disadvantaged areas. However, the data system used did not actually provide information on which rural areas were disadvantaged. In addition the data system measured the gross, rather than the net, number of jobs created over the funding period. No account was taken of factors such as deadweight or displacement (Appendix 1 PSA 2).
  - b. The NITB target that measured visitor spend relied on estimates from three surveys. Our review indicated that confidence intervals were not available for two of the surveys. However these are produced by authorities in the Republic of Ireland. DETI told NIAO that NITB is investigating the availability of confidence intervals for these surveys and, if these are obtained, relevant information will be included in the Technical Notes (Appendix 1 PSA 8).
  - c. Forest Service had a target to secure an increase in public and private forested areas. However figures produced related only to grant-aided new plantations by private landowners. No account was taken of areas of deforestation or changes in the size of the Forest Service estate. DARD told us that it had not intended that this target would measure net changes in forest area in Northern Ireland, as this would be an impractical task. It also told us that it has ensured that the revised PSA target is clearer (Appendix 1 PSA 3).
  - d. To measure the reduction in child obesity DHSSPS used a theoretical estimation technique. This is one of two accepted methods for calculating child obesity. Both methodologies have limitations and there is no evidence that one method produces a more accurate result. In the case of the methodology selected by DHSSPS, some experts consider that it exaggerates obesity rates for younger children. Although use of the methodology is not disputed, we
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## Part Three: Operating Robust Data Systems and Reporting on Performance

consider that DHSSPS should have fully disclosed the availability of an equally acceptable alternative in order to ensure that stakeholders were able to gauge the appropriateness of the specific methodology chosen (Appendix 1 PSA 11).

3.7 These cases illustrate a number of methodological weaknesses, such as the data system not measuring all aspects of the stated target, the use of sampling techniques that are prone to bias and the failure to disclose that alternative methodologies were available for use.

3.8 In designing data systems, we recommend that departments identify potential methodological weaknesses and consider how these can be addressed in order to ensure accurate and reliable performance measurement.

### Departments are not actively quality-assuring the data obtained from external providers

3.9 Where data has been obtained from external sources, it is important that operational managers appropriately assess the risks associated with the data. For example, they should:

- assess the relevant expertise of the data provider;
- obtain an understanding of the data collection procedures used, including the quality controls implemented to ensure accuracy and reliability;

- obtain assurance from the data provider on the operation of the data system; and
- where necessary, operate additional controls such as testing the raw data or undertaking credibility and reasonableness checks.

3.10 Of the 13 targets we examined, eight relied on data collected by other departments or non-departmental bodies. In all these cases we noted a general absence of proactive management, monitoring and control of the external data. Departments relied on the source organisations to implement appropriate data systems and quality controls, and presumed that these were adequate. For example:

- a. Measurement of the target to provide general practice appointments with a primary care professional within two days is monitored by the Health and Social Services Boards. However the data system in place only recorded formal complaints from patients regarding access to a primary care professional and did not actually measure referral timescales. DHSSPS has advised us that from 2008-09 this target will be measured using a new Patient Experience Survey which will report a range of information on the standard of service received, including 48-hour access (Appendix 1 PSA 12);
- b. DHSSPS targets on the reduction of adult smokers and childhood obesity

rely on estimates generated from external surveys. DHSSPS considers that, since the production of these surveys is governed by National Statistics' protocols, it is not required to put quality control or validation procedures in place to assess the reliability and accuracy of the data for reporting against its PSA targets. (Appendix 1 PSAs 10 and 11).

- 3.11 It is evident that departments need to do more to quality-assure data they use from external sources. The above examples illustrate a limited understanding of the precise nature of data systems being used by external providers. Departments should ensure that data generated externally meets their needs, is accurately collated and reliable. Failure to do so creates a risk that departments report data which contains inaccuracies or is not fit for purpose.

3.12 We recommend that departments improve their management of external data using a range of controls, including:

- regular meetings with data providers to ensure understanding of data requirements and data quality;
- commissioning peer reviews to gain assurance on data reliability; and
- active management of organisations employed to undertake data collection exercises.

### Data systems are not providing regular and timely data

- 3.13 Departments should aim to ensure that their PSA data systems can produce performance results in a regular and timely manner. Lengthy delays result in the non-reporting of progress and undermine the key objectives of accountability and transparency underpinning the PSA framework. Interim performance measurement is essential to enable progress to be monitored and allow corrective action to be taken to ensure achievement within required timescales.
- 3.14 Five of the 13 targets we reviewed relied on data systems where the delay in the production of outturn estimates was more than 12 months. Examples include:
- a. Two of DETI's targets rely on regional GVA estimates. However, there is a two-year timelag before initial estimates are available. These estimates are then subject to subsequent revisions. As a result progress on, and interim achievement against, these targets was not reported (Appendix 1 PSA 4 and 5).
  - b. DHSSPS has a target to increase life expectancy in deprived areas by 2012. The 2012 figures will not be available until 2014. As a result, progress on, and interim achievement against, these targets has not been reported. DHSSPS considers that, given the importance of life expectancy

## Part Three: Operating Robust Data Systems and Reporting on Performance

as a key policy outcome measure, the unavoidable time lag is acceptable (Appendix 1 PSA 9).

- 3.15 These examples indicate that, for some PSAs, there are substantial time lags associated with the data systems which prevent timely reporting. Long delays in the production of outturn data carries the risk that target achievement, or progress towards achievement, will either not be reported, or will be reported at a time when results are no longer relevant or useful.
- 3.16 We recommend that, in selecting PSA targets, departments formally consider the timeliness and frequency with which performance can be reported, as this has a bearing on the usefulness of the target and the extent to which departments can be held accountable for their use of public money.

### Changes to targets are not clearly disclosed and explained

- 3.17 PSA targets should be consistently stated and should not be subject to unnecessary change. Inconsistency undermines user confidence and it can appear as if departments are arbitrarily making changes to increase the likelihood of target achievement. The Committee of Public Accounts has been critical of frequent changes to targets as this weakens their ability to serve as useful and meaningful tools of accountability and to retain credibility<sup>8</sup>. If changes are essential, for example, as a result of

unavoidable limitations in data systems or the need to make targets more challenging, the reasons for the changes should be made explicit in the target documentation.

- 3.18 We identified significant changes to three of the 13 targets we reviewed.
- a. Invest NI has targets to measure the establishment and support of new sustainable businesses. In the Priorities and Budget 2004-06, the PSA targets were stated as:
- during the period 2004-2007, support the establishment of 8,500 new businesses;
  - during the period 2004-2007, establish 3,000 new businesses in New Targeting Social Need (TSN) areas<sup>9</sup>.

The 2004-05 Programme for Government/Budget Annual Report showed progress against the above targets. In the 2005-06 Annual Report, however, the PSA target reported on was:

- during the period 2005-2008, support the establishment of 10,000 new businesses, of which 40 per cent will be in New TSN areas.

In our view, the change in target (in terms of both the numbers of businesses to be established and the time period) creates confusion for readers.

8 Committee of Public Accounts, Session 2006-07, *Improving literacy and numeracy in schools (Northern Ireland) HC 108*  
 9 New Targeting Social Need – introduced in July 1998 to tackle social need and social exclusion in Northern Ireland by targeting efforts and available resources on people, groups and areas in the greatest social need.



DETI told us that since its establishment in 2002, Invest NI has implemented a series of three-year Corporate Plans, covering 2002-05, 2005-08 and, currently, 2008-11, each of which have associated three-year targets across a wide range of activities. Invest NI's reporting of performance against these targets, to DETI and through the Agency's published Annual Reports and Accounts and other documents, is entirely consistent with the Corporate targets originally set.

However, DETI indicated that, in relation to the 2004 - 2007 period, the PSA targets which had been established, on a rolling and overlapping basis, inevitably did not align with Invest NI's Corporate Plan reporting periods and their associated targets. It stated that any confusion which this may have created was a reflection of the complex nature of the then PSA reporting process and noted that this should not be repeated during the current PSA reporting period 2008 - 2011, which aligns with the timeframe of Invest NI's present Corporate Plan. DETI also assured us there had been no change to the highly challenging and published Invest NI target of 10,000 business starts during the 2005-08 period;

- b.** NITB set a target to increase annual visitor spend. The original target was to secure a six per cent annual increase by 2008 – equivalent to an annual spend of £543 million.

NITB removed the reference to the percentage and stated that the target was to secure an annual spend level of £518 million by 2008. Moreover, the original target excluded domestic holiday expenditure but the restated target figure includes such expenditure (Appendix 1 PSA 8);

- c.** DHSSPS set a target to increase life expectancy in deprived areas. Initially the target was to be achieved by 2010. This was subsequently changed to 2012. No explanation for the change was published. DHSSPS accepts that the change, which enables comparisons to be based on 2011 Census data and tied in with the revised 2013 Multiple Deprivation Measure, was not published (Appendix 1 PSA 9).

3.19 The above examples provide evidence where departments have made a number of changes – to the PSA target itself, to the dates for achieving the target or to the means of measuring achievement – without any documented explanation of the need for, and nature of, the changes.

3.20 Failure to fully justify and document changes to published targets undermines user confidence. We recommend that, once PSA targets are published, they should not be changed unless it is essential to do so and the reasons are made explicit in target documentation including Technical Notes.

## Part Three: Operating Robust Data Systems and Reporting on Performance

### Performance reporting is not sufficiently clear, transparent and comprehensive

- 3.21 The introduction of PSAs has formalised the process for reporting performance to the Assembly and the public. Good practice indicates that departments should produce timely, transparent, comprehensive performance reports and make these publicly accessible. These should include latest outturn figures, compare performance against baselines and provide historical trend data, where available.
- 3.22 OFMDFM co-ordinates and produces an annual compendium progress report on achievement against PSA targets. Although in some instances performance was also reported in departmental reports, usually OFMDFM's composite report was the only publication where PSA performance was reported. Due to competing priorities, OFMDFM delayed publishing a progress report for 2006-07 and, as a result, performance for a large number of targets went unreported in the public domain. OFMDFM told us that individual performance would have been reported to Departmental Boards and, in some cases, Ministers.
- 3.23 We found that the format of the OFMDFM compendium did not allow for the adequate reporting of target performance. We consider that, to a greater or lesser extent, the reporting of all 13 targets we investigated fell short of best practice and there was a large scope for improvement. Some notable examples of poor reporting include:
- a. DARD set a target to create 300 rural development jobs in the tourism sector. In the 2005 OFMDFM progress report, DARD reported the creation of 112.5 jobs. In the 2006 progress report, this figure had fallen to 42.5 due to 'definitional changes'. Further, DARD had concerns about the accuracy of the database used. No explanation or reference to the definitional change or database weaknesses was reported (Appendix 1 PSA 2);
  - b. Performance against Forest Service's target to sustain the supply of recreational services was not reported in either the 2005 or 2006 OFMDFM progress reports. Estimates of paying visitors were produced and reported in the Forest Services annual report but with no reference to the PSA target (Appendix 1 PSA 3);
  - c. Performance reported by DHSSPS against its target to increase life expectancy in deprived areas contained errors. Although the errors identified were not significant, they indicate that the quality control procedures were not adequate (Appendix 1 PSA 9);
  - d. The DHSSPS target to reduce smoking in the adult and manual population relies on estimates from the Continuous Household Survey. Performance figures were reported without reference to the baseline figure or the statistical error associated with the survey. Whilst the baseline was clearly

set out in the DHSSPS Technical Note, no reference was made to it, or the statistical error associated with the survey, in the OFMDFM progress report. As a result, it is not possible to assess progress. DHSSPS statisticians told us that the range of error is taken into account when calculating progress (Appendix 1 PSA 10).

3.24 The examples provide instances of where performance has not been compared with baselines; actual outturn and historical data have not been provided; and there has been inadequate interpretation of results.

3.25 We recommend that OFMDFM's composite report is enhanced in order to provide more comprehensive and transparent reporting. It should present timely and well presented outturn data, with a clear baseline. Data for interim years should also be reported so that readers can more meaningfully interpret performance.

### **The performance reported was not substantiated by the actual outturn data**

3.26 When reporting outturn data in OFMDFM's composite report, departments include an assessment of the extent to which milestone targets have either been "achieved" or are "on track for achievement". It is crucial that when such assessments are made they accurately reflect actual performance. We found examples where reported performance

assessments were not substantiated by the actual data:

- a. The DHSSPS target to reduce smoking in the adult and manual population. Despite the fact that estimates quoted in the 2006 OFMDFM progress report showed increased smoking rates amongst manual groups, and no change in overall smoking rates, the target was stated as being "on track for achievement". DHSSPS told us that this judgement anticipated the impact of successful implementation of the smoking ban in April 2007, although this was not evident from the reported performance (Appendix 1 PSA 10);
- b. DHSSPS reported that its target to ensure that all patients who request a general practice appointment are seen by a primary care professional within 2 days was "on track for achievement" despite the fact that no data system was in place to measure this target (Appendix 1 PSA 12).

3.27 We recommend that departments and OFMDFM explain clearly in their composite report the basis upon which they have recorded their assessments of "achieved" or "on track for achievement" so that readers can reconcile these assessments to the actual outturn data.





## Appendix One:

**PSA Targets selected for examination and assessment of Technical Notes' compliance with Good Practice**

This Table assesses the extent to which published Technical Notes met the good practice standards set out in HM Treasury Guidance. We note, however, departmental views that there was no comparable NI guidance on the level of descriptive material required or to indicate that a list of sources is not sufficient.

<b>Department Of Agriculture and Rural Development (DARD)</b>						
<b>Target</b>	<b>Specified and appropriate baseline</b>	<b>Comprehensive definition of key terms</b>	<b>Clear quantification of success</b>	<b>Appropriate description of data system</b>	<b>Description of quality assurance arrangements</b>	<b>Assessment of data system limitations and risks</b>
<b>PSA 1</b> - Reduce the gap in agricultural Gross Value Added (GVA) per full time worker equivalent (measured as Annual Work Units) between NI and the UK as a whole by 0.6 of a percentage point per annum between 2003 and 2008, i.e. from 34% in 2003 to 31% in 2008.	✓	✓	✓	✓	✗	✗
<b>PSA 2</b> - By 31 March 2008, create a net increase of 1,000 Full Time Equivalent jobs in disadvantaged rural areas under the Rural Development Programme 2001-2006 (300 of which should be in the tourism sector).	✗	✓	✗	✗	✗	✗
<b>PSA 3</b> - Sustain the annual supply of timber, recreation and environmental services from existing forests at 2002-03 levels and secure a modest increase in combined public and private forest area by 1,000ha by 2008 at a rate of 500ha per year.	✗	✓	✓	✗	✗	✗

Department Of Enterprise, Trade and Investment (DETI)							
Target	Specified and appropriate baseline	Comprehensive definition of key terms	Clear quantification of success	Appropriate description of data system	Description of quality assurance arrangements	Assessment of data system limitations and risks	
<b>PSA 4-</b> By March 2008, reduce the productivity gap (measured by GVA per hour worked) with the UK.	✓	✗	✗	✗	✗	✗	
<b>PSA 5-</b> By March 2008, business expenditure on R&D to have increased at a rate faster than that of comparable UK regions so as to reduce the current gap in R&D expenditure as a percentage of GVA.	✓	✓	✗	✗	✗	✗	
<b>PSA 6 -</b> During the period 2005-08, support the establishment of 10,000 sustainable new businesses of which 40% will be in New TSN areas.	✓	✓	✓	✗	✗	✗	
<b>PSA 7-</b> By March 2008, increase the level of exports as a percentage of total sales by Invest NI client companies (excluding the top 25 exporting clients in 2003) to 30%.	✓	✗	✓	✗	✗	✗	
<b>PSA 8-</b> By March 2008, increase annual visitor spend to £518 million.	✗	✓	✓	✗	✗	✗	

## Appendix One:

Department Of Health, Social Services and Public Safety (DHSSPS)						
Target	Specified and appropriate baseline	Comprehensive definition of key terms	Clear quantification of success	Appropriate description of data system	Description of quality assurance arrangements	Assessment of data system limitations and risks
<b>PSA 9-</b> By encouraging people to take preventative measures and promoting access to health and social services, reduce the gap in life expectancy between those living in the fifth most deprived electoral wards and the NI average by 50 per cent for both men and women between 2000 and 2012.	✓	✓	✗	✓	✗	✗
<b>PSA 10-</b> By 2011, reduce the proportion of adult smokers to 22% or less, with a reduction in prevalence among manual groups to 27% or less.	✓	✗	✓	✗	✗	✗
<b>PSA 11-</b> By 2010 stop the increase in levels of obesity in children. [Joint target with DE and DCAL]	✗	✗	✗	✗	✗	✗
<b>PSA 12-</b> By March 2008, all patients who request a clinical appointment through their general practice for other than emergencies, to be able to see an appropriate primary care professional within 2 working days.	✗	✗	✗	✗	✗	✗



Office of the First Minister and Deputy First Minister (OFMDFM)						
Target	Specified and appropriate baseline	Comprehensive definition of key terms	Clear quantification of success	Appropriate description of data system	Description of quality assurance arrangements	Assessment of data system limitations and risks
<b>PSA 13-</b> Working with other departments, put in place coordinated policy and action and a range of indicators to reduce the number of households and children living in poverty and improve the prospects, opportunities and living conditions of those in the most disadvantaged areas and groups - including halving the number of children in relative low income households between 1998-99 and 2010-11, on the way to eradicating child poverty by 2020.	X	X	X	X	X	X

## Appendix Two:

### Good Practice Checklists

#### **We have set out the key requirements developed for robust, “fit for purpose” data systems and produced a checklist for departments.**

As a result of our review, we have set out the key requirements of robust, “fit for purpose” data systems. We have also produced a series of basic checklists setting out best practice for departments in the design and operation of these systems. We developed our checklists by drawing on existing best practice guidance (much of which is outlined in the NAO’s Fourth Validation Compendium Report<sup>10</sup>) on PSAs together with the lessons learned from our assessment of the data systems underpinning the 13 targets selected for this compendium report.

#### **The essential requirements of robust data systems that are fit for purpose**

- Departments should develop adequate and appropriate internal/external quality control arrangements to ensure PSA data systems’ compliance with best practice.
- Data systems for each PSA target should be clearly and consistently documented.
- Technical Notes should record baselines, provide clear definitions of key terms, describe the data sources that will be used and outline systems for assessing and reporting achievement.
- Known and unavoidable significant potential weaknesses and limitations in data systems should be acknowledged, documented and reported.
- Published targets should not be changed, unless essential. Where change is justified, full disclosure should be made.
- Departments must ensure identification and disclosure of all potential/actual risks to accuracy and reliability.
- Data systems should produce robust estimates using appropriate data sources and transparent analysis methods that accurately measure performance against all aspects of the target.
- Where data is obtained from external sources, Departments should ensure that it is fit for purpose, and undertake appropriate validation.
- When relying on sample-based estimates, account should be taken of the effect of statistical error and bias.

<sup>10</sup> *Fourth Validation Compendium Report: Report by the Comptroller and Auditor General HC 22-I Session 2007-08, 19 December 2007*

- Estimates of performance should be available within a reasonable time period.
- Departments should ensure that outturn data for all PSA targets is available and reported in a clear and timely manner and supported by sufficient information and explanations of data limitations, to enable correct interpretation of results.
- Outturn data should clearly support claimed achievement against targets.

<b>Assessing the corporate control environment</b>	<b>Yes/No</b>
Does the Departmental Management Board take an active and ongoing interest in PSA data systems?	
Does management monitor PSA data, review performance against milestones and previous years (credibility/plausibility checks) and investigate variances?	
Is management aware of the key risks to PSA data systems?	
Has management issued policy/codes of practice on data quality – defining relevant aspects of accuracy, reliability and security?	
Does management allocate responsibility for the achievement of each PSA target?	
Is there central departmental control over the choice of data streams for each PSA measure?	
Does a senior individual have overall responsibility for data quality?	
Is data quality included in the corporate risk management procedures with regular reviews of the reliability and accuracy of information produced and used for PSA targets?	
Are technical specialists (statisticians) involved in developing the definitions and reviewing the appropriateness of the data system?	

## Appendix Two:

<b>Operating a robust PSA data system</b>	<b>Yes/No</b>
<ul style="list-style-type: none"> <li>• Is it clear who is responsible for data quality and operating controls?</li> <li>• Are definitions and guidance to staff on data collection, processing and analysis clear and unambiguous and are staff adequately trained to operate the data system?</li> <li>• Does management review data systems to ensure that they are providing data of suitable quality?</li> <li>• Are there effective procedures for identifying and assessing risks to data reliability?</li> <li>• Have proportionate and appropriate controls been put in place to prevent errors?</li> <li>• Have appropriate analytical techniques been applied?</li> <li>• Is data comparable over time?</li> <li>• Where data comes from external sources, do departments have adequate knowledge of the data source and possible limitations?</li> <li>• Where contractors are employed to manage part or all of a data system, does the contract specify data quality requirements and quality assurance arrangements?</li> </ul>	

<b>Evaluating performance reports</b>	<b>Yes/No</b>
<ul style="list-style-type: none"> <li>• Is the outturn data presented in a clear and understandable way?</li> <li>• Is the data in a format that is easily accessible to the public?</li> <li>• Are data sources provided and key terms defined?</li> <li>• Are cross references made to Technical Notes and other publicly available documents where this will help the reader get a clearer understanding of the outturn data?</li> <li>• Is the outturn data the latest available and is the period covered clearly identified?</li> <li>• Is current performance compared with baselines and historical trends?</li> <li>• Is outturn data made available in a timely manner?</li> <li>• Is outturn data reported for all current PSA targets, including sub-targets?</li> <li>• Is the quality of the data systems described and are limitations in the data systems and their implications for interpreting outturn results explained?</li> <li>• Are statements regarding progress supported by data?</li> </ul>	

## Appendix Two:

Key questions for consideration in designing and specifying an appropriate PSA data system	Yes/No
<ul style="list-style-type: none"> <li>• Are targets clearly and unambiguously defined in Technical Notes?</li> <li>• Are targets sustainable over time?</li> <li>• Have all unavoidable changes to targets been clearly disclosed and explained?</li> <li>• Do definitions cover all major terms; source of data; scope of data; frequency of data collection; and data collection methodologies?</li> <li>• Do definitions and documentation enable an unambiguous assessment of target achievement?</li> <li>• Have definitions been communicated to and understood by all those involved in the collection of the data?</li> <li>• Does the data system adequately cover all aspects of performance as stated in the target?</li> <li>• Have unavoidable data weaknesses and limitations been made explicit to the user?</li> <li>• Will the data system produce adequate, accurate, regular and timely data?</li> <li>• Will the data system allow for interim assessment of progress towards achievement?</li> </ul>	

Source: NIAO drawing extensively on NAO good practice checklists for PSA data Systems outlined in Appendix Five of the Fourth Compendium Report

## Appendix Three:

### NAO recommendations to improve the corporate control environment

The NAO's 3rd PSA Validation Compendium report raised concerns about the priority that departments were giving to target specification and the management and control of data systems. The report made specific recommendations that would improve the corporate control environment for the three tiers of management: operational, departmental and central (HM Treasury). These recommendations are provided below.

#### NAO recommendations regarding management control of PSA data systems - Assessing the corporate control environment

For staff responsible for managing PSA data systems:

- consider the implications for measurement and data systems when designing PSA measures and targets
- explicitly assess the risks to data quality in PSA data systems, taking into account differences between types of data
- ensure data systems and the associated controls are adequately documented and ensure supporting records are kept up to date.

For staff responsible for the Department's data quality policy:

- raise the profile of PSA data systems across the Department by setting out clear expectations for data quality and reporting standards
- actively monitor PSA data quality and ensure that there is adequate challenge to outturn data
- assign responsibilities and resources to address identified data system weaknesses
- formalise the role of statisticians and other data specialists in the quality assurance of PSA data systems.

For HM Treasury:

- challenge Departments' measurement arrangements early in the process of developing new PSA measures and targets
- review Departments' responses to NAO validation recommendations for strengthening PSA data systems
- provide measurement guidance to Departments setting out HM Treasury's expectations for PSA data quality.

Source: NAO 3rd Validation Compendium Report

## Appendix Four:

### Developments in the PSA process following devolution in May 2007

Although after the period examined in this review, it is important to note that the NI Executive has taken steps to improve departmental PSA arrangements following devolution. Revised arrangements are as follows:

- A more strategic role for the Executive, with OFMDFM and DFP Ministers supported by a central delivery team monitoring and reporting performance;
  - Increased liaison between departments to ensure development of cross-cutting Delivery Agreements for each PSA ;
  - Full integration of departmental economists and statisticians into the process of developing Delivery Agreements, refining targets and identifying appropriate data systems. Delivery Agreements will set out:
    - the PSA vision;
    - how progress will be measured;
    - the strategy for delivering commitments;
    - the strategy for managing risks;
    - a schedule of proposed consultation;
    - key delivery milestones; and
    - the delivery chain setting out key stakeholders in the delivery of commitments.
  - Additional responsibilities for DFP Supply Officers to undertake a quality assurance role to ensure that best practice is applied, that Delivery Agreements are consistent and that data systems are robust.
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## NIAO Reports 2007 - 2009

Title	HC/NIA No.	Date Published
<b>2007</b>		
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