

Chapter 3 - Central Statistics Office

3.1 Census of Population

Background

The first census of population was taken in 1841 and since 1951 has been repeated every 5 years, with the exception of 1976, when it was cancelled because of budgetary considerations.

In March 1999, the Government decided that a Census should take place on 29 April 2001, and that, as for previous censuses, it would be carried out by the Central Statistics Office (CSO).

Due to the threat posed by Foot and Mouth Disease, the Government, on 27 March 2001, postponed the census, and subsequently rescheduled it for 28 April 2002.

Audit Objectives and Scope

The objectives of the audit were to:

- Ascertain and evaluate the actions taken and the procedures put in place to provide for the taking of the 2001 census of population.
- Examine and evaluate the specific procedures followed in placing contracts for goods and services, in reacting to unforeseen events and in protecting the State's interest.
- Ascertain the cost of the project and evaluate the efficacy of the financial controls in operation.

The audit consisted of a review of the structures and procedures employed to manage the project. Files of the CSO and the Department of Finance were examined including Government Decisions and Memoranda, minutes of Consultative Groups, Evaluation Board and Project Board meetings, legal agreements and correspondence. Discussions were held with CSO staff and site visits were made to the Processing Unit at Swords in Dublin.

Audit Findings

Planning of Project

The following key tasks were involved in carrying out the census:

- Planning
- Conducting a pilot study
- Securing professional advice on the technology to be used
- Selecting a supplier to provide computer hardware, software and related printing services
- Raising public awareness
- Recruiting additional staff
- Distributing and collecting census forms
- Processing analysis of completed forms

- Publishing results

The previous census held in 1996 involving 1.1 million households cost €19.5m, according to CSO estimates. The information contained in the 1996 census forms was captured on computer using keyboard data entry. The processing of the forms, including keying, coding and editing, took approximately 480 person years. The Census 2001 workload was expected to increase by about 20% because of a rise, also of that order, in the number of households and because of additional questions to be included in the census form. A rise in wage and field costs was also predicted taking account of general wage inflation and the impact of proposed minimum wage legislation and a tighter labour supply situation. When account was taken of these factors it was estimated that, using 1996 methodology, costs would rise to €31.7m.

At this time, the computer system in use within CSO consisted of a VAX network. The Department of Finance strongly advised CSO that because of EU procurement regulations, future hardware acquisitions should conform to a PC network architecture. Given this constraint, it was decided to invest in new computer hardware and software and avail of advances in image technology, which would enable the data in the census forms to be automatically read rather than having to be manually keyed into the computer. An analysis carried out by the CSO indicated that the cost of this new technology could be offset by reductions in labour and other direct costs of about €8.3m. The new technology would also speed up the processing of the census forms so that all relevant statistical reports would be published by April 2004, a gain of 8 months¹ on the Census 1996 timetable. It was also expected that the new technology could be used, to a certain extent, on ongoing CSO projects and in processing the returns relating to the next census due in 2006.

The National Statistics Board, which comprises members drawn from public, commercial and academic bodies, has as its main function the guidance of the strategic direction of the CSO, including the setting of priorities for the compilation of official statistics. In its Strategy for Statistics 1998-2002, the Board advocated maximum consultation with users and application of modern technology in carrying out the 2001 Census of Population. Acting on this recommendation, a Consultative Group was formed representing Government Departments, local authorities, the Social Partners and the transport, planning, academic and research sectors. In consultation with the Group, CSO conducted a pilot study in September 1999 involving 8,900 households to assess public reaction to possible new questions and amendments to existing questions, and to evaluate revised layouts for the census form and alternative collection procedures. Public comment was also invited through advertising in the national press and on the Internet. Using the results, that Group assisted CSO in drafting the questions to be included in the census form. The final questionnaire was approved by Government on 30 May 2000.

For administrative purposes, CSO divided the country into some 4,000 enumeration areas, each containing approximately 350 households. Each of these areas had been mapped by CSO. Existing records were updated by the inclusion of recent known household developments and individual developments noted by enumerators. As a result, CSO were confident of achieving total coverage in its distribution of census forms to all 1.35 million recorded households. After Census Day, forms from all households were collected by enumerators, with priority being given to establishments where the population was likely to be mobile. Approximately 1.3 million forms were returned, the difference being explained by second homes, unoccupied buildings, spoiled forms etc. Regular progress reports on the project were submitted to and considered by a Senior Management Committee within the CSO.

¹ The final CSO Reports relating to the April 1996 census were released in December 1998; it is expected that those relating to the April 2002 census will be released in April 2004.

Acquisition of Computer System and Printing

Appointment of Professional Adviser

In November 1999, the CSO requested Government Contracts Committee (GCC) approval to engage a consultant to provide specialist technical advice in managing the tendering process of engaging a contractor to provide the computerised scanning and recognition system. The timetable involved in delivering the solution had, in the opinion of CSO, become extremely tight due mainly to delays in securing union agreement. In these circumstances, which CSO regarded as being exceptional, permission was sought to dispense with normal competitive tendering procedures and to engage a named consultant. That consultant had assisted the UK Office for National Statistics in its tendering procedures to outsource the processing of its census and would, it was felt, be in a unique position to immediately provide an excellent service. CSO was also of the opinion that because of the uniqueness of the skill-set required, it was unlikely that a competitive process would result in very many candidates. GCC approval was given on 30 November 1999 for the engagement, the cost not to exceed the CSO estimate of €31,743 plus VAT.

CSO decided to expand the original role envisaged for the consultant and to also involve him in the detail of drawing up the legal contract and technical schedules for the procurement process. Following negotiations with the consultant, a cost of €158,717 plus VAT was agreed and the GCC gave its approval on 26 January 2000. CSO believes that the alternative would have involved acquiring substantial legal and technical advice from a number of outside sources at a considerably greater cost and, more importantly, could not have been obtained in sufficient time to allow the tendering process to go ahead within a tight timeframe.

The consultant assisted in streamlining the procurement, negotiation and award phase of the outsourcing contract by designing the tendering documentation, providing a tender evaluation model, acting as a facilitator during evaluation, providing advice during negotiations and designing the main contract. Actual expenditure on the consultancy totalled €177,763 plus VAT. This included additional expenditure necessitated by the re-negotiation of the contract because of the postponement of the census.

Selection of supplier

The tendering process leading to the selection of a contractor for the provision of the new computer system was handled by an Evaluation Team comprising CSO census support management with IT and financial backgrounds.

A Contract Notice was published in the Official Journal of the European Community in January 2000. Following a process that involved an Open Suppliers meeting, and the evaluation of Contract Notice Questionnaires, four of the forty-one companies which had expressed interest in the contract, were issued with a Statement of Service Requirements. Two companies responded and, following detailed evaluation and negotiations, both were invited to submit a Best and Final Offer. While the two companies were rated very closely in non-financial areas, one offer was significantly cheaper. The Evaluation Team recommendation that the lowest tenderer be awarded the contract was endorsed by the Director General and a contract was signed on 24 October 2000 with that company. The contract amounted to €8.2m, including VAT, and was payable in instalments up to and including 31 December 2001.

The evaluation model used by the Evaluation Team was comprehensive and detailed and was sent to the GCC, and the procedures followed by the Team were reviewed for adequacy by a Director of CSO. Site visits were undertaken by Team members to inspect systems in other organisations provided by the two competing companies.

The contract covered an 8-year time span and was designed to give CSO flexibility in relation to carrying out

the 2006 census.

Postponement and rescheduling of census from April 2001 to April 2002

Following the postponement and rescheduling of the census, the additional and amended services required for Census 2002 were negotiated by way of a Change Request procedure included in the original contract. Legal advice received indicated that this was permissible and that there was no obligation on CSO to re-open the tendering process. The revised substitute contract was signed in January 2002, and together with the cost of re-printing the census forms, amounted to €10.7m including VAT. Approximately €1.27million of the increase in contract cost relates to re-printing the census forms. The remainder is accounted for by additional work in the areas of system specification, technical design, and additional maintenance.

After the contract had been signed, a Project Board comprising representatives of CSO and the successful bidder was formed to oversee the implementation of the contract. The Board, which is still in existence, met regularly, and kept minutes of its meetings and decisions. It considered progress reports and agreed action to resolve problems encountered at the different stages of delivery of the project. Legal advice to the Evaluation Team and the Project Board was provided by the Attorney General's Office.

System Performance

The new computer system was signed off for customer testing on 24 April 2001, some two months later than the scheduled date. With the postponement of the census, both CSO and the successful tenderer agreed that the priority should be on the optimal development of the system rather than on meeting the strict deadlines originally set. Correctly and incorrectly completed forms were fed into the system to determine the standard of recognition it carried. Once errors identified in the system had been logged, their source was established and corrective action was taken.

A number of system errors remained unresolved in early 2002. Most of these were considered by CSO to be of a minor technical nature and not to seriously compromise the overall functionality of the system, and were subsequently rectified. Some problems were encountered with scanning and other equipment, resulting in the replacement, under warranty, of all PC motherboards. Also, in June 2002, in a live processing environment, pressure placed on the network due to the volume of batches caused system errors, which, if uncorrected, could have led to a loss of processing time. The ability of the system to handle such conditions could not have been tested prior to live processing as such a volume of completed forms was not available to CSO. The system was cleared for customer testing on 28 February 2002 and went live on 27 June 2002. The target performance level is 800 batches (12,000 forms) per day. Since the commencement of processing in early June 2002, there has been a steady improvement in the number of batches being processed. At end-June 2002, a level of 500 batches per day had been achieved.

While CSO were at all stages confident that the desired system was technically feasible, it did consider that a risk existed in relation to the project over-running the exacting timetable set. CSO reservations regarding system performance have been notified to the company under the terms of the contract, which entitles CSO to withhold payment in respect of a non-conforming service. In addition, it provides for the retention, by CSO, of €520,593 pending completion of the project to its satisfaction.

Printing of Census Forms

Under the terms of the original contract with the company, CSO were to be supplied with 1.8million census forms at a cost of approximately €1.2m. The company sub-contracted the printing of the forms. However, based on a quality sampling exercise, approximately 55,000 of the forms were deemed to be of unacceptable quality. It was agreed that the forms would be reprinted. However, inspection of those reprinted revealed

further deficiencies. On 22 February 2001, CSO agreed to accept the defective forms in return for a reduction in the contract price of €29,204, together with a provision that a further deduction might be made in the event of reasonable additional costs being incurred by CSO as result of the deficiencies.

The situation was then overtaken by the postponement of Census 2001, rendering all the forms useless. They are currently stored by the company pending the outcome of legal proceedings and a decision as to their disposal. While CSO considered the position regarding payment for these 2001 forms, it soon had to make arrangements for the printing of Census 2002 forms. This was effected through the use of a contract Change Request mechanism. On 9 August 2001, the company were contracted to print the Census 2002 forms at a cost of approximately €1.27m. This time, the company, at CSO's request, introduced a Quality Control Procedure in respect of the printing of the forms.

Legal proceedings, not involving CSO, are currently underway in the UK regarding payment owing by the company to sub-contractors in respect of the printing of the 2001 forms.

Under the terms of the revised contract signed with the company on 7 January 2002, CSO retained €190,460, pending settlement of its claim regarding the 2001 forms.

Staffing

Department of Finance sanction was received for the recruitment of an additional 178 headquarters staff to assist in the mapping of enumerator areas, the fitting out of regional offices, the recruitment and payment of field staff, logistical support and the processing of returned census forms. In accordance with previous practice these staff would be recruited as permanent civil servants and following completion of their census duties would be redeployed to other Departments in the Civil Service. Of this number, 110 had been recruited by March 2001.

In the period April-December 2001, 19 were re-deployed to other Government Departments while the remaining 91 were retained pending the commencement of the Census 2002 project. CSO informed my staff that during this time they were engaged in census preparatory work such as, decommissioning all 2001 materials and preparing revised 2002 materials, investigating new housing, standing down and re-recruiting field staff, and developing educational material and the census website. They also undertook work on behalf of other divisions within CSO, primarily relating to the Census of Agriculture, Balance of Payments, the CSO business register and Quarterly National Household Survey mapping. In the normal course of events, it would have been necessary for CSO to carry out this work through outsourcing or through the use of overtime. In addition, some staff continued to be involved in training and additional system testing. From January 2002, CSO recommenced recruitment to achieve the sanctioned level.

The costs incurred in paying staff from the time of the postponement decision until end-2001 is estimated by the CSO to be about €1.2m.

In the fourth quarter of 2000 and in early 2001, 412 supervisory field staff were recruited on short-term contract to supervise the delivery and collection of the 2001 census forms. However, due to the postponement of the census, their contracts were terminated at the end of April 2001. Salary payments to these staff amounted to €2.7m.

An additional 3,974 were on the point of being hired on short-term contract as enumerators but had not taken up duty at the time the census was postponed in March 2001. No money was paid to these staff.

In early 2002, 4,386 field staff were again recruited on short-term contract to supervise and carry out the delivery and collection of the 2002 census forms.

Recruitment of supervisory field staff and enumerators was administered by CSO personnel. Security checks were carried out on all staff, who, on appointment, became Officers of Statistics and were required to sign Official Secrecy undertakings. Training was provided to all grades and a job manual issued to each staff member as detailed in Table 2.

Table 2 - Census Staff in Place

Quarters	1999		2000		2001		2002	
	Field Staff No.	HQ Staff No.						
Q1	-	42.5	-	52.5	412	141	412	183
Q2	-	45.5	-	63	-	135.5	4386	226.5
Q3	-	47.5	-	80	-	116.5	-	219.5
Q4	-	45.5	40	113	-	122	-	

The terms of employment and post-census arrangements relating to all staff were sanctioned by the Department of Finance in line with Government Decisions.

Miscellaneous Costs

Premises

At the request of CSO, the Office of Public Works (OPW) secured premises suitable for housing the Processing Unit and the attendant equipment. The building, comprising 3,462 sq metres at Swords has been rented by OPW on a 25-year lease at an annual rent of €634,869. The cost of fitting out the building, including electrical and telecommunications wiring was €1,373,857, and €322,513 was incurred on office furniture. The building was occupied from October 2000.

OPW also leased 20 regional offices on short-term leases in late 2000 and early 2001. OPW carried out security audits on all premises and where necessary, alterations were made to bring them up to an acceptable standard. On postponement of the 2001 census, 18 of the buildings were retained and the leases extended so that they could be used on the 2002 census. The buildings remained unused in the interim period. Two additional premises were leased in 2002 for the 2002 census. The rents paid in 2001 totalled €265,375. Rents arising in 2002 in respect of the 2002 census are projected to amount to €165,066.

Office furniture purchased by CSO in fitting out these premises cost €38,092.

Office equipment

A number of items of equipment were purchased or leased for use in the Processing Unit, in the regional offices and by field staff. These included a telephone system, 24 photocopying machines, 2 fax machines, 400 mobile phones, storage boxes and satchels. In all cases, CSO engaged in a tendering process in acquiring the equipment.

Following the postponement of Census 2001, lease terms on photocopiers obliged payment in full, although the machines were not used during the period of postponement. New tenders were sought in respect of photocopiers used during Census 2002. Mobile phones, which had been distributed to staff, were de-activated and stored at Swords until the commencement of Census 2002.

The cost of office equipment is estimated at €657,724.

Advertising

Fourteen companies responded to a Contract Notice placed in the Official Journal of the European Union on 15 September 2000, in respect of the provision of advertising services for the 2001 census. Following an evaluation process and consultations with senior administrative and field staff, the approval of the GCC was sought to engage one company. That approval was received in November 2000 and, the following month, a contract was signed in respect of recruitment and public awareness advertising campaigns.

Because of the difficult labour market situation pertaining in 2001 it was decided to use radio advertising on a wide scale basis for the recruitment of enumerators. Expenditure of €283,152 was incurred on the enumerator recruitment campaign in December 2000 and January 2001. The cost of the public awareness campaign up to the postponement date was €184,112.

The advertising agency was retained to carry out the awareness campaign in respect of Census 2002. This was effected by way of an amendment to the original contract and was in line with legal advice received by CSO. Payments in respect of this campaign are projected to cost €976,429. As a panel of potential candidates for enumerator positions had been established at the time of the proposed Census 2001, it was not necessary to carry out a recruitment campaign for Census 2002.

Project Cost

The total projected cost (excluding costs incurred by OPW) of the project is estimated at €43.87m, as shown in Table 3.

Table 3 - Project Cost

Area	Census2002 €m	Postponement Costs €m	Total Costs €m	1996 Costs €m
Salaries				
HQ	5.65	1.63	7.28	8.51
Field Staff	<u>14.46</u>	<u>2.14</u>	<u>16.60</u>	<u>7.46</u>
Total	20.11	3.77	23.88	15.97
Travel	2.74	0.18	2.92	1.22
Computer	7.10	1.64	8.74	0.52
Office Equipment	1.09	-	1.09	0.22
Premises	0.69	0.36	1.05	0.19
Printing	1.23	1.28	2.51	0.32
Advertising	1.35	0.18	1.53	0.41
Consultancy	0.22	-	0.22	-
Postal & Telecommunication	0.22	0.10	0.32	0.13
Incidental	1.37	0.24	1.61	0.54
Total	36.12	7.75	43.87	19.52

Includes costs of staff redeployed to other duties following postponement

The actual amount paid up to 30 June 2002 was €28.98m .

Payment Procedures

All payments relating to the project were authorised by the Census Support Unit prior to processing and payment by the Finance Unit, where they were checked for correctness and proper authorisation. Invoices were tracked from receipt to payment. Capital assets were highlighted for inclusion in the fixed asset register.

Project expenditure under each budgetary heading was also monitored, on a monthly basis, and records were reconciled with Finance Unit figures.

Conclusions

- The overall management of the census by CSO was satisfactory.
- The postponement of the 2001 Census cost €7.75m. The procedures put in place to cope with the implications of the postponement were reasonable.
- CSO internally deployed 91 of the extra staff recruited for the postponed April 2001 census for the period April to December 2001. While the deployment ensured that the State got a measure of value for the pay costs of these staff, the very nature of the circumstances which gave rise to this unexpected resource windfall suggests that it is unlikely that an optimal return was obtained.
- CSO did not initially comprehensively scope the range of services to be provided by the professional adviser – a consequence being that there was not competitive tendering for a contract which was ultimately worth €177,763 plus VAT.
- CSO should continue to pursue an appropriate financial concession in respect of system performance and the defective census forms supplied.