Summary: Intervention & Options

Department /Agency: Defra	Title: Impact Assessment of The INSPIRE Regulations 2009	
Stage: Final Proposal	**Version:** 9	**Date: 04 September 2009**
Related Publications: Consultation proposal see www.dera.gov.uk/consult/inspire/inspire-impact-assessment.pdf		

Available to view or download at:
http://www.defra.gov.uk

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What is the problem under consideration? Why is government intervention necessary?

All key location based information is held by public authorities. These data are essential for most policy and operational issues. Government intervention can: reduce duplication, encourage efficiencies, support better policy evaluation, design; and enhance emergency response. This will benefit public, industry and government users alike. The private sector is unlikely to intervene because competitive pressures would prevent coordination on the scale necessary to realise benefits and high costs of entry to the market and few participants could create competition issues.

What are the policy objectives and the intended effects?

This initiative will reduce waste caused by duplication, increase efficiency through better data sharing and support policy design, implementation and evaluation. It will also improve public authorities ability to respond to emergencies. The INSPIRE Directive establishes a pan European spatial data infrastructure for environmental information and its transposition is consistent with the Government's Location Strategy supporting the development of, and access to, shared and integrated geographic information in the areas of environmental protection, health, education, retail and insurance.

What policy options have been considered? Please justify any preferred option.

The preferred regulatory approach (option 2) that implements the Directive but does not go beyond these requirements without agreement based on supporting cost benefit information has been compared with a 'business as usual' base case (option 1). In developing this assessment other broader scenarios, including voluntary cooperation and a more prescriptive approach to implementation had been assessed but discounted: voluntary cooperation had been tried previously but found to be unsuccessful and a more prescriptive approach, although delivering greater harmonisation would have been significantly more expensive.

When will the policy be reviewed to establish the actual costs and benefits and the achievement of the desired effects?

Triennial monitoring will start in 2013 and include an assessment of the costs and benefits of implementing the regulations. Evaluation of the regulations will take place in year 5 (see section J) .

Ministerial Sign-off For final proposal/implementation stage Impact Assessments:

I have read the Impact Assessment and I am satisfied that (a) it represents a fair and reasonable view of the expected costs, benefits and impact of the policy, and (b) the benefits justify the costs.

Signed by the responsible Minister:

..... Date:

Summary: Analysis & Evidence

Policy Option: 2	Description: Implementation option

COSTS

ANNUAL COSTS	
One-off (Transition)	**Yrs**
£ 45m	9
Average Annual Cost (excluding one-off)	
£ 2m	

Description and scale of **key monetised costs** by 'main affected groups' Cost to public authorities including local government of data harmonisation, coordination monitoring and reporting. Precise timing and hence calculation of Present Values dependant on the available detailed implementing rules from the Commission.

Total Cost (PV) **£ 53m**

Other **key non-monetised costs** by 'main affected groups' No direct impact on the private sector as the Directive places obligations only on public authorities

BENEFITS

ANNUAL BENEFITS	
One-off	**Yrs**
£	
Average Annual Benefit (excluding one-off)	
£ 7.1 - 13.2m	

Description and scale of **key monetised benefits** by 'main affected groups' Estimated savings will accrue towards the end of the implementation period because of the way in which implementing rules are progressively introduced.

Total Benefit (PV) **£ 76m (53-99m)**

Other **key non-monetised benefits** by 'main affected groups' Improvements in public policy design and intervention resulting in improved outcomes; private sector improved efficiency (e.g. utilities) and the creation of new products and services and improved access by the general public.

Key Assumptions/Sensitivities/Risks Delay in the availability of detailed implementing rules may slow down the realisation of benefits, and for that reason we have assumed only 50 per cent will actually be realised within the first 10 years.

Price Base Year 2009	Time Period Years 10	**Net Benefit Range** (NPV) **£ 0m - +£46m**	**NET BENEFIT** (NPV Best estimate) **£ 23m**

What is the geographic coverage of the policy/option?				UK
On what date will the policy be implemented?				From 2010
Which organisation(s) will enforce the policy?				Defra
What is the total annual cost of enforcement for these organisations?				£ N/A
Does enforcement comply with Hampton principles?				Yes
Will implementation go beyond minimum EU requirements?				No
What is the value of the proposed offsetting measure per year?				£
What is the value of changes in greenhouse gas emissions?				£
Will the proposal have a significant impact on competition?				No
Annual cost (£-£) per organisation (excluding one-off)	Micro	Small	Medium	Large
Are any of these organisations exempt?	Yes	Yes	N/A	N/A

Impact on Admin Burdens Baseline (2005 Prices) (Increase - Decrease)

Increase of £ N/A Decrease of £ N/A **Net Impact** **£** 0

Key: **Annual costs and benefits: Constant Prices** **(Net) Present Value**

A: Background

The INSPIRE (INfrastructure for Spatial InfoRmation in Europe) Directive (2007/2/EC) was adopted in 2007 and should have been transposed into UK law by 15 May 2009. It lays down a general framework for a Spatial Data Infrastructure for the purposes of community policies and policies or activities which have an impact on the environment. It aims to improve the interoperability of, and access to spatial information across the European Union at a local, regional, national and international level; facilitate improvements in the sharing of spatial information between public authorities; and to provide improved public access to such data.

B: Scope

The Directive covers UK spatial data sets held by: public authorities; third parties holding data for or on their behalf; third parties wishing to take part and others holding data for or on their behalf. The Directive covers 34 thematic areas[1]. The approach adopted in the Directive creates a framework of standards, inter-operability and infrastructure support for environmental and other data, such as agriculture and transport. A premise of the Directive is that the infrastructure should build on those established and operated by Member States.

C: The Case for Intervention

Much information collected by public authorities contains "place-based" or "location based" information i.e. geographic information. When different types of place-based information are put together they can increase considerably the understanding, and hence the power to make effective decisions. Public authorities are the major providers and users of place-based information. Current arrangements for storage and use of this information are inefficient and ineffective – too much duplication, too little reuse and too little consistency that reduces the potential for interoperability. Work in 2003 and 2008 has highlighted the potential scale of efficiencies that better standards and sharing can generate.

The Atlantis Project – June 2008[2] identified that current users of geographic information spend 80% of their time collating and managing the information and only 20% analysing it to solve problems and to generate benefits. Similar issues are known to occur in other policy areas. Spatial information plays a key role in enabling Defra to deliver its licence to operate activities and communicating with the public, and will play a vital role in tacking and managing outbreaks of diseases in animals as it did for Foot and Mouth Disease in 2007 and more recently in connection with blue tongue.

The Atlantis Project findings are similar to an earlier survey of 50 organisations across Europe engaged in the preparation of Environmental Impact Assessments (EIA) and Strategic Environmental Assessments (SEA). This indicated that the five most frequent difficulties related to[3]

- Problems with getting access to existing data (70%);
- Difficulties with finding out which data are available (56%);
- The data we need are not available (51%);
- Datasets from different suppliers are not compatible (47%);
- Existing data are of insufficient quality (47%).

As a result of these difficulties, over half of the respondents indicated that the impact on their work included:

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[1] See Annex 1

[2] (http://www.ceh-nerc.ac.uk/news/news_archive/2008_news_item_17.html

[3] Survey conducted in 2003 and reported in the Commission's Extended Impact Assessment which can be found at http://inspire.jrc.it/reports/inspireextendedimpact assessment.pdf

- Lower level of accuracy of description of impacts;
- Higher uncertainty of extent of impacts identified;
- Higher cost of EIA/SEA studies.

The INSPIRE Directive seeks to address this problem through creating a Spatial Data Infrastructure designed to ensure that: spatial datasets are stored, made available and maintained at the most appropriate level; that it is possible to combine data from a variety of sources in a consistent way and to share them between users and applications; spatial data collected at one level of public authority can be shared between other public authorities; spatial data is made available under conditions which do not unduly restrict their extensive use; and that it is easy to discover available spatial data, to evaluate its suitability for the purpose and to know the conditions applicable to its use.

D: Commission Timescales

Timescales for implementation remain somewhat uncertain as the Directive will be implemented by means of a number of technical Implementing Rules, describing the standards and specifications for the services which will allow data to be searched, viewed and downloaded. These Rules will be approved by the INSPIRE Committee using the comitology procedures. The Commission has produced a roadmap for INSPIRE, which consists of a number of milestones, some of which are dates prescribed by the Directive, and some which are merely proposed dates. The current version, revised June 2009, is at Annex 2 together with a diagram summarising the current UK view of key deliverables over the next 4 years.

E: Consultation by Defra

Defra involved all major stakeholders in discussions throughout the negotiation of the Directive[4]. The Location Council, a cross-government group, including the devolved administrations, has been established as a senior governance group to provide leadership and direction to implement the Directive and the Location Strategy. Both developments have involved consultation with a wide range of public and private sector organisations. The Council is supported by a transposition project board.

As part of transposing INSPIRE into UK law an earlier version of this Impact Assessment was consulted upon as part of the formal written consultation exercise that took place between March and May 2009[5]. In addition, Defra held 5 outreach events in Belfast Cardiff Edinburgh London and Manchester attended by almost 200 delegates. The results of these consultations have been included in this revised Impact Assessment.

F: The Government's Position

The Government supports INSPIRE, which was a major influence on the development of the UK Location Strategy[6] . Baroness Andrews (DCLG) in launching the Strategy 'Place Matters' on 25 November 2008 said "The Location Strategy will ensure we make better use of information already held so we can use it faster and with less expense".

The transposition of this Directive will be in line with Government policy and will assist in maximising the added value from spatial data through promoting its use, developing skills and access to the EC INSPIRE Geoportal. As indicated in later sections, the net benefits are expected to be significant.

[4] www.defra.gov/corporate/consult/inspire/inspire-impact-assessment.pdf - Annex 3
[5] For the consultation document see www.defra.gov.uk/corporate/consult/inspire/inspire-consultation-doc.pdf; and for the results of the consultation see www.defra.gov.uk/corporate/consult/inspire/summary-responses.pdf
[6] Place matters: the Location Strategy for the United Kingdom. http://www.communities.gov.uk/publications/communities/locationstrategy

G: Options considered

Background

In developing its proposals the European Commission undertook an Extended Impact Assessment (XIA), which was published in 2003[7] . Among the options considered was a broad framework backed by an EU Framework Directive based on the subsidiarity principle of devolved management to Member State level where obstacles are addressed in a step-by-step manner. Following further analysis this formed the basis of the Directive. Full details of the XIA were set out in the consultation stage impact assessment[8].

In 2005 Defra produced a partial RIA on INSPIRE to help inform negotiations on the Directive. This partial RIA drew upon the work done for the XIA. It estimated costs and benefits for a number of options based on scenarios for the final agreed legislation, one of which was very close to the final adopted Directive[9] .

Consultation in March – May 2009

As part of the consultation on INSPIRE transposition Defra considered two options[10]:

1. Business as Usual ("do nothing" base case)

2. Implementation that is consistent with compliance with the Directive, but does not go beyond these requirements ("Implementation") without agreement based on supporting cost benefit evidence[11].

The Business as Usual ("do nothing" base case) option was not recommended because of the case for additional benefits arising from implementation. This option would also not have been consistent with Government policy on implementation of European Directives. This option received no support in the consultation exercise.

Current Impact Assessment - What Implementation would look like in practice:

This provides a legislative framework which promotes best practice. Key features include:

- Provision of catalogues that allow users to identify what information is available (metadata)
- Ensuring that information from different sources can be integrated (this will require information to adhere to specified common standards that INSPIRE will lay down)
- Providing, incrementally, online services such as discovery (to find out what data exists), view (to display, navigate, zoom in/out, pan, or overlay viewable spatial data sets), download (to obtain the data) and transform (to enable data interoperability) in accordance with the timetable prescribed by European Regulations.
- Employing licensing arrangements that allow information to be shared, accessed and used in accordance with Freedom of Information legislation, the Environmental Information Regulations and the Public Sector Information Regulations
- Monitoring mechanisms to demonstrate that the information is being made available
- Co-ordination mechanisms to ensure effective operation of the infrastructure.

There will be a federated approach to data provision, driven forward by the location programme, promoting inter-operability and sharing through data harmonization and the setting of standards, and places a duty on public authorities to share data. Technical arrangements for the interoperability and harmonisation of spatial data sets and services, rules governing the conditions concerning access to such sets and services, as well as rules concerning the

[7] c.f. footnote 2
[8] c.f. footnote 3
[9] Proposal for a Directive of the European Parliament and of the Council establishing an infrastructure for spatial information in the community (INSPIRE) (Commission text 11781/04).
[10] See http://www.defra.gov.uk/consult/inspire/inspire-impact-assessment.pdf
[11] Proposals for new or additional services shall be scrutinised on the basis of a cost/benefit assessment

technical specifications and obligations of network services, will be specified in the Implementing Rules referred to earlier.

In addition to putting in place the above framework the location programme will focus on driving value from the use of spatial datasets through marketing and skills development. These functions will be supported by the Co-ordination Unit that will be established to monitor and report on development of INSPIRE.

Option 2 was the option recommended during consultation and the updated assessment, based on the replies received, remains the option in this final proposal.

H: Charging and cost recovery

The Directive permits a public authority supplying a view service to apply charges where such charges secure the maintenance of spatial data sets and corresponding data services, especially in cases involving very large volumes of frequently updated data. Such charges, operated through e-commerce arrangements must not exceed what is necessary to secure maintenance of the spatial data sets and services and a reasonable return on investment. The decision to exercise this derogation would rest with individual public authorities.

With respect to public access, basic INSPIRE services such as discovery and (in the main) view will be free of charge to the public, but charges can be made for other services such as downloading data. The vast majority of transactions to members of the public will be free or at marginal cost of supply (in line with Freedom of Information, the Environmental Information Regulations, and the Re-use of Public Sector Information Regulations). Where charges are made for services, e-commerce services must be provided to assist ease of payment. It is up to data providers how they wish to deliver e-commerce services: for example, individually, in conjunction with other data providers, or through a third party.

I: Economic Analysis of Costs and Benefits

(i)Costs

Costs estimates and their timing will continue to be uncertain until there is clarity around the Implementing Rules which have yet to be tabled, negotiated and agreed. For this reason the estimates presented in this Impact Assessment draw together the best available evidence to support decisions regarding the preferred course of action. A number of responses to the consultation exercise also recognised the uncertainty that surrounds these estimates. Defra plans to monitor costs and benefits during implementation to provide further assurance about the robustness of this case.

Better Regulation and Administrative burdens

The Directive applies only to public authorities and places no new information obligations on the private sector. Private sector organizations can elect to be part of the INSPIRE community but there is no requirement for them to do so. To that extent it is not believed that implementation of this Directive will add to the administrative burdens of the private sector, and if it did it would be by choice. Indeed, it has the potential to reduce the costs, and enhance the benefits of doing business through the provision of more easily accessible and integrated data.

This was commented on during the consultation exercise when one respondent argued that the additional costs of private sector companies carrying out work for public authorities (and deemed public authorities for the purposes of the regulations) had not been taken into account. In fact legal responsibility and ownership of the data remains with the public authority and the costs of that work have therefore been taken into account whether it is done by the authority or the private sector. However the involvement of the private sector has the potential to lower costs overall by generating greater efficiencies from the sector being able to operate in new/expanded markets

There will be new burdens on local authorities arising from data harmonization in respect of data themes in Annex 1 of the Directive (and in due course there may be new burdens also in

respect of Annexes II and III – see below. One-off costs and consultation comments are discussed further below.

Recommended Option: Costs

This discussion excludes the continuing level of activity to share and harmonise spatial information on a voluntary or collaborative basis, and the costs associated with that, given that these costs will be incurred irrespective of the Government's decision to implement the preferred option[12].

Similarly, the UK has numerous obligations for reporting on environmental issues to comply with European Directives and other international agreements. These tend to be carried out as separate activities and to different specifications, which renders their aggregation for state of the environment reporting difficult and more costly than they could be with a spatial data infrastructure in place. The (England and Wales) Environment Agency alone spends in the order of £60million per annum on the direct costs of meeting the environmental monitoring obligations of European Directives and other national and international agreements. Any reduction in costs to the EA and other bodies arising from adopting the INSPIRE Directive will be counted as a benefit.

Current expenditure information on the costs of spatial information is not available. Nevertheless, the 2005 partial Impact Assessment drawing on several sources was able to provide an estimate of spatial data infrastructure activities for 2004/05.

These estimates are believed to be reasonable orders of magnitude and sufficiently accurate as a base against which to assess the incremental costs of implementation although this highlights the need for future work to be undertaken to gather actual costs (and benefits) of this work – see below.

Table 1: actual expenditure in 2004-05 on collection of spatial data

GI activity	Expenditure (£M)
Initial capital investment	1.94
Maintenance costs	5.65
Data procurement / Licensing costs	6.99
Staff costs	81.96
Major GI projects / initiatives[13]	92.13
Other known expenditure[14]	100.00
Total[15]	288.67 (c£322m at 2008/9 prices)

Two organisations commented in the consultation that their costs may not have been included in the IA. Further investigation shows that one had been included, the other not. And so as a result of this and other feedback from the consultations the final estimate of costs has been revised. Despite the above, uncertainty about the total costs has been recognised (cf footnote 11), which is why further work is needed on this and on the calculation of benefits.

The approach adopted in the earlier partial IA was to assume that "the cost of maintaining and developing these services is already being incurred and would remain so even in the absence of a Directive. It may be that a Directive would provide opportunities for some rationalisation of costs due to improved co-ordination of initiatives". Given the current level of activity and expenditure on GI activities it is believed that the provision of the underpinning infrastructure can be

[12] c.f. footnote 3, Annex 1.

[13] As there may be some slight overlap with the figures mentioned in the Cabinet Office Survey the figure has been reduced by 10 percent to £92.13M.

[14] This relates to other known expenditure not included in the Cabinet Office GI survey - see Annex 3 -or listed under major GI projects / initiatives, including the cost of producing and maintaining data sets e.g. production of Ordnance Survey data and re-engineering of UKHO data.

[15] This is the best estimate available but is probably an under estimate.

accommodated within the current planned expenditure[16] under business as usual and that future investments and activities will be aligned with the emerging technical standards specified in the Implementing rules. This remains Defra's view post consultation. However, some additional costs will be incurred and these are discussed below.

One-off costs

One-off (or transition) costs are incurred for a limited period during the set-up of the harmonised data collection regime. We expect one-off costs to arise from harmonising existing data and running the programme to implement the INSPIRE directive.

The figures for costs of harmonising existing data from the partial Impact Assessment in 2005 were used during the consultation exercise. As a result of comments received these estimates were re-evaluated. In particular these costs have been better aligned with cost assumptions for the location programme – see below. The revised cost of existing data harmonization[17] are now estimated to be £36m over 6 years, undiscounted [i.e. £6m p.a. 2011/12 – 2016/17].

In addition, there will be Programme Costs associated with developing and overseeing the implementation of the Directive. These have been estimated at £1.02m for 2008/9, £2.48m for 2009/10, £2.73m 2010/11, £1.93m for 2011/12, and £0.84m for 2012/13 (Annex 2).

Total one-off costs are therefore accrued over the 9 years from 2008/09 to 2016/17 and sum to £45m.

On-going costs

On-going costs are accrued where new activities are routinely undertaken as a result of INSIRE once the directive has been fully implemented, and which activities would not have been undertaken in the absence of this directive. These will include costs of running a new coordination unit (charged with ensuring newly collected spatial data is consistent with the Directive), maintenance costs for IT systems, and "new burdens" placed on local authorities by the Directive.

Any local authority that maintains and publishes data externally which is a theme defined in any of the Annexes I-III of the Directive will be obliged to adopt the Implementing Rules for metadata, data specification, network access and data sharing. This is to ensure that their data is interoperable with that of other public sector bodies and therefore bring business benefits of easier use and greater exploitation of under used but potentially powerful information assets. This is what we mean by "new burdens".

Work on new burdens [**DN** ,which remains subject to final Defra Finance Director and LGA sign-off] suggests costs of £4m incurred over the implementation period in respect of Annex I data themes for English local authorities. These costs, on a pro rata basis, for local authorities in the devolved administrations are £0.8m, given an overall upper estimate of £4.8m in respect of Annex I.

Annex II is not expected to apply to local authorities; and Annex III is significantly less stringent than for Annex I in which case the implications are unlikely to be greater than Annex I (though this would need to be reviewed in 2012-13 when the draft IRs will be at a state when this can be reassessed if required). For the purposes of this assessment we have therefore assumed new burdens arising from both annexes I and III together for LAs and devolved administrations of £1m pa on-going.

Running the coordination unit and maintaining IT systems necessary to deliver the INSPIRE Directive is expected together to cost around £1.25m pa (£1m pa in the early years from 20010-11 to 20013-14 due to the phased implementation).

For the 10 years from 2009/10, on-going costs sum to just under £20m, or around £2m per year.

[16] In the current recession we expect public authorities to look to increase data sharing and interoperability as budgets get tighter.
[17] c.f. £19m

Table 2: Summary of changes to cost assumptions 2009/10 – 2018/19 as a result of the consultation (£m 2008/09 prices, discounted)

	Consultation Proposal	Revised Estimates
Data harmonization	16.3	29
Coordination monitoring and reporting	10.0 – 14.8	8
Local authority 'new burdens'	9.8	8
Programme costs	11.7	8
Total	47.8 – 52.7	53

Based on the above analysis the best estimate of present value costs over 10 years discounted at a rate of 3.5%, is £53m. This includes £45m in one-off (transition) costs spread over 9 years and £2m in average annual ongoing costs.

As a check on the reasonableness of this estimate, the Commission's XIA estimated the additional costs to be equivalent to 6% of estimated spend, which was reduced to between 2% and 3% on the grounds that current spend was probably underestimated by factor of 2. The above estimate of average additional costs over 10 years is approximately 2% of spend.

It is believed that the application of common data standards and the presence of co-ordination could yield efficiency savings of up to 10% of current spend (roundly £32m). Given the risk of at least partial double counting of benefits (see next sub-section) cost estimates are presented gross of any possible efficiency savings.

(ii) Benefits

Implementation of the Directive is expected to result in substantial benefits over time. At this stage it is difficult to provide precise estimates as to their amount and timing given that Implementing Rules have still to be agreed. Moreover, benefits are also derived from better use and user familiarity with what is available. For these reasons a conservative view has been taken to costing and we are assuming that only 50 per cent of potential benefits are achieved in the first 10 years – see below.

Benefits have been appraised over 10 years, but this does not imply that impacts only last ten years. This period has been used to best match the implementation period and because ten years is recommended in the guidance[18]. The issue of better use and familiarity with what is available has also been a factor in selecting the 10 year time frame since we have no way of accurately assessing their impact (and the effect on overall net benefits) until the regulations are bedded in and working fully. An informed assessment of future benefits should be made at that stage.

This section describes the nature of the benefits expected and provides an indication of their value where possible.

The 'Location Strategy' states that the greater use of shared, integrated spatial information through the availability of consistent data supported by a coherent infrastructure may be expected to deliver benefits to a wide range of stakeholders across the economy:

- citizens and communities will benefit through better targeted services
- public sector service providers will share information across partnerships to provide more integrated, joined-up services and improved operational responses to emergencies
- public policy makers will be able to better design and target policy interventions
- the third sector will be able to partner more efficiently through more information sharing

[18] See http://www.berr.gov.uk/whatwedo/bre/policy/scrutinising-new-regulations/preparing-impact-assessments/toolkit/page44249.html

- the private sector will be able to complement the public sector more effectively in the creation of place based information and associated value added services.

In other words, improved access to and use of place based information should also result in improved policy design, targeting, implementation and evaluation, resulting in improved outcomes and reduced costs.

Transposition

The focus is on environmental information covered by the Directive.

The Commission's XIA identified a number of benefits, the quantification of which presented a challenge "as the benefits of more information being available only become apparent after a certain period of time and because they also depend on many factors coming into play." The XIA estimated quantified benefits to be of the order of €1.2-1.8 bn p.a.

These benefits are expected to accrue gradually over time as the implementation of INSPIRE progresses, reaching their full effect when INSPIRE is fully implemented. Compared to the XIA's estimate of costs (€200m – 300m pa over 10 years), suggests a benefit: cost ratio of around 6 (at the midpoints). These estimates need to be treated with caution given the difficulties with their estimation but the orders of magnitude difference between costs and benefits were deemed sufficient to support the development of the Directive.

Annex 4 sets out the assumptions used by the Commission in its XIA to estimate the different INSPIRE benefits listed below[19]:

Table 3: Breakdown of benefits in 2004/5 prices

	£m (p.a.)
More efficient EIAs and SEAs	10-20
More efficient environmental monitoring and assessment	10
More cost effective expenditure on environmental protection	30
More cost effective implementation of EU environmental Directives	5
More effective implementation of UK environmental projects	1.5
Reduced duplication of spatial data collection	2-25
Improved delivery of risk prevention policies	12-40
TOTAL (£m per annum)	70-130

Assessing the benefits to the UK has been based on the Commission's XIA. The total benefits quoted above have been derived by apportionment based on population i.e. the UK population accounted for some 15 per cent of the total population of member states in 2004. As an alternative, we might have used, for example, the proportion of GDP. But this would have yielded a higher, albeit not dissimilar estimate (nearly 17 per cent[20]). However, this was rejected because in presenting these data we have sought to adopt a conservative approach throughout given the timing and uncertainty issues surrounding implementation – see further below.

Annual average benefits are estimated to range from £70-130m p.a., once policy is fully implemented. However, these benefits will be slow to accumulate for reasons of uncertainty over timing and implementation already explained and there are not expected to be any benefits until 2015/16, slowly ramping up to full benefits only in 2018/19. On the basis that only a proportion of the annual benefits will accrue in the early years, this is expected to generate benefits over the first 10 years discounted at a rate of 3.5 per cent within a range £106 - £198m and total benefits of £152m. However, to more fully reflect the degree of uncertainty over implementation and in estimating the benefits themselves we have assumed a more conservative estimate of only 50 per cent of benefits being realised. This puts discounted

[19] UK benefits have been calculated as a proportion of the UK:EU population.
[20] OECD estimates of GDP in 2004 shows the UK GDP equal to nearly 17 per cent of EU-15 GDP

benefits over the first 10 years within a range of £53 - £99m and (undiscounted) average annual benefits in the range £7 - £13m pa.

There is a tendency to focus on the benefits to the public sector. Yet there are good prospects for gains by the private sector. The Commission's XIA argued that there were undoubted efficiency savings for industries that are, for instance, active in the utilities, oil and gas, communications, fishing, farming and forestry, mining, drilling, dredging and quarrying, in tourism, property development; surveying, insurance, cable laying, architecture and engineering sectors. Equally important are specialist information services opportunities including:

- better and more accurate analysis of different financial markets by commercial data users, leading to greater competition; and
- the creation of new products and services by commercial value added information providers, such as in the sectors of house selling, insurance, travel, logistics, telecommunications and tourism.

Experience elsewhere in the world has shown that a thriving market for added value services can develop on top of more readily accessible and usable public sector spatial data[21]. It is reasonable to assume that the implementation of the strategy would contribute to more vibrant economic activity in this area. This assumption is supported by the private sector's positive reaction to the INSPIRE initiative[22].
The recent report on the response to the summer flooding in 2007 ('Pitt Review') [23] indicates the value of such information and the benefits of improvements in the quality and accessibility of these data.

The Pitt Review estimated that "the insurance industry expects to pay out over £3 billion –other substantial costs will be met by central government, local public bodies, businesses and private individuals". Even modest improvements in efficiency can yield significant savings, notwithstanding the additional benefits from reducing the wider social and personal impact from such emergencies through speedier and more effective response.

The Report recognized that "during the emergency itself, there were excellent examples of emergency services and other organizations working well together, saving lives and protecting property. However, this was not always the case; some decision making was hampered by insufficient preparation and a lack of information. Better planning and higher levels of protection for critical infrastructure are needed to avoid the loss of essential services such as water and power. There must be greater involvement of private sector companies in planning to keep people safe".

The Atlantis Programme brings together a number of government organizations, including the British Geological Survey, the Centre for Ecology and Hydrology, the Environment Agency, the Met Office, Ordnance Survey and the United Kingdom Hydrographic Office, in order to improve government's topographical, geological and hydrological data. The Atlantis Programme shows that government organizations can work together successfully and deliver better modelling improved data quality and cost savings.

Recognition of the value of shared spatial information underpins several of the recommendations in the Report

Members of the public will benefit from vastly increased access to environmental information. Use of the internet has become widespread and as recognised in the recent report by Mayo and Steinberg (the "Power of Information")[24] citizens are making their own information and using information made by others to inform their decisions. Implementing the Directive provides a

[21] The Oxera Report http://www.ordnancesurvey.co.uk/oswebsite/aboutus/reports/oxera/conclusion.html into the OS estimated that in 1996, £79-£136 billion worth of GVA was dependent to some extent on OS products and services
[22] c.f. results of the INSPIRE written consultation and outreach events
[23] c.f. footnote 2
[24] www.commentonthis.com/powerofinformation/

web based channel for aggregating and sharing information with the public. Home Information Packs will be easier to produce and could contain a richer mix of information. Similarly, home insurance will be based on more accurate information as information on risks, such as flooding, subsidence, meteorology, and so on, become more accessible and usable.

J: Monitoring and Evaluation of Future Costs and Benefits

Monitoring and evaluation of future costs and benefits would typically be undertaken by identifying a small sample of candidate public authorities producing a representative selection of data. Costs and benefits for each would be identified and these results would then be grossed up to provide national estimates. In this instance that approach, although desirable is not suitable or likely to succeed. There are a number of reasons for this: cost estimates are confounded by timing issues brought about by the complex phased introduction of implementing rules; the wide diversity of types of public authority; and their different states of preparedness across different data sets. This means there are no reliable benchmarks for grossing information to national cost estimates. The situation for benefits is similar in that many of the benefits (as has already been identified) accrue to those who are not the original data producers.

Despite this, the European Commission has set in place a requirement on all member states to report the costs and benefits of INSPIRE starting in 2010 and every three years thereafter[25]. It is proposed that delivering this challenging task will be undertaken by the coordination unit with strategic oversight from the Location Council. It has access to a wide range of data and resources with which to gather and validate the necessary information. It is ideally placed to recruit and energise participants and has the breadth of oversight to identify and communicate with the wide range of stakeholders who can benefit from better quality more joined up data. One avenue that it will wish to explore straight away is the pilot trials it proposes to run, starting in 2009.These may well contribute to case studies that could inform the development of a wider range of information gathering initiatives.

In parallel with this activity there also need to be work set in train to identify whether there are appeals/review costs associated with INSPIRE, including those for Information Commissioner's Office. The ICO identified during the consultation that its preferred role in relation to appeals for non-disclosure of information could involve it in additional reactive work. It is of course entirely possible that, despite this formal role, the system promotes better disclosure and this reduces the amount of appeals work being done by the ICO. It is proposed that the Coordination Unit, in conjunction with the ICO should undertake an analysis of this activity early on in the life cycle of the regulations and then repeat it after 3 years to see whether the new regulations are creating additional work for the ICO.

An evaluation of the regulations is intended to take place in year 5. The plans for such an evaluation will be one of the early products of the location programme under the direction of the Location Council.

K: Specific Impact Tests

The specific impact tests have been completed and details of these can be found in the Annex 5.

L: Summary and Recommendation

The Government recognises the importance of spatial information in underpinning the development and delivery of local, regional, national and EU policies and intends to regulate to create a minimal framework of standards that will ensure the consistent gathering and sharing of location based information. This is consistent with the direction of travel signalled in the Government's Location Strategy.

[25] The Commission has publishes its requirements http://inspire.jrc.ec.europa.eu/implementingRulesDocs_mr.cfm and is proposing to hold a workshop on these later in the year.

There remains some uncertainty over the precise costs and benefits associated with implementation; the estimation of which is not helped by the phased implementation of the necessary Implementing Rules. Nevertheless it believes there sufficiently persuasive information available to make an informed decision to proceed with the preferred course of action. This will be underpinned by further information gathering during the course of implementation.

The costs of implementation are estimated to be in the region of £55m, which is believed to be a prudent estimate. On the basis of the evidence available these would seem to be more than outweighed by the potential benefits. Assuming only 50% benefits are realised in the first 10 years ,solely in terms of public authorities could be around £76m, and considerably more if the benefits from improved private sector access and the public are included.

Specific Impact Tests: Checklist

Use the table below to demonstrate how broadly you have considered the potential impacts of your policy options.

Ensure that the results of any tests that impact on the cost-benefit analysis are contained within the main evidence base; other results may be annexed.

Type of testing undertaken	*Results in Evidence Base?*	*Results annexed?*
Competition Assessment	Yes	Yes
Small Firms Impact Test	Yes	Yes
Legal Aid	Yes	Yes
Sustainable Development	Yes	Yes
Carbon Assessment	Yes	Yes
Other Environment	Yes	Yes
Health Impact Assessment	Yes	Yes
Race Equality	Yes	Yes
Disability Equality	Yes	Yes
Gender Equality	Yes	Yes
Human Rights	Yes	Yes
Rural Proofing	Yes	Yes

Annexes

Annex 1

INSPIRE Thematic Areas

ANNEX I

SPATIAL DATA THEMES REFERRED TO IN ARTICLES 6(A), 8(1) AND 9(A)

1. Coordinate reference systems
2. Geographical grid systems
3. Geographical names
4. Administrative units
5. Addresses
6. Cadastral parcels
7. Transport networks
8. Hydrography
9. Protected sites

ANNEX II

SPATIAL DATA THEMES REFERRED TO IN ARTICLES 6(A), 8(1) AND 9(B)

1. Elevation
2. Land cover
3. Orthoimagery
4. Geology

ANNEX III

SPATIAL DATA THEMES REFERRED TO IN ARTICLES 6(B) AND 9(B)

1. Statistical units	12. Natural risk zones
2. Buildings	13. Atmospheric conditions
3. Soil	14. Meteorological geographical features
4. Land use	15. Oceanographic geographical features
5. Human health and safety	16. Sea regions
6. Utility and governmental services	17. Bio-geographical regions
7. Environmental monitoring facilities	18. Habitats and biotopes
8. Production and industrial facilities	19. Species distribution
9. Agricultural and aquaculture facilities	20. Energy resources
10. Population distribution — demography	21. Mineral resources
11. Area management / restriction / regulation zones and reporting units	

Timeline

INSPIRE Roadmap – forecast UK implementation dates

Note: all future dates below are dependent on a programme of development work, legal steps and translation and are therefore subject to revision Regular text indicates date adopted, **bold text** date of implementation

Last updated: 25-Jun-2009

Adoption

Milestone date	Article	Description
15-May-2007	-	Entry into force of INSPIRE Directive
15-Aug-2007	22§2	Establishment of the INSPIRE Committee
14-May-2008	5§4	Submission for opinion of the INSPIRE committee of IR for the creation and updating of metadata
03-Dec-2008	5§4	Adoption of INSPIRE Metadata Regulation
19-Dec-2008	21(4)	Submission for opinion of the INSPIRE committee of IR for monitoring and reporting
19-Dec-2008	16	Submission for opinion of the INSPIRE committee of IR for discovery and view services
24-Dec-2008	5§4	Entry into force of INSPIRE Metadata Regulation
15-May-2009	24§1	Provisions of Directive are brought into force in MS
05-Jun-2009	17(8)	Submission for opinion of the INSPIRE committee of IR governing the access rights of use to spatial data sets and services for Community institutions and bodies
05-Jun-2009	21(4)	Adoption of COMMISSION DECISION regarding INSPIRE monitoring and reporting
December 2009[3]	16	Adoption of INSPIRE Regulation on discovery and view services
14-Dec-2009	9(a)	Submission for opinion of the INSPIRE committee of IRs for the interoperability of spatial data sets and services for Annex I spatial data themes
14-Dec-2009	16	Submission for opinion of the INSPIRE committee of IR for download services
14-Dec-2009	16(a)	Submission for opinion of the INSPIRE committee of IR for transformation services
December 2009[3]	17(8)	Adoption IR governing the access rights of use to spatial data sets and services for Community institutions and bodies
January 2012[1]	16	Submission for opinion of the INSPIRE committee of IR for the services allowing spatial data services to be invoked
15-May-2012	9(b)	Submission for opinion of the INSPIRE committee of IRs for the interoperability of spatial data sets and services for Annex II and III spatial data themes

Implementation

Milestone date	Article	Description	
15-May-2010	21§1 21§2	Implementation of provisions for monitoring and reporting	
30-Nov-2010	15	The EC establishes and runs a geo-portal at Community level	
24-Dec-2010	6(a)	Metadata available for spatial data corresponding to Annex I and II	
January 2011[5]	16	Discovery and view services operational	
January 2012[1]	16(a)	Transformation services operational	
January 2012[1]	16	Download services operational	
June 2012[5]	7§3, 9(a)	Newly collected and extensively restructured Annex I spatial data sets available	
24-Dec-2013	6(b)	Metadata available for spatial data corresponding to Annex III	
January 2015[5]	7§3, 9(b)	Newly collected and extensively restructured Annex II and III spatial data sets available	
June 2017[5]	7§3, 9(a)	Other Annex I spatial data sets available in accordance with IRs for Annex I	
30-May-2019	7§3, 9(b)	Other Annex II and III spatial data sets available in accordance with IRs for Annex II and III	

1 Date proposed by the commission
3 Under scrutiny by European Parliament and Council
5 Date depending on entry into force of measure

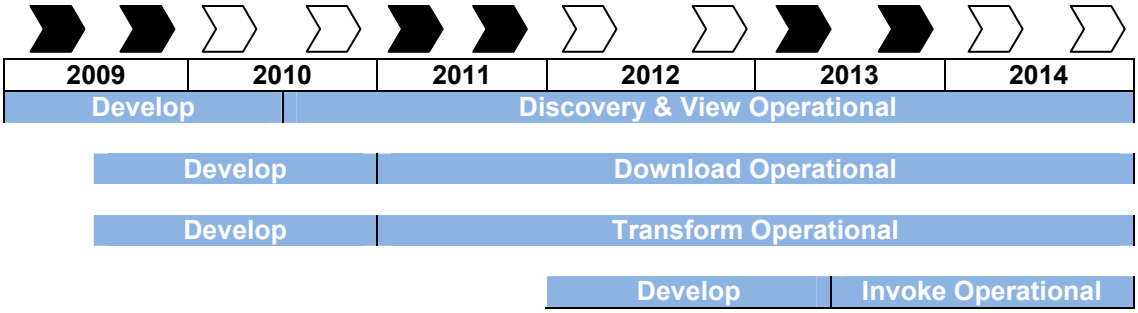
Source http://inspire.jrc.ec.europa.eu/inspire_roadmap.cfm

In most cases UK implementation dates are 3-5 months later than OJEC publication dates.

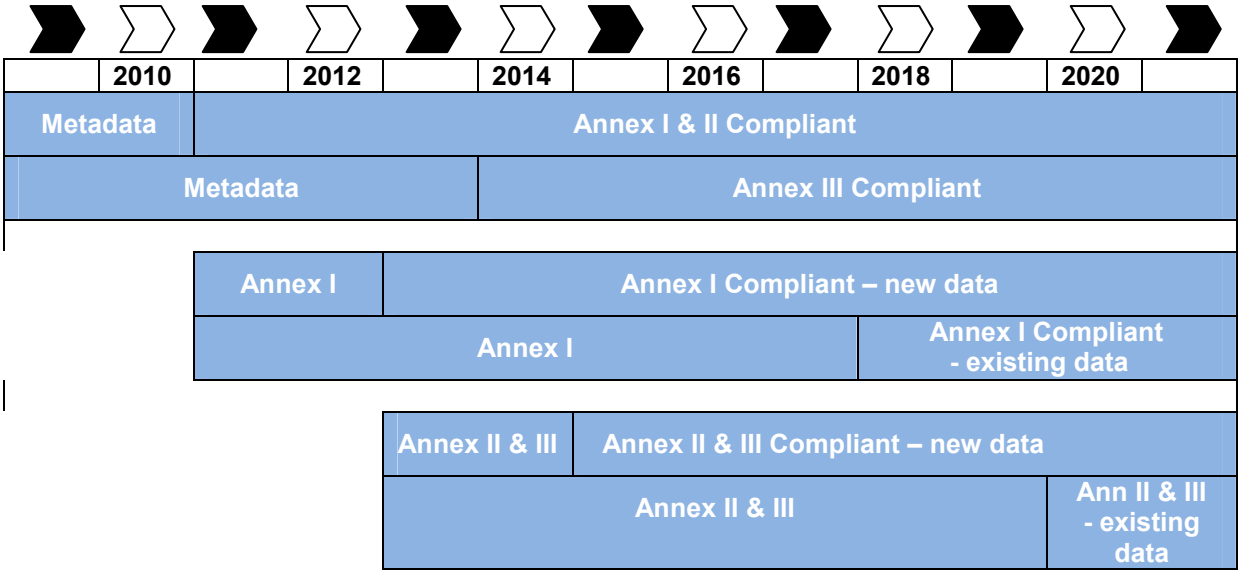
Timelines for UK adoption and compliance 2009 – 2020

Note all future dates are subject to change

Timeline Network Services



Timeline: Spatial datasets



Estimating current expenditure on Spatial Information in the Public Sector

Cabinet Office Geographic Information Survey[26]

Initial Capital Investment

Categories	Number of respondents in category	Cost (£M) [27]
£50, 000	86	2.15
£51, 000 to £150, 000	37	3.70
£151, 00 to £250, 000	7	1.40
> £250, 000	4	1.20
Total	134	8.45
Estimated total cost[28]		11.67
Estimated total cost per annum [29]		1.94

The assumptions made in estimating costs are detailed in the footnotes.

Annual Maintenance Costs

Categories	Number of respondents in category	Cost (£M)[30]
< £10, 000	62	0.31
£10, 001 to £50, 000	58	1.74
£50, 001 to £100, 000	13	0.98
> £100, 000	11	1.38
Total	144	4.40
Estimated total cost[31]		5.65

The assumptions made in estimating costs are detailed in the footnotes.

Data Procurement / Annual Licensing Costs

[26] Cabinet Office Geographic Information Survey – at the end of 2004 the e-Government Unit in the Cabinet Office undertook a survey of GI activity. They received 207 responses from 185 different organisations, 98 per cent of the responses coming from the public sector. Approximately 25% of the responses were from Central Government (including the Devolved Administrations) and 75% from Local Authorities (including regional bodies).

[27] To estimate cost the middle point of the category is used as the multiplier, e.g. use £100, 000 for the '£51, 000 to £150, 000' category. For the category 'greater than £250, 000' as the two previous categories have used an interval of £100, 000 it is used for this category. Hence, the 'greater than £250, 000' category is assumed to be '£250, 000 to £350, 000'. Thus, an average figure of £300, 000 is used for this category.

[28] Only 134 out of 185 respondents answered this question. Assuming that the responses received are representative, the total cost is multiplied by 185/134 to give the estimated total cost.

[29] Cost per annum based on the assumption that infrastructure is upgraded every 6 years.

[30] To estimate cost the middle point of the category is used as the multiplier, e.g. use £75, 000 for the '£50, 001 to £100, 000' category. For the category 'greater than £100, 000' the previous category used an interval of £50, 000. Hence, an assumed range of £50, 000 is used for the 'greater than £100, 000' category. Hence, the 'greater than £100, 000' category is assumed to be '£100, 000 to £150, 000'. Thus, an average figure of £125, 000 is used for this category.

[31] Only 144 out of 185 respondents answered this question. Assuming that the responses received are representative, the total cost is multiplied by 185/144 to give the estimated total cost.

Categories	Number of respondents in category	Cost (£M)[32]
< £20, 000	83	0.83
£20, 000 to £50, 000	26	0.91
£50, 001 to £100, 000	17	1.28
> £100, 000	20	2.50
Total	146	5.52
Estimated total cost[33]		6.99

The assumptions made in estimating costs are detailed in the footnotes.

Number of GIS personnel (Staff Costs)

Categories	Number of respondents in category	FTE[34]
1 to 5	99	297
6 to 9	18	135
10 to 25	18	315
>25	19	617.5
Total	154	1364.5
Estimated total cost (£M) [35]		81.96

GI Infrastructure Projects

[32] To estimate cost the middle point of the category is used as the multiplier, e.g. use £75, 000 for the '£50, 001 to £100, 000' category. For the category 'greater than £100, 000' the previous category has used an interval of £50, 000. Hence, an assumed range of £50, 000 is used for the 'greater than £100, 000' category. Hence, the 'greater than £100, 000' category is assumed to be '£100, 000 to £150, 000'. Thus, an average figure of £125, 000 is used for this category.

[33] Only 146 out of 185 respondents answered this question. Assuming that the responses received are representative, the total cost is multiplied by 185/146 to give the estimated total cost.

[34] To estimate cost the middle point of the category is used as the multiplier, e.g. use 7.5 for the '6 to 9' category. For the category 'greater than 25' the previous category has used an interval of 15. Hence, an assumed range of 15 is used for the 'greater than 25' category. Hence, the 'greater than 25' category is assumed to be '25 to 40'. Thus, an average figure of 32.5 is used for this category.

[35] Based on an approximate figure of £50, 000 (salary and associated costs) for an HEO level GI analyst. Only 154 out of 185 respondents answered this question. Assuming that the responses received are representative, the total figure is multiplied by 185/154.

Activity	Development / one-off costs (£Ms)	Development costs p.a. (£Ms) [36]	Ongoing maintenance costs p.a.(£Ms)
Pan Government Agreement	-	-	23.00
Mapping Services Agreement[37]	-	-	23.00
National Interest Mapping Services Agreement	-	-	13.70
Project Acacia[38]	18.00	3.00	2.00
Digital National Framework [39]	0.20	0.03	0.20
Maps on Tap[40]	4.00	0.67	0.70
SPIRE[41]	16.90	2.82	0.20
MAGIC[42]	0.50	0.08	0.10
What's in Your Backyard? [43]	3.50	0.58	-
Met Office interoperability activities		30.00	30.00
Integrated Coastal Zone mapping[44]	0.63	0.10	0.13
Marine Data Information Partnership[45]	0.50	0.08	-
Integrated Coastal Hydrography Project[46]	0.35	0.06	0.05
Vertical Offshore Reference Project[47]	0.28	0.05	0.03
National Assembly for Wales GI activities[48]	-	-	1.79
Total	44.85	7.48	94.9
Annual total			102.37

[36] Development costs expressed as per annum costs on the assumption that infrastructure would be upgraded every 6 years.
[37] Estimate.
[38] Costs that would be incurred to set up. This includes £1M that has already been spent on research.
[39] Implementation and development costs - in excess of £0.2M but not quantified.
[40] £2M spent to date with a further £2M earmarked.
[41] Programme costs over two years (2005-7).
[42] Cost to develop.
[43] £1.5M to develop: £2M to upgrade.
[44] Ongoing maintenance estimated as 20% of development costs.
[45] Expenditure to date.
[46] Ongoing maintenance estimated as 15% of development costs.
[47] Ongoing maintenance estimated as 10% of development costs.
[48] Does not include data costs.

Programme Costs Location Programme

Year	Resource	Technical Infrastructure	Advice, Guidance and Tools	Misc.	Total
2008/09	£0.72	£0.25	£0.00	£0.05	£1.02
2009/10	£1.43	£0.75	£0.25	£0.05	£2.48
2010/11	£1.43	£0.75	£0.50	£0.05	£2.73
2011/12	£0.88	£0.75	£0.25	£0.05	£1.93
2012/13	£0.54	£0.00	£0.25	£0.05	£0.84
Total	£5.00	£2.50	£1.25	£0.25	£9.00

Extract from The European Commission's XIA on INSPIRE Benefits
http://inspire.jrc.ec.europa.eu/reports/fds_report.pdf

8.3.1 Efficiency gains

Environmental impact assessment

INSPIRE is likely to be of particular use to organisations, both in the public and the private sectors, which carry out Environmental Impact Assessments (EIAs) and Strategic Environmental Assessments (SEAs).

Recordings of the number of EIA and SEA's of Member State expert suggest that 10,000-19,000 EIAs and 3000-5000 SEAs are carried out every year in the EU-15. A questionnaire of the Commission's services of EIA and SEA experts operating in the EU-25 suggests that the average cost of preparing EIA and SEA reports is €73,000. Thus the total cost for carrying out these environmental assessments in the Member States ranges between €950-1,750m. The same survey reveals that problems related to the access and use of spatial data increase the costs of EIA and SEA studies by, on average, 5.4%. If these costs could be removed savings of €50-95 m per annum could be achieved.

The survey suggests that problems related to the availability, quality and use of spatial data increase the time needed to produce EIA and SEA reports on average by 8%. Since the average time for preparing these reports is six months, this would save on average two weeks per EIA or SEA. In order to provide a conservative response, we assume that all these time savings have been included in the overall savings given above. The benefits which are expected to result from the INSPIRE initiative are, therefore, very likely to represent an underestimation and to become more important in the future. For this reason, we work with figures taken from the top end of the above range, given a rounded saving of **€100 m per annum.** These savings represent an underestimation as they do not take into account the increase of SEA's due to the entry into force of the SEA Directive in 2004 and only take very partial account of the EIA's that take place at regional and local level. For a number of countries, it is judged that the estimates of the number of EIA's should at least be doubled. Therefore, the total savings could run **up to € 200 m per annum**.

Environmental monitoring and assessment

The costs of monitoring and assessment of the environment in the pursuit of environmental policy are in the UK some €160m a year. If this expenditure us grossed up over the EU-15 as a whole (pro-rata to GDP), the total is some €1bn. Without INSPIRE much of the monitoring data collected for the primary purpose of monitoring compliance against discharge limits or environmental quality standards would remain costly or impossible to combine for secondary environmental assessment purposes, largely due to inconsistent specifications of data or systems. It would also remain difficult to combine different data for reporting on the state of the environment at a regional, national or international level. Based on similar experience from many organisations, the estimated efficiency improvements arising from harmonisation, consistent metadata, more efficient data handling, and increased quality would lead to efficiency gains of at least 10%, which would be worth **€100 m per annum**.

Environmental protection

Industry across the European Union spends an estimated €33bn per annum on environmental protection measures[49]. A reasonable estimate is that 10% of this total spending relates to data handling, primary and secondary use. The need for investment in mitigation or prevention measures are often based on the results of environmental risk assessments (ERAs) of the discharges arising from industrial installations to air, water and/or land. Data required to carry out ERAs of discharges is often lacking, requiring very expensive data collection campaigns.

[49] Environmental protection expenditure by industry in the European Union", Eurostat, Statistics in Focus Series, Theme 8 14/2002

Assuming a 5% efficiency gain from INSPIRE being in place by making environmental data of known location, quality and standards readily accessible, that would be worth €150 m a year.

Also the public sector makes significant expenditure on environmental protection measures. As an example of this expenditure, it is estimated that the cost of implementing the Directive 2002/49/EC, relating to the assessment and management of environmental noise, is of the order of € 10-15 million per annum for conurbations and € 15 m per annum for the 150 airports in Europe, totalling € 25-30 million[50]. Another example relates to reporting. The cost of the administration and reporting of the implementation of the Water Framework Directive in England and Wales alone in the order of € 15 m per annum with similar costs pro rata for other European countries. A conservative estimate that another € 150 m a year can be saved due to improved reporting and monitoring, leading to **€ 300 m a year total savings**.

Duplication of data collection

Data collected for environmental purposes can be useful both for the environment and for other sectors. For example[51] the first CORINE Land Cover inventory for EU15 and the Accession 10 countries is made available at marginal costs for non-commercial use by the EEA at small scale, but the larger scale data is only made available by each contributing institution at national or regional level with widely different conditions. As a result, an industrial user in Germany who needed land cover data for Germany and for all its neighbouring countries to develop a mobile phone network was obliged to address each neighbouring country individually and start negotiations for access to the data. Because of difficulties caused by the lack of a spatial data infrastructure, the user eventually decided that it would be more cost/time effective to simply duplicate the work already done at national level by the different countries. Costs of CORINE land cover mapping for Germany are estimated around €2 m.

Approximately 5- 10 % of the more than 500 requests per year received by the EEA for the reuse of CORINE data could not be solved and are potential cases for duplication of work similar as described above. The cost for producing CORINE land cover for EU25 is €25 m. **€25 m therefore represents a reasonable estimate of annual duplication cost for land cover data.** The SDI State of Play project conducted by the Commission reveals that similar duplication also occurs for other spatial data sets[52] and for other sectors in most of the EU 25 countries[53]. Given the huge costs of spatial data collection, potential saving are very important and **assuming that €250 m per annum can be saved in the EU25 due to reduction of data duplication is rather conservative.**

8.3.2 Better policy-making, policy- implementation and innovation

A central hope for INSPIRE, focusing as it does on spatial and environmental information, must be that, as a result, policy making in the EU as a whole will be improved. The main policy areas seem likely to be the environment; water resources; transport; communications; and (possibly) waste; agriculture; energy; public safety. Better information and sharing of information is recognised as central to the delivery of the 6th Environmental Action Programme (6th EAP) and in particular to the thematic strategies that have been launched by the 6th EAP.

There are two ways to approach the quantification of benefits: either we can start with a measure of the total current expenditure within the EU on the policy-area in question; or, where this is possible, we can look at estimates of external damage costs, on the European society, economy or the environment which policy making seeks to address, e.g., the cost of residual

[50] Cost study on noise mapping and action planning", COWI report P-44581-W, 1999 identified above are only a very small part of the total across all thematic sectors. The potential efficiency savings would be **many millions € per annum.**

[51] based on information from the EEA Information Centre

[52] Examples are spatial data sets related the data components Addresses, Terrestrial Elevation, Orthophoto-imagery and data, Transport networks, Transmission lines and pipelines, Government service facilities, Trade and service facilities, Settlements, Human health and safety, Surface water bodies/ Hydrography networks, Habitats and biotopes, Species distribution, Water resources and Forest resources

[53] In almost all of the 8 countries where a detailed examination of the situation with SDI took place,duplication of data collection has been reported

damage to the environment or to health from harmful emissions to air; the costs of water resources mismanagement (droughts and floods).

Annual expenditure of consumers of environmental goods and services within the EU25 - i.e., on environmental goods and services whose purpose is to measure, prevent, limit, minimise or correct environmental damage to water, air and soil, as well as problems related to waste, noise and eco-systems - totals about € 200 billion.[54]35 We may assume that the environmental improvement achieved is at least as large as the expenditure. Any improvement in the delivery of environmental policy could therefore be extremely valuable.

Risk prevention

A major area that would benefit from the implementation of INSPIRE relates to the prevention, preparedness and response to natural, man-made and other risks and the improved prevention of natural disasters, many of which have social underpinnings (e.g. development in flood-prone areas, deforestation, and so on). Within the EU-15 the relative importance of a number of most frequent types of natural disasters is illustrated by Figure 8.1[55]

The figure indicates damage costs of the order of magnitude of $ 80-100 bn over a 20 year period with over 5000 deaths and some 12 million people affected. Development pressures in Europe, combined with the effects of global warming, are poised to increase the extent of effects in the future. As an example, some very preliminary estimates indicate damage amounting to € 15 bn in Germany, €2 bn in Austria, € 2-3 bn in the Czech Republic and up to €35 m in Slovakia due to the 2002 flooding (EC internal document).

While much work is needed to integrate risk prevention, mitigation and preparedness throughout the environmental management and planning process, it is important to recognize the potential contribution of early warning and rapid response information systems to this area.

If GMES and INSPIRE had been in place in 2002, it likely that:

• impact scenarios, using modelling based on the various INSPIRE components could have been developed, and mitigation measures taken well in advance, hence, strengthening prevention;

• the preparedness of the civil protection and other competent authorities would have been better, resulting in less loss of life and less deployment costs, i.e. there would have been a more efficient emergency response;

• the costs for recovery/reconstruction could have been reduced or at least the rebuilding would take into account the scenario outputs, hence, avoiding the extensive use of the precautionary principle.

A reasonable estimate of the savings possible would be 2-4%. Combining this with a conservative estimate of € 6-10 bn per annum of potential damage across Europe due to natural hazards, would result in savings of **€120-400 m per annum** and, crucially, lives saved.

Health and environment policy

Better information is at the basis of the approach advocated by the European Health and Environment Strategy[56], allowing the development of new policies that reduce the impact of environmental pollution on health.

Such new policies could, for example, improve the identification of those at risk of asthma and target measures to reduce those risks or 'hot spots'. Across Europe, it is estimated that 10% of children have asthma, with an annual welfare cost, in terms of discomfort, lost schooldays, inconvenience to parents, estimated to cost €5 bn for the UK alone. If this figure is grossed up across the EU-15 (pro-rata to GDP), the total annual cost might be € 35 bn.

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[54] *Source:* ***Analysis of the EU Eco-industries, their employment and export potential****, a study by Ecotec Consulting Ltd. Available in the Industry/Employment section of* *http://europa.eu.int/comm/envionment/enveco/studies2.htm* *. Figure updated to 2003 prices*

[55] See page 48 of http://inspire.jrc.ec.europa.eu/reports/fds_report.pdf

[56] COM (2003) 338

Even a 1% improvement in policy delivery due to INSPIRE would be worth **€350m a year.**

If INSPIRE can contribute to the more efficient achievement of a small portion of these benefits, or an increase in them, it will be extremely significant. These are over and above the efficiency savings.

SPECIFIC IMPACT TESTS: FULL CHECKLIST			
	Specific Impact Test	Specific considerations	Impact Assessment Outcome
Economic	Competition Assessment	• Will the proposal have a significant impact on competition?	In response to the OFT standard questions (1) There is no evidence that INSPIRE will directly limit the number or range of suppliers; (2) There is some uncertainty but no evidence that INSPIRE will indirectly limit the number or range of suppliers; (3) There is a risk that because of the dominance of the public sector in data supply that this could set the pricing structure and blunt the incentive of the private sector to compete actively on price. (4) INSPIRE does not reduce suppliers incentive to compete vigorously. For further information see Appendix 1
	Small Firms Impact Test	• Will the proposal impact on small businesses?	There is no evidence that it will. This was in line with the intuitive conclusion we had reached. Defra wrote to BERR to gather together small firms to talk to about this Directive from the perspectives of both potential users of data and suppliers of services. There was no take up from the enquiry by the SBS and in the absence of contradictory evidence had to conclude that this is not a significant issue for small firms.
	Legal Aid Impact Test	• Will the proposal introduce new criminal sanctions or civil penalties? [External website]	There will be reporting obligations on public authorities but these do not result in criminal sanctions or civil penalties.

SPECIFIC IMPACT TESTS: FULL CHECKLIST			
	Specific Impact Test	Specific considerations	Impact Assessment Outcome
	Other Economic issues	• Will the proposal bring receipts or savings to Government?	Public sector data and services will continue to be charged for as now in line with Government policy. There is an expectation that greater consistency and accessibility will increase demand and across the piece leading to a rise in the level of receipts. We have no way of estimating the scale of the increase at this stage.
		• Will it impact on costs, quality or availability of goods and services?	Other than the implementation programme, costs will remain broadly unchanged because of the 'business as usual approach' (see IA). INSPIRE will lead to improved data quality. Although INSPIRE does not require new data to be produced greater sharing and interoperability will increase overall availability.
		• Will it impact on the public sector, the third sector, consumers?	Yes
		• Will the proposal result in new technologies?	Not directly but the spatial market is an early adopter of new technologies
		• Will the proposal result in a change in the investment behaviour both into the UK and UK firms overseas and into particular industries?	Inspire won't necessarily directly impact on investment in the UK but if the insurance market is significantly improved by more and better quality information, levels of investment could increase because risks have essentially declined. Certainly, more information (without additional private sector reporting burdens) will do no harm to levels of investment.
Environmental	Carbon and Greenhouse Gas Assessment	• Will the proposal lead to change in the emission of Greenhouse Gases?	INSPIRE will not have a significant effect on carbon emissions.

SPECIFIC IMPACT TESTS: FULL CHECKLIST			
	Specific Impact Test	Specific considerations	Impact Assessment Outcome
	Other Environmental issues:	• Will the proposal be vulnerable to the predicted effects of climate change? • Will it lead to a change in the financial costs or environmental and health impacts of waste management? • Will it impact significantly on air quality? • Will it involve any material change to the appearance of the landscape or townscape? • Will it change the degree of water pollution; levels of abstraction of water; exposure to flood risk? • Will it disturb or enhance habitat or wildlife? • Will it affect the number of people exposed to noise or the levels of exposure?	No The answer to all of the remaining questions in this section is 'No not directly'. However, INSPIRE will benefit the policy making and evaluation process. And so any of these areas may benefit from the availability of consistent interoperable data. But without a plan for specific actions the actual effect of INSPIRE cannot be quantified
Social	Health Impact Assessment	• Will the proposal have an impact on health, well-being or health inequalities?	'Human health and safety' is a theme within Annex III of INSPIRE and as such an opportunity for action that will benefit the policy making and evaluation process. It is in the same category therefore as the other environmental issues (above)
	Race Equality	• Have you considered how to assess the proposal's impact of on race equality?. This is a statutory obligation	Yes. A separate equality assessment is has been completed and is annexed.
	Gender Equality	• Have you assessed the proposal's impact on men and women? This is a statutory obligation	
	Disability Equality	• Have you assessed the proposal's impact on disability equality? This is a statutory obligation	
	Human Rights	• Will the policy have an impact on human rights?	No
	Rural Proofing	• will the policy have a different impact in rural areas?	No identified impacts on rural areas as such, other than the potential to improve policy design through sharing and combining spatial datasets.
	Other	• Could the proposal have a differential impact on: • Children and young people • Older people? • Could the proposal have a differential impact on: o Income groups o Devolved countries o Particular regions of the UK?	 No No No No (not INSPIRE) No (not INSPIRE)

SPECIFIC IMPACT TESTS: FULL CHECKLIST			
	Specific Impact Test	Specific considerations	Impact Assessment Outcome
Sustainable Development	Sustainable Development Principles	• Have you considered all of the above issues and does the proposal comply with Sustainable Development Principles?	Reference has already been made to the benefits associated with improved EIAs and SEAs. Sharing and combining datasets on environmental spatial information will support improved planning, for example in relation to climate change adaptation, and the protection of local biodiversity and endangered habitats.

Competition Assessment[57]

Preamble

INSPIRE is mainly directed at public authorities (the 'primary market'). However, it should increase the size of the market generally and particularly the secondary market (private sector supplying services to the public sector) and tertiary market (private sector providing new goods and services stimulated by for example gap analysis of goods and services supplied by the public sector) in which the private sector competes. This is because by making data more consistent and compatible it will encourage the development of new markets and give private sector companies the opportunity to spot and exploit gaps in existing provision. Moreover the demands of INSPIRE for more consistent and compatible public sector data create opportunities for private sector companies to offer their services in doing this work.

We have considered the case that INSPIRE may, by making the public sector more effective in providing data and raising the quality standards of services, make it harder for some private firms to compete, but this is a short term effect. More importantly it will drive innovation in those firms who are really determined to enter the market so overall efficiency improves.

In any affected market, would the proposal:

1. Directly limit the number or range of suppliers? (Chapter 4)

This is likely to be the case if the proposal involves:

- **the award of exclusive rights to supply**, *No, although the regulations are aimed at public authorities, 'third parties' i.e. the private sector can if they wish join in (to 'join in' they must make their data/services INSPIRE compliant i.e. comply with the prevailing standards.* or
- **procurement from a single supplier or restricted group of suppliers** *No these regulations are not about procurement and as in the answer above do not restrict the group of suppliers*, or
- **the creation of a form of licensing scheme** *No*, or
- **a fixed limit (quota) on the number of suppliers** *No*.

2. Indirectly limit the number or range of suppliers? (Chapter 5)

This market is in two parts. Answers (below) concentrate on the supply of goods and services to public authorities. But as discussed above the creation of new services and gap analysis by private sector companies is also an issue. INSPIRE will create such opportunities. There is no evidence to suggest that INSPIRE will create barriers for new entrants, unfairly favour some existing suppliers over others or affect those entering of leaving the market.

This is likely to be the case if the proposal significantly raises the costs:

- **of new suppliers relative to existing suppliers** *No. Suppliers of INSPIRE data/service support to public authorities will all have to operate to the same consistent standards. This should benefit the market because it will allow companies to compete more easily on price and quality against a consistent backdrop. However there could be some short term transitional gains for new suppliers if their set-up costs are lower than the re-engineering costs for those suppliers already offering INSPIRE affected data/services.*
- **of some existing suppliers relative to others** *We don't know enough about the market in terms of demand or supply to be able to say whether or not the greater emphasis on consistency and standards will enable some suppliers to exploit this in their favour. There is a theoretic risk that INSPIRE will increase the opportunity for some firms to specialise in segments of this market and to behave in an anti competitive way in securing to increase*

[57] Drawn from OFT Guidelines 2007

their market share. Much more likely is that this specialisation will encourage stronger competition on price and quality and so give customers better value for money, or

• **of entering or exiting an affected market** *No, public (published) consistency standards should make it easier for suppliers to enter this market. There are nothing in INSPIRE to directly or indirectly affect suppliers exiting the market.*

3. Limit the ability of suppliers to compete? (Chapter 6)

This is likely to be the case if the proposal:

• **controls or substantially influences**

- the price(s) a supplier may charge *INSPIRE may have a positive effect in that with consistent standards across Europe the market expands bringing with it greater price competition among private sector companies offering goods and services to the public sector. There is also a risk that because the public sector will supply most of the data its pricing regime may lead to the setting of minimum prices and blunt the incentive for the private sector to actively compete on price.*

- the characteristics of the product(s) supplied, for example by setting minimum quality standards *Private sector companies will be required to meet the INSPIRE standards to join the network but these standards are about the data/service infrastructure and should not be a barrier to product diversity.*

• **limits the scope for innovation to introduce new products or supply existing products in new ways**, *No – see above*

• **limits the sales channels a supplier can use, or the geographic area in which a supplier can operate**, *Private sector companies identifying new opportunities would have the choice of 'joining' the INSPIRE network, or not. Even if they joined it would not prevent them selling through other channels; and even if they did not join it would not prevent them making data/services consistent with INSPIRE standards. For those private sector companies supplying goods/services to the public sector the fact that INSPIRE is pan European should increase the geographic scope within which UK companies can operate.*

• **substantially restricts the ability of suppliers to advertise their products**, *No, indeed 'INSPIRE compliant' may in the longer term prove to be a benefit to private sector advertisers* or

• **limits the suppliers' freedoms to organise their own production processes or their choice of organisational form**. *No*

4. Reduce suppliers' incentives to compete vigorously? (Chapter 7)

This may be the case where a proposal:

• **exempts suppliers from general competition law** *No*,

• **introduces or amends intellectual property regime** *INSPIRE does not change the status quo on intellectual property*,

• **requires or encourages the exchange between suppliers, or publication, of information on prices, costs, sales or outputs** *INSPIRE does not require or encourage exchange or publication of information on prices etc.*, or

• **increases the costs to customers of switching between suppliers.** *No*

Note: Suppliers or firms include any private entity, any local authority acting in a private capacity and any not-for-profit firm which is competing in the market

Legal Aid Impact Test - stage one preliminary

Legal aid is not just about funding cases in court. In civil and family matters in particular, help and assistance is available to advise people of their rights and obligations, and entitlement. For example, to explain how new legislation impacts on them individually or to advise on the entitlement and amount of state benefits payable.

You can contact our legal aid strategy team to determine whether legal aid is an issue. The contacts are:

- Criminal: criminal defence service policy - Brett Regan 020 7210 0678
- Civil and family: civil legal aid policy - Robert Wright 020 7210 8853
- Asylum: asylum and international legal aid policy - Alan Pitts 020 7210 8760

You should have the following information to hand when you make contact:

- A broad outline of the proposal.
- What is it intended to achieve, in what timescale
- What commitments have been given, and to whom
- How the proposal changes what happens now

We will provide you with an assessment of whether there are any implications for legal aid and the work of the courts arising from your proposal. If none are identified this can be stated in the "Enforcement and Sanctions" section of the RIA. However, if an impact is identified you will need to proceed to stage two.

Advice from Defra Legal

There will be reporting obligations on public authorities but these do not result in criminal sanctions or civil penalties.

Rural Proofing

Overview

What is Rural Proofing?

Rural proofing is a commitment by Government to ensure domestic policies take account of rural circumstances and needs. It's a mandatory part of the policy process, which means as policies are developed, policy makers should:

- **consider whether their policy is likely to have a different impact in rural areas, because of particular circumstances or needs**
- **make proper assessment of those impacts, if they're likely to be significant**
- **adjust the policy where appropriate, with solutions to meet rural needs and circumstances**

Rural proofing applies to all policies, programmes and initiatives and it applies to both design and delivery stages. The Government is committed to making rural proofing a reality at national and regional levels.

The policy will have the same impact albeit with different outputs for rural and urban areas. For example, INSPIRE may create better more consistent infrastructure and policy outcomes for protected species or agricultural in rural areas while the same infrastructure might be used for entirely different policy considerations in an urban area.

Equality Impact Assessment Form

Stage 1 – Initial Screening

1. Person(s) & project team/directorate /Unit responsible for completing the assessment:

Ian Greenwood
Transposition Project Manager
CIOD

2. Name of the policy, strategy or project:

Transposition of INSPIRE Directive

3. What is the main purpose or aims of the policy, strategy or project?

The transposition of the INSPIRE Directive [2007/2/EC]. The Directive aims to create a pan European spatial data infrastructure principally for place related environmental information. The Directive's implementing rules define standards for data, metadata and services which will make it easier to find, view, share and combine data held in the public sector.

4. Who will be the beneficiaries of the policy/strategy/project?

Public authorities and the wider public will benefit from access to an increasing wide range of consistent interoperable data and services that can be used for policy development and evaluation as well as emergency response to environmental crises.

5. Has the policy/strategy/project been explained to those it might affect directly or indirectly?

This has been developed with the help of a representative pan Government Project Board and expert Working Group.
The transposition will be enacted by Statutory Instrument. This is the subject of a written consultation document.

6. Have you consulted on this policy?

Yes through the Project Board, working group and informally through meetings with stakeholder groups. The formal written consultation began in March 2009.

7. Please completed the following table and give reasons/comments for where:

(a) The policy/strategy/project could have a positive impact on any of the equality target groups or contributes to promoting equality, equal opportunities and improving relations within equality target groups.

(b) The policy/strategy/project could have a negative impact on any of the equality target groups, i.e. disadvantage them in any way. **If the impact is high, a full EQIA should be completed**.

Equality Target Group	(a) Positive Impact		(b) Negative Impact		Reason/Comment
	High	Low	High	Low	
Men		x			Improved data interoperability will make it easier for this group to find and use data in, for example, planning transport and access to a wider range of places and premises
Women		x			Ditto
Asian or Asian British people		x			Ditto
Black or Black British people		x			Ditto
White people (including Irish people)		x			Ditto
Chinese people		x			There is no evidence on the extent to which this group makes use of location data but pragmatically we expect that as with other groups improved data interoperability will make it easier for this group to find and use data in, for example, planning transport and access to a wider range of places and premises
Mixed Race people		x			Improved data interoperability will make it easier for this group to find and use data in, for example, planning transport and access to a wider range of places and premises
Other racial/ethnic group (please specify)		x			Ditto

disabled and Deaf people		x			Ditto
Gay, Lesbian and Bisexual people		x			Ditto
Transgender people		x			There is no available data to assess the impact on this group but pragmatically there is no reason to believe that this group will not enjoy the same benefits form interoperability as any other group
Older people (50+)		x			Improved data interoperability will make it easier for this group to find and use data in, for example, planning transport and access to a wider range of places and premises
Younger people (17-25) and children		x			Ditto
Working Patterns (P/T or part year)		x			Ditto
Faith groups (please specify)				x	There is no available data collected that highlights the impact on this group

8. Please give a brief description of how this policy benefits the equality target groups identified in the above table, i.e. promotes equality?

INSPIRE will make it easier for people with disabilities, the young and old and those not working full time to gain gather information on travel and tailor it to their particular requirements e.g. ease of access.

9. If there is a negative impact on any equality target group, is the impact intended or legal?

N/A

If the negative impact is not intended, discriminatory and/or high in impact, complete part 1 and move on to the full assessment.

10. What actions could be taken to amend the policy/strategy/project to minimise the low negative impact?

N/A

11. If there is no evidence that the policy/strategy/project promotes equality, equal opportunities or improves relations within equality target groups, what amendments could be made to achieve this?

The opportunity for greater consistency and interoperability of data should have the same or similar benefits for almost all target groups. The faith groups have not been included only because of uncertainty and it is entirely possible that they will enjoy the same benefits.

12. How will the policy, strategy or project be implemented including any necessary training?

The transposed Directive will be implemented through the UK Spatial Data Infrastructure (UKSDI). A programme has been set up within Defra involving cross government collaboration, including the devolved administrations. This is under the auspices of the UK Location Council. A coordination unit is to be created that will, among other things, be charged with issuing guidance and promoting training.

Partial Assessment necessary		**Yes**
	Y	**No**
Full Assessment necessary**:**		**Yes**
	Y	**No**
This is a new Policy	Y	
This is a change to an **existing** policy		
This is an existing policy		
Predictive	Y	
Retrospective		

Date completed: 18 May 2009

Signed by Line/Project Manager: Ian Greenwood

Signed by Diversity, CSR and Wellbeing : Peter Hall

Approved by Senior/Project Management Team:

Please return an electronic copy to Peter Hall in the Diversity, CSR and Wellbeing team once completed. An electronic copy should be kept within your directorate/team for audit purposes.