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D5.1 Report on pan-European survey of assessment processes

Kenward RE$_{2,1}$, Ewald, J$_2$ Sharp, RJA$_1$

1 European Sustainable Use Specialist Group of IUCN-SSC; 2 Anatrack Ltd.

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1. Introduction

1.1. Background of TESS

What is TESS about? For policy-makers in government at any level (and as explained in more detail in Kenward *et al*. 2009 and Sharp *et al*. 2009), TESS is about integrating information on biodiversity and related environmental matters from the local level into planning and land-use decisions. This is best done by mapping, using Geographic Information Systems (GIS). Assessments to develop and implement policy (e.g. through Strategic Environmental Assessment) therefore need to be underpinned by GIS maps that reflect local assessments and decisions, either on development subject to statutory Environmental Impact Assessments, or on other formal land-use planning processes, or on the myriad daily decisions made less formally by those who manage land or species. The TESS aim of integrating environmental information to support government policy at a strategic level is shared with other project work (e.g. EBONE, LIASE, LIFEWATCH, SCALES) and actions at European level (e.g. BISE, INSPIRE, SEIS). However, TESS is unusual in also focussing objectives on decision-making and related governance, including consultation processes, at local level.

TESS is most significant for local stakeholders who manage land and species. TESS recognises that decisions on what and how to cultivate are significantly shaped by government policy, but are also inescapably constrained by factors such as local soil, social considerations (including recreation), species, topology and weather. Diverse use of land and species (hence biodiversity) requires decisions that embrace the variety of these local factors, whereas remote markets, regulations and other incentives tend to homogenise land-use. A focus on local recreations which depend on biodiversity is advantageous, because activities such as angling, hunting, gathering and watching wildlife, involve private spending of some €40 billion annually in Europe, and hence can benefit livelihoods if nature remains diverse and abundant. However, in order for individuals to make small scale assessments and enlightened decisions that benefit diverse livelihoods and biodiversity, they need predictions about complex ecological and socio-economic possibilities. Much of the necessary decision support could be provided automatically if the local information is registered in a GIS.

So if government needs GIS data on land-use and species for policy purposes, and local managers need GIS-based decision support, there is scope for mutual benefit. Local knowledge from individuals could be exchanged for decision support from government. Moreover, a process that provides information benefiting local recreation and livelihoods (in exchange for data required by government at different levels for environmental assessments) is likely to encourage local people to maintain and restore biodiversity ecosystem services. This is the basis for proposing a Transactional Environment Support System (TESS).

To design such a TESS, there are requirements to:
1. Identify the information needs of policy makers and how this information is obtained;
2. Identify information needs for decision making at more local levels;
3. Identify existing models and systems capable of supporting that decision-making;
4. Identify governance that aids biodiversity and thus that such a system should support;
5. Design a technology system for integrating data to support policy and local decisions;
6. Design a socio-economic system that favours use of the system at all levels.

The first two and fourth of these requirements are the reason for the Pan-European survey in TESS Work-Package 5. The demand for information, registered in the first two requirements and also informed by initial findings of the national and local surveys carried out in WP2 and WP3, will then be assessed against the supply of models, for prediction and decision support, that is being recorded in WP4. In WP6, the resulting gap analysis will inform the fifth requirement. Also in WP6, the governance information from the survey (for the fourth requirement) will be related to indicators of biodiversity impact to inform the sixth requirement.

1.2. Introduction to the Pan-European Survey

Task 5.1 in the TESS Description of Work is a "Survey of government practices; Country Coordinators ... will collect data systematically by means of a questionnaire design based on findings of WP2; they will apply a similar process at local level based on findings of WP3." The ultimate objectives of Task 5.1 include "to assess how their use of SEA and SIA has affected ecosystem services and biodiversity", also noting that "the GEM-CON-BIO project will provide further data to complement those gathered here on processes used for SEA, SIA and EIA, for construction in WP6 of matrices relating policies on land uses and economic activity to trends in ecosystem services and biodiversity in cultivated areas as well as in protected areas."

The findings from Work-Packages 2 and 3 have been presented in Deliverables 2.2, 3.2 and 3.3. In these reports it was noted that SIA (Sustainability Impact Assessment) has not been formalised in legislation at national or European levels and is best described as a methodological tool being used in a wide variety of sectors. Thus the formal assessments to be considered are Strategic Environmental Assessment (SEA) and Environmental Impact Assessment (EIA). The European Union Directives on these topics and their application in a particular country, as well as the periodic reviews on their implementation carried out for the European Commission are analysed in the Synthesis Report D3.3. This essential background is not repeated here. It was also noted that formal environmental decision by government at various levels also includes Biodiversity Action Plans (BAPs, NBSAPs) under Article 6 of the Convention on Biological Diversity, planning for payments under the Common Agricultural Policy (CAP), and Land Use Planning (LUP) for all developments whether or not they require formal EIA. Therefore, questions on governance of all these formal decision processes addressed in WP2 became part of the more comprehensive EU-wide survey in Task 5.1.

At local level, WP3 defined six main categories of stakeholder, apart from local government, who make decisions affecting use of land and species. These categories are (i) farmers and horticulturalists (including gardeners) with their short-rotation crops, (ii) foresters and managers of other trees with their longer rotation, (iii) managers of inland fisheries and angling for aquatic species, (iv) those managing hunting areas for terrestrial species, (v) nature and wildlife watching reserve managers and (vi) managers of access land for many other activities, including gathering wild fungi and plant products, keeping and exercising recreational animals, rambling, boating, climbing, camping etc. There were indications in WP3 that these six groups of stakeholders were taking many more informal decisions, within an envelope of regulations and government incentives but not assessed as individual decisions by government, than the formal (and informal) decisions made by local authorities.

Therefore, Task 5.1 at local level looked at numbers of decisions and the information required for making them at both the lowest administrative level of government and by the stakeholder groups. The survey also addressed the attitudes of local authorities towards managers of land and species and the extent of their participation in the formal decision processes. This was done systematically across countries with questionnaires again refined carefully from the WP3 surveys in partner countries.

2. Systematic Pan-European Survey

The following sections of this report describe the methodology applied in the WP5 Pan-European survey. It then compares the relative abundance of informal decisions made by local managers to the formal environmental assessments, and shows the information sources currently used by government authorities and other stakeholders for these decisions. Finally, it describes indicators derived from the governance processes that are being taken forward to be combined, with data from GEMCONBIO and indicators on environmental impact (e.g. the Streamlined European Biodiversity Indicators), for the matrix production and combined analysis that will be a product of Deliverable 6.1.

2.1. Survey Methodology

31 Country Coordinators, from the 27 EU states plus Norway, Switzerland, Turkey and Ukraine, were recruited to act as focal points for the surveys in their countries. They were drawn from TESS partners in Belgium, Estonia, Hungary, Greece, Poland, Portugal, Romania, Turkey and the United Kingdom for the countries concerned, while for the remaining countries members or associates of ESUSG kindly agreed to act as Co-ordinators. They worked under the direction of the central team based in the UK who are the authors of this report. Illness and other personal factors affecting Co-ordinators meant that eventually usable returns were received from 24 EU and 3 non-EU countries. Due to the short time period within which the survey was carried out it was not feasible to find replacement Co-ordinators.

For their willingness to participate and their contributions to this work we thank: Professor Werner and Ms Joanna Pleschberger (Austria), Ms Mirian Lima (Belgium), Ms Sonya Zlatanova (Bulgaria), Mr Eleftherios Hadjisterkotis (Cyprus), Mr Frantisek Urban (Czech Republic), Mr Niels Kanstrup (Denmark), Professor Mari Ivask (Estonia), Professor Mikael Hilden (Finland), Dr Sylvie Vanpeene (France), Dr Melanie Mewes (Germany), Ms Olympia Papadopoulou (Greece), Dr László Szemethy (Hungary), Mr Des Crofton and Mr David Scallan (Ireland), Dr Guiseppe Micali (Italy), Ms Ligita Labane (Latvia), Dr Pranas Mierauskas (Lithuania), Mr Frank Wolff (Luxembourg), Mr Mark Dimech (Malta), Dr Hans de Iongh (Netherlands), Mr Vidar Holthe (Norway), Dr Zenon Tederko (Poland), Dr Pedro Beja (Portugal), Dr Ion Navodaru (Romania), Mr Peter Straka (Slovakia), Mr Borut Jerše (Slovenia), Dr Miguel Delibes (Spain), Mr Anders Grahn (Sweden), Dr Beatrice Senn-Irlet (Switzerland), Ms Basak Avcioglu, Mr Ercan Sutlu and Mr Engin Gem (Turkey), Ms Bridget Kenward (UK) and Dr Tetiana Gardashuk (Ukraine). We are also very grateful to the many officials in national and local governments, and individual farmers, foresters, and managers of fisheries, hunting areas and nature reserves who gave their time so that questionnaires could be completed. We

thank also Ms Penny Holgate and Mr Chris Wheatley who helped to define sample areas, extract data and prepare diagrams for this report.

2.1.1 Survey levels and types of question

The survey was based on 3 questionnaires, (i) for National Level governments (Appendix 1); (ii) for government at the lowest administrative level (LAU2, Appendix 2); and (iii) for the individual managers of land and species (Appendix 3). In each case, Country Coordinators were required to approach appropriate officers or other individuals and ask them to provide the information for the questionnaires.

At national level, questions were on decision-making for Strategic Environment Assessment (SEA) and Environmental Impact Assessment (EIA) which are conducted to conform with the relevant EU Directives or parallel legislation, Biodiversity Action Plans and Strategies (BAP's, NBSAP's) which are carried out to fulfil obligations agreed by Parties to the Convention on Biological Diversity, allocation of resources from the budget of the EC Common Agricultural Policy (CAP) and other decisions made for Land Use Planning (LUP) that operates within a legislative framework set by government at national level. The questions concerned the department responsible for the decisions of each type, the tier of government at which assessments were made and decisions taken, the guidance provided for administrators and the sources of other information used in decision-making, the data collected in the process of decision-making and the roles of parties involved in this and any monitoring of decision outcomes, and the reporting on numbers and outcomes of decisions.

At local level, questions concerned responsibilities for SEA, EIA, Land Use Planning and any other decisions being made by local authorities; these responsibilities were for protection, management or restoration of biodiversity and ecosystem services on land managed by the authority or others in the administrative areas. Details were required on numbers of decisions and on areas of land affected and on priorities for environment, economics and other social factors when making decisions. Data were also requested on administered population and area, and proportions of land cultivated for farming or forestry. Other questions concerned the extent of consultation about decision-making with higher government, non-government organisations and individual managers of land and species. There were also questions on costs and benefits of wild species as perceived by local people, and on benefits for biodiversity from activities that involved use of land and species, in order to provide indicators of attitudes to natural biodiversity and those using these wild resources. Local authorities were also asked about categories of ecosystem services on which they required information, whether it was available and if so from what sources and in what format.

Individual stakeholders managing land and species were asked about numbers of decisions and areas concerned. Questions to the farmers, foresters, and managers of fisheries, hunting areas and nature reserves also concerned the types of environmental issue that they needed to address most frequently.

Most of the questions used in the survey had been piloted in the original 10 partner countries (also including Slovenia at that time), as reported in D3.3. This permitted a reduction in the number of final questions, by elimination of those that were too hard to answer usefully or that gave answers that were too invariable to be useful in comparative analyses. It also enabled a refining of the questions to minimise scope for

ambiguous answers. However not all difficulties were avoided and with hindsight it would have been desirable to complete each questionnaire in full in one country before they were finalised.

The questionnaires were applied by Country Coordinators in slightly different ways at the different levels, with some variation between countries. Country Coordinators typically used personal knowledge to identify individuals responsible for the different decision areas at national level (SEA, EIA, BAP/NBSAP, CAP, LUP) and then approached these individuals by e-mail, telephone phone or in person for help completing the appropriate sections; a few coordinators were able to complete the forms mostly from personal knowledge. Due to the way in which government departments and agencies operate there were few if any cases where one focal point within government was aware of all the responsible officials of interest to the survey.

The questionnaires for local administrations were translated by Co-ordinators into national languages to ensure full understanding of the questions. Although questions had been reduced at both national and local level, reduction was maximised at local level to aid their completion with minimal explanation (and hence scope for unwitting bias) required from the Country Coordinators. Local questionnaires were provided to administrations for review, accompanied by a standard introductory letter, either by e-mail or post. They were then completed remotely, by telephone or in a very few cases by personal visit.

2.1.2 Sampling Issues

The variation in cultural history and governance processes across Europe provides a rich field for analysis of associations between social institutions and impacts on the environment. However, robust analyses need statistically representative information and finding a basis for this presented a serious intellectual challenge.

In most of the countries surveyed environmental policy is administered at national level. In these cases at national level, only one ministry or agency was needed to answer specific questions. This was not the case where environmental policy is strongly devolved (e.g. Germany, Spain, UK) where representative but not necessarily comprehensive answers were given.

For the local surveys it was decided at the outset that in each country the aim would be to obtain five completed questionnaires, irrespective of the country's population size, from the lowest level of public administration involving elections, while ensuring that these administrations came from different regions. This would produce c.150 responses to each question, widely spread across Europe and the individual countries. Although TESS, as a decision support system, is relevant to all areas it was considered desirable to target rural areas in order to address the various land management activities mentioned above. Finally these areas would need to have a minimum population size in order for there to be a reasonable prospect of representative activities and attitudes. For example an area consisting wholly of mountain peaks could have almost no resident population and host only a ski facility: this would not be fruitful for the TESS survey.

Although it would have been easier for Country Co-ordinators to make their own selection of administrations on a representative basis, it was decided that to avoid bias and secure statistical rigour lists of the lowest level administrations in each country

should be sampled with a stratified, randomised approach. The starting point for this exercise was the classification of regional and local authorities in Europe maintained by Eurostat, the Commission's statistical service. In this classification the most recent terminology for the lowest level is LAU2, with LAU1 being the tier above. The most common terminology for these lowest level units is "municipality", though historically they have been known as communes, gemeinde or parishes and have their origins in the medieval period. Lists of LAU2s were obtained from the Eurostat web site (NUTS 2009) arranged in geographically separated regions for each country and 5 regional lists were selected to give stratification based on landscape and/or culture in nationally recognised regions. For each selected region, a list of 5 LAU2s was produced by random sampling, using the first five that had a population of at least 200 (to achieve a representative administration) and a population density of <150 inhabitants per square kilometre (defined as rural in ESPON 2009, which makes clear that there is no standard definition of rurality for EU policy or statistical purposes). Because Eurostats felt unable to release density information, due to the basis on which it been obtained, it had to be gathered, at considerable cost in project time, by searching Wikipedia and national web-sites for the population and area information (Table 1). Another problem was that not all LAU2 units corresponded with administrative units with some form of governance. Some were merely electoral wards within larger authorities.

Table 1. Difficulties overcome in the LAU2 sampling:

> ➢ Lists for all countries not available from Eurostat
>> ➢ http://ec.europa.eu/eurostat/ramon/nuts/lau_en.html
>> ➢ Missing: Turkey, Switzerland
>> ➢ Solution: Wikipedia most up-to-date list
>
> ➢ Area and/or population of LAU2 not available from Eurostat
>> ➢ Solution: Wikipedia (some other online sources)
>
> ➢ Area and/or population of LAU2 not available from Wikipedia
>> ➢ In particular: Malta, Turkey, UK
>> ➢ Solution: Country Coordinator procured data from countries national statistics office
>
> ➢ Restructuring of LAU2 and other administration levels
>> ➢ In particular: Denmark
>> ➢ Solution: New list published on Wikipedia

Country Coordinators were instructed to ask for participation from the first LAU2 on each list. If that administration was unwilling, the next on the list was approached. If there was no willing partner amongst the five random LAU2's, re-sampling was used to get additional random LAU2's. There were substantial differences in refusal rates. These were still being analysed at the time of the report, with some follow up still necessary where survey fatigue continues to be an issue. Another problem arose for a small number of countries (e.g. Czech Republic, Germany) where LAU2s were not involved in EIA, SEA or LUP processes at all. In these cases the Country Coordinators also interviewed the LAU1 administration one level above the randomly selected LAU2 in order to obtain information specific to these topics.

Although it was possible to sample consistently in areas with population densities below 150/km^2, apart from the very high density communities on Malta and Greek islands (Figure 1), there was a huge range of population size among the LAU2 administrations

in different countries, ranging from around 10 to 67,000 (Figure 2). Generally, there seems to have been a tendency to abolish very small authorities or to encourage them to combine with neighbouring authorities for the delivery of services and professional support. As the small administrations are closest to people, there is a very real tension between democracy and efficiency, the consequences of which are far from clear.
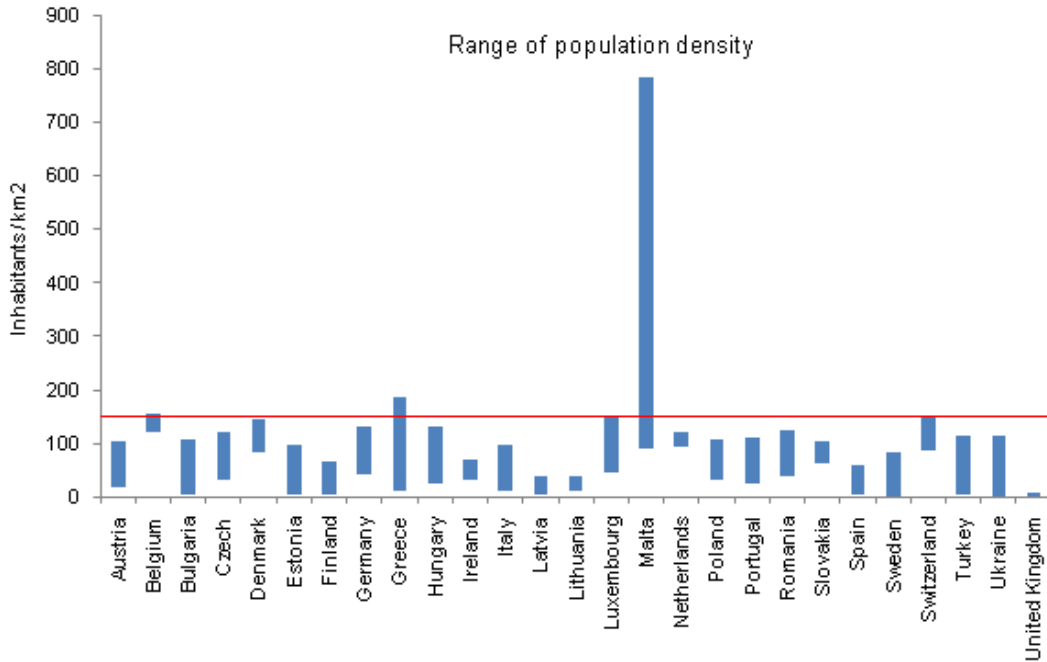

Figure 1. The range of human population densities in surveyed local administrations (LAU2).
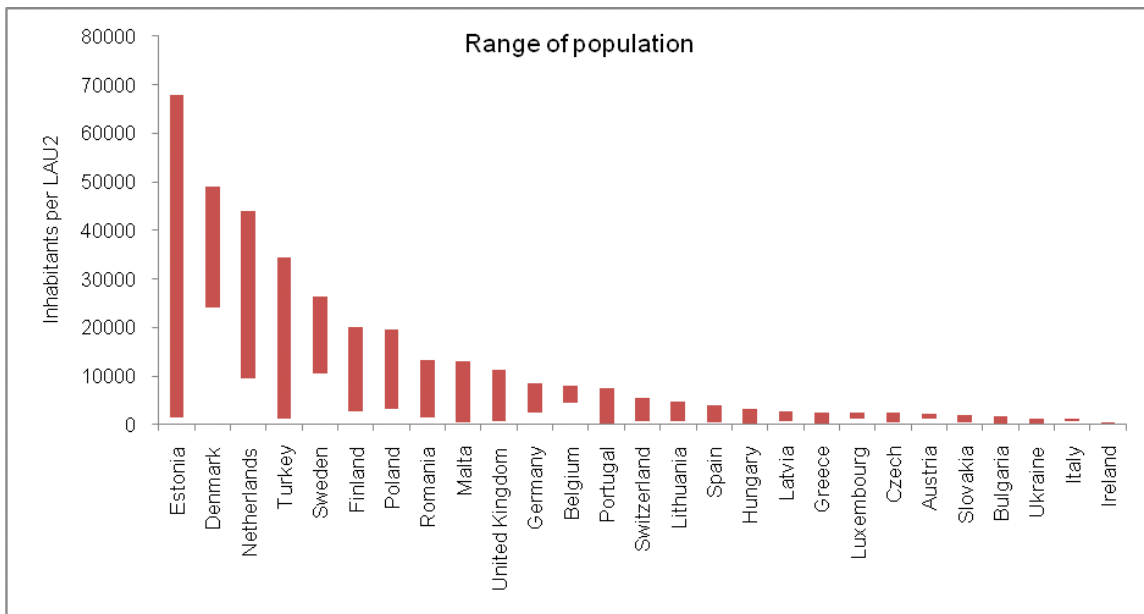
Figure 2. The range of population in local administrations (LAU2s) surveyed.
Sampling of individual managers of land and species depended on recommendation by the administration of one of the LAU2s. This was likely to bias the sample in favour of the more knowledgeable and responsible individual stakeholders, but should not have

greatly affected the number of annual decisions per area of land managed. Analysis of decision intensity was based also on number of managers estimated for each LAU2, using the average area of each management unit and the area of land estimated from the proportion in each LAU, of farmland for farmers, forest for forest managers and both these plus semi-natural habitat for hunters. It was assumed that an average LAU2 would not contain more than one fishing management area or nature reserve. These analyses used only countries with responses from both administrations and individual managers.

2.1.3 Analytic Framework

The derivation of indicators for the analysis matrix in Task 6.1 was based on the analytic framework (Figure 3) developed in the preceding project on Governance and Ecosystem Management for Conservation of Biodiversity (Manos & Papathanasiou 2008).
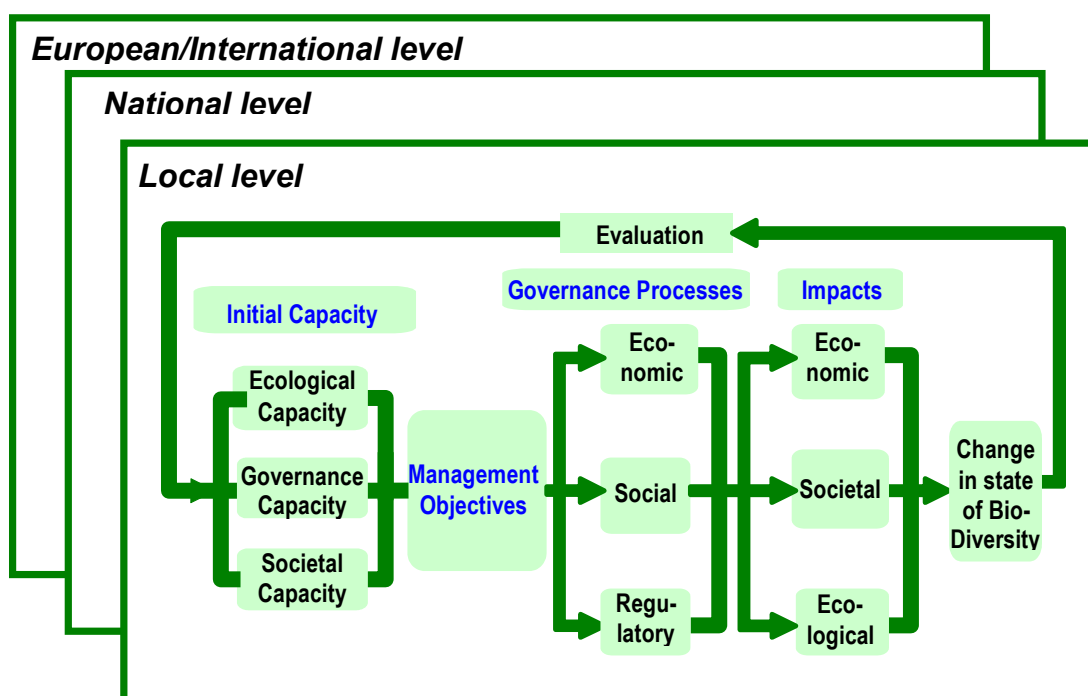
Figure 3. The analysis Framework from GEMCONBIO that is used as a basis for the governance indicators derived by the TESS Pan-European survey.

Broadly speaking, the availability of particular institutions and of information in various categories (indicated by its current use) are measures of Governance Capacity, with numbers of stakeholders in various interests as an index of Social Capacity and the proportions of land of various types as an index of Ecological Capacity. These have Management Objectives about which questions were asked directly and indirectly. Economic, Regulatory and other Social Processes are indicated, respectively and *inter alia*, by the provision of agri-environmental funding under the CAP, by the levels at which decisions are made and by presence or absence of different consultation practises. Societal impacts are indicated in these questionnaires by attitudes of local administrations to wildlife costs and benefits, whereas ecological and economic variables come from other sources. Examples are presented in this report for illustration, prior to separate delivery as a data matrix and its analysis in Work Package 6.

2.1.4 Time-frame

Country Coordinators, most of whom had assisted in the UNWIRE study of the preceding GEMCONBIO project, were recruited during the first half of 2009 and invited to the London TESS workshop in September 2009 to discuss draft questionnaires. Revisions then proceeded until mid-November, followed by translation and survey launch on 4 December 2009. Provisional end-dates were set at 31 January 2010, but holidays, weather and illness delayed the work appreciably. By the time of the Krakow TESS meeting in March 2010, completion at all three levels had been achieved by 14 countries, with an estimated 75% of the information available from another 12; five countries had not started the survey. By the end of May 2010, the survey was complete in 23 countries, four still had some information to provide at national level and 1 at local level, and 3 countries were unable to undertake the work due to illness or other indisposition of Country Coordinators.

2.2. Decision Levels and Numbers

2.2.1 Decisions recorded at National Level

Authorities at National level were asked to specify the level (National, Sub-National, Local or between Local and Sub-National, here called Regional) or at which decisions on SEA, EIA, BAP, CAP or LUP are approved in their country (Figure 4). Clearly, approvals for CBD and CAP processes are given mainly at national level, whereas SEA and EIA approvals occur at all levels (with a tendency for strategic assessments to be approved at slightly higher levels. Other formal Land Use Planning proposals are approved locally.
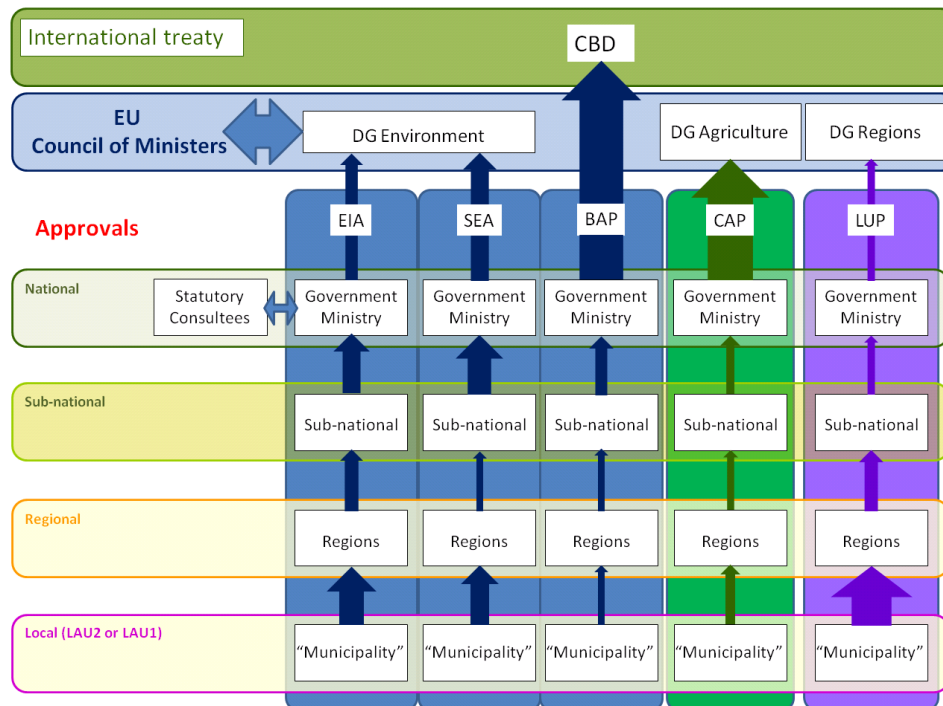
Figure 4. Arrow width reflects the lowest level at which decisions are made across countries. Decisions for CBD and CAP commitments occur mainly at national level, SEA and EIA at all levels and other formal Land Use Planning locally.

The numbers of SEA and EIA decisions registered in the 24 countries that reported (Table 2) were extremely variable and where Country Co-ordinators obtained figures these did not always correspond with those reported to COWI consultants who carried out EU wide enquiries for the Commission as part of its latest periodic review of the implementation of the Directives (COWI 2009a and COWI2009b). EIAs are for projects and might therefore be expected to relate to economic activity and population density. SEAs typically relate to sectoral plans of administrative areas and should therefore correlate with the total area of countries. However, some countries reported numbers of SEAs far greater than both their own EIAs and the SEAs in other countries, and at the same time few EIAs relative to other countries. Perhaps would be EIA in some countries may have been subject to strategic consideration in others. To investigate potential for using formal assessments as a governance process indicator, which would require correction for country size (as this would influence population and hence EIAs as well as SEAs), in the short term we summed EIAs and SEAs. However, further analyses should use the average of both indicators (or EIAs alone where these are the only available data), probably also correcting up to the COWI value if that is larger because that would suggest that case numbers were under-reported in the TESS survey.

Table 2. Number of SEAs and EIAs completed annually within surveyed countries.

Country	SEAs (years covered)	EIAs (years covered)
Austria	77[ab] (2002-2008)	8[ab] (1994-2005)
Bulgaria	33[ab] (2007-2008)	157[ab] (2007-2008)
Czech Republic	50[a] (2009)	2394[a] (2009)
Denmark	No data	128[ae]
Estonia	30[c] (2009)	100[c] (2009)
Finland	1500[cd] (2006-2008)	45[ab] (2006-2009)
Germany	No data	775[c] (2005)
Greece	No data	1600[c] (1996 - 2009)
Hungary	90[c] (2006)	475[c] (2006)
Ireland	50[c] (2007-2009)	190[a] (2007-2009)
Latvia	60[ab] (2005-2009)	15[a] (2005-2009)
Lithuania	180[a] (2009)	1200[a] (2009)
Luxembourg	4[a] (2009)	30[c] (2009)
Netherlands	70[b] (2000-2009)	150[bc] (2000-2009)
Poland	No data	No data
Portugal	10[c] (2009)	102[a] (2000-2009)
Romania	84[c] (2006-2007)	179[c] (2006)
Slovakia	120[c] (2009)	565[a] (2009)
Spain	No data	215[be] (2002-2006)
Sweden	1600[a] (2006)	1750[bc] (2005-2006)
Switzerland	Not applicable	350[c] (2009)
Turkey	Not applicable	200[a] (2009)
UK	450[bc] (2006)	313[a] (2007)
Ukraine	13[bc] (2007-2008)	600[c] (2009)

a. Precise figure provided; b. Figure based on average of numbers or median of ranges depending on which were provided; c. Estimated figure provided; d. Includes land use plans; e. From COWI report Table 6.2– Annex 1 plus Annex II, if given.

It might be expected that the index of formal assessments would relate to land area in the countries, and in broad terms this was true (Figure 5). However, there was still a great deal of variation, and the strength of the relationship (P = 0.005) was highly dependent on results from the two smallest countries.
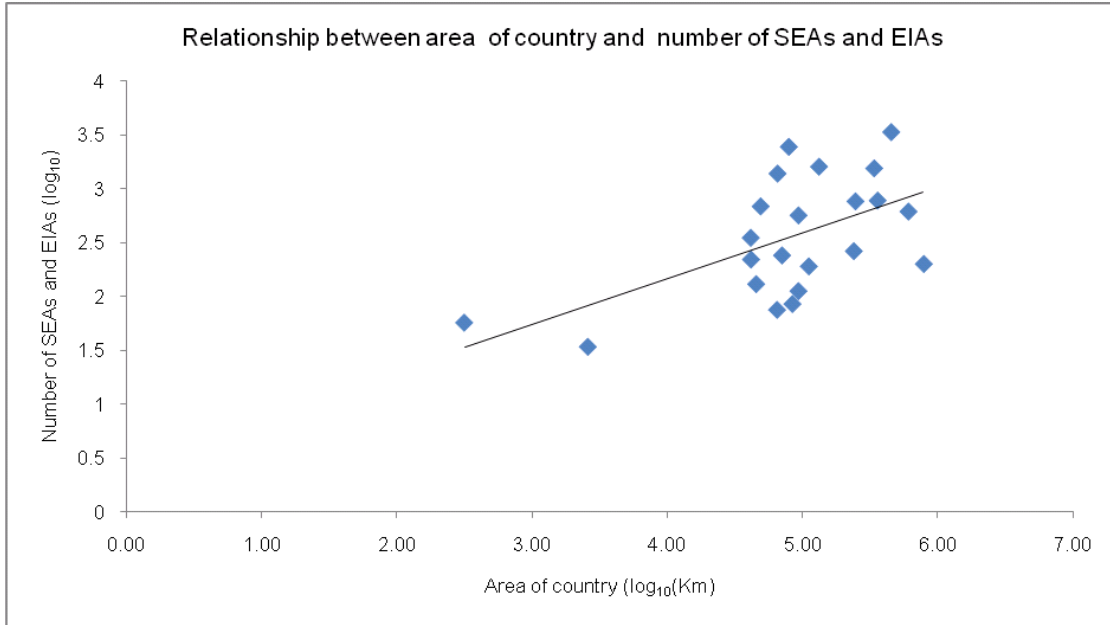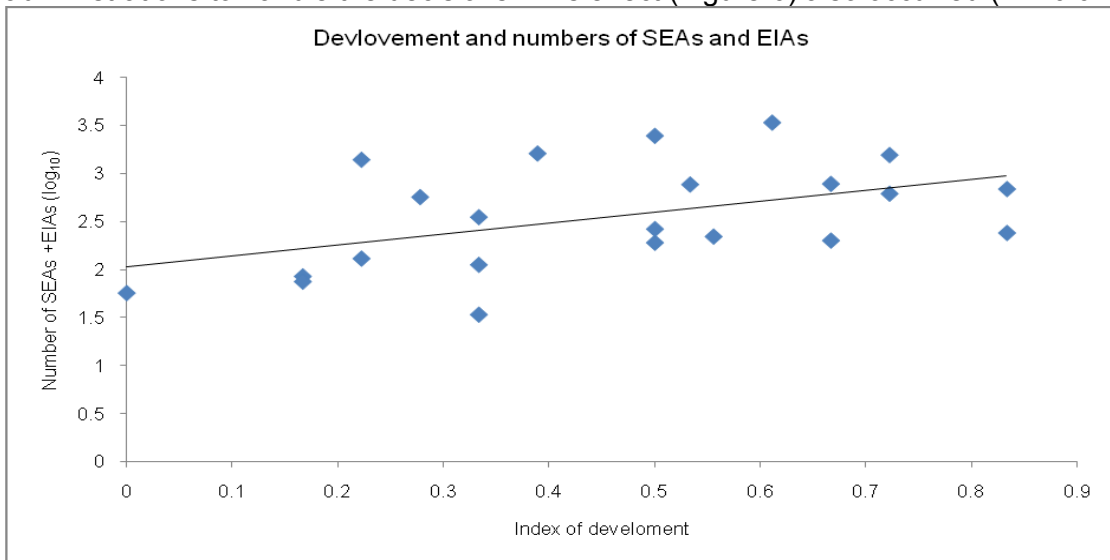

Figure 5. The combined number of Strategic Environmental Assessments and Environment Impact Assessments (from Table 2) increased with size of country.

Another factor that might associate with numbers of the statutory assessments is the level to which their approval was devolved, because at lower level there were more administrations to handle the decisions. This effect (Figure 6) also occurred (P = 0.025).

Figure 6. The combined number of Strategic Environmental Assessments and Environment Impact Assessments (from Table 2) increased with the extent of devolvement (with all decisions at local level =0 and at national level =1).

However, size of country and devolvement were also related, and attempts to separate the effects of size and devolvement on numbers of formal environmental assessments were not productive. Further analysis is required to discover what other governance factors may be associated with variation in numbers of these assessment processes. It is to be noted that the latest Pan-European surveys for the Commission (COWI 2009a and COWI2009b) throw no light on the large variation between EU member states in annual numbers of assessments carried out.

2.2.2 Decisions at local level

Local authorities recorded responsibility for formal (statutory) decisions separately from informal decisions involved in managing land and species in areas owned by the government or elsewhere. There was considerable variation on the responsibility of local authorities for informal decisions likely to affect biodiversity (Figure 7).
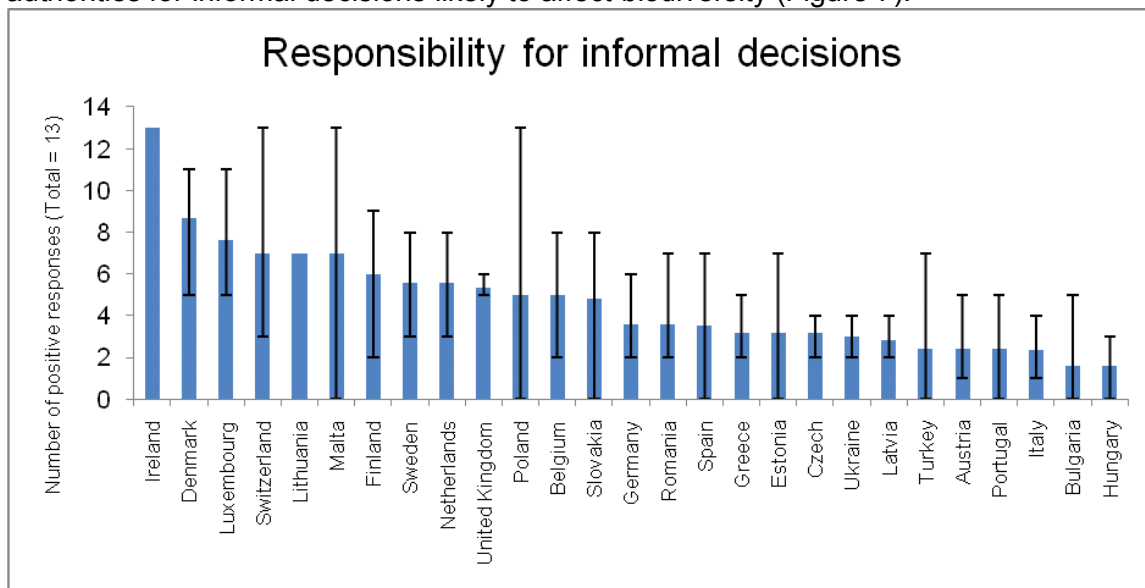
Figure 7. Index of local (LAU2) administration's level of responsibility for informal decision making, with a maximum score of 13 if there was responsibility for all listed matters on private land as well as land owned by the local authority. Error bars show the range of responses between 3-5 different LAU2s in each country.

Overall, hunters and reserve managers tended to make more informal decisions than local authorities. However, when formal environmental assessments were included, both government and private stakeholders averaged some 9-50 decisions/year (Figure 8).
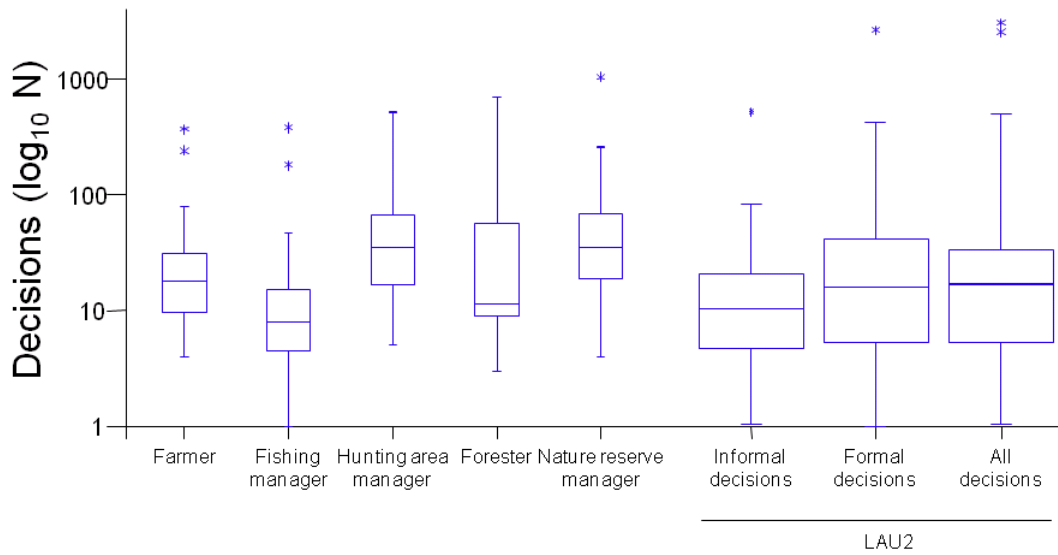
Figure 8. Numbers of management decisions affecting the environment that are made annually by private stakeholders & local councils (or their representatives). Data are shown as means with quartile boxes, decile bars and outlying values.

At local level, decisions were also assessed in terms of the areas estimated to be affected per decision. Informal decisions, probably mostly in council amenity land, affected much smaller areas than statutory assessments, so that average council decisions affected smaller areas than other stakeholders (Figure 9).
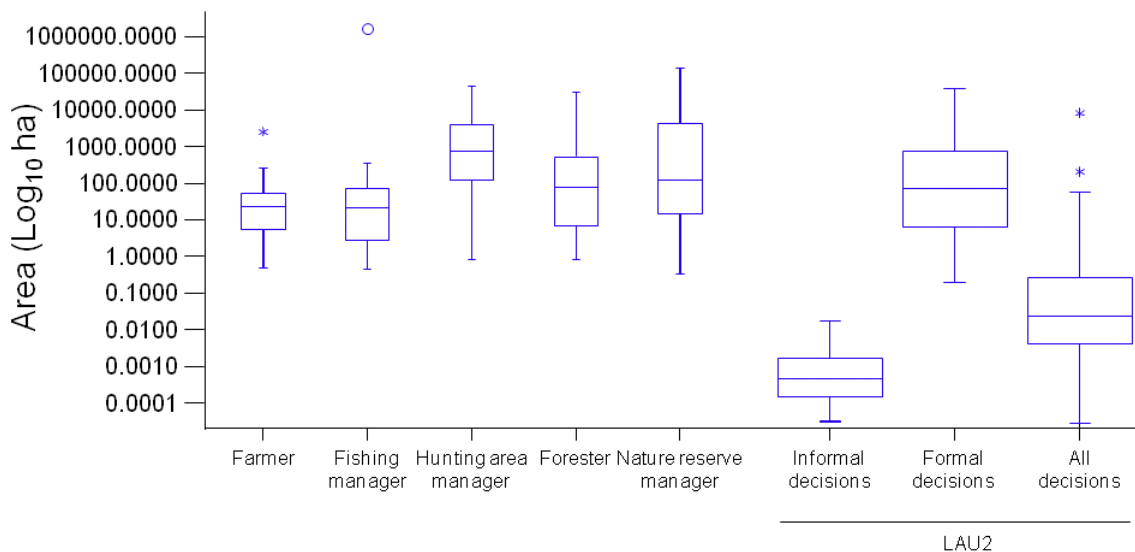
Figure 9. Area affected per decision, combining size categories of decisions made by managers and including all decisions of local authorities, as the sum of areas affected in each category divided by the number of decisions in all categories.

Taking into account the greater average areas affected by decisions of private managers and the greater number of them than of councils, all except managers of fisheries had a decision density 4-5 orders of magnitude greater than for local authorities (Figure 10).

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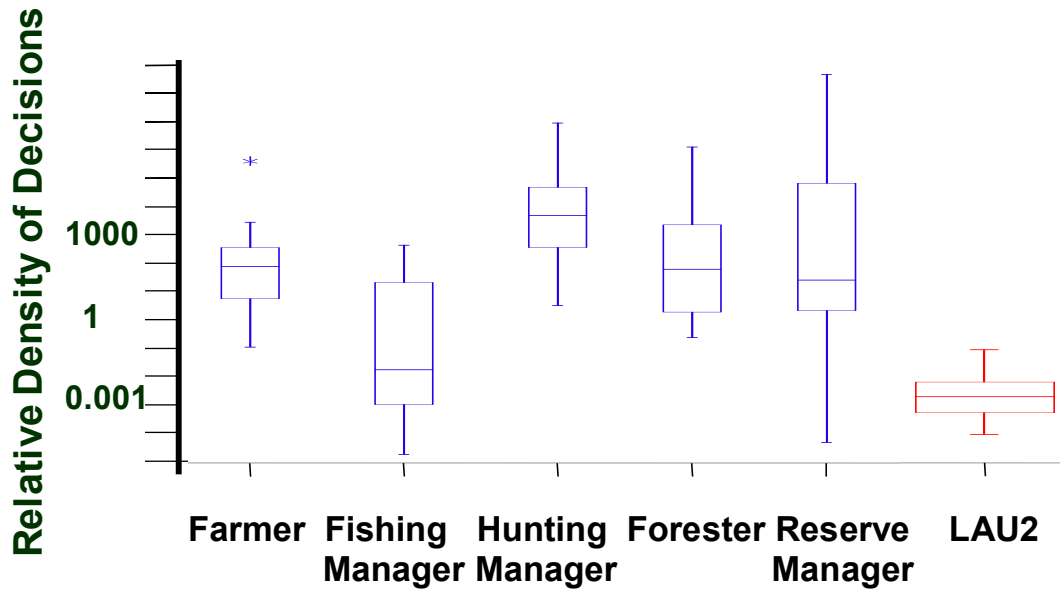
Figure 10. The intensity of decisions, taking account not only of decision numbers per management unit but also area covered by each decision and relative abundance of different management units, indicates greater importance of private than state decisions.

2.3. Information sources and types

Respondents at each level were asked to indicate all the sources used for information on biodiversity and ecosystem services. All respondents estimated that between a quarter and a third of their information came from government sources, including agencies. However, the proportion of information from other sources varied appreciably between levels. Information from published sources, including the internet, and from NGOs or consultancy firms, declined from 50% in total at national level to 38% for the average private manager and 29% for hunters (Figure 11). At the same time, use of local information increased from 16% to 35% for the average private manager and 42% for managers of hunting areas, who used most local knowledge, plans and records.
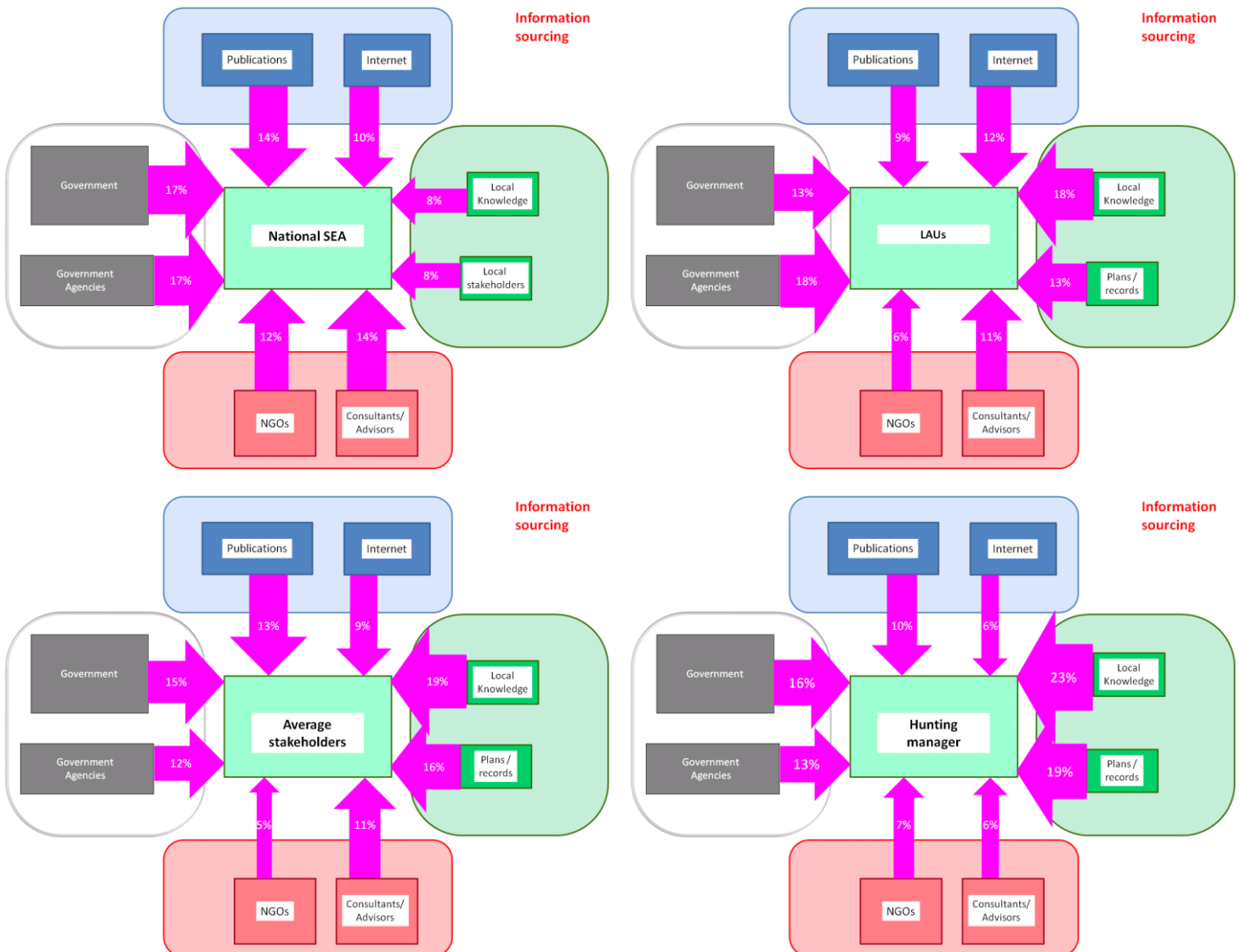
Figure 11. The proportion of information on biodiversity & ecosystem services that was reported from different sources by (in central boxes) (i) national government, (ii) local authorities, (iii) private managers of land and species in general and (iv) hunters in particular.

If the information from each of the eight sources is partitioned into that required for managing habitats, species, socio-economic considerations and hazards, it becomes clear that, compared with national governments, local authorities and managers are depending especially on their own information regarding habitats. At local level there is also dependence on government agencies and consultancy firms for information on socio-economic factors and environmental hazards (Figure 12), though this effect varies considerably between different private managers of land and species (Figure 13). In the case of managers of fisheries and nature reserves, it was information on species that came especially from consultancies and government or government agencies.
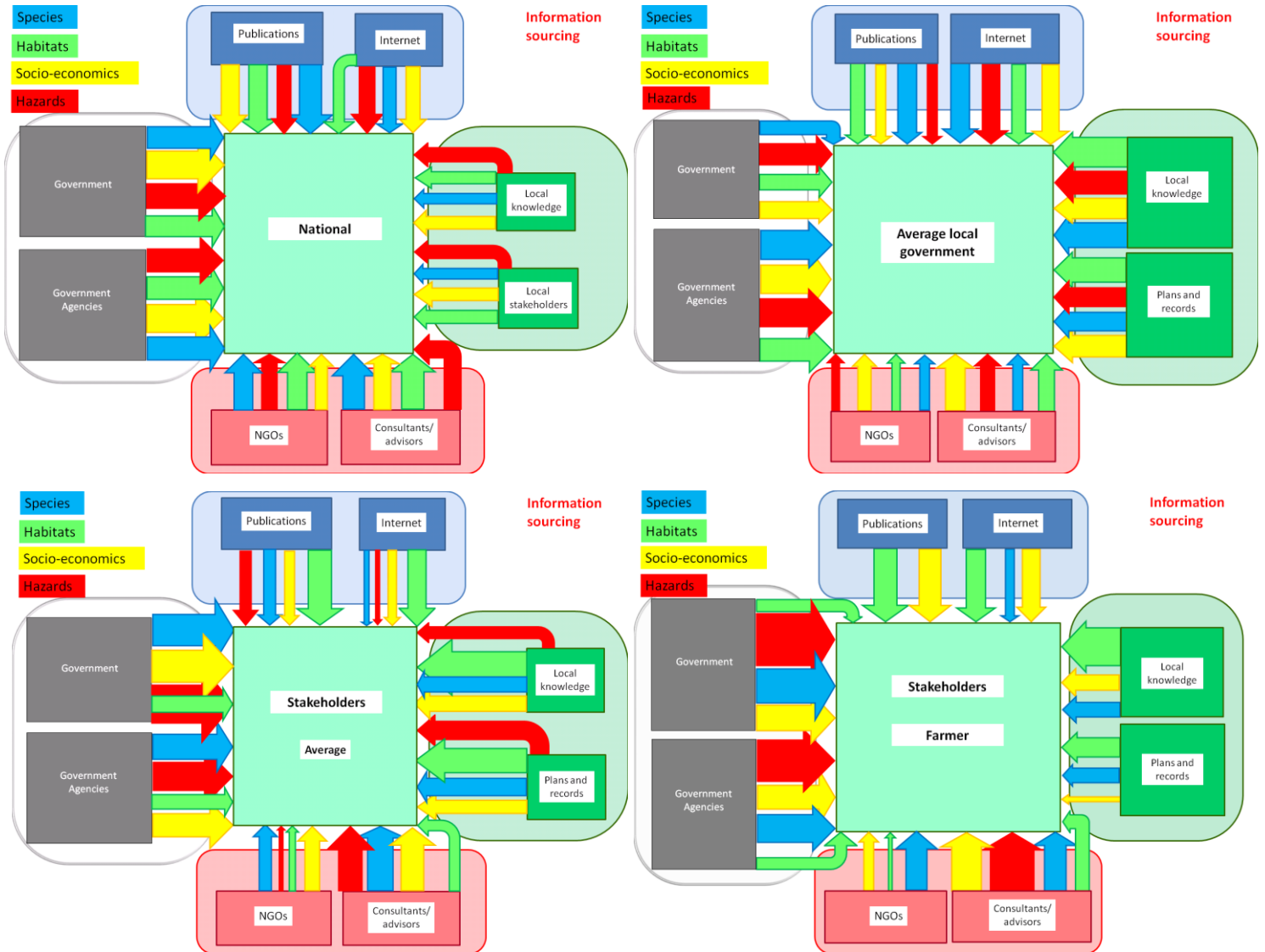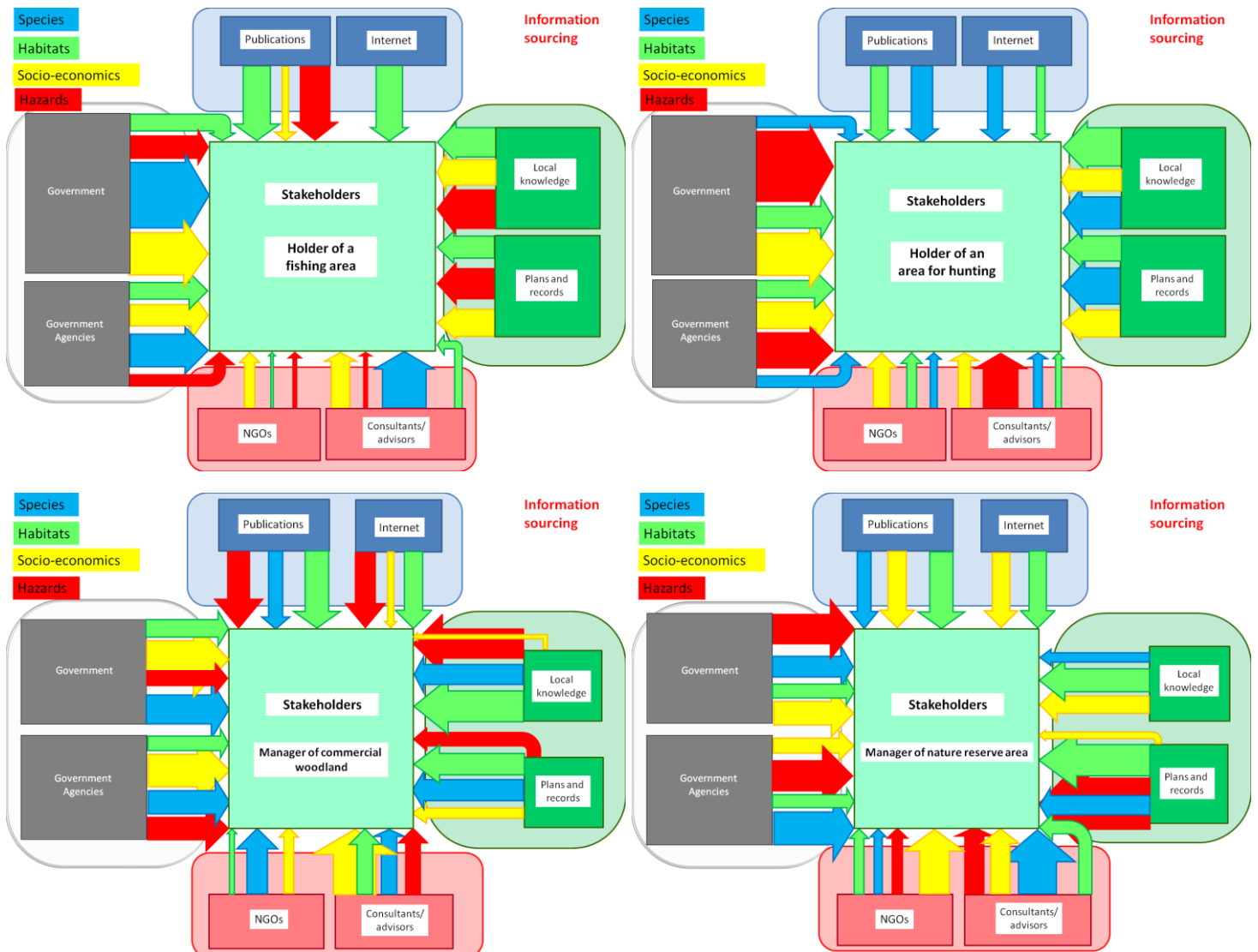

Figure 12. The proportion of information on species, habitats, socio-economic considerations and hazards that were reported from different sources by national government, local authorities, private managers in general and farmers in particular.

Although there are similarities in all groups, LAU administrators tended to report using Government agencies more than government itself, as well as getting more information from the internet and local sources. Farmers reported the highest use of the internet among the non-government stakeholders. These stakeholders used publications more than was the case for LAU administrators, with the exception of hunting managers. The greatest use of NGO information was by managers of nature reserves.

Figure 13. The proportion of information on species, habitats, socio-economic considerations and hazards that were reported from different sources by local managers of fishing, hunting, forestry and nature reserve areas.

Local authorities also recorded the information on biodiversity and ecosystem services that was needed and what was actually available. There was very great variation in both the need and the availability of necessary information (Figure 14a). The Czech Republic, Sweden and Switzerland stood out in requiring a great deal of information and having much of their needs met, with Germany, Luxembourg and the Netherlands well served in relation to more modest demand. Bulgaria, Greece, Ireland, Latvia, Malta and Portugal had large unmet demands for information, while the needs of Austria, Italy, Hungary and the UK were the most modest.
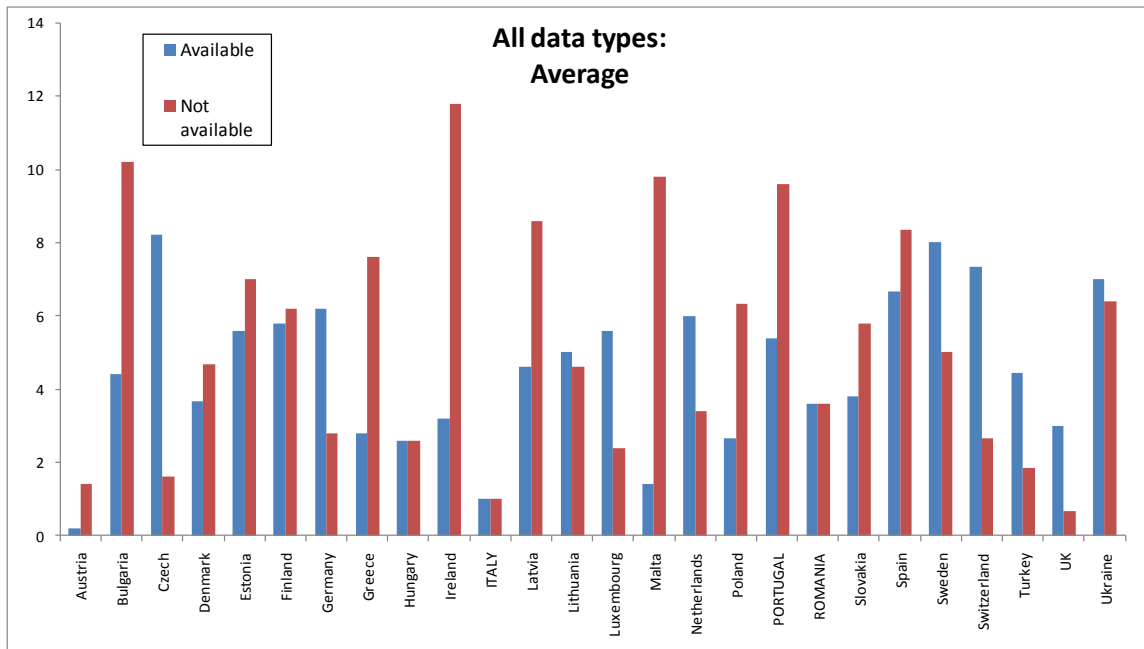
Figure 14a. The relative demand for data needed to make environmental decisions that was available, and unavailable, in local administrations across Europe.

Information requirement on ecosystems for provisioning (crops, medical, biofuels), regulating (flood/fire/disease hazards) and supporting (water/air/ soil quality) services was also highly variable (Figure 14b), whereas information on cultural services (amenity, recreation, tourism) was generally in high demand (except for Italy, which was most interested in natural hazards). Information on biodiversity (protected and harmful species and habitat maps) was also generally in high demand, except for Hungary, Italy and Lithuania.
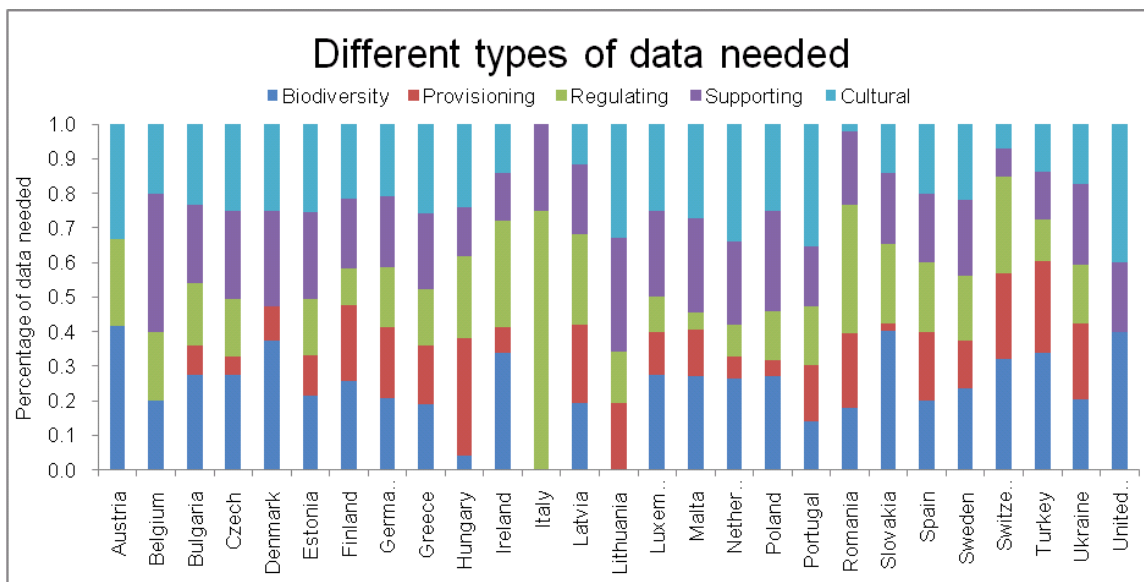
Figure 14b. The proportions of different types of data for making environmental decisions that were needed by local administrations.

2.4. Governance Indicators for further Analysis

Information from the previous sections, on the prevalence of decisions and the information currently used for them, is important for informing TESS design directly. This section considers indicators that will be used to assess factors that may contribute to best practise in conservation of biodiversity and other sources of ecosystem services, by association with least adverse changes in services across countries. These indicators, including those on devolvement of decision-making and Environmental Assessment density (section 2.2.1), local authority responsibilities (2.2.2) and need of information (2.2.3), will therefore inform TESS design after further analysis in Work Package 6. Capabilities and processes indicated by that analysis may inform TESS design, and some of the indicators themselves may be useful for adaptive governance in future.

2.4.1 At National Level, for SEA and EIA

Consultation is an important part of the process for SEAs and EIAs, with a requirement for government departments responsible for policy to nominate statutory consultees, i.e expert national bodies, who must be consulted by those compiling assessments for EIA projects or SEA plans and strategies The number of these consultees was very variable, and it is notable that 5 states were apparently not fulfilling this obligation (Figure 15).
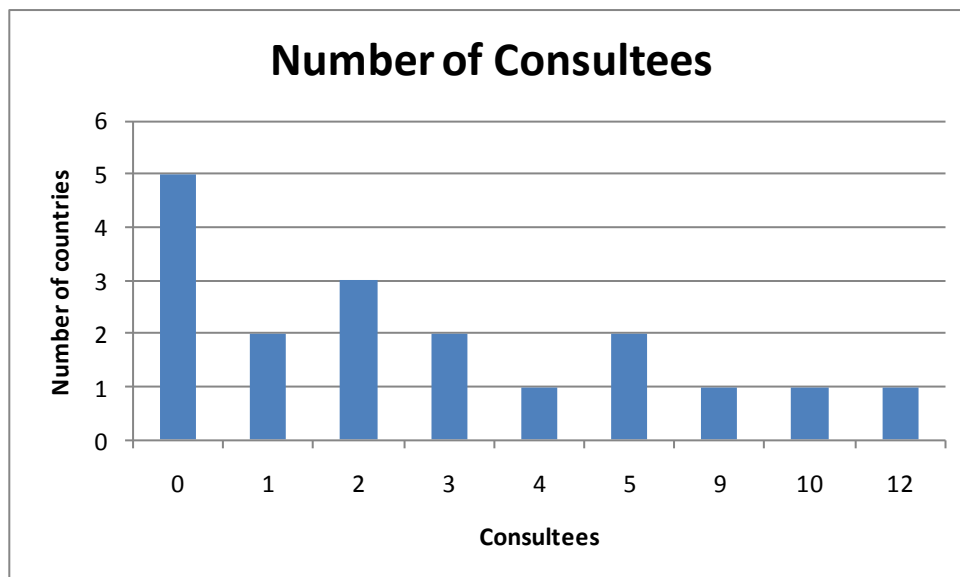

Figure 15. The number of statutory consultees for formal environmental assessment processes.

Only a minority of countries (8) reported referring to European level government for guidance on their SEAs. However, noting that 9 countries reported referring to European level government for guidance on EIAs (1-2 times annually in all cases except one state that reported taking advice from European Commission about 6 times a year), there is scope for combination in an index of international consultation. Of 21 countries, 14 combined standard guidance literature with a requirement for reference from lower levels to national level for these assessments, with either literature or referral alone in 5 more (Figure 16).
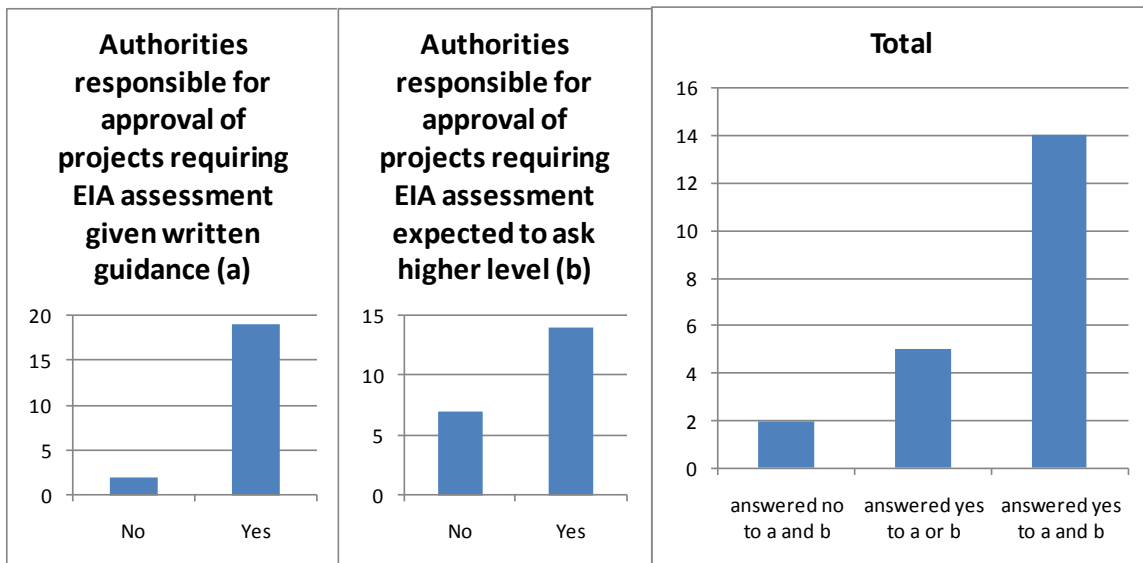
Figure 16. Extent of knowledge leadership provided by higher authorities for Environmental Impact Assessment in survey countries.

Since 2002, SEA has been applied to plans and programmes covering (i) Sustainable development, (ii) Ecological infrastructure, (iii) Waste management, (iv) Transport, (v) Energy, (vi) Climate change, (vii) Agricultural, (viii) Forestry, (ix) other sectors. The majority of countries addressed 7-9 of these nine possible topics for SEA, although assessments in three countries considered only 2-4 of them. The lack of variability makes this a poor process variable for further analysis.

It was also usual for NGOs to be able to comment on EIAs, with 1-2 NGOs being routinely consulted in 7 countries and 4-6 in 14 countries. This distribution was quite strongly bimodal with peaks at only 1-2 and also with a full list of 6 NGOs (Figure 17).
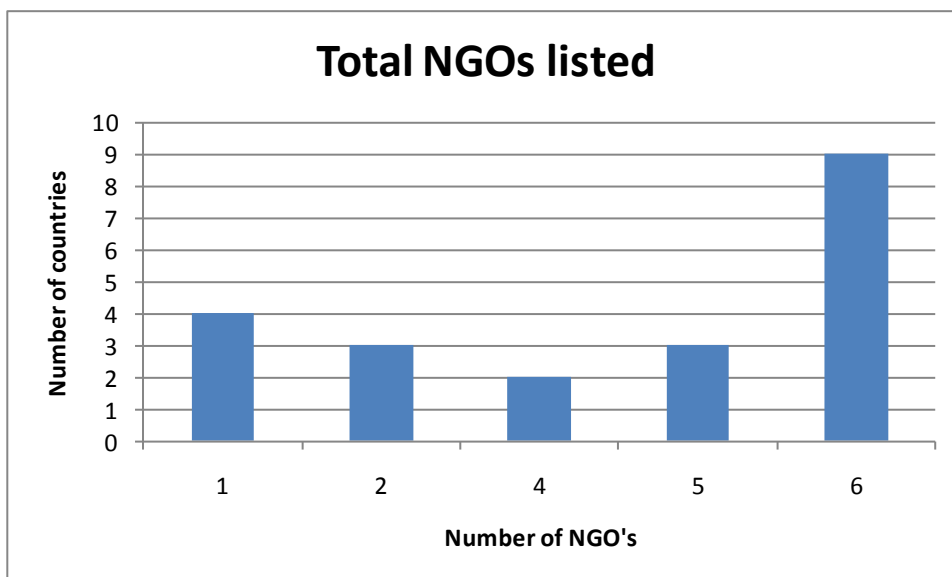

Figure 17. Extent of higher authority consultation on Environmental Impact Assessment with NGOs in survey countries.

All countries reported requirement in EIA processes for developers to present alternative development approaches and to offer mitigation, through creation of conservation benefit elsewhere, such as habitat creation, and in many cases this was mandatory. Similarly, there was a general requirement, often mandatory for monitoring of the results of the decision if development followed. However, there was appreciable variation in whether these conditions were always mandatory (Figure 18).
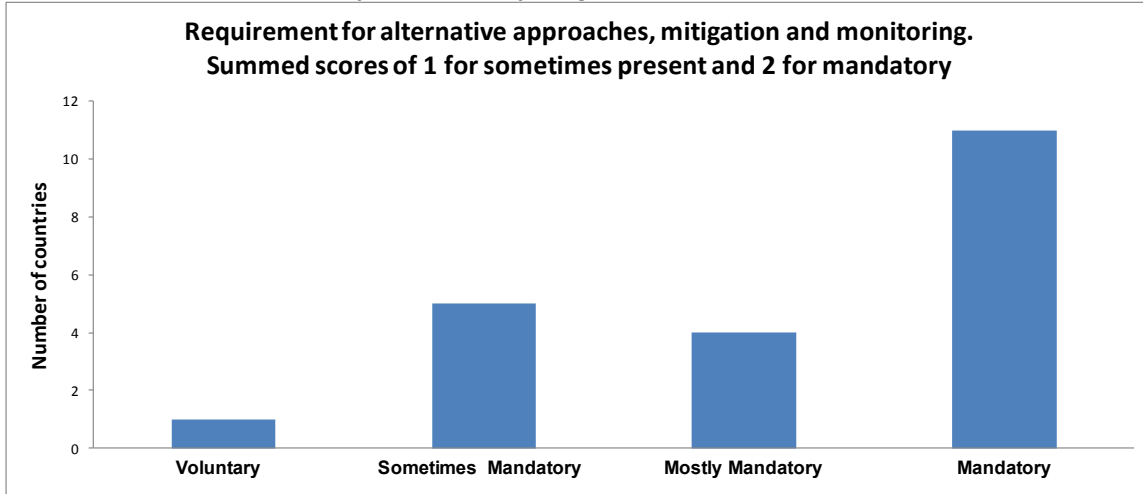

Figure 18. Provision of alternative approaches, mitigation and monitoring was always mandatory for EIAs in 11 countries, sometimes in 9 and never in 1.

In all countries the developer paid for the EIA, and in all cases except one was involved in collecting the information, albeit it 9 cases together with government and NGOs. Responsibility of the developer in any monitoring was more varied (Figure 19).
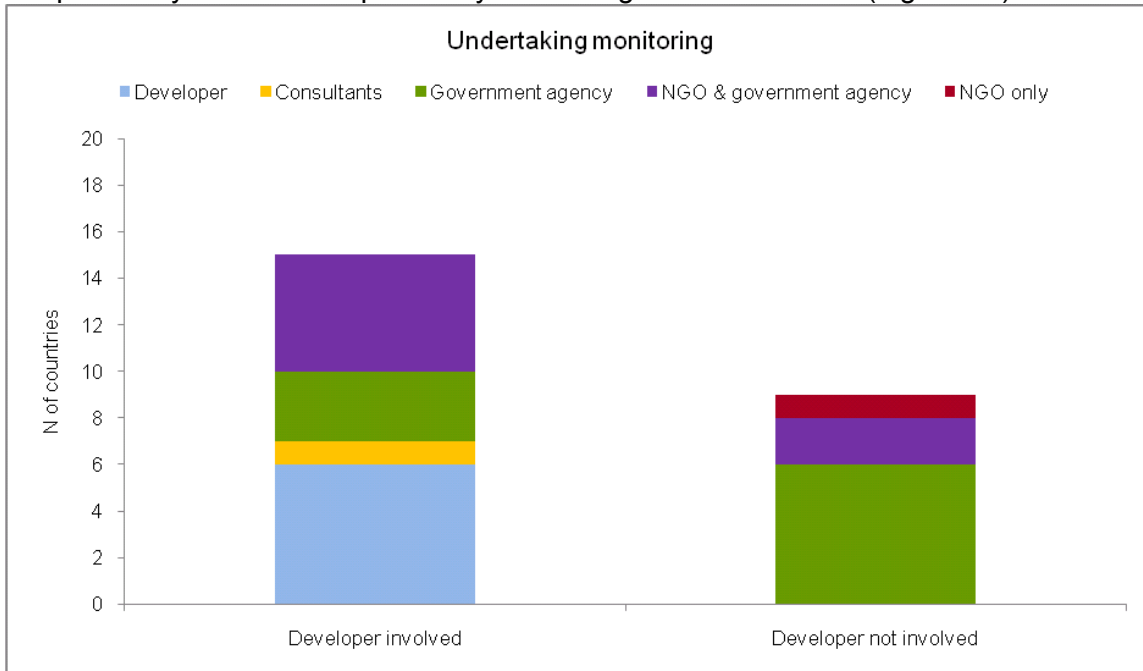

Figure 19. In most countries (63%), the developer is involved in monitoring EIA effects. In most other countries, government agencies are strongly involved.
It is interesting to note that the developer is also not always responsible for paying for the monitoring of EIA outcomes. In most countries (75%), the developer is involved in

paying for subsequent monitoring, although in just under half of these there is some costs borne by NGOs or government agencies. In the 25% of countries where there is developers do not pay for monitoring, the total cost is met by government (Figure 20).
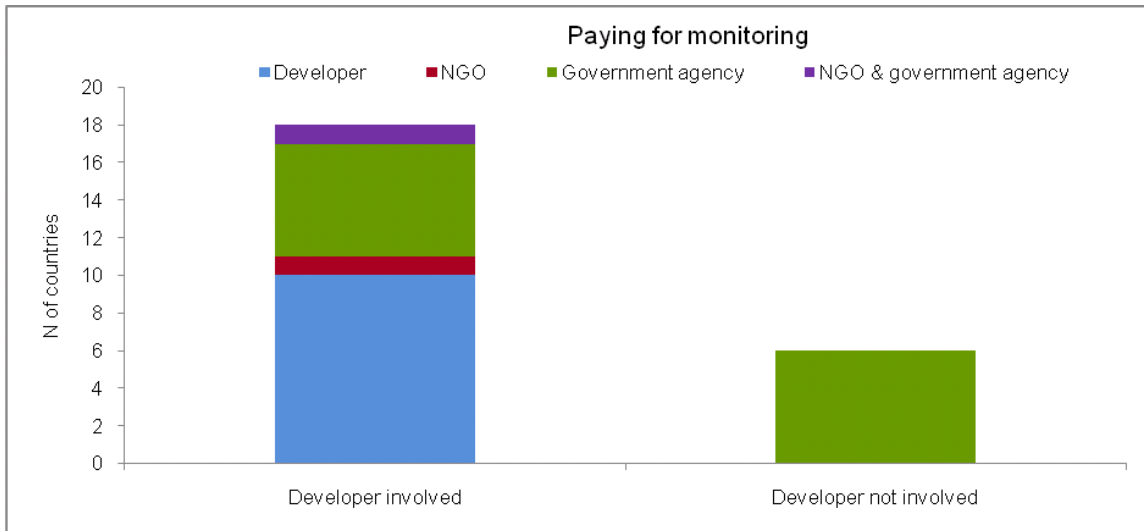

Figure 20. Payment for monitoring EIA outcomes is not always by the developer.

Indices for payment and monitoring showed that developer influence was highest relative to government and NGOs in Netherlands and Portugal (Figure 21). An index of relative responsibility of developer and government for payment (e.g. +1=developer alone, 0=developer+government, -1=government alone) should perhaps be separated from one for monitoring based on the relative responsibility of developer and NGOs (e.g. +2=dev+consult, +1=dev+gov, 0=dev+gov+ngo, -1=gov, -2=gov+ngo).
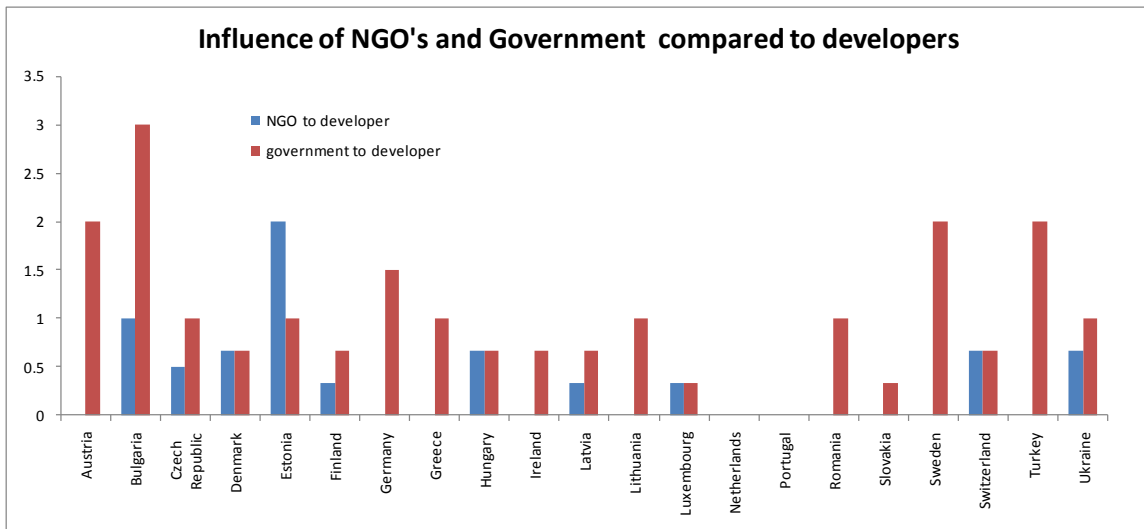

Figure 21. Scores for influence of government and NGOs to developers in EIA.

There is also some variation in the availability of information from EIAs (Figure 22). Of 24 countries, 6 (25%) restrict information availability to government.
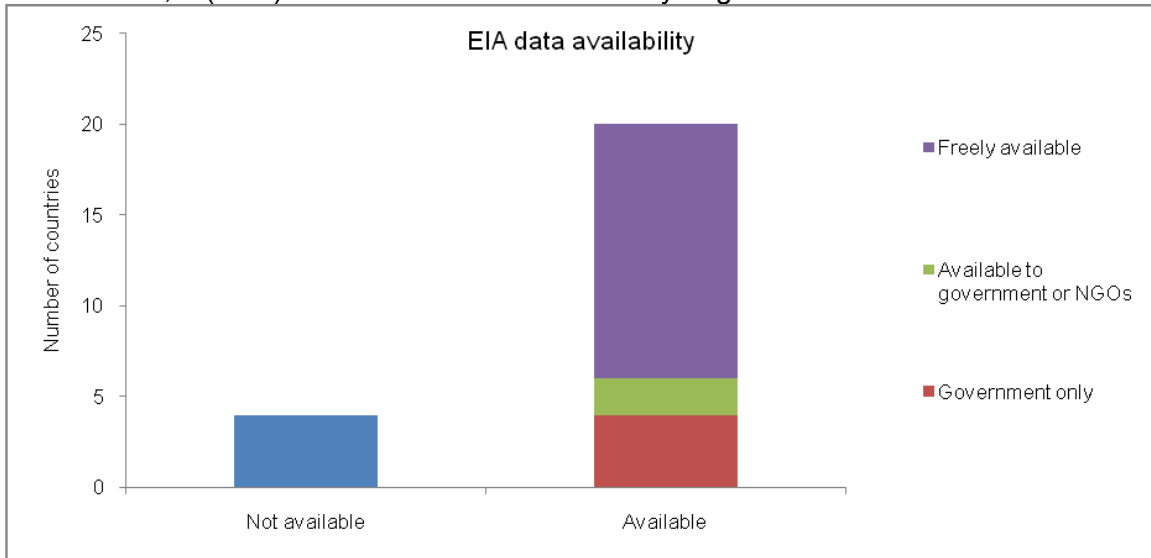

Figure 22. Ten of 24 countries do not release EIA information outside government.

2.4.2 At National Level for BAP/NBSAP

To comply with commitments to the Convention on Biological Diversity, countries are required to produce National Biodiversity Strategy Action Plans (NBSAPs), sometimes just called Biodiversity Action Plans (BAPs). In 10 cases this involved government alone (Figure 23); in 13 cases there were partnerships (with a strong government role in 6).
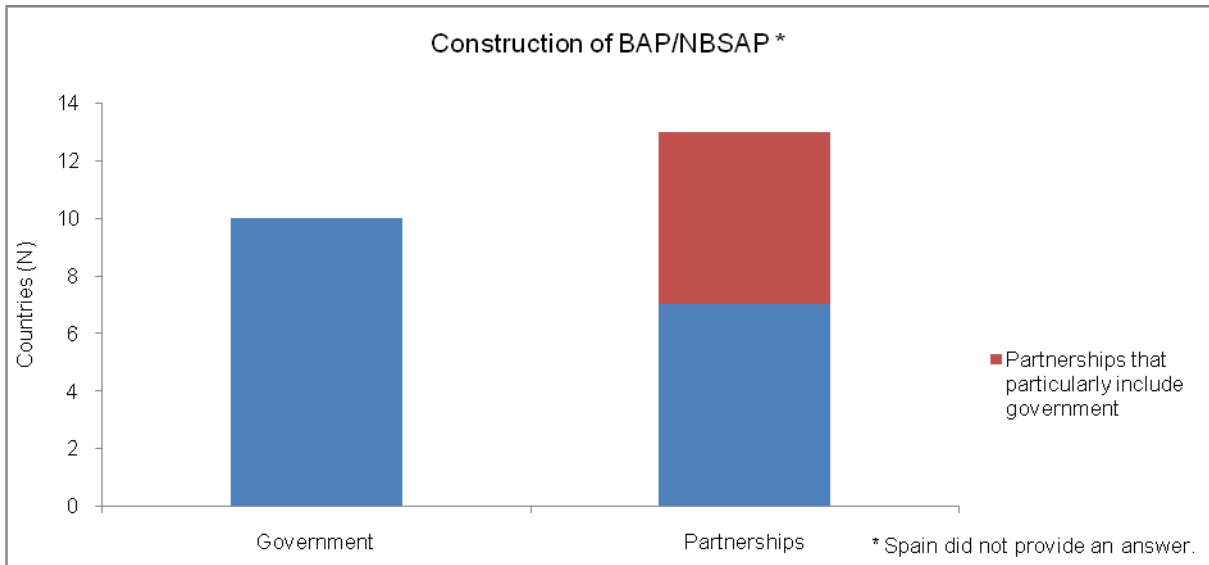

Figure 23. The institutions involved in preparing Biodiversity Action Plans.

Most countries have done plans only at national level. In one case the plans were only for habitats, in two cases only for individual species, and in six cases only for individual species and individual habitats. In 8 countries, all plans were composite for species and their habitats, and in 3 a mix of individual species and habitats or composites, with 4 countries having no plans (Figure 24a). Only 6 of 24 countries were conducting local biodiversity action plans, in 2 cases only for individual species (Figure 24b).
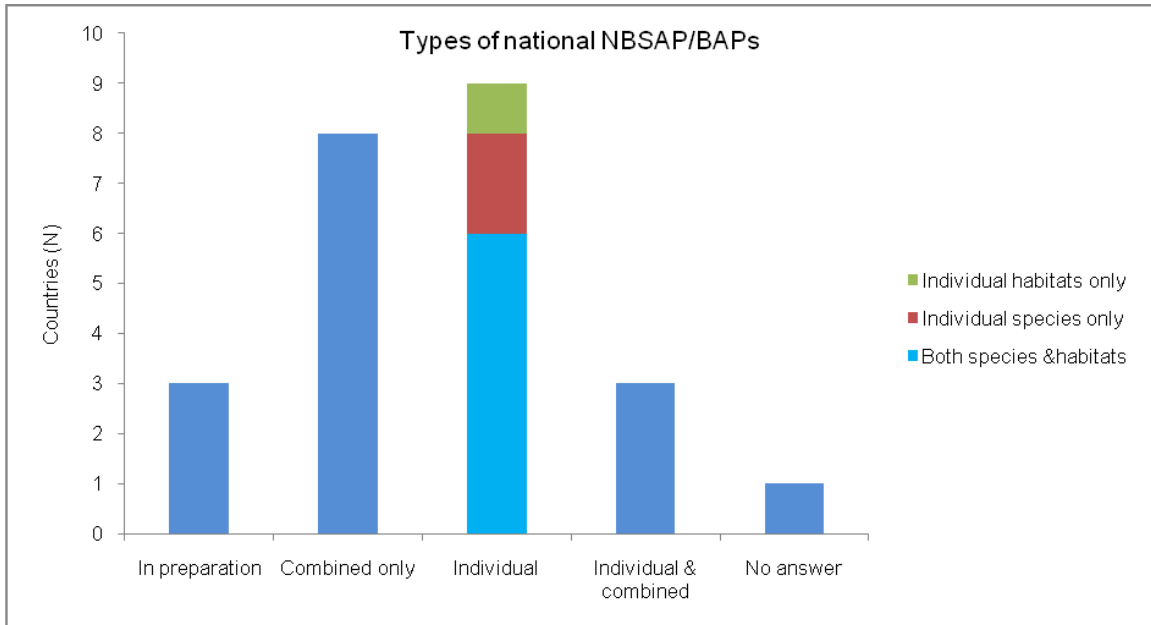

Figure 24a. Types of national NBSAPs/BAPs reported. "Combined only" are countries in which all plans considered both species and habitats simultaneously, whereas individual plans considered species separately from habitats.

Figure 24b. Types of local NBSAPs/BAPs. "Combined only" are countries in which all plans considered both species and habitats simultaneously, whereas individual plans considered species separately from habitats.
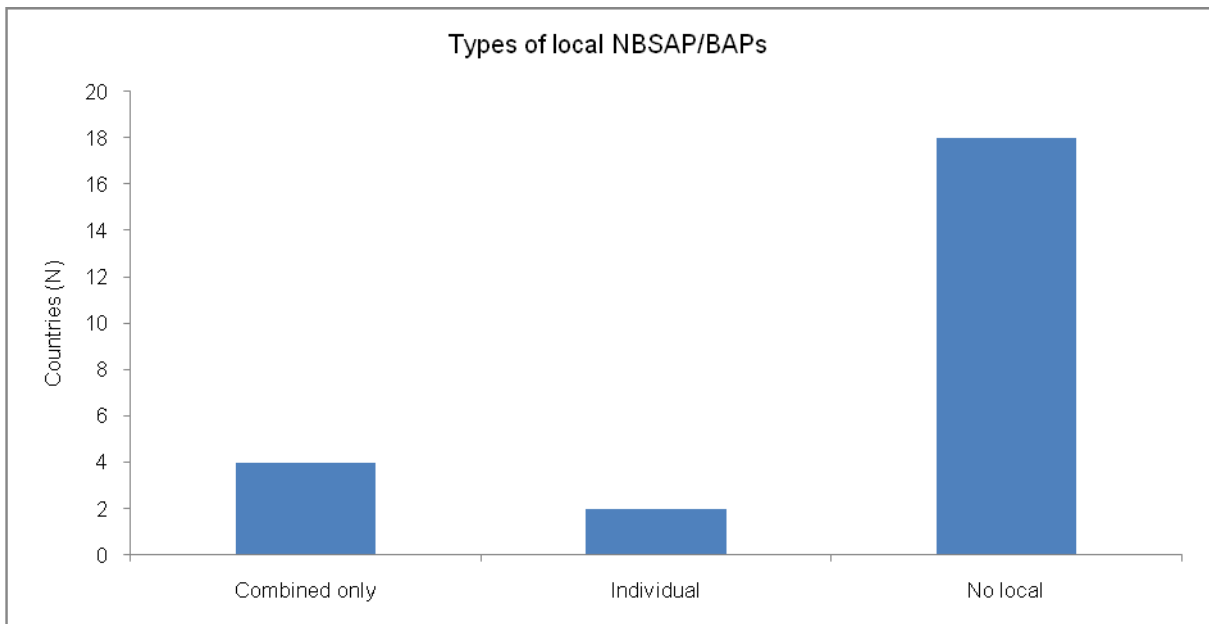
2.4.3 At National Level for Agri-Environment Schemes

Agricultural Environment Scheme (AES) payments have been available in most countries (75%) for all land where appropriate conditions are observed; most other countries only provide payments in Natura 2000 sites (Emerald Network outside the EU), although Bulgaria makes payments for these and other designated land (Figure 25). Most countries require a map from applicants before giving funding and in only 3 cases (Netherlands, Slovakia and the Ukraine) do not accept a digital map (Figure 26).
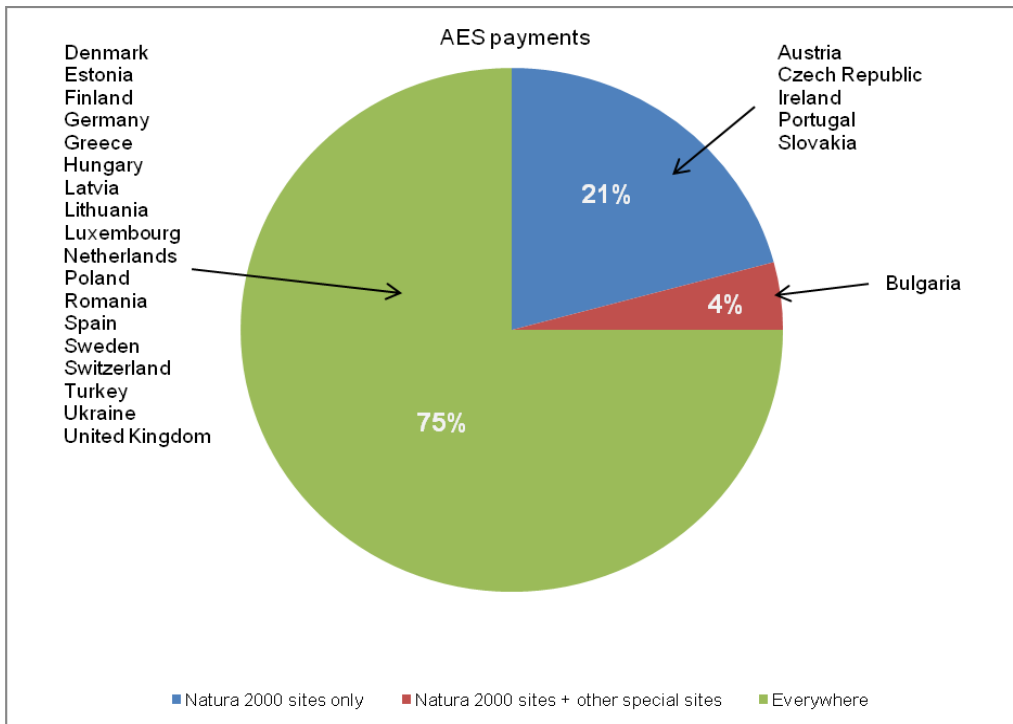

Figure 25. The designation of land for which AES payments are available.
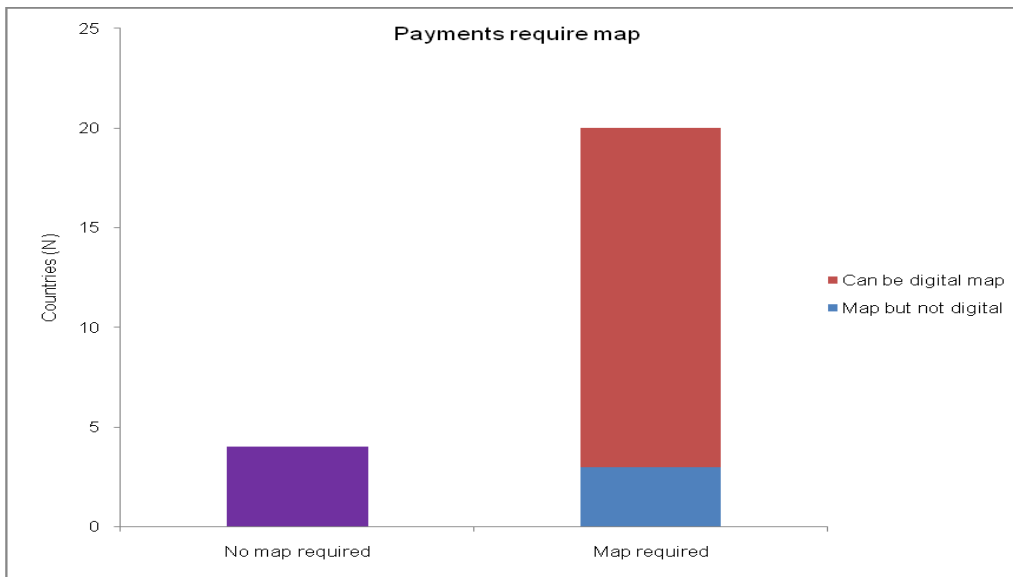

Figure 26. Most countries require maps before making AES payments.

Most countries also require information on species or habitats before making payments (Figure 27). As the countries without map requirements are Austria, Greece, Switzerland and Turkey, it is only Greece requires neither the biodiversity information nor a map.

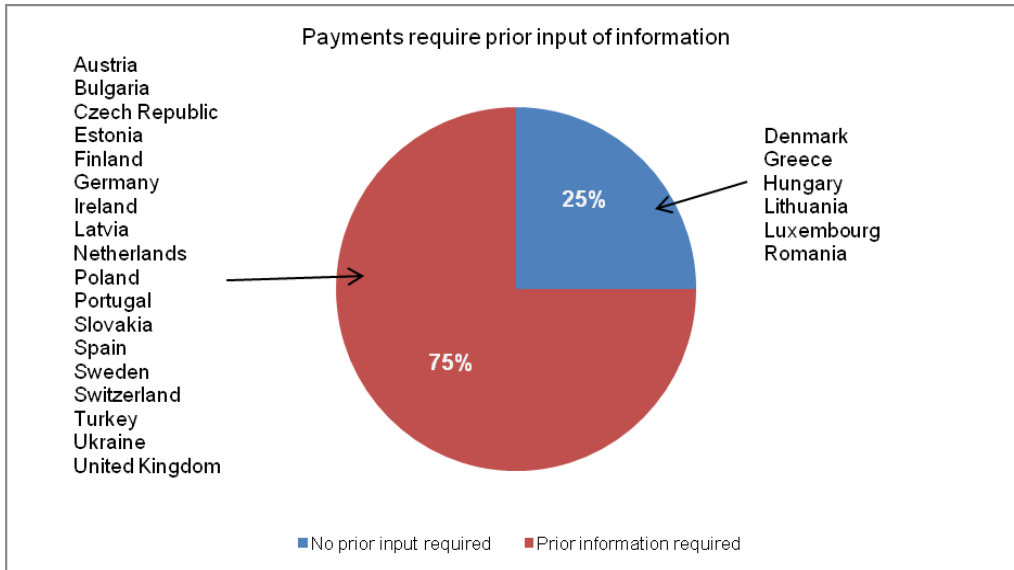**Figure 27. Countries that require species or habitat information for AES payments.**

Of 24 countries, all monitor compliance in AES schemes except for Lithuania and Slovakia. Hungary, Luxembourg, Sweden and Turkey only check compliance, but in 18 countries (75%) there is also monitoring of environmental outcomes (Figure 28).
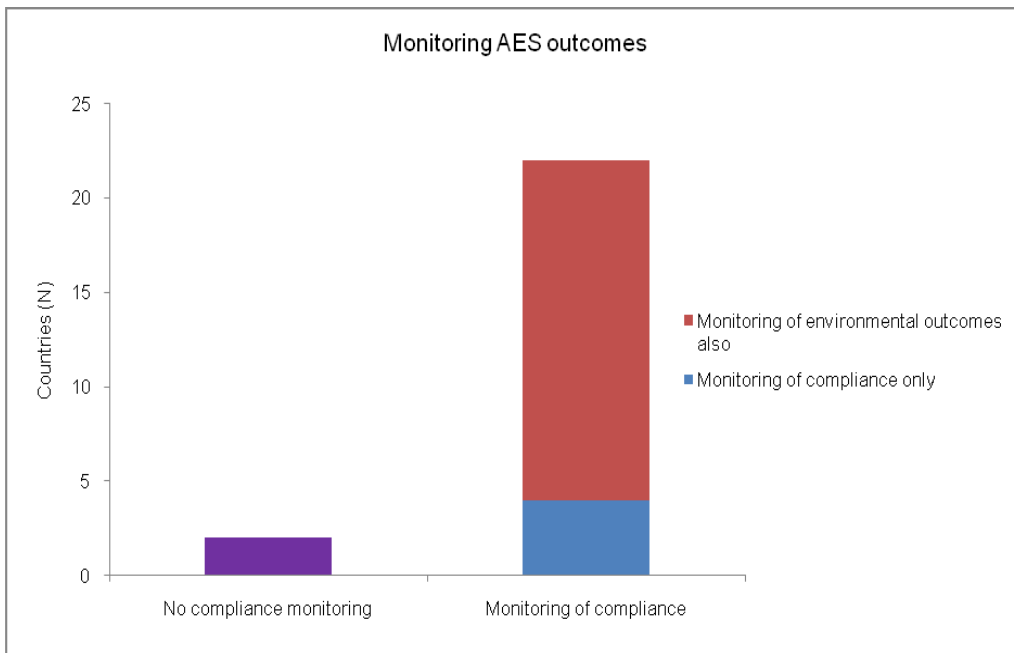

Figure 28. Monitoring of compliance and environmental outcomes in AES schemes.

2.4.5 At National Level, for all Land Use Planning

The ability to make consistent environmental decisions is likely to be influenced by whether government issues guidance (a) to those making decisions for statutory assessments and on land use, and (b) to those who comment on the process. The sum of guidance documents is a simple indicator of such guidance (Figure 29).
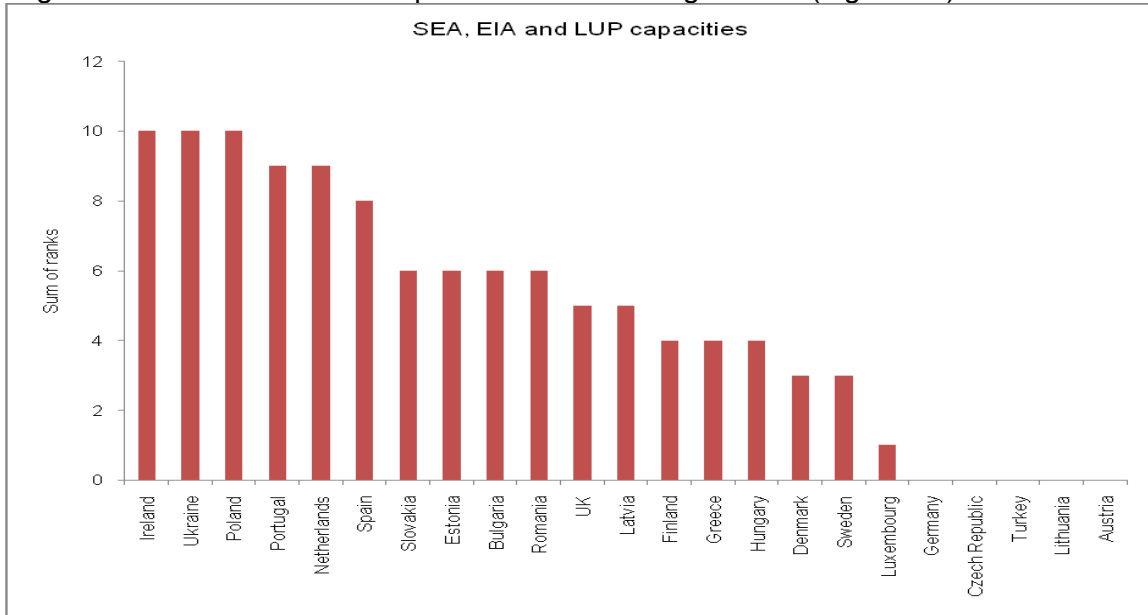

Figure 29. Presence and number of guidance publications for SEA, EIA and LUP.

Other measures of capacity were the accessibility and quality of data for environmental assessments and land use planning. Scores of accessibility were based on whether all or some of the date were (a) accessible to anyone concerned, (b) accessible via the internet (c) fragmented (i.e. are there multiple sources) and (d) only available after payment of charges. Scores for quality were similarly based on responses to questions of whether data were (e) reasonably up-to-date, (f) available at a local scale, (g) of sufficient accuracy, and including (h) habitat maps, (i) species populations distributions and (j) any density and trend information in relation to (h &/or i). Accessibility was especially poor in Hungary, Ireland, Netherlands and Portugal (Figure 30).
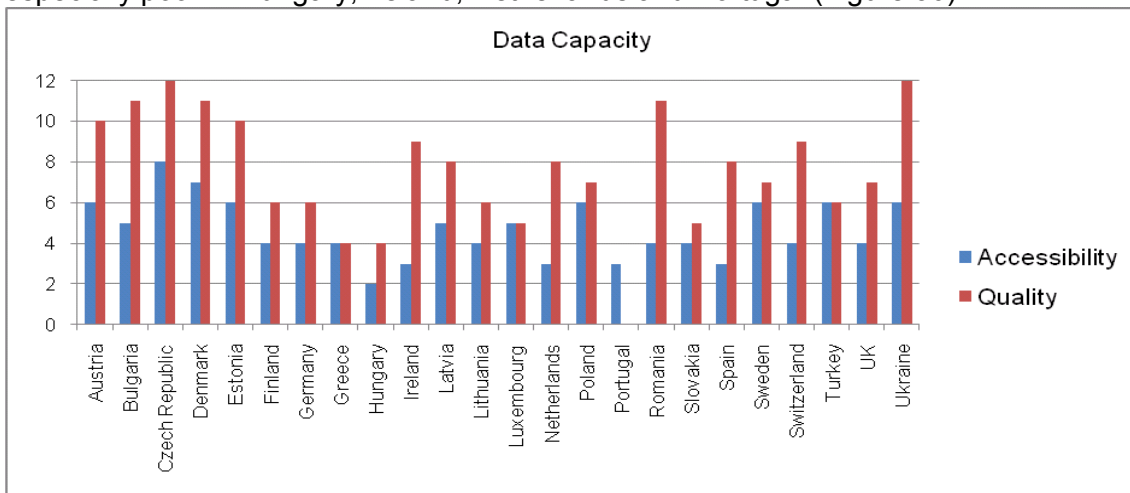

Figure 30. Scores (y-axis) for data accessibility & quality across survey countries.

Another question was whether or not national laws covering SEA, EIA or LUP required ecological connectivity beyond a development site to be taken into account (Figure 31).
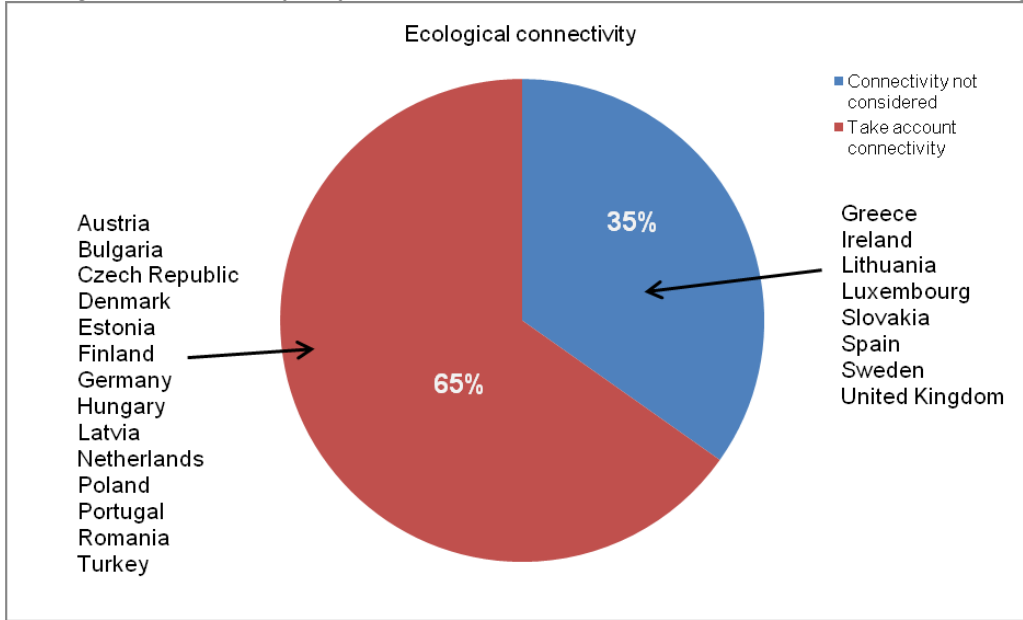

Ecological connectivity

Austria
Bulgaria
Czech Republic
Denmark
Estonia
Finland
Germany
Hungary
Latvia
Netherlands
Poland
Portugal
Romania
Turkey

35%

65%

- Connectivity not considered
- Take account connectivity

Greece
Ireland
Lithuania
Luxembourg
Slovakia
Spain
Sweden
United Kingdom

Figure 31. Of 23 countries responding, 65% reported this type of legislation.

All countries required significant negative effects on biodiversity to be taken into account during planning processes other than SEA and EIA, although in six cases this was only sometimes considered; similarly, all except one country claimed to support biodiversity positively at least some of the time during planning.

Finally, as an indicator of the complexity of process for environmental decision-making at national level, a count was made of all the ministries involved in decisions about use of land and species (including permits for hunting and fishing). There were mostly 2-3 ministries involved, although 6-8 for 6 of the 21 countries (Figure 32).
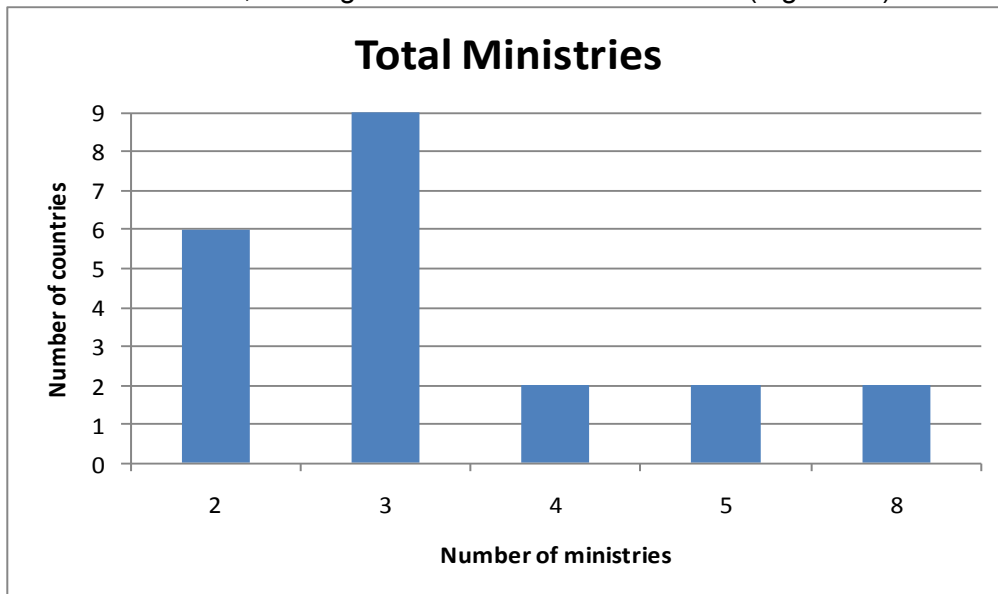

Total Ministries

Number of countries

Number of ministries

Figure 32. Number of ministries involved in decisions on use of land and species.

2.4.3 At Local Level

As well as assessing the numbers of formal and informal decisions of local authorities
and their (Section 2.2.2) and their information requirements (Section 2.3), the survey
considered the degree of digital capability for monitoring. They were asked whether they
took part in scientific study of species or habitats (scoring 3), kept records from
systematic survey (scoring 2) or kept occasional records (scoring 1) or both; they also
scored two points if they used and could name a GIS and one point if they used GIS but
could not name it, for a maximum score of 5. This was averaged across the 3-5 local
authorities that were surveyed in each country (Figure 33).
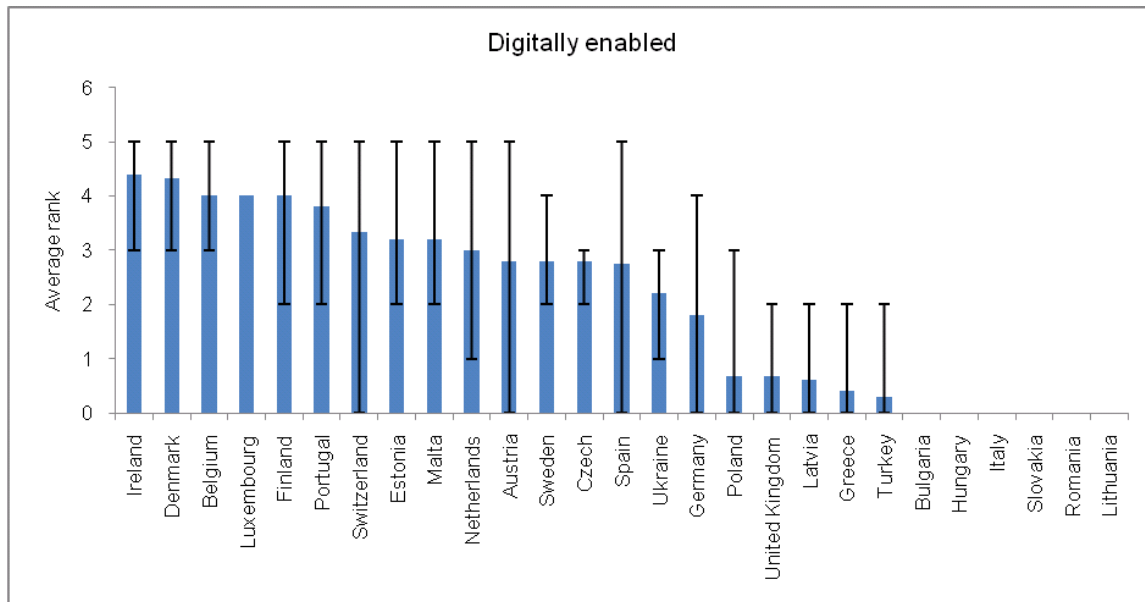
**Figure 33. Local authorities in countries with high digital enablement scores were
those that used GIS and regularly surveyed some species or habitats. Histograms
show means and bars show range of scores across LAU2s in each country.**

The remaining data from local authorities were more subjective in nature. Thus, as an
index of objectives, local authorities were asked to estimate the proportion of their time
for statutory decisions on land use (SEA, EAI, LUP) was spent assessing either (a) the
economic, (b) the social or (c) the environmental aspects. Countries with most emphasis
on the environment were the Czech Republic, Denmark, Germany, Ireland, the
Netherlands, Sweden and the UK (Figure 34), with Italy and the Ukraine putting much
more emphasis on economic or social issues.
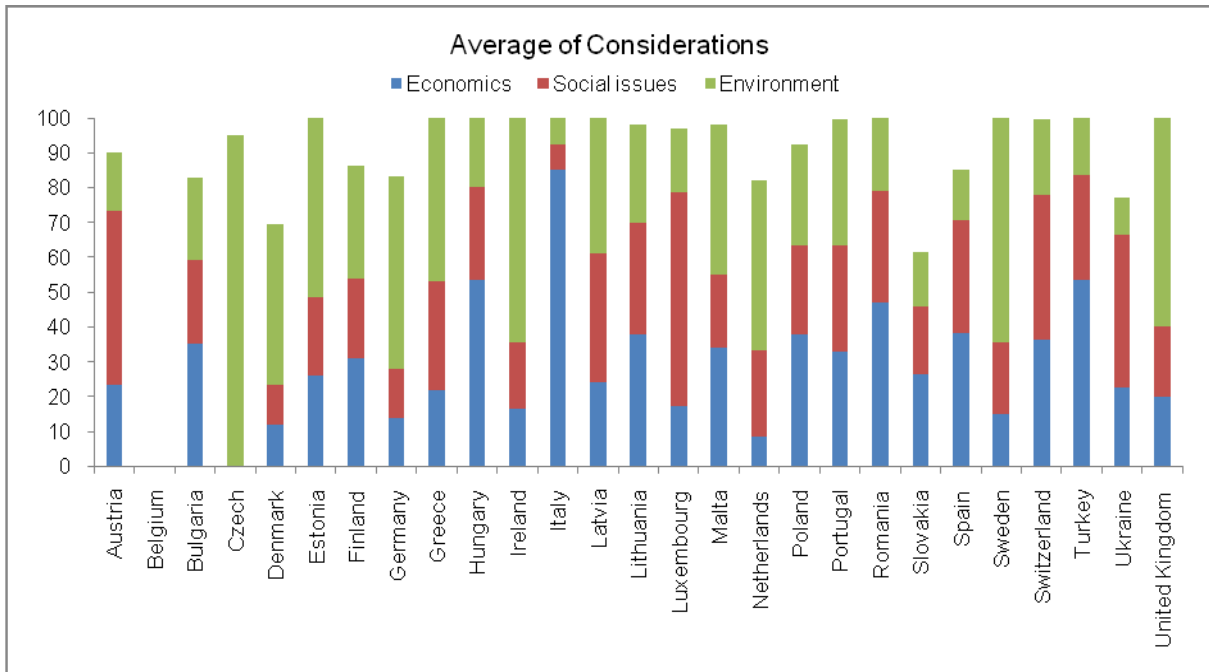
Figure 34. Administrative effort (%) when making formal decisions at local level.

Consultation is an important function of local authorities in some countries, and was very variable in extent for the countries surveyed (Figure 35).
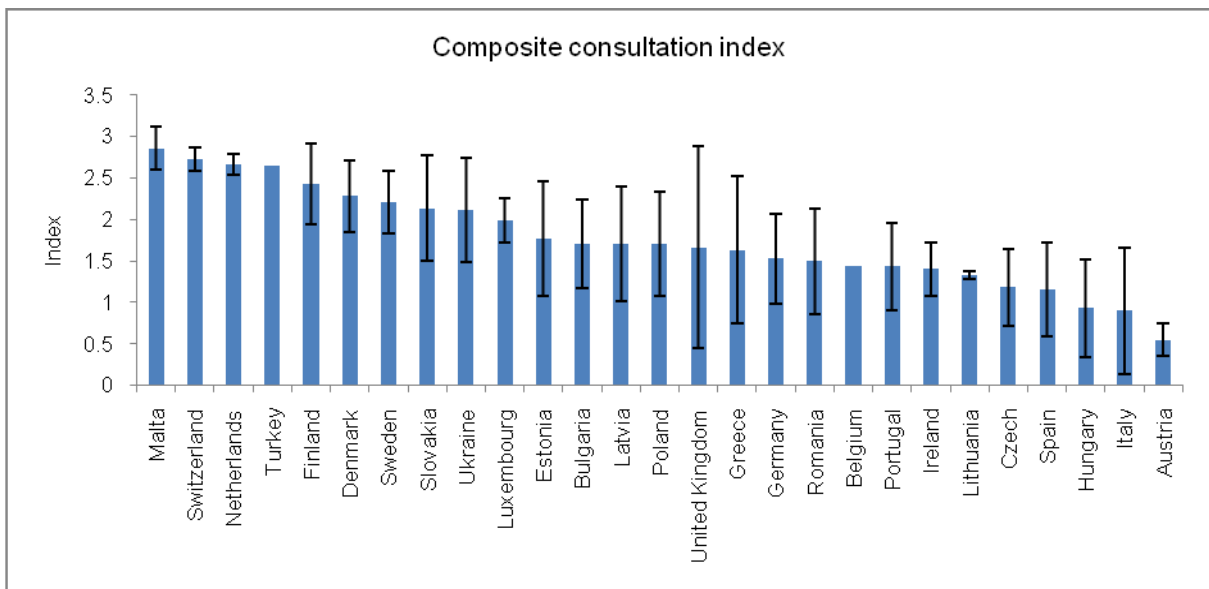
Figure 35. A composite index in which high values denote frequent consultation with many organisations and low values rare consultation with few organisations.

The consultations involved higher levels of government, government agencies and non-government organisations, with countries also different in the extent of consultation with NGOs (Figure 36).
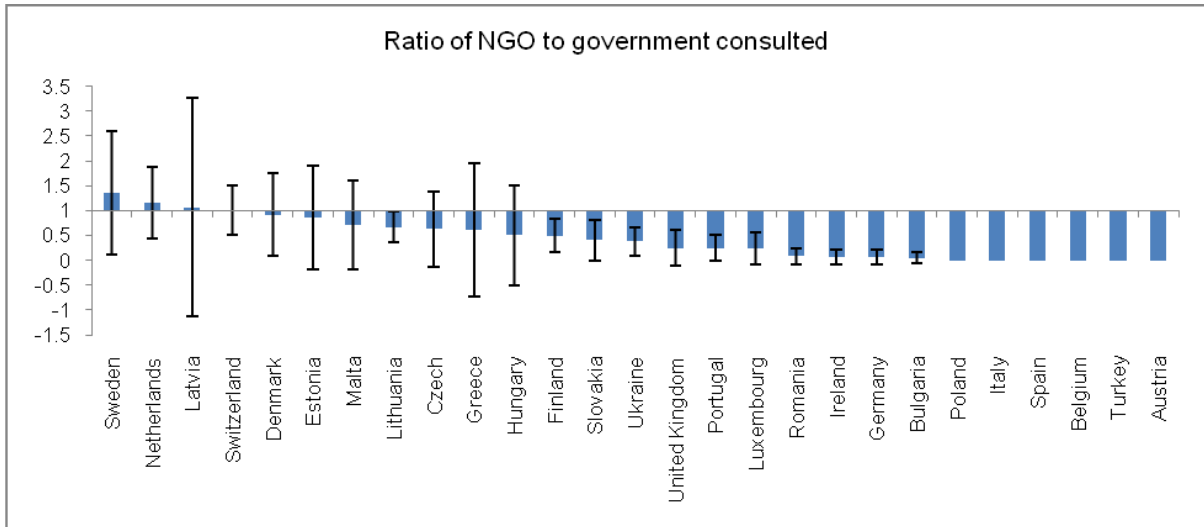
Figure 36. The ratio of local authority consultation effort with government bodies and NGOs, showing high variability at the left side and consultation only with government for 6 countries on the right.

The local authorities were asked to assess, on 5-point scales, the extent NGOs influenced decisions as well as the frequency of consultation. This gave evidence that frequent consultation of NGOs associated with high influence of them (Figure 37).
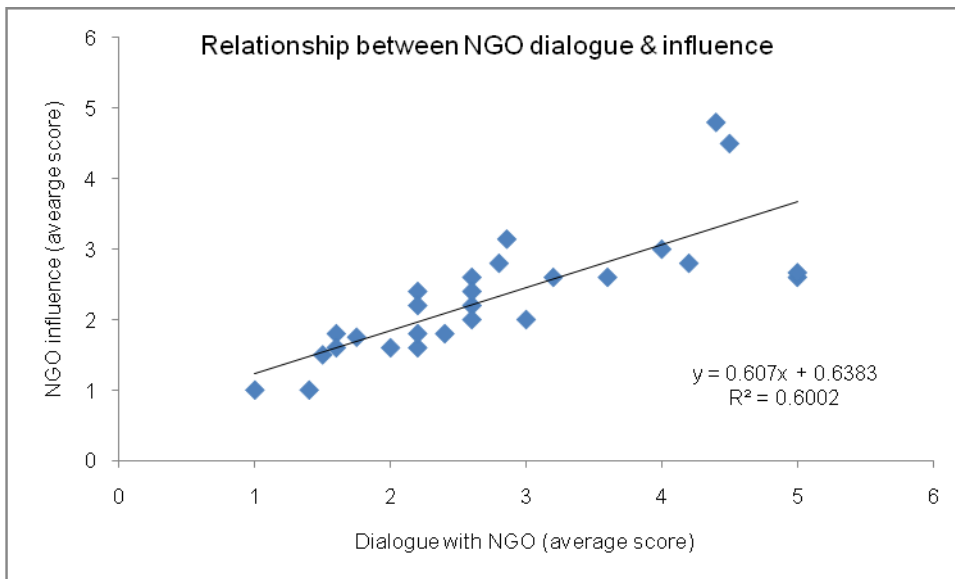

Figure 37. The strong relationship between the intensity of NGO dialogue with local authorities (x-axis) and the influence of NGOs on decisions (y-axis).

Deviation from the trend line indicated that NGOs in Denmark, Finland, Germany, Netherlands, Sweden and Switzerland had high influence relative to the consultation frequency (Figure 38), whereas those in Greece, Ireland, Malta and Turkey did not.
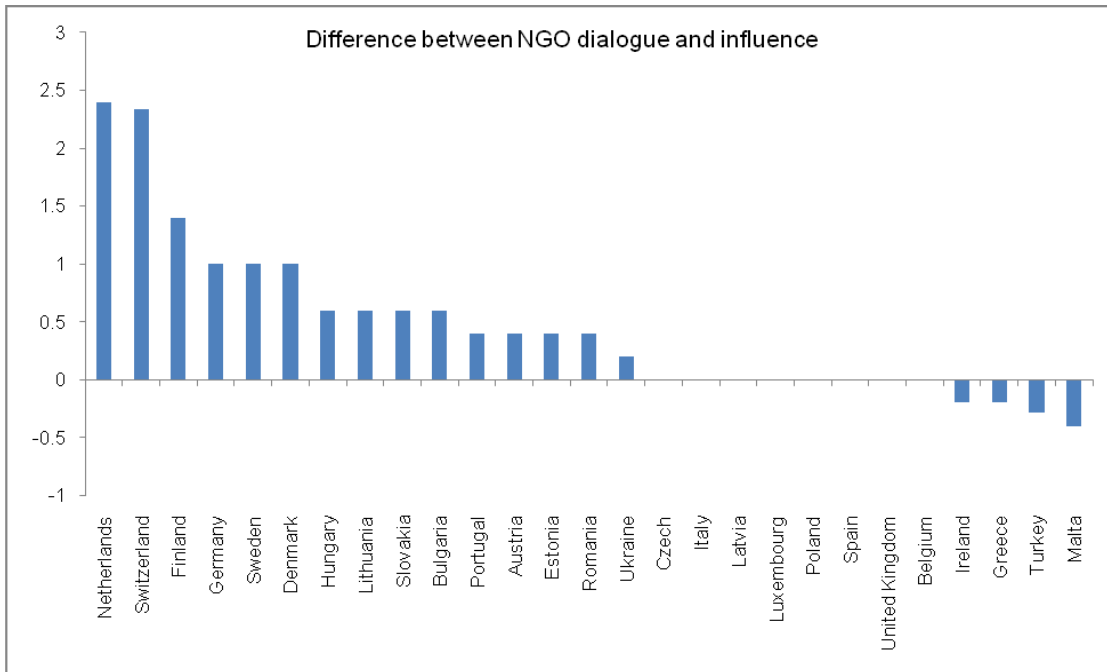
Figure 38. In countries with scores above the line, NGOs influenced local authorities relatively highly compared with the frequency of consultation.

The data provided two indices of attitudes of local authorities to wildlife and to the people that managed land and species. The first is a wildlife positivity index (Figure 39).
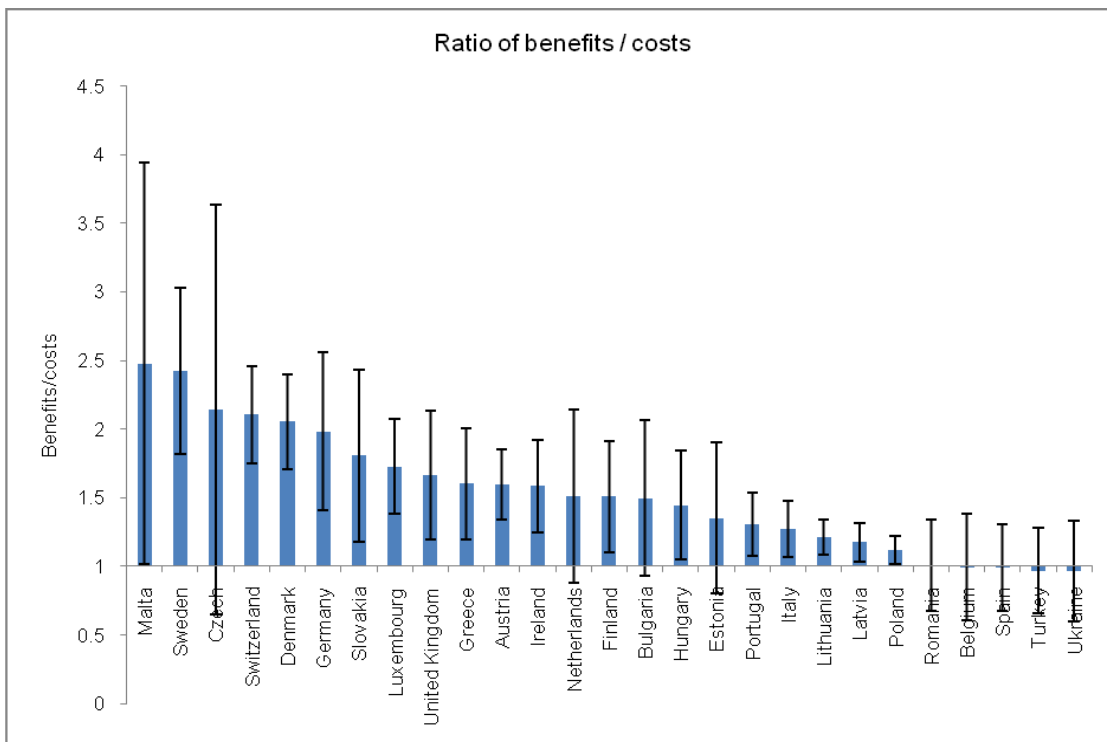
Figure 39. Local authorities considered that local households in countries on the left valued benefits from wild species highly relative to costs from wild species.

A related index of social attitudes was an assessment by local authorities, on a 5-point scale, of whether those using species consumptively or managing land (e.g. farmers, foresters, anglers, hunters) contributed more to conservation of species and habitats than those watching nature or merely visiting natural habitats (e.g. for walking, climbing, canoeing, riding), as shown in Figure 40.

Conservation benefit from activities: (consumptive + landuse)/others
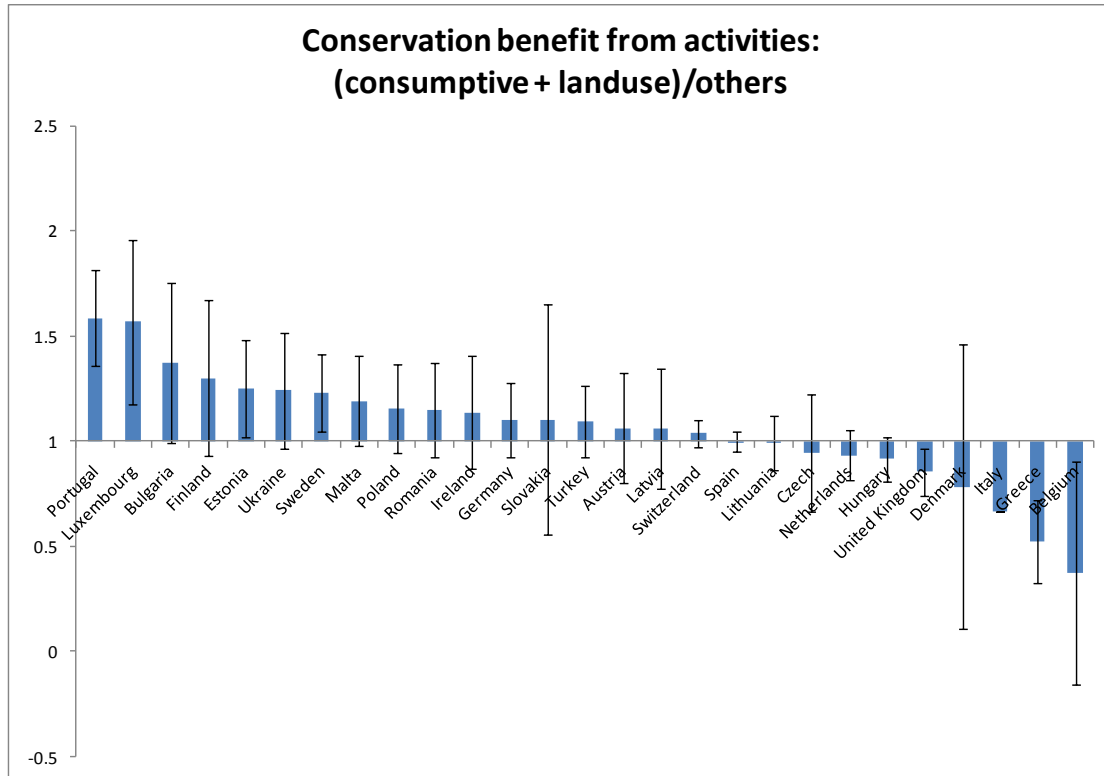
Figure 40. Local authorities in countries on the left considered that those using species consumptively or managing land contributed more to conservation of species and habitats than those watching nature or merely visiting land.

The local authorities also produced estimates of the prevalence in their communities of households conducting all these activities, for which the most abundant are shown in Figure 41 on the next page. There was very considerable variation between countries in the estimates for every activity. However, the averaged estimates across countries were for 43% of rural households to engage in gardening, compared with 23% in farming, 16% in gathering wild fruits, fungi and invertebrates, 11% in fishing, 8% in hunting and 7% in forestry. Although on average only 5% were thought to go on excursions to watch wildlife, 11% were thought to feed birds at home. The smallest proportion of households (3%) was thought to have members riding horses, but 23% were estimated to use the countryside for other exercise activities. As these figures are averages or averages based on ranges of numbers, they are likely to be very approximate as absolute estimates, but may well be effective at ranking the prevalence of engagement in different activities. The ranking of watching, hunting, fishing and gathering was the same as in the UNWIRE study (Kenward & Sharp 2008).

Figure 41. Histograms show the average % of local households estimated by LAU2s to have participants in activities dependant on land or species (bars are range of values).

3. Conclusions for Analysis of Environmental Assessments & TESS design

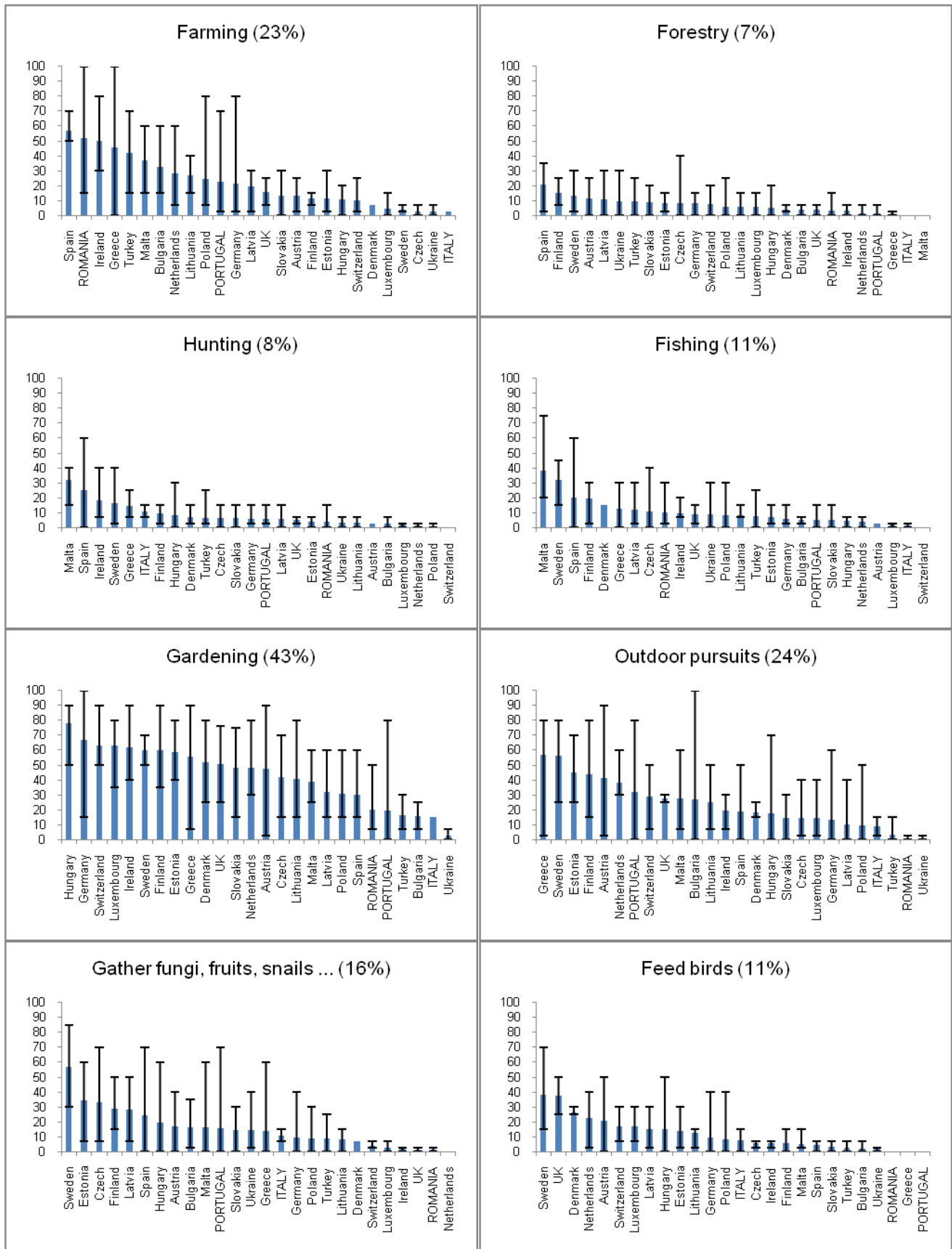In section 1, requirements to be met in the Pan-European survey can be summarised as: a) identify information needs for decision taking in policy development and at local level; b) identify governance that aids biodiversity and thus that such a system should support. Before considering these requirements, three conclusions can be drawn from processes used in the survey itself:

(i)   Internet tools (e.g. www.surveymonkey.com) now exist for answering up to 10 simple survey questions and, being automated, can accommodate very many respondents; however, for more sophisticated survey the use of Microsoft Excel workbooks and Access database provide a powerful tool, simplifying translation (if cells for the text are large enough) and enabling automated data extraction.

(ii)   The network of Country Coordinator system pioneered by the European Sustainable Use Specialist Group of IUCN/SSC in the UNWIRE survey (www.gemconbio.eu) again proved its worth for expert translation and extraction of necessary information both at national level and also in linking with local communities and managers of wild resources on land and in water.

(iii)   European Environment Agency and Eurostats both have Environmental Topic Centres with responsibility for using information as surveyed in this study; EEA advice has been most helpful, and the Streamlining European Biodiversity Indicators (SEBI) will be valuable in WP6; the Eurostats topic centre on Natural Resources could find to it useful to note the prevalence of environmental decision-taking by managers of land and species (Section 2.2) and high spending on these topics (Kenward et al. 2009), and hence perhaps choose to contribute socio-economic sustainable use indicators on these stakeholders towards the 2010 targets (thereby adopting procedures used in the USA since the 1980s).

3.1. Identifying information needs for decision taking

The number of decisions made at EU level as Directives, and as regulations by policymakers at national and sub-national levels, are necessarily relatively few compared to the decisions made by local stakeholders in the use of land, water and species, simply because local stakeholders are far more abundant. However, the very wide influence at high level, in setting constraints and incentives for those at local level who affect the land and species makes it crucially important that those policymakers are well informed, in a way that cuts across departments of government. This is recognised by the many projects and initiatives aimed at assisting policy-makers.

However, large numbers of decisions affecting biodiversity are also made annually by local authorities and private managers or users. Moreover, in making decisions about what to cultivate and how to manage crops of wildlife, decisions by private managers have 10,000-100,000 times the density of those made by local councils (Figure 8). Even though a decision by a council to develop an area may appear to have more long-term effect than a change in use of a field, that field may gradually have become the last local habitat patch for a particular species that will then take decades to re-colonise the area naturally. The monitoring of land-use, to guide conservation of habitat linkages and

replace species opportunistically where linkages are broken, therefore seems at least as important as formal processes of environmental assessment and land-use planning.

These managers often have good knowledge of how crops and domesticated species respond to weather and hence changing climate, how to maintain soil quality and avoid hazards, requiring less information on these than local authorities (Hodder *et al*. 2009, Figure 3.12). They even record appreciable information on these (Section 2.2 above). However they require as much information as local authorities on wild species and habitats, and more on statutory requirements and benefits, for instance affecting the control of species for economic or social benefit (Hodder *et al*. 2009, Figures 3.12, 3.13).

The internet is not yet being used strongly across Europe as a source of information for environmental decision making, especially by local land-managers. At local level it is government agencies and private consultancies which provide much of the information required, other than local knowledge. Thus, it is important for the TESS design to aim to deliver to government agencies and consultancies at local level, as well as to local authorities and stakeholders. As farmers and hunters affect land with the highest density of decisions (Figure 8 above), it is encouraging that the former are the most frequent internet users among stakeholders and the latter the post prolific sources of local data.

Nevertheless, it is encouraging that about half the countries in the European Union showed appreciable systematic recording and/or use of GIS by local authorities (Figure 28 above), and the proportions also using the internet for information were high both for local authorities and managers of land and species in the local case studies chosen by TESS partners (Hodder *et al*. 2009, Figure 3.16). Moreover, two thirds of countries could use maps in digital format for agri-environment payments (Figure 24 above). Thus, there are plenty of instances of good practice available and conditions exist to expand this across countries and across Europe using an appropriate TESS design that interfaces its decision support with existing GIS capabilities.

Another factor that must inform TESS design is the degree of digital enablement shown at local level (Figure 28 above). In terms of directing scarce resources to achieve rapid roll-out, it may be most efficient to focus on countries with a high enablement at local level. However, in terms of ensuring rapid uptake of a system to encourage biodiversity restoration while avoiding further loss, the priority may be to support countries where there is good biodiversity status perhaps causally associated with less technological advance. If private funding must prioritise economic efficiency, perhaps state funding can contribute to promoting the system, together with digital capabilities where these are less advanced.
.

3.2. Identifying governance that aids biodiversity

The final and very important conclusions from the Pan-European Survey concern the variables to be used in the analysis of factors associated with conservation of biodiversity and ecosystem services. In a analysis in the previous GEMCONBIO project (Manos & Papathanasiou 2008), it became clear that maintenance of biodiversity and ecosystem services in local case studies associated most strongly with capacities for adaptive management and knowledge leadership, as well as with appropriate objectives, with effects of regulations that tended to be positive for biodiversity but negative for sustainable use of ecosystem services.

In GEMCONBO, the Use Nationally of Wild Resources across Europe(UNWIRE) study, mentioned above, was a Pan-European survey at national level of ecosystem services that were mostly cultural uses of biodiversity (hunting, angling, gathering plants and fungi and watching birds). UNWIRE provided some socio-economic impact indicators, in terms of changing numbers of participants and attitudes of interest groups. An especially interesting finding was a tendency of bird-watcher numbers to increase most strongly where their national representatives gave hunting most credit for habitat benefits (Kenward & Sharp 2008). UNWIRE also assessed changes in numbers of some taxa. These data are available for TESS.

The social attitude indicators in TESS, obtained by asking local authorities about attitudes of local people to biodiversity and their own assessment of habitat benefits from different interest groups (Figures 34, 35), were sampled more robustly than in UNWIRE. Attitude indicators are important because uses of ecosystem services need to be socially sustainable as well as ecologically sustainable (WSSD 2002). Other impact indicators are available in the SEBI data and in direct analyses of CORINE data for 1990, 2000 and 2006 to assess habitat conversion rates.

The Figures and Tables in this report also provide a number of variables on capacity, and process for governance that may affect biodiversity and ecosystem services. These are summarised in Table 3, as categorised from the analysis matrix in Figure 1.

Table 3. Variables available for the WP6 Analysis Matrix

Variable Type	Category	Source
CAPACITY	Societal	National knowledge leadership (Figure 16), National consultation/influence of NGOs (Figures 17, 21)
	Governance	National number of Consultees (Figure 15), National number of Ministries (Figure 32), Local digital enablement index (Figure 33), World Bank governance indices (UNWIRE)
	Ecological	Data supply (Figure 14a), Country area (UNWIRE), Human population density/urbanisation (UNWIRE), National landcover (CORINE)
OBJECTIVES	Social	Local data demand (Figure 14b), Local considerations index (Figure 34)
	Economic	
	Ecological	
PROCESS	Social	Local responsibility for informal decisions (Figure 7), Local consultation indices (Figures 35-38)
	Economic	Local stakeholder density/decision density (Figures 8-10), Agri-environment payment density
	Regulatory	National number of assessments (Table 2), National assessment regulatory intensity (Figure 18), National AES regulations (Figures 25-28)
IMPACT	Societal	Local authority attitudes (Figures 39, 40)
	Economic	Participant numbers (UNWIRE)
	Ecological	Change in species & habitats (UNWIRE, CORINE, SEBI)

4. References

D2.2
Sharp, R.J.A., Ewald, J. & Kenward R.E. 2009. Model of information flows from local & regional to central. Report to the European Commission from FP7 Project #212304 (Transactional Environment Support System).

D3.2
Perrella, L., Ewald, J., Kenward R.E. & Hodder, K.H. 2009. Environmental information supply and demand at the local level: Conceptual models of information flow. Report to the European Commission from FP7 Project #212304 (Transactional Environment Support System).

D3.3
Hodder, K.H., Sharp, R.J.A., Perrella, L., Butters, J., Kenward, R.E. & Ewald, J. 2009. Synthesis report: Central and local information flows and decision making requirements. Report to the European Commission from FP7 Project #212304 (Transactional Environment Support System).

COWI 2009a. *Study concerning the report on the application and effectiveness of the EIA Directive* carried out by COWI consultants, Kongens Lyngby for the European Commission DG Environment.

COWI 2009b. *Study concerning the report on the application and effectiveness of the SEA Directive (2001/42/EC)* carried out by COWI consultants, Kongens Lyngby for the European Commission DG Environment.

ESPON 2009. First Interim Report of ESPON Typology Compilation, ESPON 2013 Programme: http://www.espon.eu/main/Menu_Projects/Menu_ScientificPlatform/typologycompilation.html

Kenward, R. Manos, B., Arampatzis, S. & Papathanasiou, J. 2009. A transactional environmental support system for Europe. In Hřebíček, J., Hradec, J., Pelikán, E., Mírovský, O., Pilmmann, W., Holoubek, I. & Legat, R. (eds.) Towards eEnvironment (Challenges of SEIS and SISE: Integrating Environmental Knowledge in Europe). European conference of the Czech Presidency of the Council of the EU.

Manos, B. & Papathanasiou, J. 2008. GEMCONBIO: Governance and Ecosystem Management for Conservation of Biodiversity. Aristotle University of Thessaloniki, Greece.

NUTS 2009. Eurostat website : http://epp.eurostat.ec.europa.eu/portal/page/portal/region_cities/regional_statistics/nuts_classification

WSSD 2002. World Summit on Sustainable Development. www.johannesburgsummit.org

TESS WP5 Survey – National Level

To TESS Country Co-ordinators:

Please use this template to assemble information needed from your country for the WP5 EU-wide survey.

Use information from published sources including websites where possible, if you need to

Where information is not readily available you may wish to approach government level contacts by introducing TESS and posing specific questions by email, telephone or if it is easier by meeting face to face. Normally they should be sent in advance a copy of a TESS document which explains why the project is asking for their help.

Please do not hand over the template for completion by others.

Country	
Co-ordinator	
Telephone number	
e-mail	

Please return <u>NO LATER THAN 31 JANUARY 2010</u> to: Robin Sharp, Dr Julie Ewald and Prof Robert Kenward robisharp@googlemail.com, jewald@gwct.org.uk, reke@ceh.ac.uk

Some Abbreviations

Environmental Impact Assessment	**EIA**
Strategic Environmental Assessment	**SEA**
Land-Use Planning	**LUP**
European Union Common Agricultural Policy	**CAP**
National Biodiversity Strategies and Action Plans	**NBSAP**
An EU wide network of protected areas under the Habitats Directive	**Natura2000**

Please name government department and/or agency (extend columns if necessary):		
With overall responsibility for SEA	**Ministry (and dependent Agency)**	
	Contact(s)	
	e-mail/phone	
With overall responsibility for EIA	**Ministry (and dependent Agency)**	
	Contact(s)	
	e-mail/phone	
With overall responsibility for pollution control	**Ministry (and dependent Agency)**	
	Contact(s)	
	e-mail/phone	
For EIA of changes in agricultural holdings, or uncultivated or semi-natural land Ministry (and dependent Agency)	**Contact(s)**	
	e-mail/phone	
Responsible for approving EIA & SEA assessments in specific cases (N.B. only applies in certain countries) Ministry (and dependent Agency)		
	Contact(s)	
	e-mail/phone	
Responsible for other land-use planning (if different from those named above) Ministry (and dependent Agency)	**Contact(s)**	
	e-mail/phone	
Responsible for CAP administration and dealing with farmers Ministry (and dependent Agency)	**Contact(s)**	
	e-mail/phone	
Responsible for administration of forestry	**Ministry (and dependent Agency)**	
	Contact(s)	
	e-mail/phone	
Responsible for nature conservation	**Ministry (and dependent Agency)**	
	Contact(s)	
	e-mail/phone	
Responsible for hunting	**Ministry (and dependent Agency)**	
	Contact	
	e-mail/phone	
Responsible for angling	**Ministry (and dependent Agency)**	
	Contact	
	e-mail/phone	

Please list the designated mandatory consultees under Art 6.1 of EIA Directive and Art 6.3 of SEA Directive, to be consulted by those who carry out the appropriate environmental assessment. (N.B. These are likely to be national agencies for environmental protection and nature conservation.)

Strategic Environment Assessment roles and processes

1 a) Please name the level(s) i.e. national, sub-national (Regional or other level only one step removed from national) or lower level, at which plans and programmes requiring SEA assessments are approved:

b) If formal approval of the SEA assessment is required (i.e. separately from the relevant plan or programme), please give name of the level:

National	Sub-national	Intermediate level	First tier of government

2 Since 2002, has SEA been applied to plans and programmes covering:

	Yes	No
i) Sustainable development		
ii) Ecological infrastructure		
iii) Waste management		
iv) Transport		
v) Energy		
vi) Climate change		
vii) Agricultural		
viii) Forestry		
ix) Other sectors		

3 a) How many SEA's are completed annually in your country? Please give precise or estimated number.

Number [ ] Please indicate if precise/estimated Precise [ ] Estimated [ ] for which year(s)? [ ]

b) In making these decisions, approximately what % of administration time is spent on considering:

economics (jobs & costs) [ ]   social issues [ ]   the environment [ ]

Please use X to show which of the following sources are used as data sources when considering SEA's:

	government/ agencies	/ NGOs /	other consultants or advisors	/ internet	/ publications	/ local knowledge	data from local stakeholders
c) species							
d) habitats (cultivated, amenity, semi-natural and wild)							
e) environmental hazards (e.g. floods, wildfires, wildlife vectored disease)							
f) socio-economics (e.g. finance, jobs, social institutions, regulations)							

4 Does the Department responsible for SEA refer to institutions at the European level (eg. European Commission) for guidance (other than in infraction cases)?

Yes [ ] No [ ] If yes, how many times per year? Number [ ]

EIA responsibilities and processes

5 a) How many formal EIA's are completed annually in your country? give precise or estimated number.

Number		Please indicate if precise/estimated	Precise	Estimated	for which year(s)?	

b) Are there any legal rules or processes (other than formal SEA and EIA) requiring developers or authorities to provide written assessments of the impact of their projects or plans on the environment? Examples might include processes in relation to the Habitats Directive, the IPPC Directive, pollution control or in cases related to extractive industries (mining etc.).

Yes	No

c) If yes, please name the EIA-like process concerned and give a precise or estimated number completed annually.

	Number	Please indicate if precise/estimated	Precise	Estimated	for which year(s)?
		Please indicate if precise/estimated			for which year(s)?
		Please indicate if precise/estimated			for which year(s)?

6 (a) Please name for your country the level(s) i.e. national, sub-national (Regional or other level only one step removed from national) or lower level at which developers submit projects requiring formal EIA or EIA-like assessments for approval:
b) If that government level submits these assessments to another level (*i.e.* separately from the project itself), please name the level:

National	Sub-national	Intermediate level	First tier of government

7 a) Who pays for a formal EIA or EIA-like assessment?
Please put X in all that apply.

Developer	Government /Agency	NGO	Other	*Please give comments if necessary*

b) Who prepares the information for each EIA/-like assessment?
Please put X in all that apply.

Developer	Government /Agency	NGO	Other Consultants	Other	*Please give comments if necessary*

8 a) In cases of significant damage to the environment from a proposal is mitigation, through creation of conservation benefit elsewhere, such as habitat creation, required at the outset?

Mandatory	Encouraged

b) If significant damage to the environment is likely, are alternative development approaches required to be submitted?

Mandatory	Encouraged

c) Is there subsequent monitoring of the environmental impact of the development?

Yes	Sometimes	No

d) If there is any monitoring, please indicate who pays for it?
Please put X in all that apply.

Developer	Government /Agency	NGO	Other Consultants	Other	*Please give comments if necessary*

e) If there is any monitoring, please indicate who does it?
Please put X in all that apply.

Developer	Government /Agency	NGO	Other Consultants	Other	*Please give comments if necessary*

9 Are the authorities responsible for approval of projects requiring formal EIA or EIA-like assessment:
a) sent general written guidance
b) expected to ask higher (eg. National ministry or agency) level for guidance in specific circumstances?

Yes	No

c) if (b) occurs, about how many times a year?

Number

EIA application and participation

10 a) The EIA Directive applies to certain changes in rural land management as listed in its Annex II paragraph 1,for example 'projects for the use of uncultivated land or semi-natural areas for intensive agricultural purposes or restructuring of rural holdings, subject to thresholds set by national governments'. Since 2005 how many EIA's have been submitted under these provisions?

Number   *Please give comments if necessary*

b) If known, please give number of cases, since 2005, where land managers have been subject to sanctions after infringements under these provisions.

11 If certain biodiversity or environmental NGOs frequently comment on proposals where EIAs are required, please list them as far as you are able to do so and indicate if the are national, regional or local.(N.B. a single NGO can be at more than one level.)

Use X to show if the NGOs are:

National   Regional   Local

12 Does the government department or agency responsible for EIA refer regularly to institutions at the European level (eg. European Commission) for guidance (other than in infraction cases?)

Yes   No

If yes, how many times per year?

Number

13 Is the environmental information, including any on species and habitats, collected during the EIA assessments stored centrally?

Yes   No

Is this information permanently available to:

Other government departments   NGO   General public

<u>Land Use Planning</u>

	National	Sub-national/Regional	Intermediate level	First tier of government
14 Please name the level i.e. national, sub-national (Regional or other level only one step removed from national) or lower level, to which development projects needing approval under LUP are submitted:				

15 Do any national laws on LUP take species and/or habitats into account by:

	Yes	Sometimes	No
a) supporting species, habitats or nature conservation in a positive way?			
b) requiring significant negative effects on species, habitats or nature conservation to be taken into account when development proposals are being considered?			

<u>General SEA, EIA & LUP Capacities</u>

16 Has your national government or any authority below its level issued

	Yes	No
a) formal guidance on species, habitats or nature conservation to authorities who have to make decisions on cases requiring either SEA's/EIA's or under the LUP system ?		

If 'yes' please give title example (with English translation) and reference :

	Yes	No		*Please give comments if necessary*
b) practical guidance on species, habitats or nature conservation to authorities, developers, the public, NGO's etc who need to prepare SEA's/EIA's or LUP applications or comment on them?				

If 'yes' please give title example (with English translation) and reference :

	Yes	No		*Please give comments if necessary*
17 Do any national laws on SEA, EIA or LUP require ecological connectivity beyond the development site to be taken into account?				

Information for assessments and planning

18 a) Are there national repositories or centers for species and/or habitats data?

Yes	No

b) If so, how many?

c) Is there a single <u>ministry</u> or <u>national agency</u> responsible for collating species and/or habitat data?

Yes	No

Please be sure to complete part (d) below:

d) Please list websites where information on species and/or habitats can be accessed, indicating if they are national, regional or characterised in some way (e.g. taxon-specific, area-specific, public, private, NGO):

Please list all agencies or ministries responsible for collating data.

	National	Regional	Specialised

19 Is the species and/or habitat information required for EIA, SEA, LUP or conservation planning and management:

	Yes	Some	No	*If "some" please give an explanation.*
a) accessible to anyone concerned?				
b) accessible via the internet?				
c) fragmented (i.e. are there multiple sources) ?				
d) only available after payment of charges?				
e) reasonably up-to-date?				
f) available at a local scale?				
g) of sufficient accuracy?				

Does it include:

	Yes	Some	No	
h) habitat maps?				
i) species populations distributions?				
j) in relation to (h &/or i) is there any density and trend information?				

Data for NBSAP/BAP (National Biodiversity Strategy and Action Plan/Biodiversity Action Plan, see http://www.cbd.int/nbsap/)

20 Please give name(s) for level i.e. national, sub-national (Regional or other level only one step removed from national) or lower level, at which government engages to produce the NBSAP/BAPs:

If formal approval of the NBSAP is required, please name the level:

National	Sub-national/Regional	Intermediate level	First tier of government

21 How many NBSAPs are prepared for species, habitats (or both) at:

a) national or sub-national level

Species	Habitats	Both

b) lower level

Species	Habitats	Both

c) Who prepares the NBSAP/BAPs?

Government	Partnerships

Please give comments if necessary

AGRICULTURAL data

	Yes	No		**Please give comments if necessary**

22 Is there still government funding to plant some crops, per capita of livestock or for other productivity support (e.g. EU Pillar I)?
Please name the level at which decisions regarding such funding for productivity are made.

National	Sub-national/Regional	Intermediate level	First tier of government

23 Do you have payments for agri-environmental schemes?

Yes	No

If 'yes' are they: a) For 'Natura 2000' or Emerald Network sites only?
b) for 'Natura2000', Emerald Network and other special habitats only?
c) available everywhere provided conditions are observed?

(The Emerald Network is the Bern Convention pan-European project that has become Natura2000 in the EU)

24 Please give name(s) for level i.e. national, sub-national (Regional or other level only one step removed from national) or lower level, at which any such agri-environmental applications are made?

Please give name(s) for level at which approval for agri-environment funding is given:

National	Sub-national/Regional	Intermediate level	First tier of government

25 a) Do governmental payments to farmers for agri-environment schemes require prior input of information on species and/or habitats?

Yes	No

government/ agencies /	NGOs	other consultants or advisors /	internet	local publications/ knowledge/	data from local stakeholders

b) If "yes", please use X to show sources of species data for government
c) If "yes", please use X to show sources of habitat data for government

d) In all these schemes, is there subsequent monitoring (i) of compliance?

Yes	No

(ii) of environmental outcomes?

Yes	No

26 About what % of the agricultural funding budget is devoted to agri-environmental programmes?

Percent [   ] %

Please give comments if necessary

27 Do governmental payments to farmers require a map from the farmer?
If 'yes', can this be in electronic format?

Yes	No

Degree of financial devolution to local level

28 Please use X to show governance level at which taxes are collected on (Please tick all that apply):

	Personal income	Business income	Value of personal assets (housing, land etc.)
National			
Sub-national (Regional or other level only one step removed from national)			
Lower level			

THANK YOU VERY MUCH! Please return NO LATER THAN 31 January 2010 to: robisharp@googlemail.com, reke@ceh.ac.uk, jewald@gwct.org.uk

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TESS WP5 LOCAL INFORMATION SURVEY

This form is to be answered at the level of government that typically interacts with citizens to make decisions about land for develoment, recreation and conservation. This will usually be the lowest level for which a council or mayor are elected. This local government may administer law or merely consult citizens about statutory land-use planning (LUP) for development. It may also make decisions about managing habitats and species on its own land or on land owned by others.

The information is to be obtained through telephone interview with elected representatives or employees of the local administration.

<mark>**The kind respondent needs to look at questions 1i-1q, about environmental impact assessment (EIA) and strategic environmental assessment (SEA), and question 3 on environmental data, to see if they can answer; if not, they need to be asked for contact details of the best person to approach in another administration; boxes with data from another administration should be coloured yellow.**</mark>

Data from individual survey forms will not be disclosed.

Country name		**Administration name**	

Details of person(s) providing data   **Name:**

E-mail: **Phone:**

Total area (in hectares) within the boundary of the administration

Land area (hectares) actually owned by the local government (if any)

Population size

% of land used for farming (arable or pasture)(nearest 5-10%)

% of land covered by woodland (forestry or natural)(nearest 5-10%)

% of natural/semi-natural land (heath, maquis, montane, wetland)(nearest 5-10%)

Some Abbreviations

Environmental Impact Assessment = **EIA**

Strategic Environmental Assessment = **SEA**

Land-Use Planning = **LUP**

European Union Common Agricultural Policy = **CAP**

National Biodiversity Strategies and Action Plans = **NBSAP**

An EU network of areas protected under the Habitats Directive = **Natura2000**

Country Coordinators please return forms by <u>January 31st 2010</u> to Dr Julie Ewald, Robin Sharp and Prof Robert Kenward at <u>jewald@gwct.org.uk.</u> <u>robisharp@googlemail.com,</u> <u>reke@ceh.ac.uk</u>

Coordinator name:

Coordinator phone: **Coordinator e-mail:**

1 Responsibilities for nature conservation and management   (please use X to indicate the answer)   yes   no

		yes	no
a	Does the administration (or those working for it) have responsibilities for managing any rural land, wetlands or open water?	☐	☐

		yes	no		yes	no
b	Does this include: amenity areas (e.g. parks, public gardens, play areas, paths, road verges) owned by the administration?	☐	☐	on land owned by other people ?	☐	☐
c	protecting wild species and habitats (e.g. old trees, ponds) on land owned by the administration?	☐	☐		☐	☐
d	conserving wild species and habitats (e.g. by creating reserves) on land owned by the administration?	☐	☐		☐	☐
e	managing pest/invasive species to protect other wild or domestic species/habitats on land owned by the administration?	☐	☐		☐	☐
f	limiting wild species to protect social interests (e.g. road safety, domestic nuisance, recreation, well-being) on owned land?	☐	☐		☐	☐
g	restoring native wild species/habitats (e.g. creating new habitats or reintroducing wild plants) on owned land?	☐	☐		☐	☐

h When making decisions for this management, what is the range of areas (ha) covered by EACH decision?   ☐ to ☐ hectares

Responsibility for statutory decisions concerning or affecting land use (including EIA and SEA)

		mandatory	always	usually	often	occasionally	never
i	Are there consultations with private individuals, enterprises etc. (other than developer) when considering any statutory land use planning decisions (SEA, EIA or others) in the administrative area?	☐	☐	☐	☐	☐	☐
j	Is there dialogue with conservation NGOs when considering these decisions ?	☐	☐	☐	☐	☐	☐
k	Do these NGOs exert a strong influence on the decisions?		☐	☐	☐	☐	☐
l	Is there dialogue with government conservation agencies when considering these decisions?	☐	☐	☐	☐	☐	☐
m	Is higher government or its agencies the main influence on the decisions?		☐	☐	☐	☐	☐

		<1 ha	1-50 ha	50-500 ha	whole area
n	Approximately how many of these assessments or planning decisions involving this administration annually are:	☐	☐	☐	☐
o	In making these decisions, what % of administration time is spent on considering: economics (jobs & costs)	☐	☐	☐	☐
	social issues	☐	☐	☐	☐
	the environment	☐	☐	☐	☐

p Approximately how many of all these decisions are: SEA ☐   EIA ☐   LUP ☐

q What government organisations/agencies or other interests are regularly consulted with when the administration makes environmental decisions?
Please list these below indicate how often they are consulted annually and their category.

	times /year	Govern -ment	National	NGO Regional	Local	Other
	☐	☐	☐	☐	☐	☐
	☐	☐	☐	☐	☐	☐
	☐	☐	☐	☐	☐	☐
	☐	☐	☐	☐	☐	☐
	☐	☐	☐	☐	☐	☐
	☐	☐	☐	☐	☐	☐

2 **Ecosystem Services: benefits and costs of wild resources :**

For residents in this administrative area (not tourists) what approximate % of the households engage locally or anywhere in each of the following:

	please use X to indicate the answer					If 20+%, please estimate to the nearest 10%	Are these groups considered to engage in work to protect, maintain or restore wild species and/or habitats?				
	<1%	2-5%	5-10%	11-20%	20+%		always	usually	often	occasionally	never
a Feed birds or other wildlife?	☐	☐	☐	☐	☐		☐	☐	☐	☐	☐
b Collect wild snails, fungi, fruits, flowers or other plant materials?	☐	☐	☐	☐	☐		☐	☐	☐	☐	☐
c Do outdoor pursuits eg. walking/skiing/climbing/boating/camping/off-road cycling?	☐	☐	☐	☐	☐		☐	☐	☐	☐	☐
d Go horse-riding?	☐	☐	☐	☐	☐		☐	☐	☐	☐	☐
e Make excursions in order to watch wildlife?	☐	☐	☐	☐	☐		☐	☐	☐	☐	☐
f Cultivate a garden or lawn?	☐	☐	☐	☐	☐		☐	☐	☐	☐	☐
g Go fishing?	☐	☐	☐	☐	☐		☐	☐	☐	☐	☐
h Go hunting with gun, dog or other animal?	☐	☐	☐	☐	☐		☐	☐	☐	☐	☐
i Engage in farming?	☐	☐	☐	☐	☐		☐	☐	☐	☐	☐
j Engage in forestry?	☐	☐	☐	☐	☐		☐	☐	☐	☐	☐

Are local households considered generally to value wild species for:

	Highly				Not at all
k Food or other materials	☐	☐	☐	☐	☐
l Wildlife-related recreation as listed above	☐	☐	☐	☐	☐
m Tourism	☐	☐	☐	☐	☐
n Aesthetics and other intrinsic value	☐	☐	☐	☐	☐
o Environmental security such as flood protection	☐	☐	☐	☐	☐
p Other benefits	☐	☐	☐	☐	☐

o Please give examples

p [_____]

To what extent are households in the administrative area considered to suffer costs, in time or money, from wild species or habitats?

	A lot				Not at all
q Damage from pest species to household food or property	☐	☐	☐	☐	☐
r Damage from pests, predators or weeds to livestock, crops or woodland	☐	☐	☐	☐	☐
s Increasing the risk of fire	☐	☐	☐	☐	☐
s Increasing the risk of flooding	☐	☐	☐	☐	☐
t Transmission of disease to humans or livestock	☐	☐	☐	☐	☐
u Other issues	☐	☐	☐	☐	☐

t Please give examples

u [_____]

3 **Information sources for making environmental decisions**

| | yes | no |

a Is a Geographic Information System used to help make decisions on environmental issues for the administrative area?

If YES, what is the name and/or web-site of the system?

b Are paper or electronic records of wild species and habitats kept by the administration for the area? **yes** **no**

If YES, are these records (please mark all that apply): Unsystematic Regular survey **please give examples**

Survey / monitoring as part of scientific study Other

c On which environmental topics would information be welcome in the administrative area? How frequently does each issue arise now (5=common, 1=rare), how much time does it take to resolve(5=high, 1=low)?

Please use X for all the sources of information now used to guide decisions on each issue?

List of issues For examples please see the following page.	Frequency	Time	government	agencies	NGOs	Other consultants or advisors	internet	publications	Local knowledge	Own plans+records

d **In detail, what information is needed to make environmental decisions in the administrative area?**

			Please put X if data are needed.	How much of the data required are you able to access? Please use X to indicate your answer.				Please put X if data are in electronic format.	Put X if data are updated at least every 5 years.
				All	Most	Some	None		
1	Biodiversity	Protected species							
2	information	Harmful species (as in 2q-r on previous sheet) or invasive species							
3		Habitat maps (eg. protected, designated or otherwise important)							
4	Ecosystem Services:	Economically exploited wild species (mammals/birds/fish/plant food/medicine/materials/fungi)							
5	Provisioning	Cultivated food, livestock or forest crops							
6		Biofuels							
7	Ecosystem	Flood risk / protection							
8	Services:	Fire risk / protection							
9	Regulating	Risk of disease from wildlife (to people or domestic animals/plants)							
10	Ecosystem	Water quality, availability and pollution							
11	Services:	Air quality (and pollution)							
12	Supporting	Soil quality, fertility & erosion risk							
13	Ecosystem	Amenity areas (parks, paths, verges)							
15	Services:	Eco-tourism capacity and impacts							
15	Cultural	Environmental recreation and access for residents (including impacts)							

ISSUES CITED BY PARISH COUNCIL REPRESENTATIVES IN UK
Impact of agriculture & industry changes in land use on environment/people
Impact of extractive industry (gravel, clay, sand, water)
Impact of holiday/residential/business properties
Impact of camping & caravans & other tourism
Heritage site access, erosion
Impacts of developments on traffic
Relative values of different habitats for wildlife and humans
Access (presence and maintenance)
Common land – where, maintenance
Development on designated areas (e.g. green belt)
Allotments
Road verge management – cutting, spraying (costs, impacts)
Gully maintenance – when and how often
Green area maintenance (parks, play areas, greens, cemeteries)
Hedge management- cutting, laying (costs, impacts)
Trees – retention, danger, liabilities (TPOs, planting guidelines)
Leaves on roads
Car noise & air pollution
Contaminated land – previous use
Landfill – building safety
Human sewage spreading, sewage & drains.
Smells
Domestic animal impacts (dogs, cats, horses)
Animal pests (mammals, birds, insects)
Noxious weeks (hogweed, ragwort) on verges & private land
Where water goes when drainage systems change
Flood prediction and how to manage land to avoid them
Identifying boggy areas and subsidence risk
Weather damage (storms, droughts)

TESS WP5 LOCAL STAKEHOLDER SURVEY

This form is for telephone interview of local stakeholders in **one** of the survey areas. Contact details should be obtained, after the main interview, from the local administration respondent who seems most likely to help. **Data from individual survey forms will not be disclosed.**

Country name		Administration name	

Coordinator name: _____ **phone:** _____ **e-mail:** _____

Country Coordinators please return forms by <u>January 31st 2010</u> **to Dr Julie Ewald, Robin Sharp and Prof. Robert Kenward at** jewald@gwct.org.uk, robisharp@googlemail.com, reke@ceh.ac.uk

Please list the main types of land management decision (e.g. ploughing, planting, spraying, fertilising, thinning, weeding, clearing, cutting, stock/game/fish density setting, harvesting, dredging, burning) that affect areas of cultivation (e.g. fields) or more natural habitat at three main scales, and estimate how many of these management decisions are made in total each year at that scale.

Farmer   Name [ ]   Phone [ ]   email [ ]   **number**

Decision types:	small scale (<1 ha)	[ ]
Decision types:	field scale, area (ha) from [ ] to [ ]	[ ]
Decision types:	total managed area (ha) [ ]	[ ]

Manager of commercial woodland   Name [ ]   Phone [ ]   email [ ]   **number**

Decision types:	small scale (<1 ha)	[ ]
Decision types:	compartment scale, area (ha) from [ ] to [ ]	[ ]
Decision types:	total managed area (ha) [ ]	[ ]

Holder of an area for hunting   Name [ ]   Phone [ ]   email [ ]   **number**

Decision types:	small scale (<1 ha)	[ ]
Decision types:	game home range area (ha) from [ ] to [ ]	[ ]
Decision types:	total managed area (ha) [ ]	[ ]

Holder of a fishing area (if present)   Name [ ]   Phone [ ]   email [ ]   **number**

Decision types:	small scale (<1 ha)	[ ]
Decision types:	fishing beat scale, area (ha) from [ ] to [ ]	[ ]
Decision types:	total managed area (ha) [ ]	[ ]

Manager of nature reserve area (if present) Name [ ]   Phone [ ]   email [ ]   **number**

Decision types:	small scale (<1 ha)	[ ]
Decision types:	medium scale, area (ha) from [ ] to [ ]	[ ]
Decision types:	total managed area (ha) [ ]	[ ]

Farmer

On which environmental topics would information be welcome in the administrative area? How frequently does each issue arise now (5=common, 1=rare), how much time does it take to resolve(5=high, 1=low)? List of issues. **For examples please see the following page.**	Frequency	Time	Please use X for all the sources of information now used to guide decisions on each issue? government/ agencies / NGOs / Other consultants or advisors / internet / publications / Local knowledge / Own plans+records						
Managing the farmland in general									

Manager of commercial woodland (if present)

On which environmental topics would information be welcome in the administrative area? How frequently does each issue arise now (5=common, 1=rare), how much time does it take to resolve(5=high, 1=low)? List of issues. **For examples please see the following page.**	Frequency	Time	Please use X for all the sources of information now used to guide decisions on each issue? government/ agencies / NGOs / Other consultants or advisors / internet / publications / Local knowledge / Own plans+records						
Managing the woodland in general									

Holder of an area for hunting (if present)

On which environmental topics would information be welcome in the administrative area? How frequently does each issue arise now (5=common, 1=rare), how much time does it take to resolve(5=high, 1=low)? List of issues. **For examples please see the following page.**	Frequency	Time	Please use X for all the sources of information now used to guide decisions on each issue? government/ agencies / NGOs / Other consultants or advisors / internet / publications / Local knowledge / Own plans+records						
Managing the hunting area in general									

Holder of a fishing area (if present)

On which environmental topics would information be welcome in the administrative area? How frequently does each issue arise now (5=common, 1=rare), how much time does it take to resolve(5=high, 1=low)? List of issues. **For examples please see the following page.**	Frequency	Time	Please use X for all the sources of information now used to guide decisions on each issue? government/ agencies / NGOs / Other consultants or advisors / internet / publications / Local knowledge / Own plans+records						
Managing the fishing area in general									

Manager of nature reserve area (if present)

On which environmental topics would information be welcome in the administrative area? How frequently does each issue arise now (5=common, 1=rare), how much time does it take to resolve(5=high, 1=low)? List of issues. **For examples please see the following page.**	Frequency	Time	Please use X for all the sources of information now used to guide decisions on each issue? government/ agencies / NGOs / Other consultants or advisors / internet / publications / Local knowledge / Own plans+records						
Managing the reserve in general									

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SOME ISSUES IDENTIFIED BY LAND MANAGERS
Maximising output gains (growth, harvest point, markets)
Diversification income from farm-shops, car-parking, permissive access
Subsidy opportunities and problems (stewardship, set-aside)
Habitat restoration and management contracts (local authority, agency)
Minimising input costs (breeding, fertiliser, pesticide, medicine)
Farm shop supply chain
Public recreational access problems and maintenance (foot, horse, cycle)
Predation/crop damage from animals (vertebrates, invertebrates)
Predicting/avoiding disease (crops, stock, humans)
Weeds and weed-killers
Knowledge of planning opportunities/constraints (local-national)
Measuring habitat size
Measuring habitat quality
Farm woodlands and other trees (planting, maintenance, crop impacts)
Alternative energy (bio-fuels, digesters, wind-farms)
Composting, recycling
Soil qualities (fertility, water-holding)
Natural water supply management (flooding, wildlife, fishing)
Wildlife (biodiversity) recreation payments
Wildlife (regulations)
Wildlife (watching)
Waste management: leachates and effluents (nitrates, pesticides, spillage)
Gasses and smells
Erosion control (animal, wind, water, human)
Hedge management
Headland management
Game management
Drainage (fields, ditches)
Weather (benefits and damage)
Minimising input damage (e.g. nitrate run-off)
Compensation for damage by wildlife