SUPPLEMENTARY ITEM 1

INFO SHEET

Date: _____/_____/_____

Interviewee ID: _____

Dear colleague, we kindly ask you to fill in this info sheet and to participate to our interview. Your involvement in the EU-funded ANIMPACT project will help us to gather information on how scientists from different Member States contribute to animal research and how their opinions and attitudes influence the practice of animal experimentation. The anonymity of the respondents will be rigorously respected. The interview will be recorded and will last approx. ½ hour.

1. PERSONAL INFORMATION

1.1. Age: ☐<30 years ☐30-39 years ☐40-49years ☐50-60 years ☐>60 years

1.2. Gender: ☐Female ☐Male

1.3. Nationality: _____

1.4. Education: ☐ Bachelor's/Master's degree in_____ ☐PhD in _____

1.5. Religion: ☐Atheist ☐Agnostic ☐Christian (including Church of England, Catholic, Protestant and all other Christian denominations) ☐Buddhist ☐Hindu ☐Jewish ☐Muslim ☐Sikh ☐Other

1.6. Eating habits and behaviors: Are you a ☐Meat-eater ☐Vegetarian ☐Vegan ☐Other

1.7. Do you have, or did you ever have, companion animals? ☐No ☐Yes *(please specify)*_____

1.8. Do you support any animal rights or animal protection association? ☐No ☐I'm a paying member ☐I'm an active member ☐I've given donations in the past ☐I just sympathize with the cause

2. PROFESSIONAL INFORMATION

2.1. Country of employment: _____

2.2. Occupation: ☐Bachelor's/Master's student ☐PhD student ☐Post-doc ☐Researcher ☐LabTechnician ☐Senior researcher ☐Head Department/Lab ☐Other *(please specify)* _____

2.3a. Animal species you are currently working with: ☐Mouse ☐Rat ☐Rabbit ☐Primates ☐Fish ☐Birds ☐Dog ☐Cat ☐Other *(please specify)* _____

2.3b. Are you working with transgenic animals? ☐No ☐Yes *(please specify)* _____

2.4. Scientific field(s): ☐Basic research ☐Translational and applied research ☐Regulatory use and routine production ☐Protection of the natural environment in the interests of the health or welfare of human beings or animals ☐Preservation of species ☐Higher education or training for the acquisition, maintenance or improvement of vocational skills ☐Forensic enquiries ☐Maintenance of colonies of established genetically altered animals, not used in other procedures

2.5. How long have you been working with laboratory animals? ☐<1 year ☐1-5 years ☐6-10 years ☐11-20 years ☐>20 years

2.6. Have you previously worked with other animals? ☐No ☐Yes *(please specify which species)*_____

Thank you for your time!

EU project ANIMPACT – WORK PACKAGE 5 – ISTITUTO SUPERIORE DI SANITA', Rome

INTERVIEW GUIDE

1. PERSONAL and PROFESSIONAL INFORMATION

Information gathered from the **info sheet**

2. INFORMATION ON THE RESEARCH CARRIED OUT

2.1. *As I see from the info sheet, that you are currently working with **(species).** Briefly, would you like to tell us more about your research (purposes of the study, methodology employed, etc)* [**More research fields:** *We are particularly interested in your study about **(species)***]

Interviewer: Reflective listening. Summarize what she/he has said. Example: "Ok, so you work with mice studying tumour progression". Immediately skip to 2.2. using the same information.

2.2. *Why did you choose the **(species)** to study **(purposes of the research)**?*

2.2.1. *Is it common in the research community the use of that species in studies with a similar purpose?*

2.2.2. *Are you aware of different animal models/alternative methods to answer to the same research question?*

2.2.2.1. (**If Yes**) *Why did you choose to work with that species of interest instead of using these **(species/alternative methods)**?*

2.2.2.2. *(**If Not**) Do you think this is the only model available? Why?*

2.3. **A) Info sheet: the researcher used other species in the past**

*As I see, you used other species in the past. **(If more than one)** Which one was the first species you have worked with?*

2.3.1. *Why did you choose **(first species used)** at the beginning of your career?*

2.3.2. *Would you like to share with us why did you change species of interest?*

B) Info sheet: the researcher did not use other species in the past

*Why did you choose to work with **(species currently used)** at the beginning of your career?*

2.4. *Are there some species you would never work with?*

2.4.1. (**If Yes**) *Why?*

3. FACTORS AFFECTING RESEARCH WITH ANIMALS

3.1. *What do you take into account during your work with animals? Please think about all the steps for the realization of a project i) writing a research proposal, ii) develop a research approach (including choice of the animal species and methodology), and iii) running experiments*

3.1.1. *Can you imagine other factors external to the scientific practice/community which have an influence on your work with animals?*

3.1.2. *Let's think of a hypothetical scenario: you can perform in your lab some experiments with an X species and an X methodology to answer an X research question: what would you do? You would still do what you are currently doing?*

3.1.2.1. **(If the hypothetical scenario differs from the reality)** *What prevent you from doing it?*

4. RESEARCHER'S OWN ATTITUDE AND ETHICAL CONSIDERATIONS

4.1. *These species must be treated with a severe procedure (i.e. procedure as a result of which the animals are likely to experience severe pain, suffering or distress, or long- lasting moderate pain, suffering or distress, as well as procedures that are likely to cause severe impairment of the well-being or general condition of the animals). Please rank the following species, in order of acceptability of their use in these procedures from 'most acceptable' (1st) to least acceptable (9th)* [modified from Franco & Olson 2014]

SPECIES	Ranking
Dog	
Rat	
Drosophila	
Pig	
Zebrafish	
Mouse	
Octopus	
Chimpanzee	
Rhesus monkey	

4.1.1. *What criterion have you used to rank the species?*

4.1.2. *Why have you put **(1st animal)** before **(5th animal)**? Why have you put **(5th animal)** before **(9th animal)**? Which species was more difficult to place in the rank?*

4.2. *Among the procedures you carry out on (**species**), which, in your opinion, is the most severe/which mostly affect the animal welfare? Please rate this procedure in terms of pain/stress to the animal*

The Interviewer shows a scale from 1 (Not at all stressed) to 7 (Extremely Stressed)

4.3. *In your opinion how much your research on (**species**) has an impact on the community, in terms of human and animal health OR in terms of raising knowledge in your field of research? Please rate the impact of your research*

The Interviewer shows a scale from 1 (Low impact) – to 7 (High Impact)

4.4. **The Interviewer shows both the scales (Stress to animals and Impact of the research):** *You have just made a cost-benefit analysis of your research.*

4.4.1. *Do you think that the impact of your research balance the cost inflicted to the animals?*

4.4.2. *Does the impact of the research provide you with a justification for what you are doing?*

4.4.3. *Besides yourself, is there someone else (entity, person or institution) to whom you feel or you feel obliged to owe a justification for such cost/benefit analysis?*

4.5. *How well do you know the new Directive on the protection of animals used for scientific purposes?*

4.5.1. *Which changes has the Directive introduced with respect to the previous legislation?*

4.5.2. *Can you please indicate, from your personal point of view, the most innovative/positive aspects the Directive has introduced? And the most negative aspects?*

4.5.3. *Is the Directive having (or it will have) an impact on your work?*

4.6. *Do you know the 3Rs?* **(If Yes)** *Please indicate them*

Would you like to add something? Have you some personal considerations you w

1. Are you currently working (and/or have been working in the past five years) with laboratory/captive animals?
- Yes
- No

[*If No is selected, the questionnaire ends here*]

PERSONAL and PROFESSIONAL INFORMATION. RESEARCH CARRIED OUT.

2. Age
- <30 years
- 30-39 years
- 40-49 years
- 50-60 years
- >60 year

3. Sex
- M
- F

4. Level of education
- Bachelor's degree in_____
- Master's degree in_____
- PhD degree in_____
- Other_____

5. Nationality

_____

6. Religion
- Agnostic
- Atheist
- Buddhist
- Christian (including Church of England, Catholic, Protestant, etc.)
- Hindu
- Jewish
- Muslim
- Sikh
- Other_____

7. Eating habits and behaviors: Are you
- Omnivorous
- Vegetarian
- Vegan
- Other_____

8. Do you have, or have you ever had, companion animals?
- No
- Yes, currently [*please specify which animal(s)*]_____
- Yes, in the past, but I don't have any more [*please specify which animal(s)*]_____

9. Country of employment (where you are currently working)

_____

10. Position
- Bachelor's/Master's student
- Senior researcher
- PhD student
- Lab Technician
- Post-doc
- Researcher
- Head of Department/Lab

- Research Assistant
- Other_____

11. Animal species you are currently working with and/or have been working with in the past five years
[More than one answer can be chosen]
- Mouse
- Birds
- Rat
- Rabbit
- Fish
- Dog
- Cat
- Primates
- Genetically modified animals
- Other_____

12. Current research field(s) *[More than one answer can be chosen]*
- Basic research
- Preservation of species
- Translational and applied research
- Higher education or training for the acquisition, maintenance or improvement of vocational skills
- Regulatory use and routine production
- Forensic enquiries
- Protection of the natural environment in the interests of the health/welfare of human beings/animals
- Maintenance of colonies of established genetically altered animals, not used in other procedures

13. How long have you been working with captive/laboratory animals?
- <1 year
- 1-5 years
- 6-10 years
- 11-20 years
- >20 years

14. Please briefly describe (*one sentence if possible*) the main aim of your research and the species used (e.g. "Tumor progression in mice", "Tool use in primates")
[If you are involved in more lines of research, please choose one. Consider the chosen line of research when answering to the following questions]

_____

CHOICE OF ANIMAL MODELS AND NON-ANIMAL ALTERNATIVE METHODS

15. Are you aware of different animal models or non-animal alternative methods to answer your research question?
- Yes, different in vivo animal models
- Yes, alternative methods (e.g. in silico, in vitro)
- Yes, both
- No

[*If No is not selected, skip to question 16*]
[*If No is selected, skip to question 17*]

16. Why did you choose to work with that species instead of using the alternative species/ methods you have mentioned? *[More than one answer can be chosen]*
- This is the most suitable species to answer to the specific research question
- Logistic and economic constraints
- Presence of a consistent body of literature on this species
- Institutional reasons (e.g. traditional institution's approach and expertise)
- Comparability with data from other studies/Labs
- My preference for that species beyond a particular research question
- Other reasons

17. Why did you choose to work with animals at the beginning of your career?
- I was interested in animals (animal behavior, cognition, physiology, etc.)
- I had a strong interest in my research field (e.g. biomedicine, toxicology, behavior, etc.) and I ended up working with animal models

- I chose to carry out my undergraduate work with a certain Professor and/or in a certain Institution and I ended up working with animals utilized in that context
- Other reasons_____

18. In your opinion, in the case you want to change the model species, how much resistance you would encounter in your laboratory environment, for example due to the tradition of your lab/institute (lines of research, methods) or due to peer pressure?
- Extremely
- Very
- Moderately
- Slightly
- Not at all

19. Are there some animal species you would never work with?
- No
- Yes [*please specify one animal species*]

[*If Yes is selected, skip to question 20*]
[*If No is selected, skip to question 21*]

20. Which are the main reasons for not using this species? *[More than one answer can be chosen]*
- Because of my personal ethical considerations
- Because I don't like this species
- I don't have financial resources or my lab does not have space to house this species
- Because I feel affection for this species
- Because the use of this species would generate too much pressure from the public opinion
- Because law regulations to use this species are too strict
- Other reasons_____

FACTORS INFLUENCING RESEARCHERS' WORK WITH ANIMALS

21. Please rate the importance of these factors in influencing <u>your</u> choice of the animal model

	Extremely	Very	Moderately	Slightly	Not at all
Limitations imposed by both national and supranational (Directive 2010/63/EU) regulations	O	O	O	O	O
Public opinion	O	O	O	O	O
Opinions of friends and relative	O	O	O	O	O
Project authorization process	O	O	O	O	O
Evaluation by ethics or animal care committees	O	O	O	O	O
Resource allocation and funding by public or private institutions	O	O	O	O	O
Scientific considerations, e.g. Research question / Quality of the data collected / Comparison with other Labs and Institutes	O	O	O	O	O
Ethical considerations regarding animal welfare	O	O	O	O	O
Preferences for different species / Attitudes towards animals (and/or animal use)	O	O	O	O	O
Costs (including housing and management of animals / Technologies / Equipment / Staff)	O	O	O	O	O
Trends, including trend in scientific publishing	O	O	O	O	O

22. How well do you know the new Directive on the protection of animals used for scientific purposes (Directive 2010/63)?
- Not at all
- Not well
- Fairly well
- Well
- Very well

23. Please rate how much the following aspects of your work with animals are influenced by the public opinion

	Extremely	Very	Moderately	Slightly	Not at all
Choice of the animal model (e.g. considering that some species such as dogs, cats and non-human primates are object of great public sensitivity)	O	O	O	O	O
Purpose of the research (e.g. considering that some health-related lines of research are relevant for the public)	O	O	O	O	O
Methods (e.g. considering public pressure against invasive tests)	O	O	O	O	O
Dissemination of results (e.g. putting emphasis on animal protection and/or on the impact of the research for the public)	O	O	O	O	O

24. In your opinion, is public concern about animal welfare/ human health issues affecting funding decisions by granting agencies?

- Yes, especially with regards to animal welfare
- Yes, especially with regards to human health issues
- Yes, for both aspects
- No
- I don't know

ATTITUDES TOWARDS ANIMALS

25. Imagine you are involved in an experiment which uses a particular species in a severe procedure (i.e. procedure as a result of which the animals are likely to experience severe pain, suffering or distress, or long- lasting moderate pain, suffering or distress, as well as procedures that are likely to cause severe impairment of the well-being or general condition of the animals).
Please rate how much it would be acceptable for you to use the following animal species in such procedures, from '*Not acceptable*' (1) to '*Very acceptable*' (5)

	1 - Not accetable	2	3	4	5 - Very accetable
Dog	O	O	O	O	O
Rat	O	O	O	O	O
Drosophila	O	O	O	O	O
Pig	O	O	O	O	O
Fish	O	O	O	O	O
Rabbit	O	O	O	O	O
Birds	O	O	O	O	O
Cat	O	O	O	O	O
Mouse	O	O	O	O	O
Octopus	O	O	O	O	O
Chimpanzee	O	O	O	O	O
Rhesus monkey	O	O	O	O	O
Reptiles	O	O	O	O	O
Amphibians	O	O	O	O	O
Guinea Pigs	O	O	O	O	O

26. Which personal criterion have you used to rate the species? *[More than one answer can be chosen]*

- Moral relevance attributed to the species
- Use of that particular species in human society (e.g. animals use for companionship, animals used for food consumption)
- Perceived neurobiological complexity/ sensitivity of the species used (perceived ability to experience different cognitive states including sufferance)
- Relationship with and/or preference for that particular species
- Other_____

ANIMAL WELFARE AND COST-BENEFIT ANALYSIS

27. Among the procedures you carry out on animals, think about the procedure which has the biggest impact on animals. Please rate this procedure in terms of pain/stress to the animal, from 1-*Not at all stressed* to 7-*Extremely Stressed*

1-Not at all stressed	2	3	4	5	6	7-*Extremely Stressed*

28. In your opinion how much of your work with animals has an impact on society, in terms of benefits for human and animal health or in terms of raising knowledge in your field of research? Please rate the impact of your research from 1-*Low impact* to 7-*High Impact*

1- Low impact	2	3	4	5	6	7- High impact

29. Do you think that the potential benefits of your research balance the actual costs (in terms of welfare) inflicted to the animals?

- Yes, the impact of my research balances the cost inflicted to the animals
- Yes, though I should try to decrease the animal stress/pain
- Yes, though I should try to increase the research impact/benefit
- No, the impact/benefit of my research does not balance the cost inflicted to the animals
- I don't know

30. The 3Rs model by Russell and Burch (1959) is a guiding principle for humane animal experimentation and is a substantial part of the Directive 2010/63 on the protection of animals used in procedures.
How much do you take into account the 3Rs principle during your research with animals? Please rate from 1-*Not at all* to5-*Very much*

1-Not at all	2	3	4	5-Very much

31. Which one of the 3Rs you find more easy to apply to your research? *[More than one answer can be chosen]*

- Replacement
- Reduction
- Refinement
- I don't know

32. Please rate your level of agreement with the following statements, from 1-Not at all to 5-Very much

	1 - Not at all	2	3	4	5 - Very much
When working with experimental animals, taking into account animal welfare is important because it increases the quality of the data collected	O	O	O	O	O
When working with experimental animals, taking into account animal welfare is important because animal welfare is object of great public sensitivity and a focus of attention to the public eye	O	O	O	O	O
When working with experimental animals, taking into account animal welfare is important because of ethical reasons (animal welfare is a value in itself)	O	O	O	O	O
When working with experimental animals, taking into account animal welfare is important because legislation imposes to do it	O	O	O	O	O

33. Would you like to add something? Have you some personal considerations you would like to add?

_____

Based on the analysis of the overall use of different species to provide experimental models in the EU Member States (MS), and the identification of differences among MS, 10 case studies, i.e. MS that represent the spectrum of different uses of species in research, were identified. The selection considered both inclusion criteria (which every case should fulfill) and division criteria (for which we were looking for diversity among the selected cases) **(Table S1)**.

Table S1 Case studies selection criteria

Inclusion criteria
i) MS which used more than 100,000 animals in 2011**;**
ii) MS with 2012/2013 statistical data on the use of animals in procedures available.
Division criteria
a) Number of animals used relative to R&D expenditure: ABOVE/BELOW the European average;
b) Proportion of species used in relation to the EU average: TYPICAL/ATYPICAL;
c) Proportion of animals used for different purposes in relation to the EU average: TYPICAL/ATYPICAL;
d) Level of acceptance of animal research: AGREEMENT/DISAGREEMENT/NEUTRAL/AVERAGE**;**
e) Participation in the Citizens' Initiative Stop Vivisection – Minimum number of signatories: OBTAINED/NOT OBTAINED;
f) Political geography (NORTHERN/WESTERN/EASTERN/SOUTHERN EUROPE, NEW MS)

Inclusion criteria

i) More than 100,000 animals used

We selected case studies among MS that made considerable use of experimental animals (more than 100,000 animals used in 2011[1] **[1]**), avoiding to consider MS in which the use is minimal and thus have a completely different scenario in comparison with the European average (see for example Malta, in which only 10 animals were used in 2011, all of which in the category "other mammals", or Luxembourg which used only 500 animals). Priority was given to countries for which more up-to-date information (EU statistical tables referring to years 2012/2013) were available.

ii) 2012-2013 statistical data

At the time of our study, the most recent official data available on the use of animals for experimental and other scientific purposes in relation to different fields of application (harmonized EU statistical tables) referred to the year 2011 **[1]**. In order to obtain more up-to-date information on the number of animals used in EU MS (statistical tables referring to the years 2012-2013), the competent authorities of 27 MS were contacted.

Article 59 of the Directive 2010/63/EU describes the role of competent authorities designated by each MS and serving as National Contact Point (NCP) for the purposes of the Directive to the Commission. The NCPs are responsible for the implementation of the Directive. A letter addressed to the NCPs was sent in English. Responses were received from only 13 NCPs (providing data referred to 2012 or 2013 or both). Moreover, information regarding some countries was obtained through the websites of the competent Ministry/Department that collect and make publicly available, on an annual basis, statistical information on the use of animals in procedures.

More up-to-date information was obtained for: Belgium (2012-2013), Croatia (2012), Czech Republic (2013), Denmark (2012), Finland (2012), Germany (2012-2013), Hungary (2012-2013), Ireland (2012-2013), Latvia (2012-2013), The Netherlands (2012), Poland (2012), Spain (2012-2013), Sweden (2012), UK (2012-2013).

[1] This was the most updated official Report on the use of animals for research purposes at the time of our study.

Division criteria

Among those MS that meet the criteria for inclusion, we selected case studies to represent a spectrum of different uses of animals in research, as well as a different perception of animal research (level of acceptance) and political geography.

a) Number of animals used in research relative to R&D expenditure

The number of animals used for experimental purposes across 27 countries (which were MS of the EU in 2011) was controlled for the size of member states' economies, in particular by analyzing the number of animals used in relation to the total intramural expenditure on research and Development (R&D) **[2] (Table S2).**

Table S2. Number of animals used in research in 2011 in the 27 MS of the EU expressed as an absolute value (a) and in relation to member states' R&D expenditure (b) relative to the same year. Values are given in descending order

a. Number of animals used in research in 2011 in EU member states **[1]**		**b.** Number of animals used in research relative to R&D (2011) in EU member states **[1,2]** *[Number of animals per €1M R&D]*	
FRANCE	2,200,152	HUNGARY	229.26
GERMANY	2,073,702	CZECH REPUBLIC	138.79
UNITED KINGDOM	2,050,458	ESTONIA	106.74
SPAIN	900,127	POLAND	99.49
ITALY	781,815	IRELAND	98.31
BELGIUM	665,079	ROMANIA	91.50
NETHERLANDS	514,617	BELGIUM	81.39
CZECH REPUBLIC	354,196	BULGARIA	78.58
DENMARK	282,840	LATVIA	73.39
POLAND	282,160	UNITED KINGDOM	65.00
HUNGARY	276,179	SPAIN	63.46
SWEDEN	271,041	FRANCE	50.61
IRELAND	264,990	NETHERLANDS	42.39
AUSTRIA	191,288	DENMARK	39.52
FINLAND	136,043	ITALY	39.46
ROMANIA	60,156	SLOVAKIA	33.55
PORTUGAL	46,556	GERMANY	27.47
ESTONIA	41,035	AUSTRIA	23.11
GREECE	28,001	SWEDEN	20.76
BULGARIA	17,259	GREECE	20.13
SLOVAKIA	15,717	FINLAND	18.99
SLOVENIA	11,874	PORTUGAL	17.86
LATVIA	10,329	CYPRUS	14.94
LITHUANIA	4,067	LITHUANIA	14.39
CYPRUS	1,328	SLOVENIA	13.28
LUXEMBURG	502	LUXEMBURG	0.84
MALTA	10	MALTA	0.21
EU-27	**11,481,521**	**EU-27**	**44.31**

France reported for the year 2010 (France R&D expenditure is relative to the year 2010). The blue line splits values above and below the European average

b) Proportion of species used

Aside from mere considerations on the number of animals used in research in the EU and relative differences among MS, what differentiates a particular country from the European scenario is the proportion of species used. For this analysis, we considered only those species/groups of animals whose use is substantial, i.e. whose use exceeds the 1% of the animals used in the EU (mice: 60.96%; rats: 13.96%; fish: 12.17%; birds: 5.88%; rabbits: 3.12%; guinea pigs: 1.49%; ungulates: 1.28%). *We consider a country as being characterized by an atypical scenario – in terms of the proportion of species used – when the number of animals of at least one*

species/group of species is either in the 90th or in the 10th percentile, i.e. its number is higher than 90% or lower than the 10% of the other countries **(Table S3).**

Table S3. Proportion of species used in the 15 MS of the EU reporting more than 100,000 animals in 2011 **[1]** (Typical/Atypical)

EU Member States	**Proportion of species used** *Atypical*: (species, %)*
FRANCE	Typical
GERMANY	Typical
UNITED KINGDOM	Typical
SPAIN	Typical
ITALY	Typical
BELGIUM	Atypical (Rabbits, 8.1%)
THE NETHERLANDS	Atypical (Ungulates, 4.3%; Birds, 19.3%)
CZECH REPUBLIC	Atypical (Mice 20.6%; Birds, 48.1%)
DENMARK	Atypical (Ungulates, 3.4%)
POLAND	Atypical (Fish 35.5%)
HUNGARY	Atypical (Birds 13.2%)
SWEDEN	Typical
IRELAND	Atypical (Mice 93.9%)
AUSTRIA	Atypical (Rabbits 8.17%)
FINLAND	Atypical (Fish 22.6%)

**Atypical: when the number of animals of at least one species/group of species is either in the 90th or in the 10th percentile, i.e. its number is higher than 90% or lower than the 10% of the other countries.*

c) Proportion of animals used for different purposes

For this analysis, we selected case studies to represent a spectrum of different uses of animals in research in terms of animals used in the different fields of application (including both applied and basic research). *We consider a country as being characterized by an atypical scenario – in terms of the proportion of animals used for different purposes – when the number of animals of at least one field of application is either in the 90th or in the 10th percentile, i.e. its number is higher than 90% or lower than the 10% of the other countries* **(Table S4).**

Table S4. Proportion of animals used for different purposes in the 15 MS of the EU reporting more than 100,000 animals in 2011 **[1]** (Typical/Atypical)

EU Member States	**Proportion of animals used for different purposes[£]** *(Atypical*: purpose, %)*
FRANCE	Atypical (Other: 24%)
GERMANY	Typical
UNITED KINGDOM	Atypical (Other: 18.7%)
SPAIN	Typical
ITALY	Typical
BELGIUM	Typical
THE NETHERLANDS	Atypical(Other: 0.0%)
CZECH REPUBLIC	Atypical (R&D Products[£]: 4.9%)
DENMARK	Atypical (R&D Products[£]: 38.8%)
POLAND	Typical
HUNGARY	Typical
SWEDEN	Typical
IRELAND	Atypical (Biol[£]: 10.3%; Toxicol[£]: 73.8%)
AUSTRIA	Typical
FINLAND	Typical

**Atypical: when the number of animals of at least one field of application is either in the 90th or in the 10th percentile, i.e. its number is higher than 90% or lower than the 10% of the other countries*

[£]*Purposes of experiments:* Biolo: Biological studies of a fundamental nature; R&D Products: Research and development of products and devices for human medicine and dentistry and for veterinary medicine; Toxicol: Toxicological and other safety evaluations

d) Level of acceptance of animal research (2010 Eurobarometer survey)

MS were selected also taking into account differences in public attitudes towards animal research (MS where there is high and those where there is a low acceptance of animal experimentation). In order to evaluate the public perception of animal research, two aspects were chosen that, though arbitrary, might be representative of different attitudes among MS. The first is the acceptance levels of animal testing in different countries, as reported in the 2010 Eurobarometer survey; the second aspect refers to countries' participation in the European Citizens' Initiative *Stop Vivisection*.

In 2010, a Eurobarometer survey on science and technology looking at the views on the effect of science and technology on society, including their views on animal testing, showed a divergence between EU citizens **[3]**. Divisions in public opinion on whether animal experiments should be allowed - even if the research will benefit human health – were found, particularly in terms of species of animals used in experiments. On average, when asked if "*scientists should be allowed to experiment on animals like dogs and monkeys if this can help sort out human health problems*", 44% of respondents representing European citizens (EU-27) agreed, while 37% disagreed. European citizens appeared less sensitive to the use of animals like mice compared to the use of dogs or monkeys. The majority (66%) found that "*scientists should be allowed to do research on animals like mice if it produces new information about human health problems*", while only 18% of respondents disagreed. When looking at the variation in opinion between respondents in different MS, the survey shows large country differences **[3]**. **Table S5** shows the level of acceptance of animal testing (**Table S5a** using monkeys/dogs and **Table S5b** using mice) in 15 MS (those using more than 100,000 animals in 2011). Specifically, "*Agreement above average*" indicates those countries where *the percentage of respondents agreeing with research using dogs/monkeys or mice is in the 75th percentile, i.e. its number is higher than 75% of the other countries*. Similarly, "*Disagreement above average*" indicates those countries where *the percentage of respondents disagreeing with research using dogs/monkeys or mice is in the 75th percentile, i.e. its number is higher than 75% of the other countries*. The same criterion is used for the percentage of respondents neither agreeing nor disagreeing ("*Neutral above average*").

Table S5. Percentage of respondents agreeing/disagreeing with the use of animals in research **[3]**

a. research using mice

MS	AGREE	NEITHER	DISAGREE	Agreement/Disagreement
AUSTRIA	52	18	29	Disagreement/Neutral above average
BELGIUM	70	13	17	Average
CZECH REPUBLIC	71	14	15	Average
DENMARK	78	9	12	Agreement above average
FINLAND	67	9	24	Disagreement above average
FRANCE	68	11	20	Average
GERMANY	61	16	23	Disagreement above average
HUNGARY	68	18	13	Neutral above average
IRELAND	56	16	21	Average
ITALY	58	19	20	Neutral above average
NETHERLANDS	65	12	22	Disagreement above average
POLAND	69	13	13	Average
SPAIN	75	11	11	Agreement above average
SWEDEN	72	9	18	Agreement above average
UNITED KINGDOM	67	10	22	Disagreement above average
EU-27	**66**	**14**	**18**	
75th percentile	**71.5**	**16.5**	**21.5**	

% of "Don't know" responses is not reported (average in the EU: 2%)

b. research using dogs/monkeys

MS	AGREE	NEUTRAL	DISAGREE	Agreement/Disagreement
AUSTRIA	36	18	45	Disagreement above average
BELGIUM	47	15	38	Average
CZECH REPUBLIC	41	19	39	Average
DENMARK	50	17	32	Average
FINLAND	39	10	51	Disagreement above average
FRANCE	33	14	51	Disagreement above average
GERMANY	37	19	43	Average
HUNGARY	49	24	26	Neutral above average
IRELAND	38	16	39	Average
ITALY	37	23	39	Neutral above average
NETHERLANDS	45	15	39	Average
POLAND	49	24	26	Neutral above average
SPAIN	65	14	18	Agreement above average
SWEDEN	45	11	43	Average
UNITED KINGDOM	44	14	42	Average
EU-27	**44**	**17**	**37**	
75th percentile	**50**	**19**	**43**	

% of "Don't know" responses is not reported (average in the EU: 2%)

e) Participation in the European Citizens' Initiative Stop Vivisection

Stop Vivisection[2] is a European Citizens' Initiative proposing the abrogation of the Directive 2010/63/EU on the protection of animals used for scientific purposes and a new European legislative framework aimed at phasing out animal experiments **[4]**. The initiative was registered in June 2012 and signatures' collection was closed in November 2013. Before being submitted to the Commission, the European citizens' initiatives should obtain statements of support in at least 7 EU countries (thresholds for each country are indicated by the EC). The initiative collected more than 1 million valid signatures in 12 different MS[3]: Belgium (203%), Bulgaria (114%), Germany (246%), Estonia (137%), Spain (157%), Finland (130%), France (164%), Hungary (185%), Italy (promoter), Poland (117%), Slovenia (430%), Slovakia (137%) **[4]**.

f) Political geography

MS were selected also taking into account political geography (i.e. countries from Northern, Western, Eastern, and Southern Europe[4], including new MS).

[2] http://ec.europa.eu/citizens-initiative/public/initiatives/finalised/details/2012/000007/en?lg=en
[3] Percentage of signatures collected/needed are given in parentheses
[4] http://unstats.un.org/unsd/methods/m49/m49regin.htm

Case studies selected

MS	Inclusion criteria		Division criteria					
	i) > 100,000 animals used in 2011	ii) 2012-2013 Statistical tables	a) Number of animals used relative to R&D	b) Proportion of species used	c) Proportion of animals used for different purposes	d) Level of acceptance of animal research (dogs and monkeys/mice)	e) Stop Vivisection	f) Political geography
1.Czech Republic	Yes	Yes	Above	Atypical	Atypical	Average/Average	Not obtained	E*
2.Finland	Yes	Yes	Below	Atypical	Typical	Disagreement/Disagreement	Obtained	N
3.Germany	Yes	Yes	Below	Typical	Typical	Average/Disagreement	Obtained	W
4.Hungary	Yes	Yes	Above	Atypical	Typical	Average/Average	Obtained	E*
5.Ireland	Yes	Yes	Above	Atypical	Atypical	Average/Average	Not obtained	N
6.Italy	Yes	Yes	Below	Typical	Typical	Average/Average	Obtained	S
7. The Netherlands	Yes	Yes	Below	Atypical	Atypical	Average/Disagreement	Not obtained	W
8.Spain	Yes	Yes	Above	Typical	Typical	Agreement/Agreement	Obtained	S
9.Sweden	Yes	Yes	Below	Typical	Typical	Average/Agreement	Not obtained	N
10.UK	Yes	Yes	Above	Typical	Atypical	Average/Disagreement	Not obtained	N

*New MS (from 2004)

REFERENCES

[1] Report from the Commission to the Council and the European Parliament. *Seventh Report from the Commission to the Council and the European Parliament on the Statistics on the number of animals used for experimental and other scientific purposes in the Member States of the European Union.* European Commission, Brussels, 5.12.2013. Available at: http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:52013DC0859

[2] Eurostat. Total intramural R&D expenditure (GERD), by sectors of performance. All sectors, million euro. http://appsso.eurostat.ec.europa.eu/nui/submitViewTableAction.do;jsessionid=u8S37trjEUF2-zzc-lWVS7ic3q3DwSjer3nrkNHJv01WavaVH2s7!966383771

[3] Science & Technology Report. Special Eurobarometer 340, European Commission, 2010. Available at: http://ec.europa.eu/public_opinion/archives/ebs/ebs_340_en.pdf

[4] Stop Vivisection. Signatures report. http://www.stopvivisection.eu/en/content/signatures#overlay-context=en