PROJECT FINAL REPORT

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Project acronym: DISCONTOOLS

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Executive Summary

In the context of animal diseases reducing output by at least 20% according to the OIE, it is crucial to set priorities for research into new or improved tools for disease control and to ensure the most effective use of resources and research capacity. DISCONTOOLS is a project that provides a mechanism to target research funding and prioritise research and so contribute to the delivery of new and improved tools – diagnostics, vaccines and pharmaceuticals - to control priority diseases. It is a decision support tool which identifies specific components for prioritisation of diseases and allows a comparison between diseases. The model then allows the different components to be compared and also to determine where the most effective area for research funding might lie.

The gap analysis for the availability of effective control tools provides an evidence base to inform policy makers and funders on where the most effective allocation of resources can be made to develop new and improved tools for the control of the main diseases. This will depend on which areas, such as the impact on wider society, impact on public health, animal welfare or the impact on trade, are considered to be the most important.

Following the work of the European Technology Platform for Global Animal Health (ETPGAH), 52 diseases were considered within the scope of DISCONTOOLS. Expert groups consisting of 5 to 10 experts were established for each disease. Where possible each group included experts with laboratory expertise, an epidemiologist, an industry representative, a diagnostics expert and an individual with economic/trade expertise

Each expert group finalised a “Disease and Product analysis” document (D&P) - a reference document providing key information for each disease to support the scoring for the prioritisation and control tools gap analysis models. The D&P includes 23 main sections with sub-headings covering a wide range of aspects such as description and characteristics of the disease, zoonotic potential, tools available, economic impact, etc. The expert groups were asked to reach a consensus on the final text which they then used as the basis for the scoring in the prioritisation and control tools gap analysis models.

In addition to collecting information about the diseases and the control tools an additional column was included in the D&P document. The column headed “Gaps identified” was designed to gather further information on the gaps in knowledge of each disease and products to combat it. This helps scoring in the gap analysis sheet by highlighting the most critical gaps.

The project also worked on identifying technological tools that may be used to improve the ability to control infectious animal diseases. Existing methodologies were reviewed and a methodology proposed for the animal health sector. Effective identification and technology transfer is essential if new tools for disease control are to be developed.

The outcome is a public searchable database that is being used by funders of research to set research priorities. This is a very significant contribution to the animal health research effort with the focus leading to the development of diagnostics, vaccines and pharmaceuticals more rapidly. This will protect animal health and welfare but also public health where zoonoses are concerned. In terms of sustainability, reducing the burden of animal diseases ensures greater productivity from the same or reduced inputs making agriculture more efficient and helping to secure the food supply chain.

Project Context and Objectives

Context

The concept of DISCONTOOLS arose from the work of the European Technology Platform for Global Animal Health (ETPGAH) which was launched in December 2004. Since then the ETPGAH has developed a Vision, a Strategic Research Agenda (SRA) and an Action Plan (AP) to implement the recommendations made in the SRA.

Recent disease outbreaks have highlighted the necessity of not only producing new vaccines but also for improving existing vaccines and providing vaccines capable of differentiating vaccinated from infected animals. The use of vaccines and diagnostic tests are a key component as they have the potential to support control and eradication and to be highly cost effective. New and improved vaccines, diagnostics and pharmaceuticals are required for a wide range of major animal diseases. Effective tools for controlling animal diseases of major social and economic importance are vital not only for Europe but also for the rest of the world.

Objectives

DISCONTOOLS provides a mechanism for focusing and prioritising research that ultimately delivers new and improved vaccines, pharmaceuticals and diagnostic tests. The project makes a major contribution to the objectives of the relevant FP7 call. There are three complimentary work strands backed up by the development of a comprehensive communication strategy.

The first strand provides a validated database and peer reviewed methodology in order to prioritise infectious animal diseases.

Gap analysis is the second strand and has been carried out to identify those areas where information and knowledge of the disease is deficient and where current tools are lacking, inadequate or could be improved. Information has been collected in a standard format for validation and entry into a specific disease database. A detailed analysis has been carried out for each of the priority diseases to identify gaps in key areas.

The third strand is to identify current and new technological tools that may be used to improve the ability to control infectious animal diseases. The work includes a review of existing arrangements by stakeholders and the development of a methodology to identify and evaluate new technology. Effective identification and technology transfer is essential if new tools for disease control are to be developed.

All these factors underline the need for a coordinated, transparent and multidisciplinary R&D effort from basic sciences through to the emerging technologies and onto product development, production, authorisation and distribution. There is an urgent need to boost research with effective funding so that new or improved veterinary medicines – diagnostics, vaccines and pharmaceuticals can be delivered.

It is important to develop, through public and private partnerships, an overview of current research and to identify gaps. Programmes can then be developed to fill these gaps whilst at the same time developing research collaboration and synergies to avoid duplication of research effort. Within the EU, the lack of a formal mechanism to identify research gaps increases the reliance placed on scientific communities, panels and workshops to assess these needs. Assessments are limited and need continuous updating. It is equally important

to adopt a global approach to ensure that research is coordinated and rationalised to ensure maximum returns for the investment in research.

Work Packages

The interaction of the 5 synergistic work packages in the project has been essential for the successful delivery of the objectives. The scientific and technical objectives of the project are listed and described below:-

1. To establish and maintain effective management and coordination of the project involving all stakeholders (WP1).
2. To prioritise diseases (WP2)
3. To conduct a gap analysis of the priority diseases to identify those area where information and knowledge of the disease is deficient and where current tools are lacking, inadequate or could be improved. (WP3)
4. To identify and evaluate new technologies. (WP4)
5. To ensure the effective communication and dissemination of information from the project. (WP5)

WP 1 To establish and maintain effective management and coordination of the project involving all stakeholders

The nature of project placed a strong emphasis on stakeholder input and horizontal interactions with other groups involved in research, development and delivery of new tools. A major objective was to ensure alignment of all stakeholders and also with the Commission with respect to reporting, accounting and the organisation of meetings.

There are also important horizontal interactions with Member State research funders through the Collaborative Working Group on Animal Health and Welfare (CWG) of the Standing Committee on Agriculture Research (SCAR). Links and interaction have been developed with the Community Animal Health Policy (CAHP) and with the Chief Veterinary Officers (CVO) of the Member States who have a major interest in the development of tools for disease control. Many of the specific disease experts are based in the Community Reference Laboratories (CRL) and close liaison and contact with these groups was developed. There is also a close link to the ETPGAH which is continuing to develop the SRA and Action Plan. Close contact was also maintained with the international organizations including OIE, FAO, WHO, and ILRI. There has also been coordination with other European projects such as EMIDA ERA-Net, ANIHWA ERA-Net, MedVetNet, ICONZ, STAR-IDAZ and EPIZONE. The high level of expertise which already exists within Europe wide institutions dealing with infectious diseases of animals has been utilised where appropriate.

A second important objective was to develop a flexible but comprehensive management and advisory structure to take into account the needs of the different stakeholder groups. An effective governance structure was introduced which can take decisions quickly but which does not exclude any stakeholders. This WP was responsible for the day to day running of the project.

WP 2 To prioritise diseases

A specific priority setting process is important to provide clarity over priorities and to ensure successful outcomes from research funding. An important outcome is the appropriate targeting of research funds to the diseases in the defined priority areas. In the longer term outcomes will include better focused research into those areas where new tools and methods for control have a priority and improved public and private sector funding of research.

This objective was to develop and deliver a comprehensive, harmonised and validated methodology for the prioritisation of infectious animal diseases. This work has built on the work already carried out by the ETPGAH. An agreed methodology has been developed which can be used by research funders and policy makers throughout the world. The model enables new and emerging diseases to be evaluated in a systematic manner and compared to the priority of existing diseases. This enables funders to identify a mechanism by which to allocate resources and research capacity.

The model allows for the objective and transparent classification of disease using a risk-based animal disease prioritisation model. It is difficult to allocate diseases into a simple classification as the large number of variables made a prioritisation method difficult to develop. This work package established the criteria on which to base the prioritisation, defined the methodology and delivered an effective peer reviewed model for researchers and research funders.

A comprehensive publicly accessible database (www.discontools.eu) of information and a working model for prioritisation of animal diseases which is peer reviewed and accepted by funders has been developed.

Furthermore the output of the model assists in providing a basis for an EU wide disease classification that can serve a number of different purposes. Of particular importance is the close link to the CAHP and the ability to set priorities for eradication and prevention programmes and to align total public financial support with the degree of responsibility operators or governments have for disease prevention and control.

A regular review of diseases and their order in the prioritisation list will enable research funders and policy makers to determine whether priorities have changed and whether new or emerging diseases will necessitate the redeployment of resources.

WP 3 To conduct a gap analysis of the priority diseases to identify those area where information and knowledge of the disease is deficient and where current tools are lacking, inadequate or could be improved

The objective was to produce a detailed standardised gap analysis for the priority diseases. For each disease this identifies the gaps in knowledge, the current status of control tools and highlights the areas where research is required to overcome these gaps. This information will be used to target research and development activities.

A preliminary analysis carried out by the ETPGAH attempted to identify the overall gaps for a number of diseases but concluded that a more detailed analysis is required in order to identify the gaps which currently exist in the knowledge and understanding of each of these diseases. A standard methodology was developed involving the identification of the critical issues which need to be addressed to complete a gap analysis. This includes information about the disease and the existing control tools. Information was collected in a standard format for entry into a database for analysis. A detailed analysis was carried out for each of the priority diseases and a research requirements document produced for each disease.

A comprehensive analytical methodology was developed which allows the identification of gaps which currently exist in the knowledge and understanding of the priority diseases. A more detailed assessment of host-pathogen interaction, epidemiology, immunology and control tools for each priority disease was provided. The development and implementation of the methodology to identify gaps in key areas enables effective targeting of research funding to ensure the availability of new and improved tools for the control of these diseases.

The output from this work package is the delivery of a comprehensive peer reviewed and standardised analysis for each of the priority diseases with the availability of a database for each disease.

By using the gap analysis the research requirements for the development of new or improved targeted tools for each of the priority diseases have been identified. European, national, charity, industry and third country funders should target research programmes to fill the gaps and ensure maximum returns on relatively scarce resources.

The results are available to decision makers both in relation to policy and research funding. The production of a research requirement document for each of the priority diseases acts as guidance for funders as to the priorities for development. This is not just a list of topics proposed by the researchers but a prioritised list for the production of new diagnostics, vaccines or pharmaceuticals agreed by all the stakeholders.

WP 4 To identify and evaluate new technologies

The objective is to ensure new technologies are identified quickly and evaluated to assess their potential contribution to the development of more effective tools for the control of priority diseases. This may be achieved using literature reviews and establishing a panel of experts from different disease and speciality backgrounds. Routine analysis of published literature and conference proceedings would add value to the identification process. The techniques for identifying new technologies and applying them across a range of different diseases are still in their infancy. A holistic rather than a specific disease approach was developed.

Often developments occur in relation to only one specific disease with little consideration of their potential impact or application to a wider spectrum of other diseases. A process was developed in order to speed up and ensure that potential wider applications of innovative and new technology are identified and transferred to other groups. A method of identifying innovation was developed to assist in the transfer of knowledge from one field to a much wider range of diseases. For the future, these newly developed technologies need to be reviewed regularly to assess their potential and to ensure that they are being used to maximum benefit. By evaluating the relative value of the individual technologies and their potential capacity for the development of diagnostics, vaccines and pharmaceuticals, it will be possible to focus research in those areas which will provide the greatest benefits.

Existing technologies must also be evaluated against new technologies. A classical approach based on existing technologies especially at the manufacturing level may be more appropriate. An overview of technologies needs to be developed through public and private partnerships in order to evaluate potential applications to the development of control tools.

A database of the new technologies based on the results from the expert groups needs to be established. Publication of the reviews and results from the expert groups should be made widely available. A catalogue of new technologies should be developed and against each of these would be potential applications to new control tools for specific diseases. It will be important to disseminate this information to research funders, research workers and development groups in the industry

A paper has been published titled “A review of existing approaches to the identification, evaluation and selection of New Technologies which could be applied to the Animal health sector” as was a paper titled “A methodology for identification and evaluation of new Technologies in Animal Health”. The latter paper provides a methodology which should be implemented in the future by the stakeholders.

WP 5 To ensure the effective communication and dissemination of information from the project

To share and disseminate output from the three technical work packages was an essential objective of the project. This was achieved through publications, reports and seminars.

The project also aimed to take an international as well as a Europe wide approach and to focus research at EU-level. Close links were developed with international organizations (OIE, FAO, ILRI) and non-EU countries both developed and developing.

Throughout this project links and two way communication with those responsible for the Community Animal Health Policy in DG SANCO was maintained to ensure that the output from the project contributes to the further development and implementation of the EU policies for the prevention, control or eradication of priority diseases

Good communications between stakeholders and partners as well as with others with an interest in the topics being covered by the project was a vital component to a successful outcome. Outcomes from meetings, working groups, seminars and workshops, etc. were reported to wider audiences especially via the public website. A list of stakeholders was established with the objective of providing electronic information on the activities and progress of the project. Internal communication between the stakeholders is also important and a stakeholder forum was established with regular electronic communication between the project coordinator and those with an interest

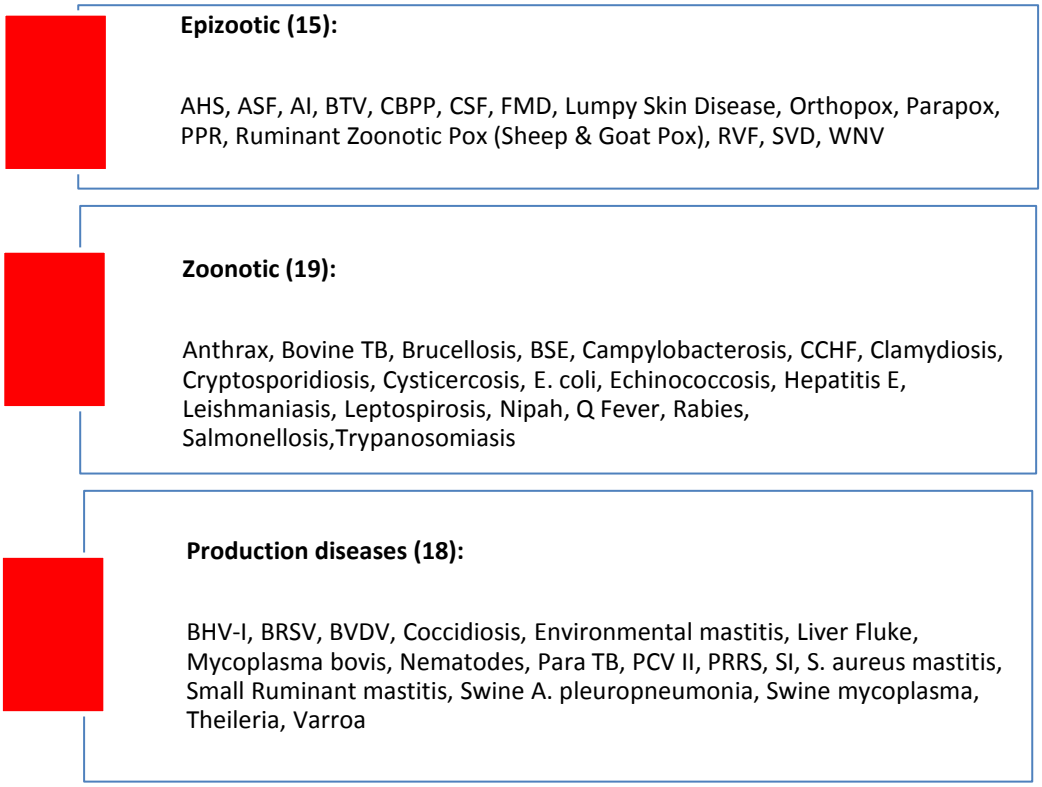
A web site was developed in the early stages of the project. An effective web site was crucial to success and has been used instead of regular stakeholder meetings and to act as the main communication method amongst stakeholders and others with an interest. The website is interactive and can be used as a communication tool by the stakeholders and permits real time communication.

The web site has a public access section with a private section for stakeholders and those participating in the project. The information from the prioritisation and gap analysis work packages is on the database to which open access is provided.

Description of the main Science and Technology Results

Building on the work of the ETPGAH, the DISCONTOOLS project took over the 47 diseases considered by the ETPGAH and expanded this list to 52 diseases.

List of Diseases



In selecting the diseases, stakeholders were invited to agree on the most important diseases where they considered research to be essential. The diseases were also chosen to represent a wide range of pathogens and species in order to ensure that the model developed would be applicable to the widest possible range of diseases. Fish diseases were originally excluded from the work of the ETPGAH but the stakeholders recognised the value of having fish diseases included. However, it was not possible to include fish diseases but the model should be applicable.

Disease & Product analysis

Having chosen the list of diseases, it was then important to decide what information we needed to gather in relation to each disease and this needed to be directly linked to the criteria for prioritisation and gap analysis. This would ensure key information was gathered to inform the gap analysis work – do we or do we not have a diagnostic, vaccine or pharmaceutical and is it of appropriate quality – and also the prioritisation work – does a bioterrorism threat exist?

This led to the development of the Disease & Product analysis (D&P) document which was used for each disease – see Annex 1.

The D&P includes 23 main sections with sub-headings covering a wide range of aspects such as description and characteristics of the disease, zoonotic potential, tools available, economic impact, etc.

As each D&P was completed for a specific disease, it acted both as a key document to support the scoring for prioritisation and gap analysis and it could also be referenced to challenge scores proposed or gaps identified. Essentially, it acts as an objective source of information taking the subjectivity out of the project work and also helping to ensure that different diseases across species can be compared in a rational manner.

This helped to ensure objectivity and comparability by, for example, prescribing a score in terms of the number of species affected or describing the score appropriate for the bioterrorism impact.

Expert Groups

The work of agreeing on the detail of the D&P, identifying the gaps and proposing prioritisation scores needed to be completed by experts familiar with the relevant disease. In order to complete this work, 52 Expert Groups each consisting of 5 to 10 experts were established for each disease. Where possible each group included experts with laboratory expertise, an epidemiologist, an industry representative, a diagnostics expert and an individual with economic/trade expertise. The expert groups were asked to reach a consensus on the final D&P text which they then used as the basis for the scoring in the prioritisation and control tools gap analysis models. Following the work of the first trial groups, Terms of Reference were developed to provide orientation, to assist the Chair of the group and to ensure consistency across groups. As an example, the groups were requested to have a European focus but also to have a global perspective. The diversity of interest in each group helped to ensure that the broad interests of the stakeholders was reflected in the final gap analysis and prioritisation work. The DISCONTOOLS project engaged more than 360 experts from 35 countries across the globe!

The Expert Groups are listed on the website (www.discontools.eu) by disease and appreciated the opportunity to collaborate on the DISCONTOOLS project. Expert Groups have expressed the wish to remain in contact as they appreciate the opportunity to collaborate with colleagues and are available to work on updating the database over time. This network is of tremendous value to the animal health research community providing a mechanism to continuously prioritise over time ensuring a sharp focus on critical research needs.

Prioritisation

The ETPGAH carried out some work on prioritisation and DISCONTOOLS built on this work as well as bringing in ideas from the paper “Approaches to the prioritisation of disease to focus and prioritise research in animal health: A worldwide review of existing methodologies”. This led to the development of the Prioritisation model – see Annex 2.

The prioritisation exercise was carried out using a scoring grid with 6 main sections as follows: “disease knowledge”, “impact on wider society”, “impact on public health”, “impact on trade”, “animal welfare” and “control tools”. Within each section there are a number of criteria which have been selected and refined. Scores are attributed to the specific criteria that are detailed in each section of the scoring model (between 3 and 10 criteria per section).

The scoring scale applied is a 5-tiered system with the following scores: for the five first sections (“disease knowledge”, “impact on wider society”, “impact on public health”, “impact on trade”, “animal welfare”) 0, +1; +2; +3; +4; For the section dealing with control tools

scores of +2; +1; 0; -1; -2 are used. This scoring scale was selected to highlight the differences in control tools for each disease in the sense that if for a particular disease a vaccine exists that has a high level of efficacy, quality, safety and availability, then a negative score will be attributed to the final total score of the concerned disease to diminish its priority as an effective tool is available. On the contrary, if control tools are missing, then a positive score will be added to the total score meaning that the disease will be higher in the prioritised list of diseases.

Once the basic scores were recorded the overall score for each of the criteria is multiplied by a coefficient, the sole purpose of which is to ensure the scores are comparable and based on a total of 100. Both the basic score and the overall score for the individual criteria are available.

An interpretation guide was developed to help the expert groups decide on the appropriate scores to apply to each criterion. The interpretation guide is also valuable for those wishing to interpret the scores – see Annex 3.

As an example, the interpretation guide provides scores for the number of species affected and for the bioterrorism threat involved. By providing this guidance, subjective scores are avoided that would distort cross disease comparison. As far as possible, the objective was to remove subjectivity. As may be appreciated, the data from the D&P also acts as a mechanism to ensure objectivity and as a means to challenge any scores that appear to deviate from the facts in the D&P. The combination of the D&P with the interpretation guide should not be underestimated in terms of removing subjectivity from the project and was seen to really empower cross disease comparisons which was seen to be a major challenge at the outset of the project.

In terms of control tools, one of the issues that emerged was the handling of a situation where a tool is missing but is unlikely to be ever developed. A classic case is that of BSE where we will not develop vaccines or pharmaceuticals. In addition, the likelihood of developing a pharmaceutical to counter a virus – allowing for anti-virals – is highly unlikely. However, the initial scoring system did not allow for this scenario. Hence, the table in Annex 4 was introduced.

As may be seen, the option now exists to choose a -2 score where it is concluded that a product will not be developed. This ensures that we do not incorrectly increase the score of BSE in relation to a lack of vaccine and pharmaceutical tools!

Gap Analysis

The availability of pharmaceuticals is well documented via easily accessible databases held by regulatory authorities and/or operated by trade associations. In the case of vaccines, the picture was not so clear. The work of the European Medicines Agency in carrying out a survey of the European Union Member States to establish the availability or otherwise of vaccines for the 52 diseases was greatly appreciated. This ensured that the Expert Groups had definitive information to hand concerning vaccine availability and could assess the presence or absence of a gap and/or comment on research that may be needed where we need a better vaccine (efficacy, speed of immunity, prevention of shedding, convenience of use, etc.). With diagnostics, information on what is available is more difficult to access. The project appreciated the input of the European Manufacturers of Veterinary Diagnostics (EMVD) who provided lists of diagnostics available from its members. This information could be coupled with information on availability of diagnostics from public laboratories. However, it is clear that a comprehensive database of products available would be of value to all concerned. From the viewpoint of the DISCONTOOLS project, the data from the EMVD

coupled with the knowledge of the Expert Groups allowed accurate assessments to be made of gaps in the diagnostics area. See model in Annex 5.

As with the Prioritisation model, an interpretation guide was developed to help the expert groups decide on the appropriate scores to apply to each criterion. The interpretation guide is also valuable for those wishing to interpret the scores – see Annex 6.

Where a product is not available, it is impossible to score the other criteria. To highlight the gap, the coefficient chosen is 20.

The gap analysis work is very important in terms of informing the "Control Tools" scoring in prioritisation and the constructive interaction between the two scoring mechanisms may be appreciated.

Quality Control

When results were received from an Expert Group, the Secretariat had a first look at the data providing feedback to the Expert Group on any obvious anomalies including what appeared to be errors in scoring. Thereafter, data the results were provided to Work Package 2 and 3 for comment. Again, any comments were fed back to the Expert Group for consideration. Finally, the Project Management Board were invited to comment on the results before the data was posted on the public website. This process ensured a robust quality control procedure.

Interpretation Guide for the scores in the prioritisation and gap analysis models

On viewing the data for the first time, the reader is provided with a wealth of data. In order to guide the reader, an Interpretation Guide was developed with the Index shown in Annex 7.

The purpose is to guide the reader though the data and assist in correct interpretation.

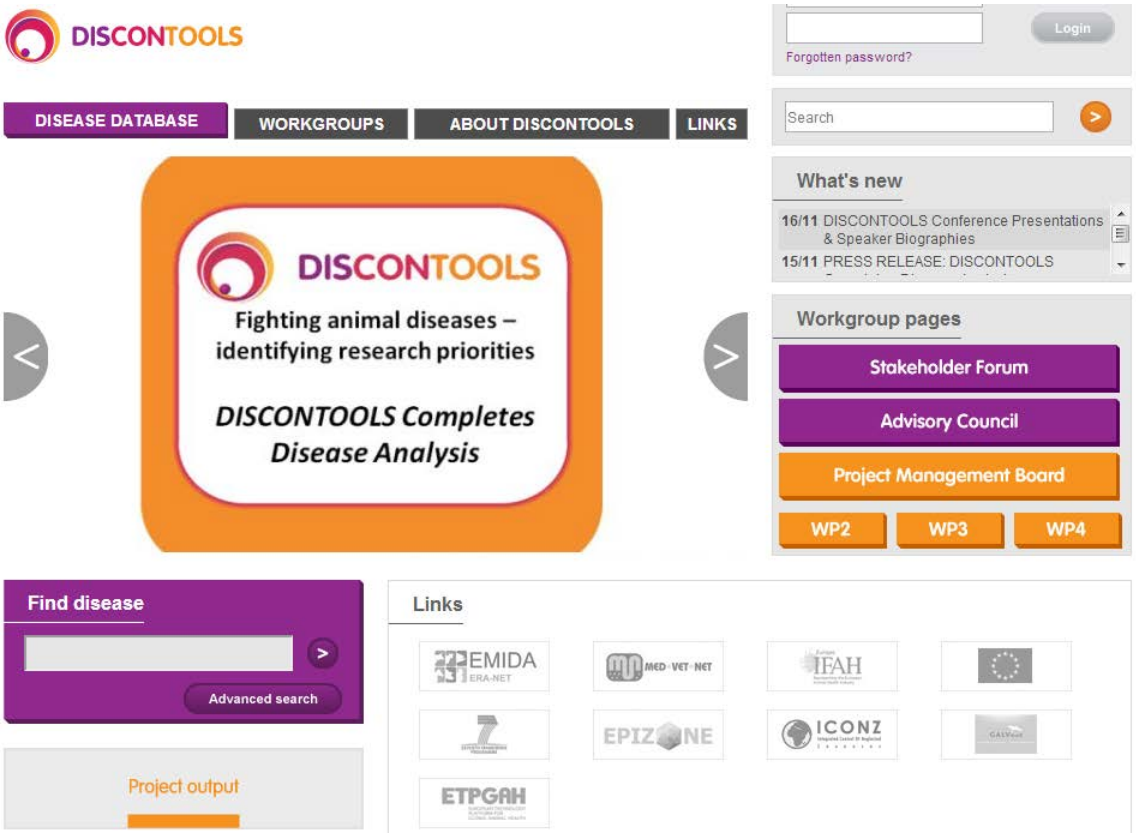
Two Page Summaries

To further assist the reader, two page summaries of each disease have been developed. The full text for Bluetongue may be seen in Annex 8.

The purpose of the two page summary is to provide a quick guide to the results especially to the non-expert user.

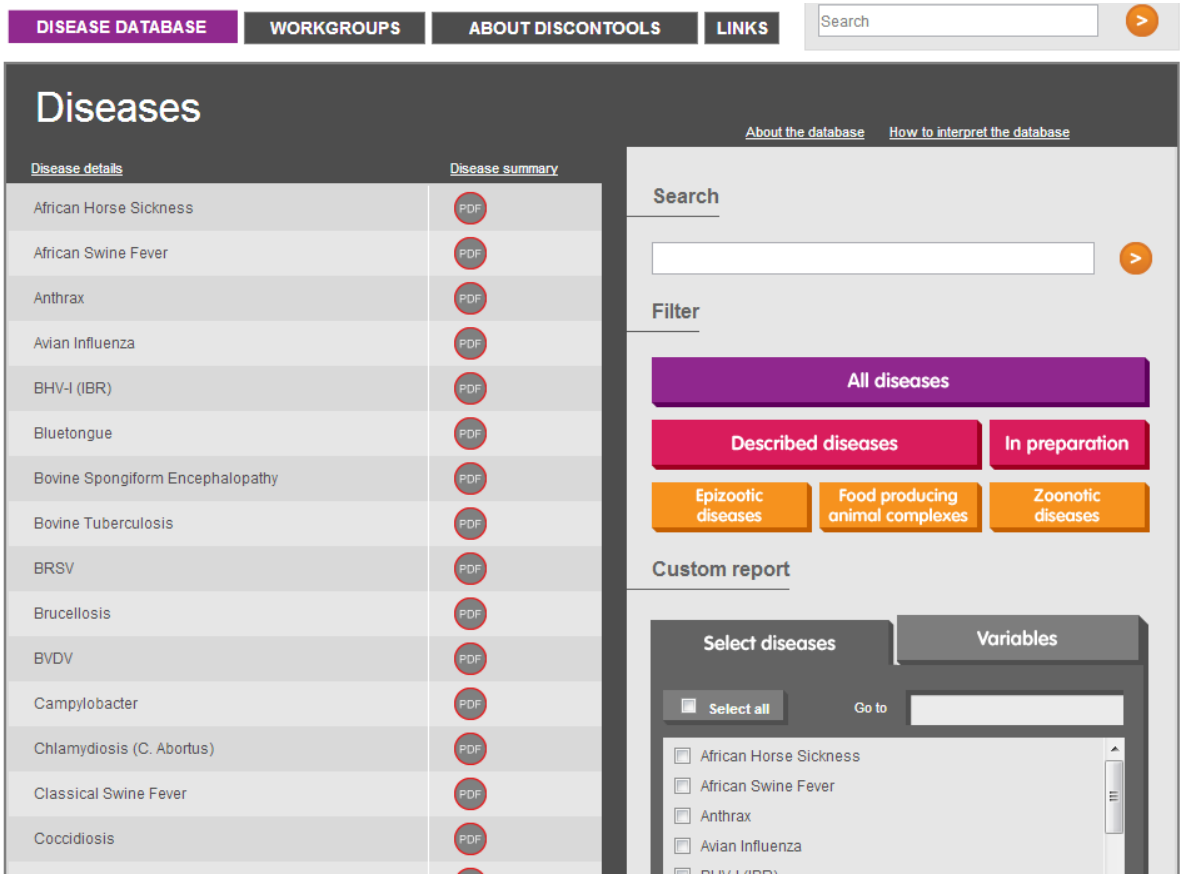
DISCONTOOLS Website

The DISCONTOOLS website at www.discontools.eu is open to the public except for a private section which is used to consult on draft documents, etc. before the final version is placed on the public side of the site. The home page provides logical access to information on the project, information on the work groups along with links and access to the database.



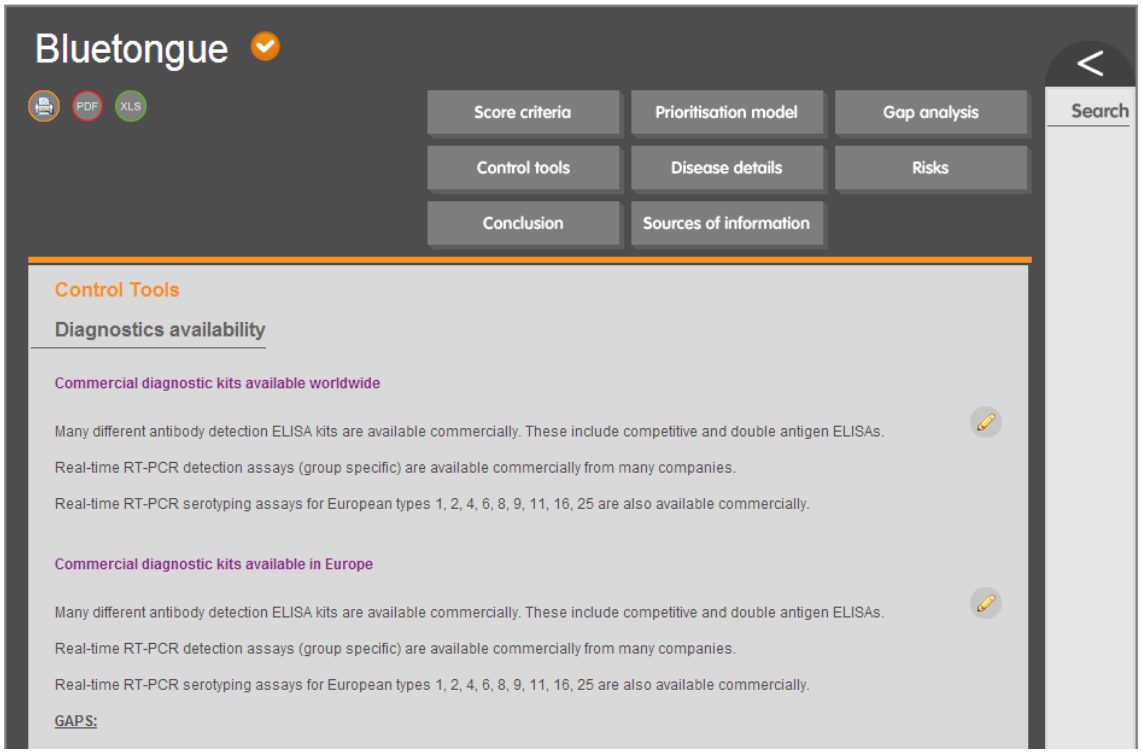
Without going into detail, the very considerable volume of data produced as the project developed is easily accessible via the home page.

The database itself provides access to the D&P for each disease along with the two page summary for each disease.



If the D& P is chosen, the user may use the icon to provide feedback making the site interactive. If the Score criteria option is chosen at the top of the page, the user is presented with the various scores with the icon allowing the user to see the data from the D&P that was used as the basis for the scoring.

The various other reports as well as quick access to certain parts of the D&P may be accessed directly from the menu on this page.



Back in the main database, options exist to view Epizootic diseases, Food producing animal complexes or Zoonotic diseases.

When proceeding further, the searchable area of the database allows the user very considerable power to explore the data as desired and in great detail.

One or more diseases may be selected and variables then chosen such as any part or parts of the D&P for easy comparison of data across a number of diseases. As an example, vaccine availability may be chosen. The results are presented along with the relevant text from the D&P including gaps identified.

Again, in terms of interactivity, the user may choose the icon and submit comments. This feature is available as appropriate across the database enabling users to challenge the D&P, scoring, etc. which in turn enhances our ability to keep the data current. Having submitted comments, the relevant Expert Group can then assess all comments received and decide how to update the public data.

The Priorisation model may be chosen for one or more diseases. The output is displayed on the computer but may be downloaded as a PDF or into Excel. The Excel option effectively makes the software publicly available as the user can then manipulate the data as desired. This includes creating charts from the data.

This is a very important feature in terms of access to the software.

The Scoring criteria option may be used to compare and contrast the scoring for one or more diseases with the criteria used being visible on the page.

The Prioritisation model (rank by score only) allows the user to see the total scores for one or more diseases on screen.

The Gap analysis model option allows the user to compare gap analysis results for one or more diseases.

Referring back to the Excel option, an example of the type of chart that may be presented may be seen in Annex 9. This chart gives meaning to the saying that "A picture paints a thousand words" as it allows the user to visually compare and contrast data which would be much more difficult to do on the basis of scores alone.

Publications

WP 2 produced the publication "Approaches to the prioritisation of diseases to focus and prioritise research in animal health: A worldwide review of existing methodologies" which was published on the DISCONTOOLS website on September 30th, 2012. This was a major review of previous work and was an important input to the development of the DISCONTOOLS model.

WP 4 produced the publication "A review of existing approaches to the identification, evaluation and selection of New Technologies which could be applied to the Animal Health sector" on January 5th, 2012. Following this review of existing approaches, WP 4 produced the publication "A methodology for identification and evaluation of New Technologies in Animal Health" on August 31st, 2012. Both of these publications were published on the DISCONTOOLS website. The methodology in the latter publication needs to be pursued over time to ensure the rapid deployment of new technologies in the animal health research area.

Conclusion

With the factual data of the D&P and Gap Analysis & Prioritisation criteria agreed, it was then possible, via Expert Groups, to carry out both Gap Analysis and Prioritisation. The quality control steps ensured that only high quality data was placed on the public website.

The Interpretation Guide and Two Page Summaries assist the user in interpreting the data.

Most importantly, the database on the public website allows the user to interrogate the data as desired along with providing a very powerful feedback mechanism. The option to export to Excel effectively makes the software publicly available and also facilitates presenting the data graphically.

In terms of science and technology, the process engaged in by the DISCONTOOLS project brings objectivity to the task of prioritising research and has resulted in the development of a unique prioritisation methodology that has engaged the interest of the animal health research community across the globe. The database is of great value especially to those funding research and if it used as intended, the focus on research will hasten the development of new or improved diagnostics, vaccines and pharmaceuticals.

Concerning the deployment of new technologies, the methodology published by WP 4 needs to be pursued over time to bring benefits to the animal health research community.

Impact, main dissemination and exploitation of results

Impact

The impact of the DISCONTOOLS project has been to create a stakeholder supported prioritisation and gap analysis methodology. The impact has also been to review and recommend how new technologies should be introduced into the animal health research world in an efficient manner.

The agreement on prioritisation and gap analysis enables the targeting of research funding at the major gaps in the major diseases. From a socio-economic aspect, this means that society will benefit from the more rapid development of new or improved diagnostics, vaccines and pharmaceuticals as scarce resources are deployed in a focused manner. From a broader societal perspective, food security will be improved, agricultural production will become more efficient and sustainable and broader societal benefits such as improved companion animal health will follow.

Dissemination

Throughout the 5 year life of the DISCONTOOLS project, an emphasis has been placed on communicating the purpose of the project, its on-going development and final output. The list of presentations seen in Annex 10 captures our work in communicating the development of the project.

Exploitation of Results

The DISCONTOOLS project conference held on November 20th, 2012 was the first opportunity to present the full DISCONTOOLS database. The animal health research community was well represented at this meeting affording an opportunity to communicate the output of the project to a key audience with the attendees being united in their call for the continuation of the DISCONTOOLS work. Presentations may be found at http://www.discontools.eu/upl/1/default/doc/DISCONTOOLSConfPackFullWeb.pdf

To advance the long term sustainability of the project, the results were presented to the ANIHWA ERA-Net on February 28th, 2013 and also to the CVOs on April 16th, 2013. These presentations complemented the November conference in terms of highlighting the value of the DISCONTOOLS database.

It is clear from direct comments and third party information that many national funders of research are using the DISCONTOOLS database as a means of objectively deciding where to spend research funding – this is the exact outcome that represents the perfect exploitation of the DISCONTOOLS work.

To underline the value of the database, discussions are at an advanced stage with national funders of research to agree a budget in the value of €100,000 per year to continue the DISCONTOOLS work. It is expected that agreement will have been reached on long term funding by early 2014 when personnel will be employed and the work of expanding the number of diseases considered will be undertaken as will the task of updating the information already on the website.

Website and Contact Details

The website is at www.discontools.eu and the contact point is Declan O' Brien, Managing Director, IFAH-Europe, Rue Defacqz 1, 1000, Brussels, Belgium. Tel: 00322 543 7560 e-mail: d.obrien@ifahsec.org

A General Information

Grant Agreement Number:	211316
Title of Project:	DISCONTOOLS
Name and Title of Coordinator:	Mr. Declan O' BRIEN

B Ethics

1. Did your project undergo an Ethics Review (and/or Screening)? • If Yes: have you described the progress of compliance with the relevant Ethics Review/Screening Requirements in the frame of the periodic/final project reports? Special Reminder: the progress of compliance with the Ethics Review/Screening Requirements should be described in the Period/Final Project Reports under the Section 3.2.2 *'Work Progress and Achievements'*	***No*** ***0Yes 0No***
2. Please indicate whether your project involved any of the following issues (tick box) :	***YES***
RESEARCH ON HUMANS	
• Did the project involve children?	No
• Did the project involve patients?	No
• Did the project involve persons not able to give consent?	No
• Did the project involve adult healthy volunteers?	No
• Did the project involve Human genetic material?	No
• Did the project involve Human biological samples?	No
• Did the project involve Human data collection?	No
RESEARCH ON HUMAN EMBRYO/FOETUS	
• Did the project involve Human Embryos?	No
• Did the project involve Human Foetal Tissue / Cells?	No
• Did the project involve Human Embryonic Stem Cells (hESCs)?	No
• Did the project on human Embryonic Stem Cells involve cells in culture?	No
• Did the project on human Embryonic Stem Cells involve the derivation of cells from Embryos?	No
PRIVACY	
• Did the project involve processing of genetic information or personal data (eg. health, sexual lifestyle, ethnicity, political opinion, religious or philosophical conviction)?	No
• Did the project involve tracking the location or observation of people?	No
RESEARCH ON ANIMALS	
• Did the project involve research on animals?	No
• Were those animals transgenic small laboratory animals?	No
• Were those animals transgenic farm animals?	No
• Were those animals cloned farm animals?	No
• Were those animals non-human primates?	No
RESEARCH INVOLVING DEVELOPING COUNTRIES	
• Did the project involve the use of local resources (genetic, animal, plant etc)?	**No**
• Was the project of benefit to local community (capacity building, access to healthcare, education etc)?	**No**
DUAL USE	
• Research having direct military use	0 No
• Research having the potential for terrorist abuse	No

C Workforce Statistics

3. Workforce statistics for the project: Please indicate in the table below the number of people who worked on the project (on a headcount basis).

Type of Position	Number of Women	Number of Men
Scientific Coordinator		1
Work package leaders	1	2
Experienced researchers (i.e. PhD holders)		
PhD Students		
Other		

4. How many additional researchers (in companies and universities) were recruited specifically for this project?	**0**
Of which, indicate the number of men:	

D Gender Aspects

5. Did you carry out specific Gender Equality Actions under the project?

○ No

6. Which of the following actions did you carry out and how effective were they? None

	Not at all effective				Very effective
❑ Design and implement an equal opportunity policy	○	○	○	○	○
❑ Set targets to achieve a gender balance in the workforce	○	○	○	○	○
❑ Organise conferences and workshops on gender	○	○	○	○	○
❑ Actions to improve work-life balance	○	○	○	○	○

○ Other:

7. Was there a gender dimension associated with the research content – i.e. wherever people were the focus of the research as, for example, consumers, users, patients or in trials, was the issue of gender considered and addressed?

○

○ No

E Synergies with Science Education

8. Did your project involve working with students and/or school pupils (e.g. open days, participation in science festivals and events, prizes/competitions or joint projects)?

○

○ No

9. Did the project generate any science education material (e.g. kits, websites, explanatory booklets, DVDs)?

○ Yes

Website at www.discontools.eu

○

F Interdisciplinarity

10. Which disciplines (see list below) are involved in your project?

○ Main discipline[2]: 3.1, 4.2

○ Associated discipline[2]:

○ Associated discipline[2]:

G Engaging with Civil society and policy makers

11a Did your project engage with societal actors beyond the research community? *(if 'No', go to Question 14)*

○ Yes

11b If yes, did you engage with citizens (citizens' panels / juries) or organised civil society (NGOs, patients' groups etc.)?

○

○ Yes- in determining what research should be performed

○

○ Yes, in communicating /disseminating / using the results of the project

[2] Insert number from list below (Frascati Manual).

11c In doing so, did your project involve actors whose role is mainly to organise the dialogue with citizens and organised civil society (e.g. professional mediator; communication company, science museums)?	○ ○	No

12. Did you engage with government / public bodies or policy makers (including international organisations)

- ○
- ○ Yes- in framing the research agenda
- ○ Yes - in implementing the research agenda
- ○ Yes, in communicating /disseminating / using the results of the project

13a Will the project generate outputs (expertise or scientific advice) which could be used by policy makers?

- ○ Yes – as a **primary** objective (please indicate areas below- multiple answers possible)
- ○ Yes – as a **secondary** objective (please indicate areas below - multiple answer possible)
- ○

13b If Yes, in which fields?

Agriculture		Energy		Human rights	
Audiovisual and Media		Enlargement		Information Society	
Budget		Enterprise		Institutional affairs	
Competition		Environment		Internal Market	
Consumers		External Relations		Justice, freedom and security	
Culture		External Trade		**Public Health**	
Customs		**Fisheries and Maritime Affairs**		Regional Policy	
Development Economic and Monetary Affairs		**Food Safety**		**Research and Innovation**	
		Foreign and Security Policy		Space	
Education, Training, Youth		Fraud		Taxation	
Employment and Social Affairs		Humanitarian aid		Transport	

13c If Yes, at which level?

- ○ Local / regional levels
- ○ National level
- ○ European level
- ○ International level

H Use and dissemination

14. How many Articles were published/accepted for publication in peer-reviewed journals?	**None**
To how many of these is open access[3] provided?	
How many of these are published in open access journals?	
How many of these are published in open repositories?	
To how many of these is open access not provided?	
Please check all applicable reasons for not providing open access:	
❑ publisher's licensing agreement would not permit publishing in a repository ❑ no suitable repository available ❑ no suitable open access journal available ❑ no funds available to publish in an open access journal ❑ lack of time and resources ❑ lack of information on open access ❑ other[4]: ……	

15. How many new patent applications ('priority filings') have been made? *("Technologically unique": multiple applications for the same invention in different jurisdictions should be counted as just one application of grant).*		**None**
16. Indicate how many of the following Intellectual Property Rights were applied for (give number in each box).	Trademark	**None**
	Registered design	**None**
	Other	
17. How many spin-off companies were created / are planned as a direct result of the project?		**None**
Indicate the approximate number of additional jobs in these companies:		

18. Please indicate whether your project has a potential impact on employment, in comparison with the situation before your project:

❑	Increase in employment, or	❑	In small & medium-sized enterprises
❑	Safeguard employment, or	❑	In large companies
❑	Decrease in employment,	❑√	None of the above / not relevant to the project
❑	Difficult to estimate / not possible to quantify		

19. For your project partnership please estimate the employment effect resulting directly from your participation in Full Time Equivalent (*FTE = one person working fulltime for a year*) jobs:	*Indicate figure:* *None*

[3] Open Access is defined as free of charge access for anyone via Internet.
[4] For instance: classification for security project.

Difficult to estimate / not possible to quantify	❑

I Media and Communication to the general public

20. As part of the project, were any of the beneficiaries professionals in communication or media relations?

○ ○ No

21. As part of the project, have any beneficiaries received professional media / communication training / advice to improve communication with the general public?

○ ○ No

22 Which of the following have been used to communicate information about your project to the general public, or have resulted from your project?

❑	Press Release	√	Coverage in specialist press
❑	Media briefing	❑	Coverage in general (non-specialist) press
❑	TV coverage / report	❑	Coverage in national press
❑	Radio coverage / report	❑	Coverage in international press
√	Brochures /posters / flyers	√	Website for the general public / internet
❑	DVD /Film /Multimedia	❑	Event targeting general public (festival, conference, exhibition, science café)

23 In which languages are the information products for the general public produced?

❑	Language of the coordinator	√	English
❑	Other language(s)		

Disease and Product analysis

"Prioritising research into new or improved tools"

Disease:_____

PART 1: CONTROL TOOLS

Product Analysis	Current knowledge	Gap(s) in availability of products/knowledge
Part 1 Control Tools		
1 Diagnostics availability		
1.1 Commercial Diagnostic kits available worldwide *Host/Pathogen*		
1.2. Commercial Diagnostic kits available in Europe *Host/Pathogen*		
1.3. Diagnostic kits validated by International Standards(OIE) or European Standards (EU) or National Standards		
1.4 Diagnostic method(s) described by International standards (OIE) or European Standards (EU) or National Standards		
1.5. Commercial potential for diagnostic kits in Europe		
1.6. DIVA tests required and / or available *Intended for eradication of disease or economic control of disease/ need and nature of the desired DIVA test*		

Annex 2

DISCONTOOLS SCORING MODEL

"Prioritising research into new or improved tools"

Criteria	Scores					Coef	Total (score*coef)
Disease knowledge	**0**	**1**	**2**	**3**	**4**		**/100**
1. Speed of spread						2.5	
2. Score for number of species involved						2.5	
3. Persistence of infectious agent In the environment						2.5	
4. Risk of spread to susceptible populations						2.5	
5. Potential for silent spread						2.5	
6. Wildlife reservoir and potential spread						2.5	
7.Vector reservoir and potential spread						2.5	
8. Variability of the agent						2.5	
9. Understanding of fundamental immunology						2.5	
10 Host pathogen interaction						2.5	
Impact on animal health and welfare	**0**	**1**	**2**	**3**	**4**		**/100**
1. Disease impact on production						8.33	
2. Duration of animal welfare impact						8.33	
3. Proportion of animals affected suffering pain/injury/distress as a result of the disease						8.33	
Impact on public health – human health	**0**	**1**	**2**	**3**	**4**		**/100**
1. Impact of occurrence on human Health						4.16	
2. Likelihood of occurrence						4.16	
3. Impact of occurrence on Food Safety						4.16	
4. Transmissibility (spread from animals to humans)						4.16	
5. Spread in humans						4.16	
6. Bioterrorism potential						4.16	
Impact on wider society	**0**	**1**	**2**	**3**	**4**		**/100**
1. Economic direct impact (including cumulative cost (e.g. Enzootic vs. epizootic)						8.33	
2. Economic indirect impact (social, market)						8.33	
3. Agriterrorism potential						8.33	
Impact on trade	**0**	**1**	**2**	**3**	**4**		**/100**
1. Impact on international Trade due to existing regulations						6.25	
2. Impact on EC Trade due to existing regulations						6.25	
3. Potential for regionalisation						6.25	
4. Impact on Security of Food supply						6.25	
Control Tools	**+2**	**+1**	**0**	**-1**	**-2**		**/100**
1 Appropriate diagnostics						16.66	
2 Appropriate vaccines						16.66	
3. Appropriate pharmaceuticals						16.66	
Total score							

Annex 3 (full document at www.discontools.eu)

	Criteria	Scores					Coef	Total
Source	**Disease knowledge**	**0**	**1**	**2**	**3**	**4**	**2.5**	**/100**
Defra AP	1. Speed of spread	None Non transmissible	Very slow Low level of transmission within holdings and unlikely between holdings.	Slow Slow transmission between holdings with or without animal movements	Medium Rapid transmissions between holdings with or without animal movements	High Rapid transmission between holdings without animal movements		
CVO AP	2. Score for number of species involved	one	ND Expected to be limited	Limited 2 species	Medium 3 species	High 4 species and over		
CVO AP	3. Persistence of infectious agent In the environment	No never found	Rare occasionally found	ND if unknown	Constant animal reservoir or vector	Not removable from the environment		
CVO AP	4. Risk of spread to susceptible populations	No Not contagious or not spread in animal feed	Low Transmissible direct contact or via animal feed	ND if unknown Medium By direct contact or via feed	Medium Indirect contact, contagion or via animal feed	High Airborne infection or via animal feed		
WG Defra	5. Potential for silent spread	none	Negligible Signs of infection easily recognised and likely to occur in animals under supervision	Low Signs of infection easily recognised but depends on the level of supervision	Moderate Specific diagnosis may be difficult in one or more species	High Disease/infection not likely to be detected for some time		
WG Defra	6. Wildlife reservoir and potential spread	None no known wildlife reservoir	Minor Prevalence in remote wildlife	Moderate. Wildlife reservoir: no direct contact with humans or domestic animals	Significant Wildlife reservoir	Serious. Wildlife reservoir in close contact with humans and/or domestic animals		

Annex 4

Scoring guide for control tools section of the prioritisation model.

Appropriate Diagnostics

Score	Need	Availability	Market potential
-2	yes	Yes (fully effective)	yes
	no		
-1	yes	Yes (not fully effective)	yes
0	yes	Yes (not fully effective)	Low to medium
+1	yes	No	yes
+2	yes	No	low

Appropriate vaccines

Score	Need	Availability	Market potential
-2	yes	Yes (fully effective)	yes
	no		
-1	yes	Yes (not fully effective)	yes
0	yes	Yes (not fully effective)	Low to medium
+1	yes	No	yes
+2	yes	No	low

Appropriate Pharmaceuticals

Score for	Need	Availability	Market potential
-2	yes	Yes (fully effective)	yes
	no		
-1	yes	Yes (not fully effective)	yes
0 bacteria	yes	Yes (not fully effective)	Low to medium
0 viruses	Yes desirable	No	yes
+1	yes	No	yes
+2	yes	No	low

Annex 5

DISCONTOOLS PRODUCT GAP ANALYSIS

Criteria	Scores					Coef	Total
Diagnostic tools	+2	+1	0	-1	-2		/100
1. Availability*						4.55	
2. Prevention and control - Differentiation of infected from vaccinated (DIVA)						4.55	
3. Strategic reserve						4.55	
4. Capacity of production						4.55	
5. Affordable						4.55	
6. Quality/stability durability						4.55	
7. .Sensitivity						4.55	
8. Specificity						4.55	
9. Reproducibility						4.55	
10. Simplicity/ease of use						4.55	
11. Speed						4.55	

Criteria	Scores					Coef	Total
Vaccination tools	+2	+1	0	-1	-2		/100
1. Commercial availability*						5,00	
2. Monitoring for infection in a vaccinated population						5,00	
3. Strategic reserve						5,00	
4. Capacity of production						5,00	
5 Affordable						5,00	
6. Quality/stability						5,00	
7. Safety of vaccines						5,00	
8. Efficacy						5,00	
9.Immunity						5,00	
10. Convenience of use						5,00	

Criteria	Scores					Coef	Total
Pharmaceutical tools	+2	+1	0	-1	-2		/100
1. Availability*						5,00	
2. Prevention and control						5,00	
3. Strategic reserve						5,00	
4. Capacity of production						5,00	
5. Cost						5,00	
6. Quality						5,00	
7. Safety Animal						5,00	
8. Safety Consumer/user concerns						5,00	
9. Safety Environment						5,00	
10. Resistance						5,00	

Annex 6
(full document at www.discontools.eu)

Product Gap Analysis – Interpretation Guide

Diagnostic tools	2	1	0	-1	-2	Coefficient 4.17	Score /100
1. Availability	Not available None available in spite of research	Low Only in highly specialised laboratories	Moderate Kits developed by laboratories	High Commercial kits available at lab level	Very high Commercial kits available at vet/farm level		
2. Prevention and control Differentiation of infected from vaccinated (DIVA)	No tests available	DIVA Tests In development	DIVA Tests available but not tested under field conditions	Commercially available DIVA tests in Europe but only partially effective	Commercially available approved tests in Europe and fully effective		
3. Strategic reserve	None	Very low Poor level of reserves for any emergency with poor storage characteristics	Low Adequate level of reserves for any emergency with good storage characteristics for short periods	Medium Good level of reserves for any emergency with good storage characteristics for intermediate periods	Fully acceptable Very good level of reserves for any emergency with good storage characteristics for long periods		
4. Capacity of production	Very restricted.	Restricted and requires notification of demand well in advance	Limited but requires early notification of demand	Limited but meets specific demands	Unlimited meet any market demands		

Annex 7 (full document at www.discontools.eu)

PRIORITISATION AND GAP ANALYSIS MODELS

INTERPRETATION OF THE SCORES.

Index

Annex 8

Bluetongue
Summary

Introduction

1. This note provides a brief summary of an analysis undertaken by a DISCONTOOLS group of experts on Bluetongue (BT). They reviewed the current knowledge on the disease, considered the existing disease control tools, identified current gaps in the availability and quality of the control tools and finally determined the research necessary to develop new or improved tools. Full details of the analysis can be downloaded from the web site at http://www.discontools.eu/ by selecting Disease Database, then the specific disease and highlighting the variables of interest. This is completed by selecting "create a report" which can then be downloaded as either a PDF or Excel spread sheet.

Disease profile

2. Bluetongue virus (BTV) is present in a broad band of countries extending approximately between 40°N and 35°S although in some regions it may extend to 55°N. BTV has been shown to be limited to regions where vector species of *Culicoides* are present and within these regions vector transmission is limited to those periods of the year when adult *Culicoides* are active

3. Bluetongue virus (BTV) infects many domesticated, zoo and wild ruminants Clinical disease is most often seen in sheep, occasionally in goats, but rarely in cattle. However, with BTV serotype 8 in the EU, clinical disease in cattle was reported from several countries. The vast majority of infections are clinically inapparent but in a percentage of infected sheep and occasionally other ruminants, more severe disease can occur. The severity of clinical signs depends on breed and immune status of the host, and is greater in naive animals / populations.

Risk

4. The recent spread of BTV serotype 8 across the whole of Europe confirms the presence of suitable vectors in each of the affected countries. The whole of Europe must therefore be considered at risk from further incursions of BTV and other *Culicoides* transmitted orbiviruses, Local climate change could lead to increasing local temperatures, exacerbating these risks. BTV has recently expanded its geographic range and is able to cross borders due to the wide distributions of vector species of *Culicoides.*

5. BTV is very stable surviving as long as 60 days in the circulation after infection of a ruminant, and infection persists life-long in vector insects. The virus apparently survives freezing winters. However, the mechanism behind this survival or 'over-wintering' remains unknown although vertical transmission in the mammalian host has been demonstrated and may contribute although this is disputed. It has been proposed that BTV "overwinters" in temperate areas through low level circulation of the virus in animals and vectors, including infected adult insects that survive for relatively long periods even in winter.

Diagnostics

6. Many different antibody detection ELISA kits are commercially available. These include competitive and double antigen ELISAs. Real-time RT-PCR detection assays (group specific) are also available commercially from many companies. No serological DIVA tests are currently available but are needed for international trade in animals, and as an important part of control measures to detect infected animals when there is widespread infection. No Pen side tests are currently available.

7. By expressing individual BTV VP2 proteins from different serotypes, and generating either polyclonal or monoclonal type-specific antibodies to them, it may be possible to develop 'type-specific ELISA' to detect antibodies to each BTV serotype. These may be useful to track movements of new types in areas that have previously been vaccinated against an existing serotype

8. Real-time (RT) and conventional PCR assays have been developed but further development of existing real-time assays may be required to maintain effectiveness to detect new BTV

isolates/variants. Initial studies indicate that chip based technologies to detect viral RNA, can be used to identify members of the BTV group and each serotype. This technology will need further development. However commercialisation will depend on cost and ease of use.

Vaccines

9. Live attenuated vaccines are effective and provide long lasting immunity with a single dose but animals vaccinated by live vaccines cannot be differentiated from infected animals. There is also potential for some live vaccine strains to cause disease, particularly in naive animals/populations. Transmission and re-assortment of some live vaccine strains can/has also occurred in the field. With the inactivated and sub-unit vaccines cross-protection can be generated by serial vaccination with multiple serotype vaccines. The development of single dose inactivated or sub-unit vaccines and non-replicating vaccines that generate a longer lived immune response will be important.. These would be particularly welcome in areas where multiple types are circulating and causing disease. They could also be used in a wider eradication campaign.

10. Current vaccines have a short shelf life. Inactivated or recombinant vaccines may need two injections to afford effective protection. The duration of immunity from the inactivated or sub unit vaccines may be shorter than that of the live attenuated vaccines, requiring annual re-vaccination. All of the current monovalent live or inactivated vaccines are type specific. Cross-protection can only be generated by serial vaccination with multiple serotype vaccines. There is a lack of multivalent or cross-reactive vaccines with longer shelf life and associated DIVA assay. No incentives exist for producers to develop and produce in anticipation of crisis. Vaccine producers need incentives to develop, test and produce vaccine for a non-existent market.

Pharmaceuticals

11. There may be some potential for the use of antivirals in BT control but there would be considerable problems in both developing and licensing such products. However, it is not considered likely that these will play a major role in protection against BTV infection in the field.

Knowledge

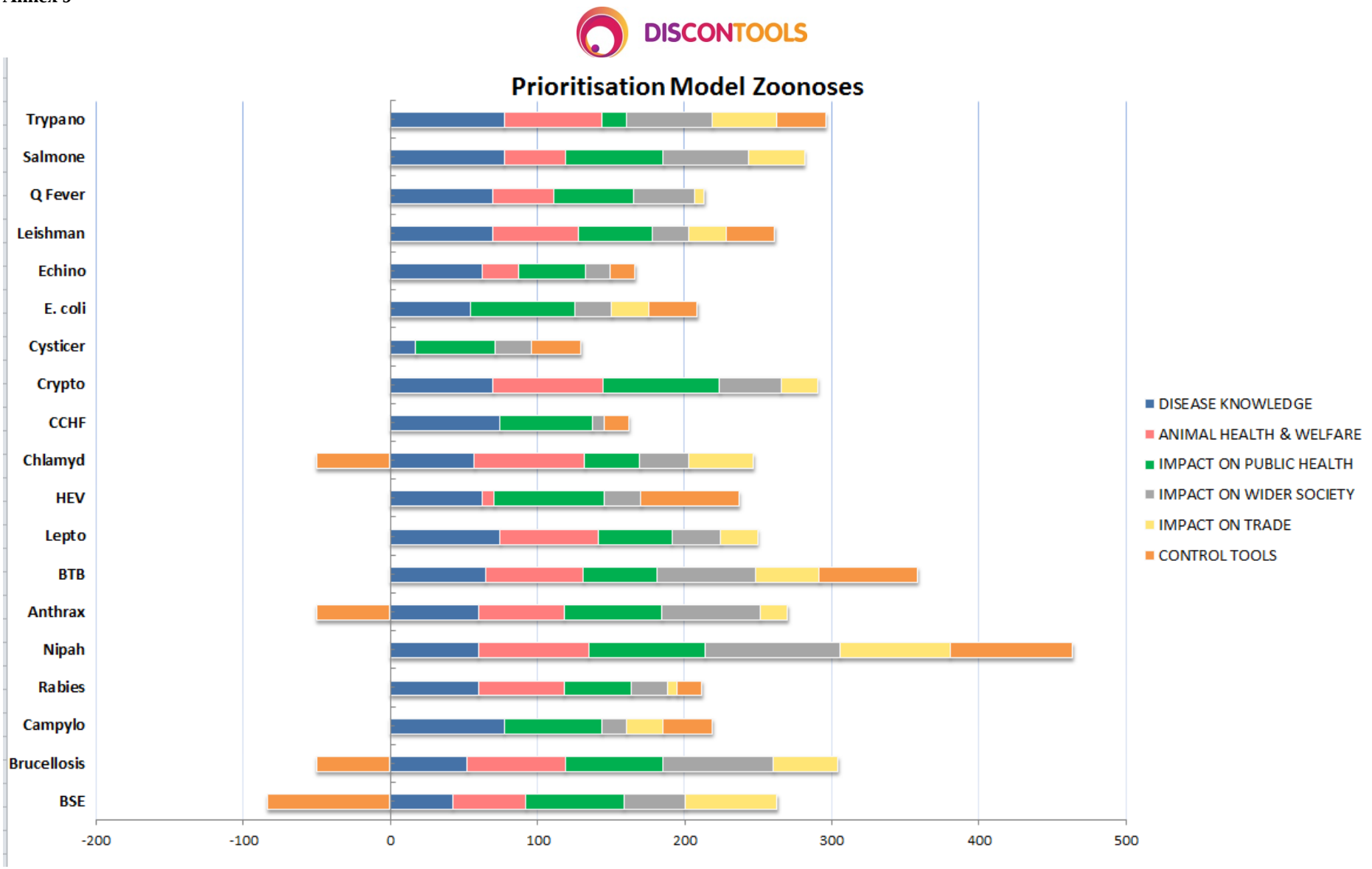
12. BTV has been studied for many years, but despite this there are many significant areas of uncertainty in the understanding and knowledge about the disease especially in relation to pathogenesis, immunology, vaccinology, epidemiology and control. Research is needed to fill these gaps in relation to immunity, strains and isolates, transmission and spread, reservoirs, carriers and geographical distribution in order to have a better understanding of the BTV which is closely linked to the more detailed research requirements to develop effective tools for the control of the disease. Full details of the gaps are shown in the Disease and Product Analysis for Bluetongue on the DISCONTOOLS web site.

Conclusions

13. BT remains a major health and trade problem for the sheep and cattle industries. Surveillance as well as vaccination remain the principle tools for prevention and control, depending on the context. A number of vaccines and diagnostic tests are available in Europe and worldwide but technological advancement in both domains would be desirable. Due to a relatively high numbers of products on the market, it is unlikely that industry will invest in new technologies, unless external funding sources can be mobilized within the context of formal collaborations

14. BTV is relatively well known but there is a need to develop new safe killed / recombinant vaccines against all the BTV serotypes with the associated DIVA tests. In particular the development of effective cross serotype / cross topotype vaccines would be extremely useful and could potentially lead to an effective wider eradication campaign. In addition studies on the duration of viraemia in susceptible species, the determination of the infective titre and the mechanisms of overwintering would help to facilitate prevention and control.

Annex 9


DISCONTOOLS
Prioritisation Model Zoonoses
Trypano
Salmone
Q Fever
Leishman
Echino
E. coli
Cysticer
Crypto
CCHF
Chlamyd
HEV
Lepto
BTB
Anthrax
Nipah
Rabies
Campylo
Brucellosis
BSE
-200
-100
0
100
200
300
400
500
DISEASE KNOWLEDGE
ANIMAL HEALTH & WELFARE
IMPACT ON PUBLIC HEALTH
IMPACT ON WIDER SOCIETY
IMPACT ON TRADE
CONTROL TOOLS

Annex 10

List of presentations given at conferences or other meetings with references to DISCONTOOLS and the ETPGAH during the five years of the project.

Date	Location	Conference/meeting	Name (beneficiary)	Title of presentation
27th February 2008	Brussels (Belgium)	IFAH-Europe CNA and ETPGAH mirror groups	Telmo Valinhas	"Presentation of DISCONTOOLS"
28th April 2008	Paris (France)	EAFVR 4th ordinary general meeting	Telmo Valinhas	"ETPGAH and DISCONTOOLS, which opportunities for diagnostic industries?"
6th and 7th May 2008	Edinburgh (Scotland)	SCAR Animal Health and Welfare working group	Telmo Valinhas	"DISCONTOOLS"
4th June 2008	Brussels (Belgium)	Meeting with Med-Vet-Net Project Manager	Telmo Valinhas	"ETPGAH and DISCONTOOLS"
29th September – 1st October 2008	Rome (Italy)	2nd EMIDA ERA-Net meeting	Telmo Valinhas Morgane Delavergne	"Update on ETPGAH and DISCONTOOLS activities"
29th October 2008	Brussels (Belgium)	DG SANCO Conference "Delivering for tomorrow's European consumers"	Declan O'Brien Morgane Delavergne	Stand on ETPGAH "Ensuring the future of prevention and cure…"
24th November 2008	Paris (France)	EMVD Board meeting	Morgane Delavergne	"Update on DISCONTOOLS activities"
2nd December 2008	Brussels (Belgium)	ETPGAH mirror groups meeting	Morgane Delavergne	"Update on DISCONTOOLS activities"
16th March 2009	Prague (Czech Republic)	SCAR Animal Health and Welfare WG and EMIDA meetings	Declan O'Brien Morgane Delavergne	"Update on ETPGAH and DISCONTOOLS activities"
14th May 2009	Antalya (Turkey)	3rd EPÏZONE annual meeting	Declan O'Brien	"Introduction to the ETPGAH and DISCONTOOLS"
15th June 2009	Brussels (Belgium)	Animal Health Advisory Committee	Declan O'Brien	"Presentation of DISCONTOOLS"
10th July 2009	Brussels (Belgium)	DG SANCO Steering Group on Categorisation	Morgane Delavergne	"Update on DISCONTOOLS progress"
22nd September 2009	Brussels (Belgium)	ETPGAH mirror groups meeting	Morgane Delavergne	"Update on DISCONTOOLS activities"
6th to 8th October 2009	Prince Edward Island (Canada)	VetHealth Global Conference on animal health and nutrition businesses	Morgane Delavergne	"Introduction to the ETPGAH and DISCONTOOLS"
6th to 7th October 2009	Paris (France)	SCAR Animal Health and Welfare WG and EMIDA meetings	Declan O'Brien Morgane Delavergne	"Update on ETPGAH and DISCONTOOLS activities"
3rd February 2010	Brussels (Belgium)	DG SANCO Steering Group on Categorisation	Declan O'Brien	"Update on DISCONTOOLS progress"
23rd March 2010	Paris (France)	Etats Généraux du Sanitaire	Morgane Delavergne	"Introduction to DISCONTOOLS"

25th March 2010	Brussels (Belgium)	EMVD Board Meeting	Morgane Delavergne	"Update on DISCONTOOLS"
27th April 2010	Helsinki (Finland)	EMIDA and SCAR meetings	Morgane Delavergne Declan O'Brien	"Update on the ETPGAH and DISCONTOOLS"
17th September 2010	Rimini (Italy)	IBS 14th International Biotechnology Symposium and Exhibition	Jim Scudamore	"The Development of Effective Tools for the Control of Major Infectious Diseases of Animals: The DISCONTOOLS Project"
13th October 2010	Tel Aviv (Israel)	EMIDA and SCAR meetings	Morgane Delavergne Declan O'Brien	"Update on the ETPGAH and DISCONTOOLS"
22nd October 2010	Brussels (Belgium)	DG SANCO Steering Group on Categorisation	Declan O'Brien	"Update on DISCONTOOLS progress"
23rd November 2010	Brussels (Belgium)	ETPGAH mirror groups meeting	Declan O'Brien	"Update on DISCONTOOLS activities"
13th September, 2011	London, UK	AHVLA	Jim Scudamore	Representation of DISCONTOOLS
20th October, 2011	Paris, France	EMVD Board Meeting	Morgane Delavergne	"Update on DISCONTOOLS"
12th- 13th April, 2011	Arnhem, Netherlands	5th EPIZONE Annual Meeting:	Morgane Delavergne	"The Development of Effective Tools for the Control of Major Infectious Diseases of Animals: The DISCONTOOLS Project"
May 11th, 2011	London, UK	EMIDA Stakeholder/Dissemination Conference, May 2011	Declan O'Brien	EMIDA: the added value to the ETPGAH
May 12th, 2011	London, UK	Launch of the Global Network: STAR-IDAZ	Declan O'Brien	DISCONTOOLS: developing the most effective tools to control infectious animal diseases.
21st February, 2012	Brussels, Belgium	Copa-Cogeca workshop on Research and Innovation	Neil Craven	The role of research and innovation in ensuring a strong EU agricultural sector – IFAH Europe's view
February 20th, 2012	Davos Switzerland	GRF 'One Health Summit 2012'	Declan O'Brien	ETPGAH, DISCONTOOLS and STAR-IDAZ: more than just alphabet soup – a tangible contribution to One Health
March 5th, 2012	Paris, France	Launch of ANIHWA ERA-Net & CWG meeting	Neil Craven	"Progress report from DISCONTOOLS"
March 7th, 2012	Brussels, Belgium	Conference titled "Enhancing innovation and the delivery of research in EU agriculture"	Jim Scudamore	Attendance at conference to represent DISCONTOOLS

April 13th, 2012	Vilamoura, Portugal	COST Action on Farm Animal Proteomics (FA1002)	Neil Craven	"Progress report from DISCONTOOLS"
July 12th to 14th, 2012	Brighton, UK	EPIZONE Conference	Declan O' Brien	Poster presentation
September 5th to 7th, 2012	Madrid, Spain	IX International Congress of Veterinary Virology	Declan O' Brien	Attendance at conference to represent DISCONTOOLS
February, 28th, 2013	Paris, France	ANIHWA meeting	Declan O' Brien	"DISCONTOOLS Update & Future Funding to CWG"