REPORT

of the

THIRTY-NINTH GENERAL SESSION

of the

EUROPEAN COMMISSION FOR THE CONTROL OF FOOT-AND-MOUTH DISEASE

FAO HQs

Rome, Italy

27-28 April 2011

FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS

Rome, 2011

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Recommendations

Considering

1. The extent and impact of the FMD epidemics in West Eurasia in 2010;

2. The threat of further FMD outbreaks in South-East Europe;

3. The uncertain environment for FMD prevention and management in parts of the Middle-East and North Africa, as a result of political developments and their impact upon the trans-border movements of people and animals;

4. The uncertainty on the persistence of infection in wildlife in the forest ecosystems common to the eastern Bulgaria/Turkish border;

5. The current threat of type A and Asia-1 outbreaks developing into national or regional epidemics, threatening South-East Europe and untouched parts of the Middle-East;

6. The need for improvement in early detection of new epidemic threats, including the greater sharing of data regarding FMD outbreaks and improved recognition and response to significant events;

7. The continuous need for International FMD Reference Laboratory (IRL) services to ensure the member states and their National Reference Laboratories (NRLs), as well as international organisations and affected countries are able to rapidly receive the guidance and information and reference services needed, and taking note of the financial situation that affects the future provision of IRL services by the EuFMD member states;

8. The difficulty of strategy development in the context of established long distance movement patterns and price gradients for animals and animal products;

9. The limited amounts of vaccine for emergency use and the need to achieve greater efficiency and impact of preventive vaccination programmes in countries which operate them;

10. The progress made to implement the West Eurasia Roadmap for FMD control, and the need for benefit/cost assessments for further investments in FMD prevention and control;

11. The progress made to implement the EuFMD 4 year Strategy Plan adopted at the 38th Session, but mindful of the new risk situation and the scale of the challenge remaining;

12. The opportunity created for greater sharing of information for risk management;

13. The challenges faced by member states to maintain their capacity for FMD control in face of budgetary constraints and to identify critical issues and resources that would affect ability to control epidemics of different scale, and the benefits to decision makers and policy analysts of modelling as a tool to aid decision making, and the importance of correct model interpretation and data input;

14. That the West Eurasia FMD Control Roadmap, and regional co-operation on FMD prevention and

control in Europe, may provide a model for other regions to establish Roadmaps for FMD control based on the Progressive Control Pathway (PCP);

15. The advantages of co-operation between the EuFMD Commission and scientists and institutions developing new tools for FMD surveillance and control, and the risk that new tools will not enter into use without support for adaptation and evaluation;

16. The changing global landscape for animal production, movement, and trade, and the need for technical strategic guidance to the EuFMD Commission, its members and the international organizations, on issues and gaps that affect progress in FMD risk management;

17. The experiences of Bulgaria, Japan and the Republic of Korea in dealing with FMD outbreaks, given that the lessons learned include the benefits of training, contingency planning, laboratory capacity assessment, strict biosecurity and stringent border controls;

18. The progress made under GfTADS to develop the PCP as a common tool to assist countries to develop effective and sustainable national strategies for FMD control, and the need to develop and sustain regional initiatives in all of the seven epidemiologic regions that will impact upon the disease burden in source countries and reduce the threat and economic impacts at local, European and global scales.

Endorses

1. The work plan for the biennium, as proposed in Item 6;

2. The proposed budget for the Commission for the coming biennium;

3. The nominations for the EuFMD Executive Committee and the proposal for the Standing Technical Committee and Special committee on Research (”Research Group”).

Recommends that

Relating to the management of FMD crises

1. Member states should ensure they benefit from lessons learned from previous FMD epidemics worldwide and address in particular the following aspects of contingency planning: training of personnel, biosecurity protocols, laboratory capacity assessment, border controls, internal and international communication channels, and logistics of animal carcass disposal;
2. The issue of budgetary constraints faced by member states is kept in mind in the development and implementation of actions over the next two years, and that the international role and support provided is arranged in a way that is realistic to the needs of the member states and of the prospects for sustainable multilateral actions.

Relating to the current risks in the European neighbourhood

3. Member countries and those in European neighbourhood should take note of the risk relating to the current epidemics of Asia-1, type A and type O in West Eurasia, and ensure measures are in place for rapid detection and response; and should reconsider their contingency plans , in light of the current events and risk factors including the potential role of wildlife;
4. The level of protection against the circulating lineage of Asia-1 of current concern is assessed in a challenge test, using the Asia-1 Shamir antigen most likely to be used by member states;
5. Increased support is provided for planning, evaluation and monitoring of FMD management in West Eurasia, in particular to identify benefit/cost of different national strategies and provide epidemiology support for analysis of new threats, and to evaluate and optimize measures for disease control management;
6. Member states should consider the use of modelling tools as decision making aids, while ensuring that the output of such models are clearly understood by decision makers with respect to uncertainty and sensitivity. Member states using such models should engage in comparisons with other states to constructively examine the issues affecting confidence in their use, and that support be given to assist countries to review the suitability of tools for their needs.

Relating to the progressive control of FMD in endemic regions

7. The continued development and promotion of the PCP, in particular the refinement of assessment criteria and processes, the possible inclusion of mandatory requirements for reporting of results of surveillance for FMD, and the quality of vaccination and other control programs;
8. The FAO and OIE continue their development of a GfTADS Global Strategy for the Control of FMD, drawing upon the technical and organization expertise of the EuFMD and its Technical Committee, and are encouraged to continue plans for a Global Conference on FMD Control in June of 2012.

Relating to the priorities for the Commission in the coming biennium

9. Attention be given to the situation arising in South-East Mediterranean countries, and that the EuFMD Secretariat be empowered to respond to requests for assistance on FMD control, working at all times in full consultation with the EC and regional FAO/OIE offices;
10. The continuation of support for the West Eurasia FMD Control Roadmap, including currently agreed national projects, but with a greater emphasis upon the objective assessment and use of indicators, including reporting of FMD cases and serological survey results, to measure progress in the control of FMD and assistance for countries with evidence of virus circulation and no reporting of outbreaks/suspicions;
11. The Real-Time FMD training courses are continued, with the aim of training at least 2 persons per member country and neighbourhood country in the coming biennium;
12. Increased support is given for non-EU countries in the Balkan region to establish a functional minimum capacity for FMD lab diagnosis, to be achieved within the next 6-12 months, in line with minimum diagnostic capacity requirements adopted by the 38th Session and the EU Directive;
13. Mechanisms are established for emergency procurement of FMDV vaccine that fit with the interests and possibilities of member states that hold national antigen banks;
14. The Commission or members of the Executive Committee, making use of the Standing Technical Committee, and in support of GfTADS Global Working Group, establishes/fosters dialog between European parties funding FMD surveillance, and other international funding bodies, on the issue of international support for FMD surveillance, Reference Laboratories, and other actions that

have the aim of promoting the PCP application at regional and national level, including a yearly review on the status of international support for FMD surveillance and control;

15. The Standing Technical Committee give guidance on the process of application, or further development, of the priority setting procedures for vaccine/antigen bank holdings and on the proposed priorities for technical studies, including studies on the role of wild boar/wildlife, and on the need for specific meetings or actions in relation to gaps/issues identified during the 39th Session;
16. Funding be sought for the studies identified in the Berlin meeting of experts, including on the exposure of wildlife in Turkey to FMD, in order to better validate risk assessments and the develop models for wildlife infection;
17. A yearly review of R&D relevant to FMD control is undertaken, to identify new opportunities for application and threats to development or adoption; this should be managed through the Research Group, working with international consortia on FMD research such as the Global Foot and Mouth Disease Research Alliance (GFRA).

REPORT

Introduction

On behalf of the Director General of FAO, the Session was opened by Mr Modibo Traoré, Assistant Director General, Agriculture and Consumer Protection Department, FAO.

Opening Ceremony

Opening address by Mr Traoré:

Dear Colleagues,
It is my honour to welcome this esteemed group of CVO's, veterinary policy makers and scientists here at FAO headquarters in Rome on behalf of the Director General of FAO, Dr. Jacques Diouf. This is the 39th General Session of the European Commission for the Control of Foot-and-Mouth Disease. The Commission was founded in 1954 by seven European Countries to join forces in the fight against FMD. These countries decided to base the Secretariat of the European Commission for the Control of FMD at FAO headquarters in Rome to share infrastructural costs and benefit of each others' information and activities. Since then, the European Commission for the Control of FMD has steadily grown to the 36 Member States it has today. The European Commission for the Control of FMD (or EuFMD as it is called usually) and the Research Group of its Standing Technical Committee have become well-established names in the world of Foot and Mouth disease. Both the General Sessions and the Open Sessions of the Research Group attract participants and observers from countries all over the world. I am happy to see that also for this meeting so many people from different regions and continents have found their way to Rome.
The countries that founded EuFMD realized already over half a century ago that a disease like FMD cannot be fought by one country alone, but that regional efforts are an absolute must to make sustainable progress. History has proven your founding countries to be right. FMD was eradicated gradually from most of Europe and today nearly all your Members States are officially free of FMD. There is no doubt in my mind that the EuFMD story can be called a success story. Nevertheless, now and then there are still FMD incursions into Europe. This is reflected by the agenda of your meeting, showing that you will discuss the FMD outbreaks in Bulgaria and Turkey, in addition to outbreaks in other regions of significance to your Member States, including the Middle East, Eurasia and parts of Africa.
It is always advisable to try to learn from the experiences of others. I have noticed with satisfaction that you invited representatives of Japan and the Republic of Korea to present their experience and the lessons learned in coping with the major FMD outbreaks that occurred in these countries recently. Just like many of your Member States, Japan and Korea also enjoyed the luxury of FMD freedom and then were confronted with the vulnerability of such a status in a world where FMD still occurs. The consequences for both countries were enormous and should be a lesson to all of us.
We all know that the possibilities of international spread of Transboundary Animal Diseases have increased in recent years, due to increased trade, transport and travel. As long as FMD is still present in so many parts of the world, it remains a threat to each and every country. It is an illusion to think that a highly contagious virus like FMD virus can be kept outside a country or a region forever, only by import restrictions and by strict border controls. In my view there is no other option than to fight the disease at source.
This observation is valid for FMD, but also for many other highly contagious animal diseases, the so-called Transboundary Animal Diseases. As I mentioned before, the international trade in both live animals and in products of animal origin has increased enormously. Transport occurs over much

longer distances than in the past and animal pathogens can reach the other side of the globe in less than 24 hours. However, the situation on the ground still is, that by far most live animals are transported across the border to directly neighbouring countries that the animals use cross-border pastures or that they are kept by pastoralists who move from one country to another. Therefore regional approaches to control Transboundary Animal Diseases are just as important as they were in the early days in Europe, when EuFMD was founded to control FMD. The importance of the regional approach can hardly be overemphasized.

FAO is trying to apply the lessons learned with FMD control in Europe, and in other regions, to improve FMD control (and the control of other Transboundary Animal Diseases) on a global scale. This is urgent, since animal diseases have a profound negative effect on the production potential of animal husbandry systems, in particular in developing countries. In view of the tremendous challenges posed by the strongly increased global need for animal proteins in the near future, negative effects of animal diseases should be avoided as much as possible. This is an immense challenge, not just for FAO, but for all organizations and countries feeling responsibility for global food security.

I am happy to see that the Progressive Control Pathway for FMD that FAO and EuFMD developed together, is featuring prominently on your agenda. Using the Progressive Control Pathway, Regional Roadmaps were developed in the Middle East, Eurasia and Africa and experience has been gained for a few years now. In addition, the PCP for FMD is key in new FAO technical cooperation projects in many countries where FMD is still endemic.

The FMD Progressive Control Pathway for individual countries and the related regional roadmap approach recently have been made the corner stone of the joint FAO and OIE Global Strategy for the Control of Foot-and-Mouth Disease that is under development. This strategy will help countries and regions where FMD is still endemic to stepwise control FMD and to enjoy the fruits of a better FMD situation. In this regard it is of importance to remind you that countries were FMD is still endemic often are developing or in-transit countries. FMD in developing countries hampers economic development, has a significant negative socio-economic impact on the livelihoods of small holders and directly threatens food security. However, developing countries face more threats than only FMD. In fact FMD may not be their first priority. Therefore it is important to support such countries to improve their veterinary structures and disease control capabilities. This requires more international efforts based on both solidarity and the realization that global progress can only be achieved by practising the much-heard slogan "fight the disease at source".

I am happy to announce that FAO and OIE together intend to present the Global Strategy for the Control of FMD in Bangkok in June 2012. I hope and trust that the launch of the Global FMD Control Strategy will be recognized by the World Community as an opportunity to fight the disease at source in a structured manner. The Strategy will make use of the structure of the Global Framework for the Control of Transboundary Animal Diseases. It will have the full backing of both FAO and OIE and I trust that it will also get the active support of Regional organizations like AU-IBAR and the European Commission for the Control of FMD. The support of the regional organizations will be reflected in the organizational structure chosen to allow for visibility of the regional organizations as well.

Although the international organizations have the intention to intensify the fight against FMD also in the European neighborhood, it is clear that this will be a hard and a long fight. Instant success cannot be expected and sustained efforts with international and regional support will be necessary. Therefore, FMD will remain a threat to Europe for some time to come. In my view this also means that EuFMD should continue to play a strong role.

I encourage all Member States, as well as the European Commission, to maintain strong support for EuFMD. It is your organization, it serves your best interests and it needs your guidance. While serving the best interests of Europe, EuFMD has already made significant contributions to international disease intelligence, to the availability of international reference lab activities, to the creation of laboratory and epidemiology networks and to FMD control efforts in the Member States and in the European neighborhood. I do hope that also in the future we can count on your continued strong presence and on continuation of our highly fruitful cooperation.

Item 1. Adoption of the Agenda

Dr Ulrich Herzog, Chairman of the EuFMD Commission, welcomed the delegates and proceeded to Item 1. The Agenda (**Appendix 1**) was adopted as proposed.

Item 2. Lessons learnt from managing FMD control operations, tools for minimising impact and optimizing control measures

Item 2.1 Lessons learnt from managing FMD in previously free countries in 2010-11

Three papers were presented and discussed under this Item. The first was the Report of the management of the type O epidemic of FMD in Japan in 2010, presented by Dr Tsutsui (**Appendix 2**), the second was a paper provided by NVRQS, Republic of Korea (RoK), on the management of the three separate incursions of FMD into the RoK in 2010, presented by Dr Wainwright, FAO-EMPRES, together with information on the spread of FMD in the Democratic People's Republic of Korea (DPRK) in 2011 (**Appendix 3**). The third paper reviewed the events and lessons learnt during the management of FMD in south-east Bulgaria in 2011, presented by Dr Alexandrov (**Appendix 4**).

The financial, agricultural and social impact of these events had been enormous, and placed enormous strains on the veterinary services involved. **In Japan**, the epidemic had a duration of 2.5 months, resulted in the culling of 298,000 animals, involved over 158,000 people, and required indemnity payments totalling EUR 440 million. Almost 300 farms had their animals culled for disease control and three times this amount of farms were vaccinated (1011). Vaccination began on 25th May, 36 days (five weeks) after the first confirmed outbreak. New cases essentially ceased three weeks after vaccination (circa 12th June). The official Inquiry Commission concluded that earliest cases were infected one month before detection, and delayed notification was an issue. Improvements recommended were greater awareness of signs requiring notification and withdrawal of full compensation payments for non-compliance. Improvements needed to border controls were identified. Regarding Contingency Planning (CP), the roles and responsibilities of Central and local authorities needed to be clarified and CPs reviewed every 3 years. Legal powers for culling healthy animals were also needed, for risk management of dangerous contacts/high transmission risk herds. Improving Biosecurity at farm level was a major issue, and in future the emphasis would be on greater owner responsibility, mandatory reporting of biosecurity with supervision by prefectures, and far greater attention (including compulsory requirements) for vehicle disinfection during outbreaks. The lack of human resources for handling livestock was a issue which may be common to other countries with high production intensities but low on-farm human/animal ratios. These operational constraints, as well as cost implications of delayed control measures, render research essential as well as international co-operation to reduce risk.

In the Republic of Korea, five incursions have occurred in the 10 year period since 2000, with three of these in 2010. Three of these incursions took less than 30 days from first to last case, the latest being the most difficult and at time of report, had exceeded 120 days with over 3.4 million animals culled. More than one hundred and fifty outbreaks were recorded, with the last three occurring 45 days after the previous, in late April (16-22nd). The economic and social losses have been huge, with the first four incursions totalling about USD 600 million and the latest, more serious incursion likely to far exceed this total; in a one month period (December 2010), FMD spread within the country. Failure to control by stamping-out led to decision to apply nationwide vaccination, with the first round of vaccination completed by 31st January 2011 (two months after the first case), and third round from 3rd March for specified animals unsuitable for earlier vaccination. Obtaining sufficient vaccine was a major difficulty and required negotiations with many producers and holders of vaccine banks.

Lessons learnt:

- huge pig complexes are a major problem, as a result of proliferation and intense human traffic;
- spread may occur for two weeks before reporting;
- initial reaction failures/errors in judgement at local level have a huge impact;
- biosecurity/disinfection is less effective in severe winter conditions;
- low awareness of disease at several levels together with poor sanitation and dense populations create conditions for major epidemics.

Improvements planned are to:

- address failures in early detection and immediate response;
- tighten border quarantine;
- strengthen routine surveillance;
- improve capacity for vaccination;
- address issues with animal husbandry systems.

Dr Wainwright, FAO, provided a timeline for outbreaks in relation to vaccination. About ten of the 153 outbreaks had occurred after the 31st January completion of the first round of vaccination. Further work was needed to identify if the prioritization given to cattle compared to swine was optimal given the peak in cases in early January. The reasons behind the latest cluster of outbreaks after a 45 day silent period also needed to be understood. Dr Wainwright also provided a map illustrating FMD cases in the Democratic People's Republic of Korea (DPRK) in period November 2010 to 22nd April 2011, provided by the country to FAO and OIE; the organizations organized a mission (CMC-AH mission) to provide immediate guidance and identify needs of the country for assistance.

In Bulgaria, the recorded start of the 2011 type O situation began on 4th January with confirmed positive wild boar samples from a location close to the Turkish border in South-East Bulgaria. Two waves of outbreaks in domestic animals have occurred subsequently. The first three outbreaks occurred in January, and the third of these was epidemiologically linked to the first outbreak (Kosti village). Intensive control and surveillance measures in line with the EC Directive followed, but after 46 days and at a distance of at least 42 km from the first wave, a second wave of outbreaks occurred in March–April, with the Kirovo case on 19th March and seven subsequent cases over an extended distance, with the last case on the 7th April. Infected premises were detected by clinical surveillance and serology, with the latter playing an important role. Virological analyses (WRL Pirbright applying methods developed with EC/EuFMD support) provide strong evidence that additional infections, presumably in wildlife, were amplifying and maintaining infection, with separate introductions accounting for the majority of outbreaks. (The evidence for this was presented in the Research Group item, in **Appendix 30**). Given the initial wildlife case, the forest locations, the distance and lack of traced links, surveillance in wildlife on both sides of the border was agreed at Bi- and Tri-partite meetings organized by EuFMD. At time of report, all wildlife sampled (19 wild boars, 6 roe deer) were FMD negative in Bulgaria, following application of a trapping/shooting programme. The lessons learnt from this unfinished episode were that FMD control can be far more difficult than anticipated in Contingency Plans where wildlife and forested settings are involved; that CPs must be adapted to deal with difficult settings and wildlife; that laboratories must be prepared for the full range of methods required to be applied for mass screening in surveillance and protection zones, or where wider location of risk populations must be included.

The Bulgarian Food and Safety Authority (BFSA) thanked the EuFMD and EC for their support throughout, with missions, materials and guidance, and the Turkish authorities for their readiness to meet and agree upon joint programmes for surveillance.

Discussion

The Chairman warmly thanked the speakers for their willingness to share the information and experience. In discussion, the problem of delayed laboratory confirmation in Japan was raised: would greater use of rapid, in-field diagnostic devices have reduced the delays? The report from RoK indicated they used penside devices in the field for both antigen and antibody detection; these have

not been evaluated in the field in Europe but could be interesting to consider as the Svanova kits are only for antigen detection.

Other questions were on the entry routes for infection in Japan and Korea, on learning from earlier incursions, on the need to look again at the issues concerning densely populated areas (including use of antiviral products in at-risk susceptible species), national movement bans and on related decision making. The scale of the problem relating to delayed detection was apparent and a cause for every country to review the likelihood this could happen. The growth of pig populations and densely mixed ruminant and pig systems is a concern for many regions of the world and it was questioned why experience from other regions had not been applied in Contingency Planning. Dr Tsutsui urged greater use of simulation modelling and exercises to identify better what needs to be achieved to prevent repeated large epidemics. Carcase disposal was also a major issue affecting use of stamping-out and driving the search for alternatives.

Questions on the Bulgarian presentation focused on vaccination issues, and management of non-vaccination next to vaccinating zones (Thrace). The EC indicated the progress in Thrace region over the past five years had been objectively verified, and a Thrace "free with vaccination" and with all the safeguards now established was a good development for the long term. In the short term, the apparently unique event of FMD in wildlife populations should be seen in a historical context.

Recommendations: 1 and 2

Item 2.2. Lessons learnt from transboundary epidemics in non-free regions: the 2010 type O epidemic in West Eurasia

Dr McLaws, EuFMD, presented this report (**Appendix 5**) on the major epidemic affecting several West Eurasian countries and which was the most significant risk to Europe and neighbourhood in 2010-11. The report was an output of the EuFMD epidemiology working group meeting held in Ankara, Turkey in March 2011, with Turkish and Iranian epidemiology representatives.

Although type O FMDV is considered endemic in both Turkey and Iran, with cases every month of recent past years, epidemic events can be seen as occurring with several years between major peaks, such as 2007 and 2010, and smaller scale events between these at local or regional scale. In 2010, the cases (all types including unconfirmed) rapidly took off in April in Iran and after a short lag period, in Turkey. Peak numbers exceeded 300 per week in May in Iran and about 100 per week in Turkey in June. In Turkey and Iran, the majority of outbreaks were type O throughout 2010 and a total reported outbreaks of 5242 and 1613, therefore almost 7000 reports in 2010 compared to 2800 in 2009. In Turkey the number of cases reported in 2010 was almost ten times more than in 2009, affecting the country very widely, but there was no evidence of Thrace being involved, (no reports nor serological evidence).

Virological typing lags behind events, but with high submissions from Iran and strenuous effort by the WRL, it could be seen that almost all outbreaks in 2010 in Iran were caused by O PanAsia-2 ANT-10 lineage, whereas in 2009 the lineage was seen only once in 40 FMDV cases studied. The 2010 epidemic appears to be of one lineage, but this feature was not recognized until several months after the event had spread to involve Turkey. The paper considered why the epidemic occurred, and the possibility of prediction of future epidemics and earlier detection. The Working Group (WG) had, for the first time, been able to assemble a very large dataset from Iran and Turkey on vaccination coverage, outbreaks, and sero-surveillance. Of note were that most type O isolates from Iran and Turkey in 2010 were not well matched to the vaccine in use, a change from 2009 in that vaccination coverage was much less than required to achieve continuous immunity, with only 36% of villages in Iran having the three planned times a year schedule (cattle) and circa half the sheep population were unvaccinated (40 million). Given the much large number of sheep than cattle and their rate of sero-conversion of 1.5 times cattle (1.2-1.91 times per age group), it seems likely sheep played a major role in amplification and spread, but this does not explain why the epidemic occurred in 2010. The higher live animal and meat price in 2010 compared to 2009 (almost double) and price differential that favoured movement towards Turkey must have played some role, in longer distance movements and perhaps greater market transactions per animal between production, fattening and slaughter

points. The paper considered how to identify risk populations and periods, and how to interrupt or reduce risk in the complex animal marketing chains. The EuFMD/EC project, working with IVO Iran and Turkey, had managed to make significant progress to analyse data from 2009-2011, but achieving early warning would require the start of new epidemics to be picked up in the narrow window of space and time when control may be achieved. Automated detection of events with close human scrutiny for unusual patterns will be considered, preferably starting with field veterinarians. Laboratory typing within a week (as planned in the EuFMD/EC project in Iran), should assist to pick up change in serotype but lineage typing would need human input to prioritize.

The EuFMD/EC project was also concerned about vaccination practices, emergency management, and biosecurity issues. Initial assessments suggested that ring vaccination procedures needed to change to avoid local spread. The latest development, with Asia-1 detected in Iran for the first time since 2004, was a cause for great concern. The project team had investigated sites of confirmed infection; preventing entry to Turkey, and early detection and response would be crucial. Overall, the pattern of regional emergence and spread of FMDV lineages in West Eurasia, including rapid long distance spread, present huge issues for disease control. A start has been made on the analysis of events but far more is required to give guidance to prevent future catastrophic losses.

Discussion
The effort to understand the type O epidemic was appreciated and greater efforts were urged, in particular to understand why so many new variants appear to arise in West Eurasia compared to other regions. Is it better surveillance and typing, or greater virus evolution in a vaccinated population? The EC, and others, highlighted the importance of addressing the movement management within and between countries. Would adopting a movement permits system based on double vaccination make a difference and could it be managed? Dr Bulut mentioned that each new sublineage is seen for about one year, and new antigen variants every 3-5 years, but the factors driving this were not yet clear.

Recommendation: 3, 4 and 5.

2.3. Improving decision making: tools and methods for estimating impacts of FMD

This paper was presented by Dr Mourits (**Appendix 6**)**.** Dr Mourits reviewed the use of models in decision support. The usefulness of models is an important criterion, which has qualitative (insight and understanding) as well as quantitative aspects. Economic modelling is aimed at decision support, on discrete alternatives, and aims at integration of all required knowledge, which presents a major data challenge. Dr Mourits provided the examples of modelling on the analysis of prevention measures for CSF into the Netherlands, and modelling of different FMD control strategies. The first example assisted in priority setting of strategic preventive measures based on priority pathways and assists with the benefit/cost of prevention measures to reduce risk at reasonable cost. The second considers the social-economic consequences of FMD control under different control strategies, enables "what-if" simulations, and enables exploration of the areas of uncertainty that have greatest potential impact (and need attention). This second exercise integrated epidemiological with economic modelling, using *Interspread* for the first, combined with tools for direct and indirect consequential costs. The work considered impact of different control strategies in Densely Populated (DPLA) and Sparsely Populated Livestock Areas (SPLA). As expected, the control in DPLA was difficult and the duration long (> one year). Alternative control measures were modelled, with a potential 10 fold reduction in losses, with vaccination "to kill" being marginally less costly than vaccination to live. Overall, the models were extremely useful, but application to other countries will demand a lot of specific inputs; however, there were many gains that make this useful in peace time for decision support. The range of application includes evaluation of resource allocations, financing instruments, effect of cross-border harmonisations, etc, so the trend will be towards better use of these tools to assess options in a complex, interlinked animal trading environment.

Discussion
The integrated models had high interest and relevance to countries; restriction zone management is a subject with great economic consequence so alterative management (size, duration, restrictions,

actions) should be priority for modelling of options. This issue has cross-border consequences (zones extending into neighbouring countries).

Recommendation: 6

2.4. Improving decision making in Real-Time: lessons learnt from the UK "Silver Birch" FMD simulation exercise

This was presented in three parts (**Appendix 7**). The first explained how this UK national exercise, which involved around 800 persons across England, Wales and Scotland, was organized to explore 12 themes/issues in the management of an FMD incursion. The two day exercise began six days into a simulated outbreak, on which day eight cases were reported with a total of 46 cumulative reports. Modelling was used as part of the evidence base for decision making on control measures to investigate how an epidemic may develop, and predict likely outcomes in different scenarios. Based on the presenters' experience, epidemiology models are essential; resource models (to identify constraints and use of resources) are considered nice to have, and an integrated model with both components would be ideal, since resource constraints inform the epidemiologists on what is possible to be achieved.

The Exodis-FMD model was used, which explicitly models the DEFRA Contingency Plan, and whose output can be fed into the Economic Consequences Model, to estimate (on basis of 1000 runs) the total cost of outbreak, with different control strategies and scenarios (developing outbreak situation). Seven types of data, including those set by control policy choice, were utilized. In the Silver Birch exercise, the use of vaccination was continually under consideration, with impact upon number of infected farms, total culls and duration, and average cost of the outbreak, with cost divided into Government, industry and wider economy. Vaccination impact was sensitive to the value of the vaccinated animals. If the loss in value was only ten percent, vaccination would reduce Government costs, while slightly increasing livestock industry costs, but overall reducing the total cost. A longer export ban due to vaccination was less important to the overall decision, as vaccination shortens outbreak; of significance was the substantial reduction in animals culled and number of farms with culls.

Lessons learnt include that decision to vaccination is not a simple 'yes or no', but also depend upon where, when and which species, on industry and other stakeholders' perceptions, and exit strategy. Of note is that a decision to vaccinate to live does not prevent a subsequent decision to cull vaccinated animals should this be predicted to reduce costs/impact on sectors affected. Modelling was valuable to identify resource constraints, for example as zones move from 20 to 30 km radius, the number of vets required moves from 107 to 316. At an early stage, the situation is often unclear but waiting for information may allow spread that could overwhelm capacity to vaccinate or manage by the normal stamping-out policy. Issues identified included the need to explore reduced vaccination zones, targeting vaccination (areas, species) and prioritization of vaccination order (targeting high risk farms for onward spread).

Discussion
Around ten days into an incursion is the critical point for decision on vaccination. Modelling assists to indicate the benefits and risks associated, as vaccination (in the UK) was considered to increase operational complexity and has multiple consequences. It was pointed out that the ''vaccinate-to-live'' option could be converted to ''vaccinate-to-die'', therefore decision makers would retain options as the situation further develops. Use of models in peacetime was urged, including to predetermine non-vaccination zones (no situation foreseen where it would assist). Dr Dekker asked if there were any plans to review the three month extra penalty on regaining OIE-free status if vaccine is used and the speaker agreed that if economic and risk consequences are disproportionate in relation to gains of safety then international standards should be reviewed. In Europe, the Directive allows more flexibility in this sense than for export from the EU where the OIE recognition is more critical.

In terms of appropriate use of models to build consensus on options, the speakers mentioned a high value to achieving familiarity and building internal agreement when models are used, and in this sense they assist as a basis for discussions on scenarios and options.

In conclusion, the Chairman considered that the tools presented offer new and important assistance to policy makers and potentially, in crisis management, and that all Member States should benefit by building up their expertise to select and use relevant models; the EuFMD should assist to improve sharing and opportunity in this field.

Recommendation: 6

2.5. Lessons learnt from multi-country exercises

The experience of Austria in multi-country simulation exercises for FMD was presented by Simon Stockreiter (**Appendix 8**). The exercise "Picorna 09" was conducted over three days in June 2009, involving nine agencies and four countries (Austria, Germany, Switzerland and Liechtenstein), with the objective of testing efficiency of the CPs with a focus on intra- and international cooperation of authorities, communication and command, and public relations. The exercise was part of a series of workshops between March and September 2009 on six aspects of crisis management and hosted by different partners. The scenario was the first day of a suspected outbreak in Austria, subsequently confirmed and with restriction zones which affect the neighbouring three countries. Veterinary activities were managed at three levels in Austria, including on-the-spot teams, local and national crisis centres. The exercise was valuable for re-enforcing or improving information flow within and between crisis centres, and building confidence in timely information and action management across borders. Issues faced, for which post-exercise work was required, were information/documentation efforts at the three levels: practical guidance to veterinarians to be improved; the need for more vet personnel if greater than the single focus; and different workflow in neighbouring countries under the same restriction zones, which may need prior agreement between countries on their activity plans in surveillance or protection zones where zones cross international borders.

In terms of usefulness, both national exercises and international co-ordination are essential as national exercises allow greater depth and critical evaluation of problems. To evaluate critical components ("depth") it was suggested to use more frequent, smaller and focussed exercises. Finally, he concluded that real-time exercises may identify longer-term issues, but were not ideal for addressing issues that require significant prior study, for example where larger (and therefore longer) terms control measures, with associated political, resource, tourism and public opinion aspects. Alternative methods or special focus may be needed to draw attention to issues to be solved in advance of these rare, but potentially very damaging, crises.

Discussion
The issue of laboratory bottlenecks was raised. Are they evaluated? The speaker replied that for critical components it could help to have specific training and response plans, covering the range in scale of needed services.

Recommendation: 6

2.6 Survey on the use of decision support tools including models in Contingency Planning

Dr McLaws, EuFMD, presented the results (**Appendix 9**) of a survey of Member States and neighbours conducted in March 2011. Thirty-one countries responded to the survey. The survey revealed widespread participation in disease simulation exercises; 45 percent of respondents indicated that they held a simulation exercise within the last 12 months. Many of the simulation exercises were table-top and only involved government. However, when a field component was included then industry was more likely to be involved. ten of 27 countries reported use of disease spread models, with six - seven of these ten countries having models that also demonstrate different intervention strategies that could be used to assist with Contingency Planning. Of note was that only two reported to use economic modelling, a surprise in the current economic environment, which

perhaps reflects a lack of investment at national level and/or lack of easily adaptable models. Respondents perceived the greatest challenges to FMD control to be: lack of veterinary resources; financial constraints; carcass disposal capacity; animal welfare issues and disease control in areas with a dense livestock population.

In the survey, 21 countries indicated that they would be interested in a workshop on disease spread modelling, with seven out of 21 interested in external support to adapt a model to their particular national situation.
Recommendation: 6

Item 3. Reducing international risk: the Progressive Control Pathway (PCP)

3.1. The PCP for FMD control

The Progressive Control Pathway (PCP) was presented to the Session by Dr de Leeuw, FAO (**Appendix 10**). He explained that the PCP is a development and progress monitoring tool initially developed by EuFMD and FAO for use in projects in West Eurasia. Since the Global OIE/FAO Conference in 2009, the PCP has been further developed in collaboration with OIE to become a joint tool for use in endemic or non-free regions, as part of the progression towards OIE recognition of the status of control.

For endemic or non-free countries, the PCP structures the long road towards freedom into small but distinct steps, starting with risk assessment and strategy development, with emphasis on local decision making on the desired level of control based on benefits/cost and impacts. Given the transboundary nature of epidemics, and since some countries may see limited prospect or benefits to FMD control, the PCP can be applied in regional roadmaps which may assist to generate commitment and mechanisms to influence countries whose level of control threatens the status of others.

For FMD-free countries, although the PCP is not needed for their status, it should assist for risk assessment by generating information that is not currently available, such as indicators of risk management in third countries and relatively standardized FMD incidence rates. It should also give greater information on circulating strains, as countries in PCP Stage 1 should provide data from their routine monitoring of FMD circulation. Dr de Leeuw summarized the outcomes expected in each Stage, and indicated that from PCP Stage 3 onwards, countries may in future be able to request the OIE to endorse their national eradication programmes.

In the past three years, FAO has invested in promoting the PCP and in assisting at regional level to develop long term roadmaps based on PCP progression, and at country level to embark on the PCP, for example through development of revised national strategies for FMD control. Incentives for PCP participation include potential trade negotiation advantages from having sets of risk management measures in place and data on FMD incidence that support the claimed level of management. The PCP uptake has been good, with PCP being the basis of projects in Central Asia, the Andean region of South America, and used to define country gaps and investment needs in South Asia (SAARC initiative, through FAO). A recent joint OIE/FAO workshop in Southern Africa assisted by drafting a subregional roadmap to 2020, using the PCP and OIE criteria, and this type of joint FAO/OIE approach to promoting regional and national PCP assessment and to define investment needs is a promising avenue for future work.
This was followed by presentations by FAO (Dr Ferrari, **Appendix 11**, and Dr Pinto, **Appendix 12**), on how the PCP has been applied in regional and country projects, in Asia, Africa and South America. The first talk drew attention to the FAO promotion of Regional Roadmaps to address the seven virological and geographically distinct virus pools, in which FMDV control by vaccination requires to address the distinct virus strains therein. Two of these seven (SEACFMD and South America) have already elaborated regional long-term visions and programmes, and in the other five, FAO, in joint meetings with OIE, has assisted Regional Roadmaps to be drafted based on PCP assessments. In Africa, participation by veterinary services in western and eastern Africa to this process is needed to

validate the approach of Roadmap development by regional experts. He illustrated the talk with Roadmap progression charts for these five regions, and showed how the annual re-assessment in West Eurasia, supported by FAO and EuFMD, demonstrated progress year on year but also slippage where country commitment has wavered, the annual workshop giving an opportunity to identify faltering progress or reversions, and to enable regional responses where risks increase. He showed how PCP Stage 1 generates substantial information on FMD exposure and risks to assist with arguments as to FMD impact and benefits of control, for example 3 countries with prevalence of over 35 percent in youngest age groups. Stage 1 activities are usually well accepted by countries and generate essential information for assessment of options. Revision of national strategies (particularly where public versus private funding is involved) is a major task and should not be underestimated in the desire to progress to Stage 2, or similarly, if the move to prevent circulation (Stage 3) is the aim.

The difficulties of progress at higher levels of the PCP was the subject of Dr Pinto's presentation, where two FAO projects (supported by Spain and Italy) contribute to the progressive control of FMD in Bolivia, Ecuador, Venezuela, Colombia and Peru, thereby adding to future eradication from South America through focus on the critical issues that constrain current FMD management in each country (and zone, since most countries have zones at different levels). The PCP has been used to define control activities and set targets, including for entry to higher PCP stages. This has added value to the hemispheric plan (PHEFA) through focus on critical risk management issues particularly where these involve economically marginalised communities.

Recommendation: 7

Item 3.3. Preparation of the Global GfTADs Strategy for FMD control

This item was presented by Dr Domenech, OIE, on behalf of OIE and FAO (**Appendix 13**). In 2010, the majority of countries (95 of 177) were not recognised as free of FMD. The OIE/FAO Global Conference in 2009 developed recommendations to address this, with an emphasis upon building on successful regionally co-ordinated programmes such as that of EuFMD/Europe, South America, SEACFMD in South East Asia, and more recently the West Eurasia Roadmap. In June 2012, a second Global Conference will be organized by FAO with OIE, and in preparation for this, a Global Strategy for FMD control will be developed in advance by the FMD Working Group, which comes under the GfTADS Global steering Committee. The Global FMD-WG will be assisted by a dedicated joint FAO/OIE FMD Secretariat based in FAO in Rome, regular FMD experts and a pool of qualified FMD consultants for PCP training, assessment and capacity building projects. Dr Domenech illustrated how the approach would integrate several themes of FAO and OIE work with countries on veterinary governance, livestock sector development, regional programme co-ordination and support and scientific networking and underpinning research. The Joint FAO/OIE PCP would be the key FMD tool for use in developing and monitoring progress. Further integration with PVS could be an important means to ensure the enabling environment for FMD control is assessed using a common framework. He thanked EuFMD for their organization of two major scientific conferences which provided important recommendations and concepts to assist the global strategy development and urged the continued support in the run up to the Global Conference, and in the roll-out of the PCP and Global Strategy to other regions.

The Chairman thanked the four speakers and congratulated the FAO and OIE on the progress being made, and was pleased to note the role played by the EuFMD and the Secretariat in developing concepts, tools and in organising major meetings; this role he believed should continue, and EuFMD could support expertise to underpin the further PCP development and the FAO/OIE Global Working Group.

Recommendation: 8

Item 4. Financial matters

The Secretary explained the current funding situation, with the Trust Funds administered by the Secretariat being the administrative fund (MTF/INT/011/MUL) and the Trust Fund for activities of the Commission supported by DG-SANCO (EC). A third Trust Fund is maintained for contributions by Member States or others to disease control actions, but had not received fresh contributions in 2009 or 2010.
The expenditure for MTF/INT/011/MUL was USD 413,553 in 2009 and USD 366,563 in 2010, giving a balance at 31/12/2010 of USD 446,782 (**Appendix 14**).

On behalf of the Executive Committee, Dr Sumption then presented the proposed budget for the Administrative Fund for the years 2012 and 2013 (**Appendix 15**). The proposal was for an unchanged level of financial contribution in these years, achieved through savings in several budget lines, including in the annual contract in support of the WRL Pirbright which would in future be supported by the EC (through EuFMD), to allow greater technical support to EuFMD through recruitment of a full time P3 officer (from late 2011) and enabling training attachment of Member States professional staff to work with EuFMD by support for costs of short-term attachments.

The net result of the proposed expenditure should be a minor reduction of the fund from USD 481,000 at the end of 2011 to USD 389,000 at the end of 2013, the balance enabling the Commission to cope with changes in exchange rate and allowing the Executive Committee some discretion with use of the balance to fund urgent actions that are not eligible for EC support.

The Chairman proposed the budget to the Session and as there were no adverse comments. The proposal was endorsed.

Item 5. Election of the Executive Committee and Subcommittees

Dr Lubroth, Chief of the Animal Health Service, FAO, presided over the Elections of the new Executive Committee, in the presence of representatives of the FAO Legal office.

Dr Lubroth first asked for nominations for the position of Chairman and two Vice-Chairpersons, then of the five other members of the Executive Committee. The following were elected:

Position	Elected	Proposed by:	Seconded by:
Chairman	U.Herzog (Austria)	United Kingdom	Estonia
Vice-Chairman	N Gibbens (UK)	Sweden	Netherlands
Vice-Chairman	L Denneberg (Sweden)	Germany	Finland
Member	Z Micovic (Serbia)	Croatia	United Kingdom
Member	N Pakdil (Turkey)	Austria	Bulgaria
Member	S Doudonakis (Greece)	Bulgaria	Turkey
Member	R Chetan (Romania)	Greece	Germany
Member	L Carbajo Goñi (Spain)	Portugal	Austria

He asked if any further proposals for members would be forthcoming from the members present and there were none. The Executive Committee was unanimously accepted, with acclamation. He then handed the rest of the elections to the re-elected Chairman, Dr Herzog, who thanked the members for their confidence in him and the new Executive to undertake the responsibilities placed upon them.

Election of the Subcommittees

Dr Sumption presented a paper (**Appendix 16**) which had been previously circulated to the EuFMD membership in advance of the Session, concerning the Standing Technical Committee and "Research Group". The Constitutional position was that Subcommittees were established at the regular Sessions of the Commission and for the purposes agreed at the Session. The first Standing Technical Committee was agreed in 1957, and subsequently this Committee had organized study tours to leading laboratories in Europe and elsewhere, which was known as the Research Group of the STC. The Executive Committee, having considered the situation, had come to the conclusion that the situation should be clarified, with a distinct role for a small Standing Technical Committee relating to technical guidance to the executive on risk management, and a Special Committee on research to maintain the need for a cadre of experts with continuous involvement in the scientific disciplines in FMD diagnosis, surveillance, vaccinology or epidemiology.

Conclusion
The proposal, including the resolutions regarding the Committee and the number of its members in the biennium, was endorsed.

Election to the Standing Technical Committee and Special Committee on Research

Dr Herzog on behalf of the outgoing Executive Committee presented a proposal for membership of the Committees, as follows:

Standing Technical Committee

David Paton	United Kingdom
Christianne Bruschke	Netherlands
Preben Willeberg	Denmark
Matthias Kramer	Germany

Special Committee on Research

Twelve members were proposed, with the World Reference laboratory (WRL) to be invited to each relevant meeting as an *ex-officio* member. The list was endorsed by the Session without further proposals.

A. Dekker, Netherlands

B. Haas, Germany

E. Brocchi, Italy

E. Ryan, Ireland

G. Georgiev, Bulgaria

G. Belsham, Denmark

K. De Clercq, Belgium

L. Bakkali, France

M. Arias, Spain

M. Bellaiche, Israel

N. Bulut, Turkey

S. Zientara, France

Item 6. Progress to implement the EuFMD Strategic Plan 2009-13, and Action Plan for the upcoming biennium

A presentation on the activities of the Secretariat to implement the Strategic Plan was provided (**Appendix 17**). Five priorities for actions were agreed at the 38th Session, in addition to the capacity to respond to FMD crises in the region. Projects have been developed and implemented for most of the priorities, with progress to develop and implement monitored by the Executive Committee. A major part of the work programme has been the protection of South-East Europe through projects in support of FMD surveillance and control in West Eurasia, including the support to promote and monitor progress of the 14 countries in this region. Two major projects have been implemented, in Iran and in support of the TransCaucasus countries. Emergency responses have been part of this, particularly in response to FMD in Iran, Iraq and most recently, Bulgaria and Turkey. Real-Time Training on FMD has been in action since June 2009, with veterinarians trained from almost all EuFMD Member States. Support to FMD surveillance has been provided to Egypt in relation to the African type A circulation in the country, and support to ship samples to reference laboratories provided to a number of Africa and Asian countries in order to maintain awareness of viral circulation and risk. In 2010 the decision was taken to support the improved networking within the higher risk regions (northern East Africa and Sahara boundary countries in West/Central Africa) and this support to networking of experts has assisted to improve the quality of the information provided to the Global (OIE/FAO) Reference Laboratory Network, summarized in its Annual Report. Each of these FMD networks comes under the FAO regional laboratory networks in their areas, so making use of support for efficiency while feeding the WRL and global reference centre network. Relating to applied FMD research, two major meetings were organized, plus working group meetings on FMDV risk to Europe (priority-setting exercise), on development of surveillance guidelines (PCP), on risk relating to wild boar populations (2011), and research commissioned on full genome sequencing (utilised in Bulgaria, 2011), and on development of panels of antisera for type A, and validation of diagnostic tests for SAT1 and SAT2. A Global FMD Research Report was also commissioned and the result provided in the report of the Research Group.

Emergency activities included missions (Bulgaria 2011, and Turkish Thrace), and delivery of vaccines in support of DG-SANCO (six countries/times), and procurement and supply of kits and biosecurity items. The number of missions/travellers has been exceptionally high, in part because of the high volume of trainees and major meetings (with the Open Session Vienna and West Eurasian Roadmap being peaks). The utilisation of the EC funds was shown, indicating that subject to agreement of the Session, the overall funding allows for new activities to be proposed within the budget envelope agreed.

The Action Plan for the biennium (following the 39th Session) was proposed (**Appendix 18**), in which pre-agreed projects would be continued to the term of their programme, and new activities would be proposed in response to the FMD management issues faced in 2010-11.
These new activities were proposed to be:

- Strengthening FMD diagnostic laboratory capacity;
- Training in the use of modelling to improve the quality of Contingency Planning and decision support in crises;
- Support for an “epidemiology unit” to assist strategy development and real-time detection of epidemic threats in West Eurasia;
- Research studies with emphasis on the role of wild boar in FMDV persistence.

The estimated additional cost of the activities over two years was USD 1.6 million, but with potential gain in efficiency and probable budget saving through competitive tendering compared to direct implementation. The recruitment of a P3/4 officer in Rome should assist with the processes of development, tendering and indirect or direct implementation of the above. For discussion with the Executive and interested parties would be the establishment of a “co-ordination group” to bring potential donors or supporters with similar concerns around the table, to ensure gaps in

international funding are foreseen and explore how mechanisms to co-ordinate the funding of international FMD reference laboratory services, for example, might be achieved.

In discussion, the situation in south-east Mediterranean, particularly in Egypt and Libya was raised, and the representative of Italy reminded the Session of the need for the Commission to retain its ability and mandate to provide assistance that would reduce the risk of epidemic spread in the Mediterranean area. The Secretary illustrated that the reality of the risk, since the two most recent laboratory investigated FMD incursions in Libya probably occurred through movement of live animals across the sea, since countries in between (Egypt) had not been affected by the same strains, while Egypt maintains a African lineage of type A not found in other mid-east countries.

Conclusion
The Action Plan was endorsed.

Recommendation: 2, relating to the issue of budgetary constraints and the need to ensure support is provided that is realistic to the needs of the member states.
Recommendation: 9, in relation to the situation in some South-East Mediterranean countries and the need for potential response by the EuFMD Commission to requests for assistance with FMD control.

Item 6.1. Progress of the Regional Roadmap for FMD Control in West Eurasia

The report was presented for the EuFMD Secretariat by Dr Pötzsch (**Appendix 19**)**.** The Roadmap had been developed in a regional meeting of 14 countries in Shiraz in 2008, and the 38th Session of the EuFMD in 2009 had agreed to support the Roadmap process, including development of support in countries that directly threaten to be the source of FMDV incursions to Turkey and South-East Europe. The support of Italy, via the FAO GTFS project for Central Asian countries, had ensured a complementary set of PCP activities on FMD in Central Asian countries, and additional funds from FAO (TCP) and USAID (In Pakistan) were positive developments which would ensure the PCP and Roadmap are applied at national level.

Since the 38th Session, two Roadmap progress review meetings have been held, both in Istanbul (October 2009 and December 2010). In the first two and a half years, the Roadmap could claim with justification to have increased awareness of the risks of FMD epidemics, to identify and communicate these risks for vaccination programmes, and make progress to generate the information needed at country level to review and refine country strategic plans. In the period 2008-2010, five countries had progressed on the Roadmap (PCP Stage), three had been down-graded, and one had achieved official freedom (Thrace region of Turkey). However, the initial progress in risk identification occurred at a time of large epidemics affecting much of the region, so it is clear that although progress has shown the scale of the problem to be addressed, the challenges remain enormous.

The 14 Roadmap countries each use vaccination at national or zonal level, and the Roadmap meetings reviewed vaccine use in relation to emerging risks. In 2010, 178 million doses of vaccine were used in 410 million susceptible animals, from ten different suppliers. The optimisation of vaccine use is therefore an issue for all countries, and monitoring impact of vaccination is needed in PCP Stage 2-3. In the same period, ten major sero-surveys had been conducted, under EC, EuFMD and GTFS projects, as well as with some national programmes. Greater use of the data (as well as timely production) is needed, if vaccination programmes are to have greater impact, and EuFMD/FAO can provide greater assistance in this area to ensure decision makers understand what could be changed and what impact revised programmes could have.

Dr Pötzsch drew attention to the need for analysis of problems on PCP implementation in countries with evidence of virus circulation and no reporting of outbreaks/suspicions. This should preferably start as a workshop and have high level FAO and OIE support. FMD outbreaks and epidemic events in the region were also highlighted, and the support provided for improved laboratory network for early warning (WELNET -lab network) and on data sharing and analysis (Ankara workshop 2011). Finally he illustrated the aims of the EuFMD/EC project to support PCP-FMD control progress in the TransCaucasus (TCC), and the outlook for the next two years for Regional Progression. On behalf of

the EuFMD he thanked the Italian funded GTFS project, in particular Dr Ferrari, for their complementary efforts and success in bringing Central Asian countries in to co-ordinated activities on FMD.

Dr Askaroglu, President of the Advisory group for the West Eurasian Roadmap on FMD Control, made a statement to the Session. Since 2008, progress had been achieved. Turkey greatly appreciated efforts but there is a need to step up to achieve a functioning Early Warning and Early Response capacity to prevent epidemics merging with high consequences. The three working groups now established had assisted with better communication, including warnings on Asia-1, and greater transparency. The speaker considered we should not be pessimistic (even with the huge recent epidemics) and should instead learn the lessons from this and identify better the benefit/cost and feasibility of changes proposed for future programmes. These joint epidemiologic- and economic assessments are needed for strategy development in a way that will convince national treasuries and international donors to invest. He called upon the EuFMD with FAO/OIE/EC to continue support, and to take steps to establish:

- a regional early warning system (shared service); and
- sound economic analyses of different control options, to assist countries in decision making on changing levels of vaccination use and movement control.

Discussion
The EC representative stressed the importance of the Roadmap process and the need to demonstrate with objective data the evidence that investments were resulting in better monitoring of control measures and that outcomes, in terms of vaccination targets and incidence measures etc were being taken seriously, and used at project and national level to improve management. The Chairman agreed with this comment and indicated the Executive would want to take a critical look at projects that had been supported, and form a view on the type of activities EuFMD/EC needed to maintain from 2013 onwards. More analysis would be needed over the next two years on the potential impacts of recent, and future investments. One delegate considered that the PCP/Roadmap process, which reaches eventually to freedom without vaccination, was unrealistic and assistance targets should be to a maximum of PCP Stage 3, with disease under control. High level commitments are needed to maintain progress, and the national investments currently in most countries is not a guarantee they are committed to resolve the reasons for continued outbreaks.

Dr Domenech, OIE, stressed the remarkable progress made in the past two years to start the regional Roadmap processes; things have definitely moved in the right direction, and PCP assists transparency as the outcomes needed for completion of each stages are clear and have verifiable indicators. If countries in a region reach Stage 3, it is a huge step forward from the current situation and when sufficient achieve this it safeguards those wishing to progress further.

Dr Füssel reminded the participants of the EC position, specifically that if a country does not report FMD cases, it cannot be allowed to progress; Dr Sumption indicated that the PCP placed emphasis on routine serosurveillance and annual re-examination of results, therefore if FMD occurs, serosurveys are a means to measure more accurately the risk than reporting. However, there is an issue with reporting both outbreaks and sero-surveillance in some countries, but their PCP status could then decline to 0 if they continued to provide no evidence.

Recommendation: 10

Item 7. Progress of the Regional Roadmap for FMD Control in West Eurasia: progress in Turkey, Iran and the report of the West Eurasian FMD Laboratory Network (WELNET) on virological threats

FMD progressive control in Turkey

Progress and problems for control were presented by Dr Bulut (**Appendix 20**). New sub-lineages had emerged and spread, the most serious being of type O PanAsia-2 ANT10 in 2010, and of A Iran -5 AFG-07 (DEN10). Thrace region had achieved the status of FMD-free without vaccination in May 2010, but in Anatolia 1702 outbreaks were recorded, a dramatic increase from 214 and 253 in previous two years. At time of report, 793 outbreaks had occurred in 2011, with type A predominant, whereas in 2010 the widespread epidemic of was predominately of the new sublineage of type O. In eastern provinces, the percentage of animals recorded as infected per outbreak was much higher, suggesting vaccination does affect the proportion with signs and thus it greatly reduces transmission from these groups. Decisions had been taken to replace A22 Iraq with A TUR 2006, in July 2008, and to change O Manisa to O TUR -07 as result of poor *r* values with recent type O field strains. Dr Bulut illustrated how typing and sequencing enabled spread of exotic lineages to be traced in Turkey, and the evidence of incursions and emergence of FMD, both of serotypes A and O. The high meat process in 2010 may be one factor behind the number of incursions, but others include antigenic drift.

The epidemic events of 2010 and 2011, despite unprecedented vaccination coverage and quality, were a major disappointment to the veterinary service, even considering the success in Thrace region. A Phase two of the Euraid project is planned to start in the second half of 2011 and to end 2014, to achieve zonal freedom with vaccination in the Anatolian part of Marmara and the Aegean, thus extending the current free zone of Thrace. The speaker presented the vaccination programme, with bivalent vaccine in all provinces except for 1) Thrace region and 2) the 13 neighbouring provinces to Syria, Iraq, Iran and the TCC. The 2010 programmes had achieved outstanding levels (>90 percent in Anatolia and Thrace in large ruminants, 73 percent in SR in Anatolia and 88 percent in Thrace). NSP Sero-surveillance in spring 2010 (before peak of the epidemic) indicated a higher percentage positivity than in 2009 (12 percent vs eight percent). Additional measures had been taken in the Kurbanbayram festival period to prevent FMD entry into Thrace, with a ban maintained on movements from Anatolia. Serosurveillance in 2010, and in 2011 after the Bulgarian outbreaks, indicated no circulation of FMD in domestic ruminants (almost 11,000 samples in 2011). Following the wild boar case in Bulgaria and the EuFMD mission, 44 wild boar had been sampled, and four of 26 were positive by NSP and by LPBE for type O. These results had been openly shared with Greece and Bulgaria, EuFMD/EC/OIE at the tripartite meeting in March and a consensus reached with Bulgarian colleagues on cessation of further hunting in April, to be reviewed after this Session.

The speaker thanked the EuFMD and EC for the support provided to Turkey in this period.

FMD progressive control in the Islamic Republic (I.R) of Iran

A summary report (**Appendix 21**) on the progress of the Phase II of the project to support the I.R of Iran to improve surveillance and control of FMD was provided by Dr. Sumption. The project was signed and implemented in autumn 2010, and had five components, with the overall aim of achieving PCP Stage 2 criteria and preparing for entry into Stage 3 in at least one area. To address the problem of delays in typing of epidemic events, a network of subnational laboratories undertaking FMD confirmation (and serology) would be established in the current provincial laboratories. The project would assist with development of control strategies in the area bordering Turkey (West Azerbaijan province) and in the problem area of the marketing/fattening complexes in central Iran, the latter being considered the highest risk for FMDV entry, emergence and dissemination. Animal marketing and movement chain control measures, including guidance on I&R, was a fifth component. Inputs in the first stage have been principally expert epidemiologist missions, which enabled study on movement and marketing patterns in high risk areas, advice on the impact and problems of current controls, particularly vaccination, and assistance with assessment of the asia-1 epidemic. A workshop was held jointly with the GDPC, Turkey, to analyse the events in the 2010 epidemic and design an improved system for identification of new epidemic events. Training at IZSLER had been conducted

and diagnostic kits ordered for use in the national network, so that by August 2011 there should be in place sufficient diagnostics for the programme of routine typing and serology to monitor vaccination performance and impact (incidence). Future missions would focus upon vaccine quality, movement systems and their control (Identification and Registration), and management options and monitoring of the high risk marketing/fattening complexes. The co-operation with Iran has been very good, and project recommendations on changing emergency response vaccination practices have been immediately applied, which may reduce the FMDV spread by veterinary teams, and places renewed emphasis on the quality of routine vaccination. The 6 month progress report is given in **Appendix 28**.

Recommendations: 3,4 ad 5, relating to risk and risk management, and #10 relating to the West Eurasia Roadmap.

7.3. Current virological threats in West Eurasia and Globally

Dr Hammond, head of the WRL-FMD Pirbright, summarized the situation in West Eurasia, and gave an overview of the events in the other six FMD virological regions (**Appendix 22**). The year 2010 had seen an unprecedented level of submissions, creating a heavy work load for the WRL; in West Eurasia, the huge type O epidemic resulted in >500 samples from EuFMD and FAO projects in four countries. The major feature was an type O panAsia-2 epidemic of the sublineage ANT-10, which had first been seen in 2009 in Iran in a few samples but suddenly "exploded" in mid 2010. Vaccine matching indicated that in 2010, samples from Iran, Pakistan and Turkey were poorly matched to the usual vaccine strains (O Manisa) compared to 2009. This may have contributed to the ability to spread, and also poses problems for response, since the late 2010 vaccination campaigns were already committed in the selected antigens.

In 2011, over 700 samples had been received in first 3 months, of which 292 were from one country (Afghanistan) and 130 from Pakistan. The most concerning new development was detection of Asia-1 from Bahrain and Pakistan (and subsequently from Iran), and vaccine matching indicated the Asia-1 was poorly matched to the long standing and usual antigen, A Shamir, and also to two other Asia-1 vaccines. Dr Hammond emphasised though that this was an *in vitro* finding, and that challenge studies in live animals were urgently required to validate this finding in *vivo.*

The high priority antigens for the vaccine and antigen banks in Europe were stated as:

O PanAsia-2
O Manisa
O BFS or Campos
A-Iran-05
A24 Cruzeiro
A22 Iraq
Asia-1 Shamir
SAT2 Saudi Arabia.

The speaker summarized the situation in other regions, and drew attention to the Quarterly reports of the WRL, and the annual, global FMD surveillance report of the FAO/OIE reference laboratory network, both of which are found on the WRL and EuFMD websites. He thanked EuFMD/FAO for their financial and organization support, but indicated that the workload now generated by greater involvement in West Eurasia and the aim for earlier typing was one of several demands that required specific support if it was to be continued. Related demands were for proficiency testing (annual FAO Phase/EU PTS) and accreditation.

Dr Bulut, FMD Institute Turkey, gave a report (**Appendix 23**) on the progress of the West Eurasia FMD laboratory network, (WELNET), and the recommendations of the first Meeting (Istanbul December 2010), on organization of Proficiency Testing Scheme (PTS), regular teleconferencing, the development of a comprehensive training plan and provision of services at regional level (services to be offered by SAP institute as the leading laboratory, and to reduce the work pressure on the WRL). The Chairman thanked Dr Bulut for the work conducted in 2010 and noted the importance of

achieving early diagnosis and typing of FMDV in the key countries in West Eurasia. The lab network, working with WRL, had an important task to play and justified support.

Item 8. FMD training: lessons learnt in "Real-Time" and plans for 2011-12

Dr Ryan provided a report (**Appendix 24**) on the Real-Time FMD Training Courses which had been provided by EuFMD following the decision of the 38th Session; eight four day courses had been organized in Turkey, and 4 in Kenya. He recalled the objectives of the training which are principally to give experience of an FMD outbreak investigation, including clinical recognition, diagnosis, lesion aging, and immediate assessment of the source and risk of spread. Courses are kept small because of the need for mobility and access to rural communities which may be distant to the base, and the norm has been for two to three trainers and up to 12 trainees (including two local host Government trainees). The 38th Session agreed the target should be three trainees per member state, and in the past two years, 88 had been trained, and great effort had been made to ensure gaps were minimised. The proposal for the following two years was to continue with a training base in Kenya, unless nearer locations become feasible, and to address some of the issues from earlier courses, including the need for NRL veterinarians to be trained (now that front-line staff had been given priority in the first phase), and to consider further training for a selected group of "trainers" who may develop greater in-depth experience and expertise and thereby have greater credentials as both trainers and experts for EuFMD/EU missions or in crisis response.

Discussion
The training programme received very positive feedback and representatives indicated experience and materials had been used on several occasions in national follow-up courses; in one case (Bulgaria) it had been directly applied to investigation of FMD outbreaks by a trainee. All indicated that there was a very good, positive impact, but for future courses, it should be clear what mix of depth and breadth would be efficient. The UK advocated in-depth (repeated involvement) experience building of a few who could act as trainers and European experts for the future, alongside single course training to ensure breadth of numbers so that each country had several with recent training.

***Recommendation*: 11**

Item 9. FMD diagnostic capacity: status and issues

Two reports were presented, the first by Dr Georgiev on the gaps and weaknesses in diagnostic capacity of NRLs in the Balkan region, 11 territories including Moldova, and by Dr Hammond (WRL) on the participation in the combined FMD and SVD Proficiency Test Scheme (PTS) Exercise 2010. At the 38th Session, a standard was agreed by the Member States in order to try to ensure that all countries and territories in the EuFMD Member States had in place arrangements for confirming FMDV infection either by a laboratory within their territory or by agreement with another state.

The review, and the PTS, are means to monitor if these arrangements and performance standards are in place.

The first paper (**Appendix 25**) highlighted the gaps in diagnostic capacity, with six of the 11 Baltic countries having worrying lack of capacity for FMD diagnosis; four of the 11 diagnostic laboratories can routinely perform FMDV antigen ELISA, and five of the 11 (mostly the same laboratories) performing RT-PCR; therefore these countries would need to send samples to the WRL or another reference centre, which will delay confirmation. Five of the 11 do not participate in the PT organized by the WRL. Accreditation of methods to ISO17025 is limited, mainly because sample received are too small for testing; only three labs declared accreditation for FMDV antigen and antibody ELISAs to IS017025. The EuFMD meeting in Vienna (2010), which enabled the laboratories in the region to meet and discuss, recommended actions to ensure all territories should be able to apply quick and

sensitive methods for confirming FMD, with focus on Real-Time PCR and Lateral Flow Devices (LFD), with harmonisation and accreditation of methods. Increasing the number of samples to reach numbers for accreditation could be achieved by requiring higher surveillance in Balkan region to confirm negative FMD status, but the rationale and cost of this must be considered against other ways to achieve diagnostic status desired.

On the FAO/EC Proficiency Test Scheme (**Appendix 26**; Phase XXIII- 2010), 26 of 27 EU states participated, and 28 of 48 invited non-EU countries, in total 57. Four panels were prepared and distributed by the WRL, for agent detection and serology, inactivated and infectious options. The results for each lab, compared to others, were not provided, but would be discussed at the Annual NRL National Reference Laboratory meeting (for the EU labs) and each individual laboratory would receive their feedback individually. Of note is that sensitivity of conventional PCR was a problem in some laboratories, and cross-contamination (false positives). The PTS can assist to bring this to attention and rectify it. Continued movement towards real-Time PCR methods is justified; for serology, ELISA based methods had problems of false negatives or specificity, but since VNT requires a high containment facility, the options are limited except to improve the individual lab assay performance. Finally, the speaker thanked EuFMD for the additional financial grant to enable the PTS to be offered in 2010, and drew attention to the huge administrative workload involved, but also the progress year on year with individual labs.

The Chairman, summarizing the discussion, indicated he agreed action must be taken to address the gaps in diagnostic capacity, particularly following the outbreaks in Bulgaria. To this end, a project would be developed that would support training within the region, with the training contract to be decided after competitive process and based on the best quality and value proposal that would also achieve co-operation between training centres.

Dr Füssel reminded the Session of the importance of the Proficiency Test Scheme and that this needed to also be co-ordinated with the EC CRL support to ensure the Balkan region and other neighbourhood countries were included.

***Recommendation*: 12**

Item 10. Status of FMD antigen and vaccine banks

Dr BenYoussef, EuFMD, presented the summary (**Appendix 27**) of the survey of the EuFMD Member States and neighbourhood countries for 2011; 35 of 46 countries responded, with nine countries (EuFMD Member States) having a national antigen bank. All banks hold O, A and asia-1 antigens, and almost all SAT2. Compared to current high priorities of the WRL, no bank reported to hold O PanAsia-2 antigen, which was the recommended antigen for use with the 2010 type O epidemic lineage in Turkey and the one detected in Bulgaria. Regarding type A, only three hold A Iran 05, despite this being a high priority for the past four years. Only four of the nine banks hold SAT2 Saudi Arabia or equivalent, which places an emphasis on the EU stocks in case of need.

The total holdings were slightly lower in 2011 than 2009. National banks had been used only once in the two years (supplies to Republic of Korea) but the EU bank had been mobilized on several occasions, for Iran (2x), Lebanon, Iraq, and Zambia, the last in response to a request from GfTADS Africa for assistance to counter the southward spread of type O, threatening the export zones of southern Africa region.

In relation to Virus Pools, no banks hold antigens that originate from South Asia or from West/Central Africa. The risk associated is difficult to assess as very few FMD isolates are submitted from either area (and none from India) but has been studied by the Secretariat/Research Group (**Item 11**).

***Recommendation*: 13**

Item 11. Progress on issues referred to the EuFMD Research Group (RG)

11.1 Progress to develop an antigen banks priority setting procedure

This was a priority referred to the RG in 2009 by the 38th Session; the Research Group, meeting in 2009 had proposed a three step procedure including:

- assessment of risk into Europe from different virus pools;
- the assessment of circulating strains and antigen match; and
- final consultation including with vaccine producers.

Dr McLaws presented work in progress on the first component (**Appendix 28**), and Dr Hammond on the second component (**Appendix 29**). Dr Paton, as leader of this working group, then provided a paper (**Appendix 30**) on the implications for surveillance; how much virological surveillance is needed to supply the quality and timelines of information needed for the different risk assessment purposes? Progress had been made to develop a risk assessment framework, based on quantity of imports from the pools multiplied by prevalence data. The gaps in knowledge on both quantity of imports and FMD prevalence required estimates and surrogates for illegal movements based on shared borders and trade (since legal trade may contain smuggled products). This approach was peer reviewed at a workshop, and improvements recommended, one being to improve estimates of prevalence in source regions by use of serosurveillance data. This had been sought, and 26 papers identified. Use of such country data remained an issue but indicated much greater prevalence than would be estimated by outbreak data. More work was needed to define if such data influence the overall risk from certain countries or regions. An opinion on the use, or continued development of the method, was needed by the Standing Technical Committee.

On vaccine selection, Dr Hammond indicated that the OIE/FAO FMD lab network provides a vital role in bringing together data from each virus pool on a yearly basis, but not yet in real-time; the WRL, as it received FMDV from all regions (even from south America in 2010 as a result of FAO), contributes 53 percent to the annual report by number of submissions; vaccine suitability is a complex issue, and methods vary between regions (there being two main protocols described in the OIE manual but methodological variations). So far, the approach of prioritization for Europe, or for other regions, remained the traditional approach of serological vaccine matching and considering patterns of results over time. The time period for new vaccine strain development and licensing in Europe may be similar to that of the average time that a new variant may remain as a predominant risk, so vaccine producers wish to continue with restricted number of strains. So far, the WRL approach had not adopted the prioritisation model developed by the Research Group, but agreed that an approach of combining information from risk assessment together with virological assessments was needed. A difficulty remained to predict how long vaccine strains may retain a value.

In his talk, Dr Paton provided a rationale for international surveillance for FMD, considering the three separate users of such information, those countries applying vaccine based control, free countries with vaccine banks, and those endemic without vaccination policy. In the long term, local needs should be met locally by building capacity; international needs may be met centrally, unless technology allows multiple service providers; and vaccine supply needs to be meet through increasing the producers' ability to enter the market at low cost by obviating the need for containment, and simplified evaluation of protection. In the short term, the international community should build up the capacity in primary endemic countries, develop additional regional centres, and the networking of laboratories as supported by the EuFMD was a good example, as were twinning programmes. The aim could be to achieve pre-screening (at least virus type) at the NRL or regional lab level, and refer only significant samples/priorities to OIE/FAO reference centres. Centralized services would assist vaccine banks, given the number of antisera and biological complexities involved. A common web interface for samples and results would assist to ensure relevant samples were prioritised and results communicated.

His recommendations on numbers were:

- a minimum of 120 samples submitted to reference centres from each virus pool per year (= four samples, from five outbreaks in each of six countries);
- all pre-screened and confirmed positive before submission;

- original materials submitted, and complete service applied to the isolates, including full P1 sequencing;
- matching against all European vaccine bank antigens;
- continued integration between reference laboratories, to meet targets and respond to sampling gaps associated with new epidemic events.

Each of the papers was warmly appreciated, and the Chairman thanked Dr Paton for a precise rationale for supporting international surveillance activities and providing a clear vision on the directions needed. Questions from the EC and from Turkey were made on how to increase the effort on analysis of the surveillance results, and on the apparent reversion in type O towards matching in 2011 after non-matching in 2010. This <12 month variability gives a warning that some major epidemics may occur with particular short lived antigenic characteristics but high consequence. The question 'how much is enough?' needs to take this into account.

The Chairman reminded the Session that it had been decided under **Item 4**, Budget, that the IAH (WRL) contract would in future be taken from the EC Trust Fund not from the Administrative Fund. The new contract would be developed by the Secretariat, taking the above description of diagnostic service needs and reference laboratory costs into consideration. Dr Gibbens reminded the Session that the UK Government could no longer support the WRL to the previous extent, and funding would be maintained but at a reduced level. A framework for international support was needed, whereby Organizations such as FAO, EuFMD and interested parties of other regions would be expected to contribute to maintain the services provided. Dr Füssel agreed that it was essential to identify those core services needed for EU members, those services purchased by projects, and those needed that benefited both Europe, the Regions submitting samples and the international community (GfTADS Services) as they informed FMD control in those regions. Some co-ordination was needed to avoid gaps and ensure continuity; but that EC agreed to supporting part of the international services of the WRL, through the EuFMD mechanism, as part of a co-ordinated approach. He indicated that given the seven pools, regional leading laboratories could play a role, as Dr Paton suggested, to pre-screen samples and ensure earlier information and more efficiency in use of the WRL. Samples are likely to increase from some regions, but these should be screened locally and the reference centres provide expert services on the most high risk FMDV.

***Recommendations*: 14 & 15**

11.2. Research Group issue 2: development of protocols and application of full genome sequencing in FMD epidemiology and outbreak investigation

Dr Valdazo-Gonzalez, WRL-Pirbright, summarized the application of full genome sequencing (FGS) procedures (**Appendix 31**) to elucidate possible linkages between FMD outbreaks in Bulgaria and to estimate the extent of missing samples (which may be FMD cases in wildlife or unreported outbreaks). Initially assisted by funds from the EuFMD/EC as one priority of the Research Group, and currently funded by Defra, UK, these methods are based on previous studies carried out in the UK 2007 and 2001 outbreaks. This approach was used to elucidate possible linkages between FMD viruses recovered from the different outbreaks in Bulgaria and to closely related FMD field strains that have been recently sampled from Turkey (in 2010). All sequences from Bulgaria had a putative common ancestor that was closely related to the virus recovered from a wild boar shot in Bulgaria (in December 2010). However, there appeared to be gaps in the genetic relationships between the viruses samples from the different Bulgarian outbreaks, findings that point to significant reservoir of related viruses within Bulgaria, which, given the surveillance, suggests a wildlife reservoir. In conclusion, the methods provide evidence, where the epidemiological studies had been inconclusive, of separate introductions from a reservoir, rather than direct farm to farm transmission; this is important for the control strategies and for future surveillance.

Conclusions

1. The methods and service provided to undertake full genome sequencing (FGS) on isolates from recent outbreaks in Bulgaria and Turkey indicated the value of the concept note approach to commission studies identified by the EuFMD research Group, and very good value for money.
2. The need for further development of this approach, or maintenance of the capacity for FGS should be evaluated by the Standing Technical Committee.

11.3 Research group issue 2: Risk of FMD transmission and persistence in wild boar/wildlife in Europe

Dr Khomenko, FAO, summarized the issue and results of the Berlin meeting (**Appendix 32**) organized by the EuFMD Research Group/EMPRES Wildlife Unit. He summarized the state of knowledge on FMD in wild boar, pointing out the significant but probably forgotten records of disease in wild boar in eastern Europe/Soviet Union, and highlighted the Strandzha mountain ecosystem in Bulgaria/Turkey in which the current infection is through to circulate. From his work with EUFMD, between 60,000 and 80,000 wild boar may be present in Turkey, mainly in forested areas close to the Black Sea and the potential in short or longer term for FMDV circulation is important to study, to inform both Turkish eradication strategies but also for risk assessment in free parts of Europe. Dr Khomenko summarised work from the FLI, Germany on experimental infections, and on modelling FMD in the Strandzha system. Based on the model assumptions used, the epidemic may last one and a half to two years, and population size is most important for persistence as it is assumed recovered animals remain immune. Should immunity be lost earlier, or maternal immunity not protect, or the virus mutate so that immunity is reduced, then greater likelihood of persistence would occur. Finally, as FMD is multi-host, modelling must cope with multispecies environment, including re-introductions from domestic stock (exchange). He drew attention to FAO work on wild boar populations across Northern Eurasia, and re-iterated the call to make the most from the current opportunity to gain information on FMD in wild boar that would help refine the risk assessment and surveillance operations.

***Recommendation*: 16**

11.4 Report of the EuFMD Research Group, and co-ordination with global FMD research activities

Dr Dekker provided the report (**Appendix 33**) on activities undertaken on priorities established at the 38th Session; several of these had been summarized in the earlier reports (above), and so he summarized several new activities which had been agreed with the Executive Committee as commissioned actions, including on improving diagnostic tests for SAT1 and SAT2, improved vaccine matching for SAT strains, and harmonized SAT2 LPBE tests, and production of specific antisera (SAT1, SAT2 and type A strains).

One issue faced by the Committee when reviewing concept notes is the question of overlap or gaps, and the need to make efficient use of research actions taking place around the world compared to commissioning studies in Europe. To this end, a Concept Note had been agreed to support a regular, comprehensive review of ongoing FMD research and technical development activities, making use of the interest of the Global Foot and Mouth Disease Research Alliance (GFRA) whose members include approximately half of the EuFMD Research Group, are well placed to undertake laboratory and in some regions, field based research and who organise regular scientific meetings on specific areas of research. It was agreed that EUFMD could gain by having this global review conducted annually, and the Research Group expertise would gain by greater appreciation of the global efforts. The first Draft Global report on FMD research was delivered to EuFMD in mid April in time for the 39th Session, and had six thematic sections. The Final Report will be on the EuFMD website, and summarized in the Session report (**Appendix 34**).

***Recommendation*: 17**

Item 12 - Reading of the report

The Secretariat presented the draft final report, which was endorsed subject to the inclusion of the corrections and changes proposed during the reading by the member states, EC and OIE, to be included in the version to be circulated for comments.

Closing ceremony

The Chairman, Dr Herzog, thanked the participants for their support and interest in the programme of the Commission, the EC for their support to the activities and active participation at all levels, and thanked the Secretariat and FAO for the organization and arrangements. He paid tribute to the members of the Executive who had served in the outgoing Executive for their generous contribution of time and energy, and in particular thanked Dr Carlos Pinheiro, Portugal, and Dr Voinov, Bulgaria, for their contributions during their term of office. Finally he thanked the Secretariat, and especially Nadia Rumich, Enrique Anton, Florence Dickens and Claudia Ciarlantini, for their perfect work over many months to prepare the Session, while maintaining the main tasks of the Commission in supporting FMD control continued at field level.