REPORT

EXECUTIVE COMMITTEE

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of the European Commission for the Control of Foot-and-Mouth Disease

Seventy-second Session

72nd

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of the

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TABLE OF CONTENTS

Page

INTRODUCTION

[1] OIE/FAO Global Framework for progressive control of TransBoundary Animal Diseases

[2] Report to Executive Ctte and EC on use of EC Trust Fund MTF/INT/003/EEC ("EC Trust Fund")

[3] Proposal with financial implications for EC Trust Fund

APPENDICES

INTRODUCTION

The Executive Committee of the European Commission for the Control of Foot-and-Mouth Disease (EUFMD) held its Seventy-Second Session in The Hague, the Netherlands on 29 and 30 November 2005.

Members of the Executive Committee present were: Dr Sloboden Cokrevski, The FYR of Macedonia; Dr Peter de Leeuw, the Netherlands (Chair); Dr Rolf Krieger, Germany; Dr Eugen Olaru, Romania; Dr Nihat Pakdil, Turkey; and Dr Preben Willeberg, Denmark.

Present as observers were: Dr Kris De Clercq (Belgium), Chairman of the Research Group; Dr Alf-Eckbert Füssel, Head of Sector, DG-SANCO, Brussels; Mr Sebastien Dubost, EC Food Security Programme, Armenia; Prof. Dr Nikola Belev, President of the OIE Regional Commission for Europe; Dr Christianne Bruschke, Project Officer of the OIE, Paris; Dr David Paton, WRL. FAO was represented by Dr Joseph Domenech, Chief of the Animal Health Service.

Additional observers present were: Dr Sinan Aktas, SAP Institute, Ankara, Turkey; Dr A.L.J. Nielen, Department of Food Quality and Animal Health, the Netherlands; Dr Aldo Dekker, Central Institute for Animal Disease Control, Lelystad; Dr Johan Bongers, CIDC, Lelystad; Dr Piet van Rijn, CIDC, Lelystad; Dr Flamur Kadriu, Deputy CVO of Kosovo Veterinary and Food Agency, Kosovo and Mr Mike Robson of the Agriculture Department, FAO.

The Secretariat was represented by Dr Keith Sumption (Secretary) and Ms Egiziana Fragiotta (Administrative Clerk).

In the absence of the President of the Executive Committee, the meeting was chaired by first vice-Chairman, Dr Peter de Leeuw.

Mrs Renee M. Bergkamp, Director-General of the Food Quality and Animal Health, Ministry of Agriculture, Nature and Food, The Netherlands, opened the meeting and welcomed the participants to the 72nd Session of the Executive Committee. She indicated her pleasure that the Session would be hosted by her Government, which had been one of the founding members of the Commission some 50 years ago and had been a strong supporter of its activities ever since. She was pleased to note that Dr Peter de Leeuw had been elected as a member of the Executive Committee. She considered that the task of international activity to promote animal disease control is important not only for the Netherlands but for also for all other countries. Recent history has illustrated this in the nineties and early 2000, when the Netherlands struggled with outbreaks of CSF, FMD and AI, which had as one of the results a shift in the way of thinking on animal disease control. This was demonstrated in the international conference on the "Material and Immaterial costs of Animal Disease Control" held in Brussels in December 2004 the results of which were recorded by Peter de Leeuw and presented to the previous session of the Executive Committee. The Netherlands has also shared its experiences with the EU member states and tried to influence future policies, in particular, on the use of vaccination, contributing to change in policy in emergency animal disease control. As a result the economic and social impact of the last FMD outbreak in the Netherlands, priority is now given to policy matters relating to FMD outbreak control, and in particular those relating to the use of the instrument of protective vaccination in certain vaccination zones and to the consequences of allowing animals to live out their natural productive lives. It is understood that this could have economic consequences, unless importers will accept the safety of products from vaccinated animals. She also stressed the importance to review and strengthen FMD preventive measures, and pointed out the main objectives of this Committee as being "prevention and control of FMD in Europe".

She added that it is a reality that in the foreseeable future the outside border of the European Union will move towards the east. Efforts to prevent and eradicate FMD should therefore be focussed on the bordering countries such as Syria, Iraq, Iran, Azerbaijan, Armenia and Georgia. Prevention of FMD in Europe may best be served by using the "forward defence" strategy and noted that this Commission does important work in this area. She added that the Netherlands political leadership also attaches importance to the work of the Research Group of the Standing Technical Committee of the EUFMD Commission by continuing to support Dutch participation in the Group. She concluded by wishing all a fruitful meeting and a comfortable stay in The Hague.

The Chairman, Dr Peter de Leeuw then took the floor and also welcomed the participants. He presented the apologies of Karin Schwabenbauer, Vasilios Stylas and Romano Marabelli who were unable to attend the Session. He requested approval from the floor to invite an observer from Kosovo to attend the Session who would give a description of the FMD situation in that country. There being no objections, Dr Flamur Kadriu, Deputy CVO of Kosovo Veterinary and Food Agency was called to the meeting.

Item 1. Adoption of the Agenda (Appendix 1)

The Agenda was adopted with one modification that the Secretariat would provide under Item 2, an overview of the action plan for 2006, following the summary of EUFMD activities in 2005.

Item 2. Activities of the EUFMD Commission since the 36th General Session

The Secretary presented a summary of activities of the Commission, indicating the missions undertaken by the Secretariat, FAO staff and nationals in 2005 (**Appendix 2**), by country and type of action. These included several missions to Turkey, the Caucasus countries, Iran, and other FMD affected countries, EUFMD meetings, European Food Safety Authority working group on FMD risk to Europe, OIE ad hoc group and other meetings, research group actions including the mission to Hong Kong and the on-going FMD surveillance mission in Niger which was underway at the time of the Session.

The Secretary then proceeded to present a paper on the implementation in 2006 of the EUFMD Commission strategic plan for 2005-8 (**Appendix 3**). The intention of the paper was to indicate the status of proposed or agreed actions, including a number where decisions were required during the course of the 72nd Session.

He indicated that further human resources were necessary to provide the required technical and implementation support to these actions. The establishment of a Sub-Regional support unit in Tbilisi, Georgia, for TADs prevention and control should assist to provide technical expertise for countries in Trans-Caucasia, and possibly for parts of eastern Turkey.

In discussion, it was highlighted that the Trans-Caucasian countries need to be informed of the selection of the operating base for the Sub-Regional support Unit, and factors that led to the decision.

As specific aspects of the plan would be further discussed and agreed under the relevant Items, the plan was noted and support given in principle to the proposed plan.

Conclusions

1. The Committee welcomed the new agreement between EUFMD/FAO and EC relating to financial support for FMD control measures in the period 2005-8 and considered this should enable essential disease control activities to be taken that are of significance for the entire region.

2. The Committee considered the activities proposed in the plan of action for 2006 were fully consistent with the 2005-8 EUFMD Strategic Plan and endorsed the plan, subject to decisions to be made under later items on the Agenda.

3. An official letter from FAO to countries in Trans-Caucasia is needed, and should be prepared after consultation and agreement with OIE and EC, and sent to the authorities of Georgia, Armenia and Azerbaijan to explain to them the reason for location of the sub-regional support unit for GF-TADS centre will in Tbilisi.

Item 3. Report of the First Regional Steering Committee of GF-TADs in Europe held on 13-14 October 2005

3.i Report on items relating to FMD Control

The report of the 1st Regional Steering Committee was provided by the OIE. Dr Husu-Kallio, Deputy Director General (DDG) DG SANCO, had been elected as President of the Committee and a summary of main points relating to FMD was provided by Dr Füssel.

3.ii Capacity building actions – discussion on technical support to countries in the region which are not recognised by OIE as free of FMD

Dr Christianne Bruschke, OIE Scientific Department, summarised the position of the recent applications to the OIE for recognition of freedom from FMD infection without vaccination, from countries in the European region. The responsible ad hoc group had met in September 2005 and their report had been forwarded to the Scientific Commission. She could not comment on the reports as these had not yet been reviewed and cleared by the relevant Scientific Commission. However, it was clear from recent experience that some dossiers received could have been much improved if further effort had been made to ensure the most significant issues had been identified and addressed in the dossiers. She considered that timely provision of technical advice could ensure countries are better informed of the issues of most importance and of problems and potential solutions to be addressed during dossier development. She indicated that as the evaluating body, it could be a potential conflict for the OIE to offer advice other than in general terms to countries on the preparation of the dossiers.

In discussion, it was clear that the structure of veterinary services in some submitting countries has been a major issue, and this could have been foreseen before submission.
Some members of the Executive expressed concern that credibility might be at stake if the EUFMD Commission provides technical advice which does not lead to the desired result, and therefore the Commission should proceed with care in making assistance available.

Dr Flamur Kadriu was invited to present the FMD situation in Kosovo. He described the organisation of the veterinary services (**Appendix 4**) and provided a file of information on a recent serological survey in the territory; all samples tested by the WRL using ELISA for NSP antibodies had returned negative results. He indicated that Kosovo fully desired to adhere to the standards of the OIE and wished to ensure that disease surveillance results from the country

were made internationally in order to support the livestock industries and country status of both Kosovo and its neighbours. However at present, the lack of recognition of the territory affected this, with the result that disease surveillance information cannot be reported directly to the OIE, and the territory does not accept to report through the OIE delegate of Serbia and Montenegro.

Conclusion

The Secretariat was authorised to respond, when opportunities arise, to indications from countries in the European region that assistance is needed to assess and advise upon their state of readiness to request recognition of FMD freedom. As a result such responses should lead to better identification of issues and action points required at national level.

The above technical support may also include Kosovo.

Item 4. FMD control and eradication in Turkey - coordination of technical support

4 a. Current Situation

4 a.i. Report on FMD control and sero-monitoring in Thrace region, 2005

Dr Sinan Aktas presented a report (**Appendix 5**) on the sero-surveillance which was carried out in Thrace region in 2005, which followed the plan developed in December 2004 by a working party of the EUFMD Research Group. The main aim of the survey was to inform the management of FMD on the presence or absence of virus circulation in the region, and a second objective was to identify the population immunity after vaccination. Two rounds of serum collection were organised, the first for the purpose of detection of virus circulation and the second conducted 60 days post vaccination to assess vaccination coverage and level of estimate the population immunity. The survey was designed to detect 2% at village level and 5% intra-village prevalence, and 9728 samples were collected at day 0 of the vaccination campaign, from 152 villages and 64 cattle per village. The results detected 29 positive sera (confirmed in both Cedi- and Bommeli NSP tests) giving an overall rate of 0,29%; 19 of these were from 3 villages in Istanbul Province, located within or close to the city. A further 477 serum samples (all animals sampled in villages returning positive results) and 34 probang samples (from NSP positive animals) were collected in follow up findings in the primary sero-survey, and found an additional 17 positives in one village (Kayabasi) but not in other sampled villages. The investigation revealed an unreported outbreak, apparently limited to two premises, with no other positive animals from other premises in the same village. The outbreak occurred immediately after the kurban festival, at the end of January/start of February, some two months before sero-survey. From the age profile and lack of additional positive animals in other villages, it was concluded that there is no evidence of virus circulation in other parts of Thrace region.
Post-vaccination immunity levels at 60 days post-vaccination at Province level were above 60% for animals 4-12 months of age for each serotype, and above 78% for animals 12-24 months of age. The lowest levels were in young animals in Istanbul province (52-55%), at least 10% below that of other Provinces.

Conclusions

1. The Committee noted the report and expressed its satisfaction that the results of the sero-monitoring of the vaccination campaign indicated a generally satisfactory immunity level across the region, including in cattle less than 2 years of age.

2. An unreported outbreak in Thrace region was detected by serology; infection of animals was estimated to have occurred in January/February 2005 in Kayabasi area but did not spread,

presumably as a result of the immunity following the previous (autumn) vaccination campaign.

3. The lower level of immunity in young animals in Istanbul Province should be further investigated, and is a reason for concern given the history of disease introduction to this Province.

4. Additional measures to detect infection after risk events such as animal movements around the time of the kurban festival need to be considered to reduce the time between virus entry and detection by the authorities.

4 a.ii. Report of recent EUFMD missions and progress of surveillance actions

The Secretary presented a report of recent FMD missions in relation to FMD control in Turkey.

Following a planning meeting in April in Rome, a mission to assess the need and modality for support for FMD surveillance in eastern Anatolia was undertaken on 6-11 June by Keith Sumption and Tom Murray (APO, EUFMD Commission), with senior staff from the General Directorate of Protection and Control (GDPC), Ankara. The Secretariat advised that given the limited human resources for outbreak investigation, and the unclear level of under-reporting inherent in passive surveillance systems in vaccinated populations, a participatory rapid epidemiological appraisal be conducted, to assess the distribution of FMD in Erzurum Province and to identify risk factors that have lead to the current epidemiological situation. The use of participatory techniques for information gathering was advised as this should have the advantage of eliciting perspectives of the livestock owners, and could be conducted at times when animals were at summer highland grazings, and not available for examination or serum collection. A follow up mission, involving FAO consultant to provide training and Tom Murray to advise on biosecurity arrangements during field investigations, was arranged in August to train veterinary staff of the Erzurum VCRI and Provincial Directorate and support to the field activities provided under letter of agreement with the SAP Institute. The rapid assessment took place over a 5 week period in August-September, visited 98 villages and interviewed almost 700 persons; 11 active FMD outbreaks were encountered during the field work and a detailed report of findings assembled by Berhanu Admassu, FAO consultant in October. The report had been sent to the SAP Institute and GDPC for their response, and a summary of main findings was presented (**Appendix 6**).

In brief, these were that:

- in the recent years FMD has affected almost all parts of the province in each year, with most villages reporting its occurrence;
- there is very significant under-reporting to the authorities;
- vaccination programmes are unable to reach the majority of the cattle population for reasons including lack of human resources and timing of the programmes in relation to summer movements;
- major risk factors for disease introduction and perceptions of the owners on control programmes were rapidly elicited and rapid surveys could provide a useful rapid mechanism to identify and address issues and measure progress in FMD control.

Keith Sumption was invited to participate in two symposia (in Van, 25-30 June, and Ankara 26-28 September) on eradication of FMD, PPR and SGP in Turkey, organised by the twinning project (Turkey/Germany supported by EC). The mission to Van Province provided an important opportunity to reconsider the difficulty to prevent entry of FMD across the eastern borders with Iran and Iraq, and to develop ideas for supporting GDPC to manage increasing

vaccination coverage in this region. The importance of establishing an independent monitoring system within GDPC to evaluate performance of control measures and particularly vaccination by the Provincial administration was highlighted by the findings of the mission, including observation of FMD in one village in the mission after an apparent gap of some 5 years. After discussion with the twinning advisor and members of the mission team regarding post-twinning project technical support to FMD eradication, a concept note for support to the Turkish authorities to improve monitoring, evaluation and planning of control measures in the eastern region of Turkey was drafted by the Secretariat and reviewed by the GDPC, and discussed with GDPC, SAP Institute and EC delegation representatives at the September symposium held in Ankara. Following comments received, an FAO consultant was asked to formulate a project document and undertook a mission to Erzurum in October, timed to coincide with the report writing stage of the FMD rapid appraisal. The resultant draft project document is attached (**Appendix 7**).

The EUFMD-FAO/OIE/EC Tripartite meeting on FMD and other exotic disease control in the southern Balkans was held 24-26 November in Alexandropoli, Greece.

Commenting on the above, Dr Füssel indicated that the importance over the next year of control measures in Turkey were now higher than previously, since the surveillance measures in Bulgaria and Greece were reduced in intensity compared to previous years. *Inter alia*, the responsibility for protection of these countries lay in the measures conducted in Turkey, and therefore monitoring and evaluation and early detection of disease events assumed ever greater importance. The events of 2005, with an outbreak detected by serology some months after its occurrence, highlighted the need to implement a ban on movement of animals during the kurban festival except direct to slaughter, and to use active surveillance measures particularly after high risk animal movements where and when these continue to occur.

4 b. Summary of strategy and programme for FMD eradication and status of required funding

4 b.i. Presentation by Government of Turkey

Dr Sinan Aktas presented the national FMD control situation (**Appendix 8**), and summarised the planned national strategy for FMD eradication in the periods 2006-2015. In the first 10 months of 2005 there were 111 reported outbreaks, with types O (97 outbreaks) and type A (6 outbreaks) being identified, and 8 where the type was not confirmed. This is an increase over previous years, with unusual events including involvement of locations such as Rize and Samsun Provinces on the Black Sea coast as a result of purchase of infected animals from main endemic areas in the east. The distribution of infection was wide, and those involving western provinces considered to be the result of movements during the kurban period introducing infection from the east. He presented vaccination rates for selected western Anatolian provinces close to Istanbul; over 70% of scheduled animals were vaccinated in spring (AO bivalent vaccine) and in autumn (trivalent vaccine) with vaccine produced at the SAP Institute, Turkey. The reversion to use of Trivalent vaccine had been on receipt of information received from FAO regarding the locations of Asia-1 outbreaks in Iran.

Regarding the control in upcoming years, Turkey had agreed with a programme of FMD control with financial support from EC between 2007 to 2009 that has the intention to include 100% of the large and small ruminant population in the country, with biannual cattle and once annual small ruminant vaccination; the aim being to reduce outbreaks to such an extent that in combination with regulatory measures on movement, aided by a fully functioning identification and registration system, areas can become recognised as free of FMD on a progressive basis with the aim that significant parts of the country will be recognised as having a status in line with that of EU countries by 2015.

He provided a table indicating that the programme would be financed by co-funding with EC, with some 64.7 million euro identified to supply FMD vaccine and equipment for the programme 2007-9, and 0.436 million for sero-surveillance and 0.3 million for cleansing and disinfection materials, and relative contributions of circa 49 million from EC and 16 million from Turkey. The implementation schedule was also presented, with vaccination and sero-surveillance beginning March and June 2007 respectively, with specifications for contracts would be drawn up in June to September 2006.

4 b.ii. Proposal for technical support via EUFMD for preparation for eradication in the period 2006-7

Dr Sumption presented a summary of a support project that had been formulated to address weaknesses in prevention and control of FMD control in eastern Anatolia, and formulated to build capacity in Turkey to effectively implement the planned national FMD campaign scheduled to begin in 2007. The proposed support would be given in 2006-7, and would build capacity at sub national level, using the Veterinary Control and Research Institutes at Erzurum and Elazig as centres to monitor and evaluate the spread of epidemics in their responsible areas, to support Provincial Directorates to plan mass vaccination campaigns, and to act as communication hubs to improve the awareness of FMD prevention measures, to address stakeholders issues regarding vaccination of animals, and to increase support at political level and among other agencies involved in enforcing measures (such as the police). He indicated that the support aimed to improve management skills to implement mass vaccination measures, and given that over 80 provinces will be expected to implement control measures, there was a case for working through sub-national control centres to ensure co-ordination, and day to day monitoring of events in their areas and provide training of the responsible persons in the executing agencies at Province level. He suggested that the type of inputs indicated in the document should be further reviewed between GDPC, FAO and EC.

Discussion

The Chairman proposed that the discussion focus on the question of the role to be played by the Commission in support of the FMD control programme in Turkey. He highlighted the important collaborative work conducted with Turkey and the experience in the Commission and its Technical Committee in FMD control that should assist in the important Phase of consolidation of control with the aim of eventual eradication.

Dr Jean Guegan, DG-SANCO representing the position of DG-enlargement, in response to questions on the control of animal movement indicated that EC would monitor and evaluate the progress of the animal identification and registration and of the border inspection posts (BIPS), from 2006. He agreed that the technical expertise available through the EUFMD Commission could be of valuable assistance, for example in technical advice for procurement of inputs to the FMD control programme, and in other areas.

Issues in the implementation and the responsibilities for monitoring and evaluation of the FMD eradication programme were then discussed.

Concern was raised that the financial support was almost entirely for material inputs and did not provide for management or implementation support, or communicating with stakeholders to address issues affecting success of the programme; the issues of the capacity of the veterinary service to absorb and utilise the vaccine was questioned, given the low level of vaccination coverage in significant parts of the country.

Programme co-ordination was discussed, and there was clear support for involvement of external technical support, through the FAO/EUFMD Commission, in the central co-ordination bodies at least in the Steering Group, and possibly in the project Task Force. Dr Guegan indicated that these bodies are scheduled to start their work in 2006. The lack of use of booster vaccination was questioned, and Dr Willeberg asked if the task force will have the role to monitor progress in implementation.

Regarding the proposal to support GDPC to prepare for the major vaccination and control programme, through a preparation programme with a focus on regional Veterinary Control and Research Institutes serving the provinces in eastern and south-eastern Turkey, members indicated there support for the proposal. It was suggested that the programme should not be considered distinct from the EC programme, should be based within the existing GDPC structures and synergies ensured through the Central Co-ordination body established for the 2007-9 FMD programme. Dr Aktas indicated that Turkey desired the proposed project as it should bring an external eye to help identify solutions to implementation and technical problems faced in FMD control. If support via FAO could not be obtained, the GDPC would try to implement the field actions in the project under its own resources, based on experience gained in the Erzurum pilot study.

Conclusions

1. The sero-monitoring results provided evidence that the vaccination campaign in spring 2005 had achieved a wide coverage and satisfactory post-vaccination response in the cattle population in Thrace region.

2. The sero-monitoring had also provided evidence of an unreported outbreak in Thrace region in early 2005, but secondary spread did not appear to have occurred.

3. The level of immunity resulting from 2004 vaccination is likely to have been an important factor in the lack of spread of FMD virus from this focus near Istanbul.

4. This event appears related to animal movement in the kurban festival and additional measures should be considered to provide earlier detection of infection after this period in 2006.

5. The most recent incursion of virus into Thrace region highlights the importance of the control measures against FMD in Thrace, including but not limited to vaccination, to protect the neighbouring countries of Greece and Bulgaria.

6. That 2006 be considered a transition year before the major EC support begins in 2007 and in this year the activities of the EUFMD Commission in support of Turkey should continue and that these should be an integral part of the countrywide FMD control and eradication programme.

7. The proposal to support regional disease control centres (RDCC) in improving the implementation of FMD prevention and control in 2006 was supported.

Recommendations

1. The Secretariat and Research Group should proceed to assist GDPC to review the results from 2005 and to develop a plan for sero-surveillance in 2006 in Thrace region, including

guidance on the follow-up investigations to be conducted after detection of positive results in NSP tests.

2. In order to make available the expertise in the EUFMD Commission in FMD control in the region that has been acquired over many years, it is recommended that representatives from the EUFMD Commission participate in the future central co-ordination bodies (steering group and task force) which are scheduled to start their work in 2006.

3. The management and working structures developed in projects supported by the EUFMD Commission should be appropriate for incorporation into the national FMD eradication programme developed by Turkey.

Item 5. FMD Control in the Trans-Caucasus

5 a. Current situation

5 a.i. Report on the actions in 2005 to maintain the buffer zone and in sero-monitoring

The Secretary presented an overview of the support to the three Trans-Caucasus countries in 2005 to implement FMD control provided by EUFMD with EC Trust Fund support, and also through FAO (TCP/RER/3001). The summary is provided in **Appendix 9**. Under the agreement with the EC and following recommendations of Paris meeting in May 2004, buffer zone vaccination had been continued in spring 2005, with sero-monitoring according to EUFMD design. A reserve of 140,000 doses of FMD vaccine had been held at the supplier and was used to respond to the request from Armenia to supply FMD vaccine for the buffer zone by 15th September. Following a new tender procedure and after receipt of guarantees from DG-SANCO, a further purchase of vaccine was made to ensure supply to each country (by 15 October 2005) for vaccination in the BZ in autumn 2005 and additional supply in February 2006 to ensure spring vaccination. The findings of the 2005 sero-monitoring had been discussed with the CVOs of each country; evidence of exposure to FMD virus had been found but it could not be revolved if these were the result of single or multiple introductions of virus into the zone. The lack of reporting of clinical disease may be the result of the satisfactory immunity levels in Armenia and Azerbaijan, but even so it is likely that clinical disease had occurred but was not reported. He therefore indicated that the risk of virus entry and spread through the zone existed. Under FAO support, the process of developing and testing contingency plans for FMD had been started; after national workshops to review quality of the plans, a regional desk top simulation exercise had been held in November 2005. This process had identified gaps and weaknesses, in overall strategy and in detail, affecting feasibility. However, the plans could be of value for other situations, notably HPAI and this aspect had been addressed in the regional workshop. Since the TCP/RER/3001 finishes in early 2006, continuation of progress should be made a priority under the regional 3 year programme (below).

5 b. Coordination of inputs in FMD surveillance and control 2006-8

5 b.i. Proposal for a regional support unit for FMD control (FAO/OIE/EC FMD Control Coordination Centre)

An outline project proposal for a three year programme to follow in 2006-8 in support of the coordination of FMD surveillance and control in the Trans-Caucasus countries and strengthening of emergency management capacity, with a proposed implementation date in early 2006. This project had been developed as a result of the long term engagement of EUFMD/OIE/EC in disease control measures in the buffer zone (BZ) of the Trans-Caucasian countries since 1999. The proposal to co-ordinate technical inputs and monitoring of measures from a base in Tbilisi had been agreed in May 2004, and the recent Regional Steering

Committee of the GF-TADS at their October 2005 re-affirmed support to establish a centre which can be considered, because of its significant geo-political and epidemiologic significance, as a 'subregional support unit' under the GF-TADS.

The Secretariat reported that Minister Mikheil Svimonishvili, Minister of Agriculture of Georgia had offered in writing the support of his Government to provide an office for the co-ordination centre. Project funding would be required to provide the epidemiological and logistic support required to operate the project, and following consultation in Georgia and Armenia in early November 2005, had costed various options for support in the next 3 year period:

Option 1: Maintain the buffer zone vaccination support to spring 2007, with baseline regional technical support.
Option 2: Maintain buffer zone vaccination to end of 2008, with essential technical advisory support to FMD surveillance and control in each country, and for monitoring and evaluation.
Option 3: As option 2, but with funding for vaccination progressively switched to capacity building if and when national funding is guaranteed to maintain the buffer zone vaccination.
Option 4: The Regional support programme presented at OIE/FAO Regional Steering Committee in October (this option predated the discussions held with Ministries of the Caucasus countries in November 2005).

Mr Sebastian Dubost, EC Delegation, Yerevan, Armenia, summarised the support mechanism of the EC through the Food Security programme (FSP) to Armenia. The EC-FSP would continue to the end of 2006 in Armenia and Georgia, but was drawing to a close in 2005 in Azerbaijan. The FSP support had been in several areas including agriculture, and involved budget support to the Government with provision of some additional external technical support to meet agreed targets, which are conditions for subsequent budgetary support. This had proved an effective mechanism to improve agricultural planning, and the implementation of measures such as introduction of sero-monitoring for FMD and CSF vaccination in Armenia. In the case of the national animal disease surveillance systems (NADSS) in Armenia, co-operation with FAO had been productive with the latter developing the database software (under TCP/RER/3001) and the FSP providing technical advisory support to implement the system at national level, and establishing NADSS in pilot regions prior to national roll-out in 2006. In the sero-monitoring, the parallel EUFMD programme in the buffer zone had led to detection of different results in the national laboratory to those found by FAO. Resolution of the problem had been discussed with Keith Sumption; FAO support is sought to improve the capacity and performance of laboratory to undertake surveillance.

He considered that there is a potential for external funding of the buffer zone to be discontinued in Armenia, with purchase being made from national funds available for epizootic disease control.

In response the Chairman welcomed the suggestion but warned that international standards for quality of the vaccine used must be guaranteed.

Dr Füssel suggested that with Turkey embarking on an eradication programme, that we are entering another period of transition, with the potential at least in Georgia and Armenia to reduce or even discontinue mass prophylactic vaccination once the FMD incidence is brought to a far lower level in eastern Turkey, under their programme for the next 4-5 years. He cautioned against reliance upon national funding for buffer zone vaccination, given the past problems and the uncertainties in the region including the impact of reforms in veterinary services. He supported the view that support was justified to assist reform and that support may be required in a number of areas, directly or indirectly ensuring higher capacity to detect and control

epizootic diseases, including registration/identification of livestock, implementing reforms to address food safety requirements, and in certification including laboratory capacity and quality assurance.

Conclusions

1. Follow-up actions are necessary to identify the reason for the finding of clusters of sero-positive animals in parts of the buffer zone.

2. The results of sero-monitoring for virus exposure support the continued vaccination of animals in the buffer zone with vaccine meeting international standards until the risk from the neighbouring countries is effectively reduced or feasible alternatives are identified.

3. The decision to undertake external serological testing at a European reference laboratory, with comparison of findings from independent analysis by scientists at the EUFMD research group was justified and contributed to reaching consensus on the interpretation of results.

4. The safety of the nationally produced FMD vaccine used in Armenia remains in doubt.

Recommendations

1. The support to be given by the Commission in 2006 should proceed on the basis of the second option, and agreement to this effect should be sought from DG-SANCO for use of the Trust Fund to enable this to proceed, including the provision of regional technical advisory inputs to this programme from an operating base in Georgia.

2. With respect to 2007 and 2008, the decision to proceed with the option as presented or in modified form should be taken at or before the next Executive Committee meeting and will depend on indications from the EC that the additional funding required can be made available.

Item 6. FMD control in Iran – Progress report of Phase I of the EUFMD/EC/France supported actions on FMD surveillance and control

The Secretary presented the progress made in Phase I of the project. Major activities had not initiated due to a delay in authorization from the EC to commence, which was received in October 2005. Activities have commenced following the agreement on the use of the Trust Fund to support Phase I of the proposed programme.

Conclusions

The Committee noted:

- That the implementation of the project had been delayed and was satisfied that the plan of action for the first year should lead to significant improvement in surveillance information available to assist planning of risk management measures, including those to be conducted in Turkey and the Caucasus.
- The importance of reducing the time between implementation of the project and flow of surveillance information on FMD virus circulation on types A and Asia-1, to assist selection of vaccine antigens for use in the Caucasus and Turkey.

Recommendation

1. The progress of the project should be reviewed at a meeting in the second half of 2006 with high-level representation of the EC and OIE.

Item 7. FMD risk situation

a. Report of the FAO WRL on change in global risk situation

Dr Paton presented the report of the FAO-WRL for FMD (**Appendix 10**). He highlighted that among type A isolates, antigenic diversity remains a challenge for vaccine selection. A number of isolates from Iran have a closer match to A22 than to the vaccine type used in Turkey which is of the A Iran96 topotype.

Overall, the WRL **recommendations** on vaccine antigen selection have not changed but the shift towards A22 Iraq among circulating viruses in the west Eurasia region should be noted.

He reported on the development of agreement between OIE Reference Laboratories to form a network under FAO/OIE and this had already produced a unified Annual Report to OIE and FAO, to replace the separate reports made by WRL and Panaftosa previously. The process of drawing up an annual report should assist in identification of surveillance gaps and problems for resolution by the network.

He again drew attention to the lack of virus isolates from India and China, although substantial progress had been made to ensure the relevant laboratories were in contact with the WRL and that at the least a collaboration at scientific level could be pursued that could lead to more substantive information. This approach had already yielded information including virus sequences on the Asia-1 epidemics in China and had shown that two different virus subtypes had been circulating in that region.

He indicated that the FAO/OIE network of laboratories had identified a need for financial support to ensure active collaboration and problem solving, including support to the arrangement of annual meetings, to ensure exchange of reagents or development of specific biologicals required in standardisation, in the development of a shared database, and for Secretariat functions. He suggested that the laboratories had been active in developing the network, with a workshop planned on 7-8 December to identify how to proceed to integrate laboratory information into global animal health information systems. At this meeting OIE and EUFMD and EMPRES/FAO would be represented as well as OIE and FAO reference laboratories for FMD, CSF, PPR, BT, avian influenza and other infections.

He drew attention to the plans for FAO Phase XIX which had been drawn up by the WRL and the Chairman of the Research Group; agreement was needed on division of the costs between DG-SANCO (on behalf of the Community Reference Laboratory, CRL) and EUFMD, since the new CRL (to be announced) could be expected to be reimbursed by EC for the cost for the EU member states, enabling EUFMD-FAO to act in support of quality assurance in neighbouring countries and Reference laboratories.

b. FAO/OIE Network – supporting global surveillance for FMD

Dr Sumption presented a short report on the work of the Secretariat in 2005 to address gaps in virus surveillance and relating to the FAO/OIE network (**Appendix 11**).

As agreed in previous Sessions, the Secretariat had supported sample submission where financial means were the principle impediment. FAO programmes had also assisted in this respect, resulting in virus submissions to WRL from East Africa (Kenya), West Africa (from countries served by an FAO TCP project) and Sudan in 2005. The process in most cases required some 12 months of preparatory work and by no means had achieved a baseline level of virus surveillance.

He reported on an ongoing mission to Niger in late November, where FAO had provided the 4WD vehicle and EC provided operating costs for a West African expert and an EUFMD expert (Francis Geiger). The mission planned to visit 4 locations and collect samples where possible, and identify if regular sample collection in gateway areas of regional significance could be achieved. It was hoped that this may establish some active and regular sampling in areas where little is known of the types circulating.

On the laboratory network, he indicated that the three year EUFMD/FAO contract with the WRL for services will finish at the end of 2005. Together with support for external quality assurance and standardisation (FAO Phase studies), the yearly support is over US$70,000 to FMD and given the request to support the network, and that support for some of the functions may be covered by the Community Reference Laboratory (when designated) some rethinking of requirements in the contract is required. Under FAO procedures, the new contract may have to be awarded after tender.

Discussion

The presentations drew a significant number of questions and discussion.

Regarding recent type O FMD in Brazil, concern was expressed that vaccination may not have been applied efficiently since the outbreaks had not been prevented by use of an apparently suitable strain of vaccine (O1 Campos that is said to have a good antigenic match to recent isolates). It was also of concern that the origin of the outbreaks could not be pin-pointed due to a lack of up-to-date sequence information from nearby countries. This indicates either that isolate characterisation data is lacking or else that the virus is circulating undetected.

The selection of vaccines for eastern Africa was also considered a problem. Concern was expressed that there are few or no suitable vaccines for type A in this region. Dr Paton agreed but indicated that for Africa as a whole and for SAT viruses in particular, there are relatively few vaccines for the diversity of antigenic types circulating. Reagents are not always available at WRL to examine the suitability of such vaccines as are used in Africa.

The situation with circulation of Asia-1 in East Asia was discussed, where different subtypes were circulating and there had been extension into Russia and Mongolia. Details on vaccination policy, and onset of vaccination against Asia-1 in China in the past two years were required but not available. The hypothesis was put forward that unsafe vaccines used somewhere in the region had introduced one of the two subtypes found in China.

The safety of FMD vaccines was discussed given the findings from Africa and the Chinese region in 2005 where vaccine type sequences had been detected among circulating field viruses. Dr De Clercq pointed out that where followed, good vaccine quality production processes and quality assurance procedures adhering to the OIE and/or European Pharmacopoeia standards, had effectively reduced the risk of residual virus to zero, and that the problems in some regions related to the lack of implementation of the procedures developed in Europe (with a major input from the EUFMD Commission Research Group) at least 20 years ago.

On the network of FMD laboratories, Dr Willeberg expressed the view that if the objective of the network is to improve global surveillance for FMD then the network should have access to modelling expertise and related tools to address areas of uncertainty, including risk of spread between regions.

The Secretary gave the position of FAO on the network. In line with resolutions of the 36th General Session, FAO had written to OIE expressing a desire to establish a network on the model of the OFFLU network for avian influenza, in which both FAO and OIE reference laboratories would be represented but also others with expertise to ensure a global complement of expert resources including national reference laboratories and collaborating centres and epidemiology experts. He indicated that FAO had offered to provide the Secretariat for a Global Network and could offer further some support to the laboratory network.

Christianne Bruschke, representing OIE said that their idea was to follow the avian influenza model, but to include other scientific collaborators and the applications would be evaluated by the scientific committee. Need to move on the basis of experience from AI.

The question of designation of the WRL was raised; would this be affected if contracts were given by FAO to another laboratory? The Secretary answered that the WRL designation was not linked to the contract, but that if FAO placed the contract for virus typing with another laboratory then over a period of time the designation of the WRL would inevitably have to be reviewed.

Conclusions

1. The Executive Committee will exchange information on the renewal of the contract with the WRL, and conclude the matter within the next 21 days.

2. There is insufficient data from some regions of South America to assist understanding of the origin of the recent type O outbreaks in Brazil.

3. The recent spread of Asia-1 virus types in parts of the Russian Federation and in China that may be related to a vaccine strain indicates once more that vaccination programmes can result in entry of infection with consequences for transboundary spread.

4. Given that with only one exception type C outbreaks in the past 10 years have been shown to be related to vaccine virus introductions, a move towards global cessation of type C vaccination should be considered; an adequate safeguard will be required after this to enable vaccination with quality assured emergency stocks of appropriate type C vaccine if the need arises.

Recommendations

1. There should be priority given to gaining the information, isolates and vaccine strains required to improve FMD risk assessment relating to the African region.

2. As the type A situation in Iran is significant for EUFMD member countries, it is essential that type A outbreaks in western Iran are rapidly characterised to allow earlier warning of disease problems, and the collaborative activities with Iran should be prioritised to address this concern.

3. There should be effort within the CRL work programme or through other funding to undertake cross-protection tests and cross-neutralisation tests to establish the level of protection between vaccines held in the EU and circulating viruses of type A in Iran.

4. FAO should continue discussions with OIE to reach agreement on establishment of a wider FMD expertise network, which should include experts in the field of surveillance and modelling of FMD, and extend the network of OIE/FAO FMD reference laboratories.

5. The Commission should continue to address the gaps in the global surveillance where complexity of FMD viruses is expected, but where insufficient baseline information is available.

6. The international organisations do everything within their possibilities to encourage countries to use only FMD vaccines that have been demonstrated to meet the OIE standards.

Item 8. Report of the Working Group on development of a FMD training initiative

Mike Robson (FAO) presented the progress report for the Training Group established at the 36th General Session (**Appendix 12**). This group had met on two occasions, in June in London, hosted by CVO of the UK, Dr Reynolds (DEFRA), and in Lyon in September, hosted by Dr Mallet, ENSV, Lyon. The Group comprised of representatives from UK, France, Germany, and Ireland, who contributed to the design of the training programme, and drafted the titles and outline contents for the modules aimed at two types of staff, those involved with immediate response to suspicions of FMD and in implementing local area FMD control, and those in decision making at national level.

He emphasised that the training would be based on the assumption that countries require their staff to understand how to organise their activities to meet the requirements of the 2003 Directive on FMD control, and that two groups of persons were priorities for training, those veterinarians/staff involved in local area control, who would be present in higher numbers and usually would require local language training, and those involved in national control centres. Therefore a training tool kit approach was suggested, to create aides to training that could be rapidly adapted to local languages so to be used by National Services. A second principle was that training would be problem oriented, with emphasis upon trainees working individually or in groups to tackle typical, and testing problems that can be expected to occur during FMD control operations. Existing materials, text books and online and other sources would be used wherever appropriate. The proposal tabled was therefore to develop and test modules with typical groups of trainees, and to use feedback from training sessions and from trainers engaged to ensure the problem setting is sufficiently realistic to resemble reality. Interactive learning would be a challenge but there could be significant advantage to trainees interacting to discuss solutions to problems, and sharing ideas and experience and practises.

He provided an estimate of costs for the first year's activities; some components would be contracted out following competitive tender under normal FAO procedures, but the key work of co-ordinating and developing content and curriculum and training would require specialist technical input best provided by full or part time professional staff.

Conclusions

The progress report was noted and the proposal for further development endorsed. The Secretariat should proceed to develop this into a full document that can be transmitted as a request for support for use of the EC/FAO Trust Fund.

Item 9. Report of the Research Group of the Standing Technical Committee

Dr De Clercq presented the progress report (**Appendix 13**) of the Standing Technical Committee of the Research Group ("Research Group"). He drew attention to the number of working groups and their roles and responsibilities within the 2003-5 work plan, and summarised progress of these groups. He then indicated the Items discussed at the Closed Session of the Group which had been hosted by the Friedrich Loeffler Insitute, Greifswald, Germany, 20-23 September 2005. Each of the elected members of the group were present and in addition were joined by FAO staff based in Iran (Francis Geiger), Tajikistan (Erika Carlsson) and the Pakistan (Mansoor Hussain, epidemiologist for the FAO TADS surveillance and control project for Central Asia). This additional staff was requested by the EUFMD Secretariat to assist with the assessment of Asia-1 risk to Turkey, in response to questions received from the GDPC, Ankara.

The Group had developed a workplan for the biennium 2005-7 (**Appendix 14**). To increase efficiency of efforts, the plan identified areas which are not covered by parallel actions involving members or other programmes and indicates the division of tasks between the Research groups those parts which are considered primarily the responsibility of working groups convened under other projects with a coordination role, in particular the DG-Research funded Coordination Action (CA FMD&CSF) and the expected role of the EU-CRL for FMD.

He highlighted the flexibility of the group to rapidly respond and adapt to new tasks that are identified, but also the issues of co-ordination between the various EC funded actions that have related functions.

He indicated also that:

- The results of the Brescia Workshop on comparison of NSP test performance, supported by Improcon/EUFMD and organised by EUFMD Research Group in 2004, will be submitted for publication in December 2005.
- It is proposed that a Workshop is organised for decision makers, technical experts and epidemiologists, to apply the results of recent work on post-vaccination surveillance to realistic scenarios on the application of post-vaccination surveillance.

<u>Discussion</u>

The Chairman congratulated Dr De Clercq on his re-election to the Chair of the Group, and thanked him sincerely for his efforts to improve co-ordination in this important area. He welcomed him back to work with Executive in this biennium, and asked him to pass on the gratitude of the Executive for the work of the group.

Dr Willeberg strongly supports the idea of the PVS seminar and to invite the participation at CVO level. The Secretariat and Group should firm up the details of what is proposed. He considered the development of software to improve PVS decision making is of major importance and urged the group to complete and test this utility ahead of discussions with CVOs on its use.

He also re-iterated his support for the increased involvement of epidemiologists in the group, and for development of guidance on selection of models to assist outbreak decision making.

In relation to the OIE guidelines on FMD surveillance, he suggested an option is that there should be European guidelines developed that are more specific but within the frame of those of the OIE. He indicated that the Executive and Research Group were of significance to keep momentum on this process.

Dr Füssel suggested that in the current state of knowledge and given the need for flexibility for decision makers to implement there is limited opportunity further improving the OIE Guidelines on FMD surveillance; if change is required it must be made clear what we are wanting to see changed, and it is necessary to be very careful to retain essential flexibility in interpretation or implementation, which enables risk management by importing countries. He agreed that the EC can decide unilaterally within the framework of the standing committee (EC-SCAH) but if it creates rigidity in the guidelines then this can create subsequent problems for member states.

Regarding the concept of the FAO/OIE network on FMD, Dr Domenech applauded the excellent work of the Group and stressed that the idea is that together with the OIE, the network should be established that will include other experts, in which the EUFMD Research Group can be considered a core of technical expertise. FAO is in agreement with the OIE that should be based on the model of OFFLU and FAO is proposing to host the Secretariat of the network.

Dr Cokrevski asked for clarification on the transport guidelines, as the problems faced to transport samples to RLs are very significant. Dr Eugen Olaru alternate for CVO of Romania, agreed, but indicated that transport is expensive but not impossible.

In response, the Secretary added that there are two levels where action is needed on a near continual basis, one is at the level where the international regulations for transport of samples and disease agents is set (UN subcommittee on transport of dangerous goods, and subsidiary air transport regulations based on these) and the other is to give simple assistance to countries to understand regulations in place and to find the most appropriate and efficient way to get samples to RLs. The OIE has taken the lead on the first area, and it will be important they continue to do so and provide regular updating on progress and issues that will affect ability to transport in future.

On the second, the Research Group should provide a yearly update to guide RLs on the state of the regulations and at least for FMD, how to transport to the WRL.

Dr Paton added that the recent change to classify FMD diagnostic samples at a lower level than cultures of virus should assist the transport of specimens. However, countries which are endemic for FMD often face major hurdles where airlines will not carry goods classified as dangerous and this can require complex transport routings which can be a problem for sample quality as well as logistics. This problem is likely to continue, and therefore FAO/EUFMD support to such countries to achieve submissions of samples.

The issue of vaccination against type C, and safety of FMD vaccines was again raised, and several members suggested that FAO and OIE should take the lead to press for countries to use only vaccines meeting international standards.

Conclusion

The workplan of the Research Group for the period 2005-7 was endorsed.

Recommendations

1. The Secretariat should proceed to plan the Workshop on post-vaccination surveillance in 2006.

2. Member countries should take into account the findings of the Research Group and the forthcoming workshop on PVS, before considering the need to advocate change in the OIE Guidelines relating to surveillance for FMD.

3. The RG is requested to finalise the revision of the guidelines on transport of FMD samples for circulation to interested parties by the Secretariat.

4. The international organisations should be encouraged to work towards the organisation of a series of regional workshops on the subject of vaccine quality, innocuity and vaccination monitoring, for countries that continue to use vaccination against FMD.

Item 9.b EUFMD/FAO involvement in the EU-EPIZONE project

Dr Sumption indicated that FAO had been invited to participate as a partner in the EPIZONE project which had reached negotiation stage between EC (DG-Research) and the co-ordinators (coordinated by Piet van Rijn and Johan Bongers, CIDC-Lelystad, Netherlands). He proposed that the co-coordinators should present an overview of the project, and that the Executive Committee should discuss the relevance for activities on FMD control and the role of the FAO/EUFMD in the project.

Dr Bongers presented an overview. The project has been proposed under FP6 as a network of excellence, and currently 20 institutions should be joined as partners in the project. Negotiation is ongoing with DG-Research and it is anticipated the project will begin in mid-2006. He illustrated the structure of the project, with Governing body and Advisory board, and a budget proposed of 14 million euro for 5 years. He indicated the transversal themes and specific themes, and that at this stage only the workplan for the first 18 months was drawn up but not finalised.

In discussion that followed, it was clear that the scale of the partnerships created logistic and management issues and that much would depend on the effort of managers from different institutions to lead the efforts in their areas. FMD related activities were also not clear, although several of the themes provided an opportunity to improve risk assessment and communications, diagnostic development and standardisation, and to progress actions on vaccine development. The presentation indicated the effort of the EPIZONE was to better integrate existing laboratory actions rather than fund specific lines of research. There was some disquiet that this would result in considerable numbers of additional meetings and reports without substantial investment in research activities, and therefore by itself could only be considered to facilitate rather than achieve real progress.

Dr Sumption proposed that the areas for FAO/EUFMD involvement should assist the linkage between Europe and scientists in the endemically affected regions, and should facilitate transfer of expertise between these regions. He proposed that the FAO/EUFMD focus on training initiatives theme in the EPIZONE and in the theme concerned with linking experts in Europe with control actions in endemic countries. The EUFMD training initiative may be the model for knowledge transfer, and EPIZONE may be a good vehicle to expand the initiative to include other institutions as training partners. In addition, EPIZONE could assist to support greater

experience in European institutions of disease control situations, and a database of expertise would assist FAO to find relevant expertise for response actions.

Conclusions

1. The EPIZONE project is of relevance to the work of the EUFMD Commission.

2. EUFMD/FAO inputs could be in the development of training/knowledge management area and in development of global database of epizootic expertise.

Recommendation

1. The Secretariat should proceed with developing partnership in the EPIZONE project.

Item 10. FAO reform process – update and relevance to EUFMD Commission

Dr Domenech, FAO, provided an update on the reform process of FAO. He indicated that the supreme decision making body is the biennial FAO Conference, and this had recently met in mid-November and had taken decisions relating to budget, work programme and proposed reforms. The reforms proposed to the Conference included development of a new Division that would focus on Emergency Prevention (EMPRES) of both animal and plant pests, and the DG had indicated the high priority that would be given to operating EMPRES for animal diseases. However this change would result in other animal health specialists being placed in different Divisions and assurance had been received that his role as CVO of FAO would continue but would have to be mediated through transversal working arrangements. Following the Conference, the conclusion is that reform process for EMPRES will be delayed for one year. Some parts of the reform may occur but budgetary constraints imposed by Conference will have a major impact on changes in 2006-7, unless some additional transitional funding is agreed.

The reform documents had proposed that Commissions with a regional nature such as EUFMD might move in location to the site of the Regional Economic or political body, which in the case of Europe is Brussels. Dr Domenech indicated FAO's position that EUFMD Secretariat should remain located in Headquarters in Rome. This was not opposed by any of the Executive Committee.

Item 11. Financial statements

The Secretary presented the Financial Statements prepared by the Administration and Finance Division (AFF) of FAO, for 2005 for the three Trust Funds relating to the EUFMD Commission (**Appendix 15**).

In line with the recommendations of the 36th Session, for the first time the expenditures would be reported in both US$ dollar, as the operating currency of FAO, and in euro based on a standard system of exchange rates operated in FAO.

As expected from the commitments made for contributions in 2005 and the effect of the dollar depreciation, the floating balance was significantly depleted over the year, but this should be rectified in 2006-7 through the new level of contributions endorsed by the 36th Session which should make it possible to meet previously agreed commitments.

In regard to the Trust Fund operated with the EC, the TF was currently operating a significant deficit, since the Commission had proceeded to purchase vaccine for continuation of the buffer zone in the Caucasus to meet the operational deadlines for delivery, necessitating expenditure

before receipt of the agreed funding in 2005 from EC of some €2 million. He hoped that the Executive and EC appreciated that this was possible because of the long standing relationship in operating the fund with EC and because of the commitment of FAO to ensure that emergency actions are not delayed by such financial transactions.

He then presented the expenditure plans for 2006 for the two main Trust Funds (**Appendix 3**). He requested that the Executive consider and approve the plan which was in line with that agreed at the 36th Session, except in the budget line relating to non-expendable equipment. He asked that the Executive give their approval to the purchase of a project vehicle to be used in support of the FMD control co-ordination actions to be operated from the FAO/OIE Office based in Georgia. The use of this Trust Fund would ensure that the operations have independence in action and be seen as a contribution from EUFMD members to regional FMD control.

In relation to the proposed expenditure from the EC Trust Fund, approval of funding would proceed by the usual mechanism with the decision being one for the EC on how the use of the Fund is made in any particular year. The table was provided to ensure that it is clear that if Option 2 support to regional FMD control is approved, then the Fund can be expected to run into a deficit situation in 2007-8 unless additional funding in the order of some €1.2 million is secured.

Conclusions

1. The expenditure statements for 2005, and the projected expenditure plans for 2006, were approved.

2. The financial impact of operating the proposed actions from the EC Trust Fund were noted.

3. The response of the EC to the proposal for expenditure in 2006 is of great importance, as is the securing of additional financial guarantees in the period running up to the next Session, in relation to the costs of FMD control in the Caucasus in the period 2006-8.

Item 12. Any other business

The Secretary brought to attention that he had an enquiry from a technology company who were interested to have evaluated a system based on barcodes and handheld scanners that could record the point of use of vaccines or collection of blood tubes by veterinary field workers. In discussion the point was made that the system could help administration and recording but would not by itself prevent fraud, since the bar code of vaccine bottles could be recorded without subsequent inoculation of animals.

The Chairman concluded from the discussion that the system may have administrative benefits if coupled to GPS so that details in time and space of vaccination or sample collection could be assembled centrally to monitor progress of activities, particularly of emergency or routine vaccine use.

Dr Cokrevski added that The FYR of Macedonia had already been implementing a similar system for recording animal identification prior to movement. He considered this was an area for routine monitoring where such systems could reduce lag time between issue of permits to move and information recording at central level.

Conclusion

The Secretariat was authorised to proceed to identify opportunities to evaluate the technology providing that there is no additional costs to the Commission.

Item 13. Future meetings

Dr Pakdil indicated that Turkey was willing to host the 73rd Session.

The dates agreed are 15-16 June 2006. The location for the Session will be proposed by Turkey in the near future. The time of year could mean hot conditions on the coast and cooler inland locations may have advantages as these are also areas where important work on FMD control will be pursued.

The Chairman thanked Dr Pakdil for the kind offer and was confident that the 73rd Session would be successful and memorable event for the Commission.

Closing remarks

The Chairman, on behalf of the President of the Commission, Karin Schwabenbauer, thanked the members and alternates and observers for their contribution to the 72nd Session. He thanked the Secretariat for assistance with arrangements and encouraged them in their efforts to implement the recommendations made. He recorded his appreciation of the team from the Ministry of Agriculture, Nature and Food Quality, who had worked on the practical arrangements and wished everyone a safe return.

Dr Sumption recorded the appreciation of FAO and the Secretariat to Dr de Leeuw and his team for their excellent hospitality and their attention to every detail required to ensure the success of the meeting. He presented a small token of appreciation to Dr de Leeuw and to Ms. Inge Hamid-Hardenberg.

Appendix 1

72nd Session of the Executive Committee
of the European Commission for the Control of Foot-and-Mouth Disease

The Hague, the Netherlands
29-30 November 2005

PROVISIONAL AGENDA

Provisional Timetable - Day 1: Items 1 to 5; Day 2: Items 6 to 13

Opening Statement: Mrs. Renée M. Bergkamp, Director-General, Dept. of Food Quality and Animal Health, Ministry of Agriculture, Nature and Food Quality, The Hague

14. Adoption of the Agenda

15. Activities of the EUFMD Commission since the 36th General Session

16. Report of the First Regional Steering Committee of the GF-TADS[4] in Europe held on 13-14 October
- i. Report on items relating to FMD control
- ii. Capacity building actions – discussion on technical support to countries in the region which are not recognised by the OIE as free of FMD

17. FMD control and eradication in Turkey – co-ordination of technical support
- *a. Current situation*
  - i. Report on FMD control and sero-monitoring in Thrace region, 2005
  - ii. Report of recent EUFMD missions and progress of surveillance actions (*FAO Letter of Agreement with SAP Institute for action in Erzurum Province*[5])
- *b. Summary of strategy and programme for FMD eradication and status of required funding*
  - i. Presentation by Government of Turkey
  - ii. Proposal for technical support via EUFMD for preparation for eradication in the period 2006-7[6]
- *c. Discussion and position statements of EC representatives (DG-SANCO and DG-enlargement)*

18. FMD control in the Trans-Caucasus
- *a. Current situation*
  - i. Report on the actions in 2005 to maintain the buffer zone and in sero-monitoring[2]

[4] OIE/FAO Global Framework for progressive control of TransBoundary Animal Diseases
[5] Report to Executive Ctte and EC on use of EC Trust Fund MTF/INT/003/EEC ("EC Trust Fund")
[6] Proposal with financial implications for EC Trust Fund

b. *Co-ordination of inputs in FMD surveillance and control 2006-8*
    i. Proposal for a Regional support unit for FMD Control (FAO/OIE/EC FMD Control Co-ordination centre)[3]

Items below are proposed for Day 2

19. FMD control in Iran

a. *Progress report - Phase I of the EUFMD/EC/France supported actions on FMD surveillance and control*[2]

20. Co-ordination of FMD surveillance

a. *Report of the FAO WRL on change in global risk situation*
b. *FAO/OIE Network - supporting global surveillance for FMD*
    i. Status of agreements
    ii. FAO support via the EUFMD Trust Funds and FAO regular programme
        1. Mission to Niger (November 2005) to improve virus submission[2]
        2. Improving FMD virus collection from risk areas[3]
        3. Support for FAO/OIE laboratory network functions[3]

21. Report of the working group on development of a FMD training initiative

a. *Progress report*
b. *Presentation of Project Proposal*[3]

22. Report of the Closed Session of the Standing Technical Committee of the Research Group held in Insel Riems, Germany, September 2005[2]

23. FAO reform process - update and relevance to EUFMD Commission

24. Financial statements

25. Any other business

a. Evaluation of new technologies to track vaccine usage in the field - proposal with relevance to field programmes.

26. Future meetings

Appendix 2

DUTY TRAVEL - EUFMD COMMISSION
2005

ACTIVITY	ACTION BY	LOCATION	DATES	PURPOSE	FUNDING
CAUCASUS	Carsten Pötzsch (Germany)	Rome, Italy	10-13 April	Drafting of project document for support to a 3-year programme on FMD & transboundary diseases in the Caucasus	TF
	Andriy Rozstalnyy (SEUR)	Georgia, Armenia, Azerbaijan	3-14 May	Inspection of buffer zone vaccination and organization of sero-monitoring	TCP/RER /3001
	Karoline Schollmeyer (Germany)	Tbilisi, Georgia	19-24 June	Workshop on FMD organised through project TCP/RER/3001	TF-EC
	Andriy Rozstalnyy (SEUR)	Borjomi, Georgia	19-26 June	1st Regional workshop on development of national contingency plans (NCPs)	TCP/RER/ 3001
	Andriy Rozstalnyy (SEUR)	Armenia and Azerbaijan	2-15 October	National workshops to evaluate draft NCPs for FMD	TCP/RER/ 3001
	Keith Sumption	Tbilisi, Georgia Yerevan, Armenia	23-27 October 28-30 October	Project feasibility mission	TF
	Carsten Pötzsch (Germany)	Tbilisi, Georgia	23-28 October	Project feasibility mission	TF-EC
	Andriy Rozstalnyy (SEUR)	Tbilisi, Georgia	6-19 November	National workshop to evaluation Georgian NCP for FMD and regional workshop on simulation exercises to evaluate NCPs	TCP/RER/ 3001
	Martyn Edelsten (UK)	Tbilisi, Georgia	13-23 November	Attend FAO regional workshop organised through TCP/RER/3001	TF (to be reimbursed by project)
TURKEY	Keith Sumption	Erzurum, Turkey	6-11 June	Project formulation mission	TF
	Tom Murray	Erzurum, Turkey	6-11 June	Project formulation mission	TF
	Mustafa Tufan Haluk Askaroglu Abdulnaci Bulut (Turkey)	Erzurum, Turkey	6-11 June	To accompany FAO staff on project formulation mission	TF
	Keith Sumption	Van, Turkey	25-30 June	FMD investigation/tracing procedures and draft guidelines; field trip to Van	TF
	Admassu Berhanu (Ethiopia)	Erzurum, Turkey	20 July – 5 August	Technical support to establish field applications of participatory epidemiology techniques	TF
	Tom Murray	Erzurum, Turkey	31 July – 4 August	Pilot study to investigate distribution and risk factors of FMD in Erzurum	TF
	Keith Sumption	Ankara, Turkey	26-28 September	Workshop on animal disease Eradication programmes in Turkey and their implementation	TF

ACTIVITY	ACTION BY	LOCATION	DATES	PURPOSE	FUNDING
	Admassu Berhanu	Erzurum, Turkey	10-27 October	Follow-up to previous mission	TF - EC
IRAQ (Jordan)	Keith Sumption	Amman, Jordan	16-19 May	Change management training programme	OSRO/IRQ/ 406/UDG
EUFMD MEETINGS	Kris De Clercq (Belgium)	Rome, Italy	23-25 January	71st Session of the Executive Committee	TF
	Carsten Pötzsch (Germany)	Rome, Italy	23-25 January	To present a report at the 71st Session on consultancy to Caucasus	TF
	Kris De Clercq (Belgium)	Rome, Italy	26-29 April	36th Session of the EUFMD Commission	TF
	Tony Garland (UK)	Rome, Italy	26-29 April	Rapporteur at the 36th Session	TF
	Dónal Sammin (Ireland)	Rome, Italy	26-29 April	Rapporteur at the 36th Session	TF
	Carsten Pötzsch (Germany)	Rome, Italy	26-29 April	36th Session	TF
	Keith Sumption	Insel-Riems, Germany	18-25 September	19/9: CSF-FMD meeting, Berlin Session of the Research Group (20-23/9)	TF
	Tom Murray	Insel-Riems, Germany	18-25 September	19/9: CSF-FMD meeting, Berlin Session of the Research Group	TF
	Egiziana Fragiotta	Insel-Riems, Germany	19-25 September	Session of the Research Group	TF
	Members of the Research Group: De Clercq/ Aktas/ Alexandersen/ Brocchi/ Bronsvoort/ Dekker/ Georgiev/ Greiner/ Moutou/ Sammin/Yadin /Paton	Insel-Riems Germany	19 – 25 September	Session of the Research Group	TF EC and TF
	Francis Geiger (Iran)	Insel-Riems, Germany	19-24 September	Invited guest: Session of the Research Group	TF
	Manzoor Hussein (Pakistan)	Insel-Riems, Germany	19-24 September	Invited guest: Session of the Research Group	Part TF EC & part GTFS/INT/ 907/ITA
	Kris De Clercq (Belgium)	The Hague, the Netherlands	28 Nov – 1 Dec	72nd Session of the Executive Committee	TF
	Keith Sumption	The Hague, the Netherlands	28 Nov – 1 Dec	72nd Session of the Executive Committee	TF
	Egiziana Fragiotta	The Hague, the Netherlands	28 Nov – 1 Dec	72nd Session of the Executive Committee	TF
TRIPARTITE MEETINGS	Keith Sumption	Geneva, Switzerland	1-3 February	FAO/OIE/WHO Tripartite - GLEWS	TF
	Keith Sumption	Alexandrou-polis, Greece	24-26 November	FAO/EC/OIE Tripartite on the Balkans	TF
	Keith Sumption	London, UK	30-31 January	EFSA panel	Reimbursed by EFSA

ACTIVITY	ACTION BY	LOCATION	DATES	PURPOSE	FUNDING
EFSA MEETINGS	Keith Sumption	London, UK	13-15 March	EFSA panel	" "
	Tom Murray	London, UK	13-15 March	EFSA panel and assist with finalization of FMD incidence elements	TF
EFSA MEETINGS	Keith Sumption	Brussels, Belgium	1 July	EFSA panel	Reimbursed by EFSA
	Keith Sumption	Brussels, Belgium	2 September	EFSA panel	" "
	Keith Sumption	London, UK	23 November	EFSA panel	" "
OIE MEETINGS	Keith Sumption	Geneva, Switzerland	1-3 February	FAO/OIE/WHO Tripartite	TF
	Keith Sumption	Paris, France	23-26 May	OIE General Session	TF
	Keith Sumption	Paris, France	12-14 October	1st meeting FAO/OIE steering committee GF-TADs	TF
OTHER	Dónal Sammin (APO)	Brescia, Italy	5-6 January	Follow-up to NSP workshop held in Brescia in May 2004	TF
	Dónal Sammin (APO)	Brussels, Belgium	10-14 January	NSP workshop and EmproCon follow-up	TF EC
	Francis Geiger (France)	Rome, Italy	20-23 January	Briefing on action to be conducted in Iran under EUFMD EC	TF
	Keith Sumption	Brussels, Belgium	23-24 February	EC – First stakeholder meeting for the European technology platform for global animal health	TF – reimbursed by EC
	David Paton (UK) Dónal Sammin (Ireland)	Hong Kong	6-24 March	To assist i the study on diagnostic tests for FMD in pigs	TF
	Tom Murray (APO)	Copenhagen, Denmark	7-10 March	To take part in discussions on planning & evaluation of nordic FMD simulation exercises	TF
	Tom Murray (APO)	London, UK	11-12 April	To visit Pirbright Laboratory and assist with preparation of reports on training needs on FMD control	TF
	Keith Sumption	London, UK	20-21 June	1st Training group meeting (as rec. at 36th session)	TF
	Slobodan Cokrevski (TFYR of Macedonia)	London, UK	20-21 June	1st Training group meeting	TF
	Keith Sumption	London, UK	15-16 August	Visit FAO-WRL to discuss future action	TF
	Keith Sumption	Lyon, France	13 September	2nd Training group meeting	TF
	Keith Sumption	London, UK	17 October	WRL to discuss progress of CSF/FMD project	TF
	Francis Geiger (France/Iran) Emmanuel Couacy-Nymann (Côte	Niamey, Niger	18 Nov. – 3 Dec.	FMD surveillance feasibility mission	TF EC

ACTIVITY	ACTION BY	LOCATION	DATES	PURPOSE	FUNDING
	d'Ivoire)				
	Keith Sumption	London, UK	5-7 December	Workshop on integration of laboratory-based information. Organised by CSF/FMD Action Plan	TF

Appendix 3

Implementing the EUFMD Strategic Plan – 2006

Background:

The EUFMD Strategic Plan, as approved by the 36th Session:

Sets out the strategic vision – goal

Consistent with the EUFMD constitution, the strategy is to undertake a programme of actions that will assist member countries, and the EC, to progress towards the goal, or vision, of:

- A Europe free of FMD – the FMD disease-free state achieved and maintained in all Europe.

Purpose

Envisages the member countries, with support from the EUFMD Commission and other partners, working towards the following:

1. No occurrence of FMD in officially free countries of Europe in the period to 2008.
2. Effective management of risk of entry through improved access to information of FMDV circulation in source countries and of epidemiologically significant events.
3. No occurrence of Asia-1 infection in Turkey over the 4 year period.
4. Reduction in incidence of other exotic FMD types entering Turkey over this period.
5. FMD surveillance targets and reporting in Caucasus countries and in Iran (and Iraq, Syria) that meet the requirements of at risk countries for early warning.
6. Incidence of FMD in Thrace region of Turkey reduced to zero in period; targets for surveillance, disease investigation and reporting in Thrace region meet need for early and effective control of incursions.
7. Reduction in distribution of type A and type O FMD in Anatolia – defined by increase in the Provinces/area, and in period /time when virus infection is shown not to be present.

Recommended a Strategy for action

The strategy focuses on actions to be taken to achieve outcomes which are useful to member states to help them achieve and maintain FMD freedom.

The Commission should focus on delivery in four key categories of action in the period 2005-8:

- Support to FMD control in "traditional risk areas"- threatening south-eastern Europe and Turkey.
- Global FMD observation – virus circulation and risk.
- Coordination of technical studies to address constraints to policy implementation.
- Capacity building across Europe – raising and retaining expertise and competence in the scientific basis of FMD control and in best practises in epidemic management.

The Commission should therefore in the 4 year period develop projects, gain funding and implement projects to enable it to develop useful outputs and outcomes which are applied in member countries and beneficiaries:

1. Improved system for monitoring FMD virus strain circulation operational
2. Technical constraints to preferred European FMD control policies reduced
3. System for professional development in FMD management/expertise developed
4. FMD risk surveillance and management programmes operating in target countries
5. FMD incursions/emergencies rapidly controlled, where supported by specific Commission decisions

The Secretariat/FAO should take steps to find funding for the following:

- 1: Implementation of an FMDV observation action, supporting European vaccine management through better identification of risk trends and events, including:
  - support to developing country veterinary services to collect and submit samples;
  - support to information exchange and networking of FMD Reference Laboratories.
- 2: Supported actions to address technical constraints identified by the EUFMD Standing Technical Committee, working with the FAO/EC/OIE Co-ordination structure for FMD and CSF laboratories.
- 3: Implementation of innovative, capacity building action to raise technical competence of key levels of the European epizootic control management.
- 4: Field programme support:
- Support the implementation of comprehensive actions for the surveillance and effective response to FMD in the southern Balkans region (Turkey, Greece, Bulgaria);
- Implementation of a project for early warning of FMD regional risk events, through supported actions with the Islamic Republic of Iran;
- Implementation of a project for the surveillance and effective response to FMD risk in countries of the South Caucasus (Georgia, Armenia, Azerbaijan);
- Identification and formulation of project actions to control risk in other countries neighbouring to Turkey, and in other FMD risk situations, as required by the emerging situation.

Plan of action of action for 2006

Towards goal of official FMD free status

- **Moldova:** technical support to assist Moldova towards official FMD free status should be provided under EC-FAO Food Security Programme (EC-FAO FSP), 2006-8 with FAO implementing and AGAH/EUFMD as lead technical unit.

- **Republics of Belarus, Serbia and Montenegro, status of Kosovo;** *decision on EUFMD action to provide technical advise or support needed*

Activity status - under the 5 Strategic Plan categories

Category of Activity		*Targets/supported*	*EUFMD funded*	*EC-FAO Trust Fund*	*Other FAO relating to FMD*	*Complementary donor & FAO actions*
1	Improved system for monitoring FMD virus strain circulation operational	All European countries, but global value	Annual contract with WRL will finish 2005. FAO Open tender proposed to follow: support to FAO/OIE network and to global surveillance services, 2006	To be decided. Priorities for supported submission: - west Africa, Sudan/horn of Africa	Some regional support e.g: 1. Italian funded Central Asia TADS; 2. Asian Bank Mekong subregional project	OIE WAHIS development FAO-EMPRES-I information system development Exploratory: FAO/OIE and Co-ordination Action discussion on surveillance networking.
2	Technical constraints to preferred European FMD control policies reduced	All European countries	EUFMD-Research Group meeting 2006.	To be decided. Meetings of task groups to progress Workplan of EUFMD-RG		DG-Res funded CA FMD&CSF (2005-). DG-Res funded EPIZONE (2006-)
3	System for professional development in FMD management/expertise developed	All European countries, potential global	Secretariat inputs to training initiative.	To be decided. Training initiative prepared: year 1 request circa US$ 330,000		

Category of Activity		*Targets/supported*	*EUFMD funded*	*EC-FAO Trust Fund*	*Other FAO relating to FMD*	*Complementary donor & FAO actions*
4	**FMD risk surveillance and management programmes operating in target countries**	Trans-Caucasus-regional	Secretariat technical and admin support time. Vehicle provision – EUFMD TF ?	Trans-Caucasus: Buffer zone Spring vaccination 2006 approved. To be decided: Proposal formulated for 2006-8, 2006 costs of.EURO 636k.	Trans-Caucasus: FAO funded: final workshop of TCP/RER/3001, Jan 2006.	Office: Provided by Govt of Georgia
	FMD management in target countries	**Georgia**		Agreed: BZ Spring vaccination 2006. **2006 priorities:** **Address low vaccination rates in BZ-organisation/cold store** Technical support to establish TADinfo/National Surveillance system (NADSS). Baseline national FMD survey. Prevention planning: Progress NCPs		EC-FSP support to reform of veterinary service. US-DETRA project. Important capacity in FMD diagnosis will be in place.
	FMD management in target countries	**Armenia**		Agreed: Spring vaccination 2006. **2006 priorities, funds not yet agreed** : Implement TADinfo/NADSS with active follow up of FMD sero-surveillance findings. Laboratory support: -external quality assurance and training to establish sero-monitoring - outbreak /virus confirmation Progress NCPs		EC-FSP in country technical assistance to implement NADSS. FAO/Italian Government support to brucellosis control (expected not signed) – some synergy.
	FMD management in target countries	**Azerbaijan**		Agreed: Spring vaccination 2006. **2006 priorities, funds not yet agreed** : Address 2005 problems Identify capacity gaps.		EC-FSP, French bilateral. US-DETRA project should begin 2006. Important capacity in

Category of Activity		*Targets/supported*	*EUFMD funded*	*EC-FAO Trust Fund*	*Other FAO relating to FMD*	*Complementary donor & FAO actions*
				National baseline FMD sero-survey. Progress NCPs Surveillance system: Implement TADinfo installation, training, NADSS with active follow up of FMD sero-surveillance findings. Laboratory support: -external quality assurance and training to establish sero-monitoring. - outbreak /virus confirmation		FMD diagnosis will be in place - ?2007 FAO/UNDP support to privatised delivery of vet. services, focus on brucellosis surveillance and control.
	FMD management in target countries	**Iran**	Secretariat technical and admin support time Secretariat technical support time	Iran: FAO Technical co-ordinator in place provided by France. Phase 1 programme approved, [US$ 761,000, of which 2006: US$381k.].		
	FMD management in target countries	**Turkey**	Secretariat technical support time	Turkey: To be decided 12/2005. Actions in 2006-7 to protect eastern borders and prepare for national eradication drafted. Thrace region: Diagnostic support to sero-surveillance to be identified 12/2005.		EC enlargement support to FMD eradication (project fiche prep) -support not until 2007+
		Syria	To be decided			
	FMD management in target countries	**Iraq**	Secretariat technical support time		Uncertain; via FAO support to rebuilding services.	
	FMD managemert in target countries	**Moldova**	Secretariat technical support time (to be charged to EC-FAO FSP project)		Moldova: Expected US$ 314k EC-FAO FSP funded technical support to TADS prevention and control, FMD	

Category of Activity		*Targets/supported*	*EUFMD funded*	*EC-FAO Trust Fund*	*Other FAO relating to FMD*	*Complementary donor & FAO actions*
					freedom, 2006-8	
		Kosovo	To be decided.		Via FAO programme support (?).	
		Middle-east and north Africa	Secretariat technical support to FMD roundtable meeting 2006 (5 days)			
5	FMD incursions/emergencies rapidly controlled, where supported by specific EC decisions	EU & EUFMD m.c. benefit.	As required; Secretariat technical support time	Situation dependent.		

Cross-cutting implementation issues

1. **Regional support units for TADS prevention and control – protection of Trans-Caucasaia and eastern Turkey**

The technical support can be provided through:

1. Tbilisi base

The Government of Georgia has offered office accommodation to host an FAO/OIE Regional Co-ordination Centre in Tbilisi, Georgia.
As an operational base, Tbilisi office could enable a technical support officer to serve EUFMD actions in:

Georgia
Armenia
Azerbaijan

PLUS: Eastern Turkey - especially areas neighbouring to Georgia and Armenia

Secretariat proposal:
See paper.
Recruit Technical Support Officer (specialism in surveillance/epidemiology)
Recruit administrative assistant for implementation - via UNDP/Tbilisi as FAO Office in Tbilisi is not full FAO-Country Office.
Vehicle: required and propose purchase under EUFMD Trust Fund under biennial budget 2006-7.

2. Teheran base:

Project Office is provided by Government of Iran, staffed by FAO-EUFMD Officer (Francis Geiger) and project management team for Iranian Veterinary Organisation (IVO).

Project implementation is via FAO Office in Teheran, as baby project from EC Trust Fund.

The EC/FAO Phase I project support includes western provinces bordering Turkey as one (of three) areas for improving surveillance in 2006.

3. FAO Headquarters (Rome):

EUFMD Secretariat for co-ordination, technical backstopping to countries/areas not covered by above (may include other regions of Turkey according to agreement GDPC).

2. **Technical support for professional development in FMD surveillance and control**

Secretariat proposes that an additional officer to be recruited:

- Part-time training officer, under the FMD training initiative (if approved)
- Part -time responsibilities technical support (backstopping) to FMDV surveillance actions outside European boundaries in non-European risk areas

3. **Administrative support assistant, FAO Headquarters**

Project implementation via FAO/UNDP system of offices is established but admin-heavy. The project has a very high number of transactions/activity. The need to include an additional assistant to operate the project was foreseen in the EC-FAO agreement on use of the Trust Fund 2005-8, and is a requirement to service the project by FAO Management. Recruitment should occur in 2006.

Proposal for expenditure – 2006

Given in Annex 1and 2.

1. MTF/INT/011/MUL - TF number 904200

   Significant points:

   1. The proposal to increase Non-Expendable Equipment Line to US$ 44,000, to allow purchase of a vehicle for Regional Support Unit based in Tbilisi.
   2. The other figures are as agreed in the 36th Session, and provide for a recovery in balance (the balance acts to bridge at times when contributions are delayed).
   3. The increase in Contracts line gives the Executive flexibility to direct project formulation, or increase contracts (e.g. WRL/Reference Labs).

2. Scenario for expenditure from EC-Trust Fund (MTF/INT/003/EEC)

   The final agreement on the use of the Fund rests with the EC.

   The table indicates cash-flow issues if proposed actions were funded from the Trust Fund with current scheduled contributions from EC.

   Proposed actions in 2006 could be financed, but a minimum of additional 1.2 m Euro would be required in period 2007-9 to offset the costs of the actions (mainly the cost of the Buffer zone operation in Trans-Caucasia).

Projection for 2006; *MTF/INT/011/MUL - TF number 904200* Annex 1

MTF/INT/011/MUL - TF number 904200

– Projection for 2006

Year		**2005 (15th Nov)**		**2006**
	US$			(Projection) US$
Balance as at 1 January		168,822	$	209,060.97
Interest received	3,637.00			
Contribution from member countries	296,455.0	300,092	$	496,210.00
(As per statement 2)				
Expenditure	By 15th Nov	In final period 2006		
Commission Secretary	157,354.0	31,471	$	200,000.00[7]
Consultant	20,643.00			15,600.00
Admin. Support Personnel	71,931.00	14,386		86,920.00
Contracts	46,061.00			85,405.00
Duty Travel	53,982.00	10,796		66,967.00
General Operating Expenses	18,239.00			2,791.00
Expendable Equipment	14,444.00			3,375.00
Non-Expendable Equipment	60.00			44,000.00
Total Expenditure	382,714			501,058.00
Projected Last 6 weeks of 2005 expenditure by end of 2005		56,653		
Cash balance as at 15 November 2005 and projection -12/2006		86,200	$	200,212.97
Outstanding Contributions 15th Nov (exc Yugoslavia):		122,860.97		

[7] As dollar/euro exchange rate fluctuates ad costs in Rome are adjusted to euro costs, the yearly support costs of secretary and assistant cannot be closely estimated; above projection shows a fall in projected costs compared to April 2005.

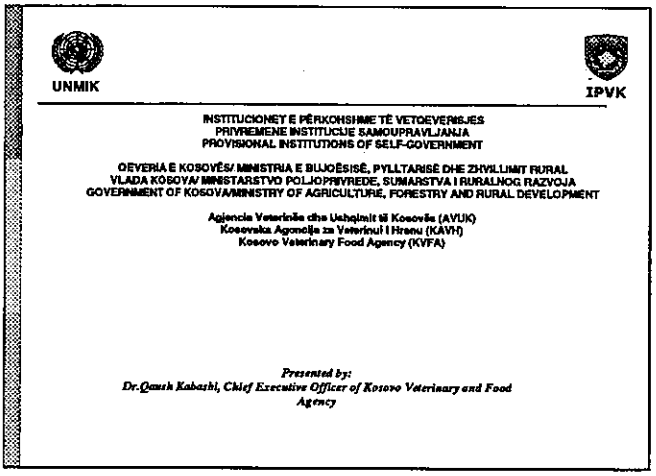
Annex 2

Scenario for expenditure from EC-Trust Fund (MTF/INT/003/EEC)

IN EURO. Figures for 2005 are not final, and support costs (inc. administrative assistant costs from 2006) are not included.

Option 2	*Activity*	*2,005*	*2,006*	*2,007*	*2,008*	*2,009*	*Total*
Scheduled contrib.		2,000,000	625,000	625,000	625,000	625,000	4,500,000
	Trans-Caucasia	614,000	636,615	956,418	950,435		3,157,468
	Iran	25,000	320,000	190,000	100,000		635,000
	Eastern Turkey	40,000	200,000	200,000			440,000
	Training		285,000	285,000	100,000		670,000
	Surveillance	15,000	100,000	125,000	125,000		365,000
	TSU Officer		100,000	100,000	100,000		300,000
	Other Support Costs	25,000	25,000				
	Total	719,000	1,666,615	1,856,418	1,375,435		5,567,468
	Year end Balance	1,281,000	239,385	-992,033	-1,742,468	-1,117,468	

Appendix 4



Introduction

- Kosovo Veterinary and Food Agency (KVFA) is a new organization established in 2000 with the support of the United Nations Interim
- Administration Mission in Kosovo (UNMIK) adopted by the resolution 1244 (1999) (annex 2). The authority given to the Special Representative of the Secretary-General, under the above mentioned United Nations Security
- Council Resolution 1244 (1999), promulgated and published the regulation on "A Constitutional Framework for Provisional Self-Government"
- (Regulation nº 2001/9 of 15 of May 2001). This Regulation (Annex 3) entities the Kosovo, under interim international administration, to be governed democratically through legislative, executive, and judicial bodies and institutions.

Introduction

- According to the referred legal frame, the Provisional Institutions of Self-Government, in fact the Assembly of Kosovo, under the United Nations Interim Administration
- Mission in Kosovo, approved the "Veterinary Law", Law No.2004/21, of 30 July 2004, which regulate the organization and the activities of Kosovo Veterinary and Food Agency (KVFA) under the Ministry of Agriculture Forestry and Rural Development (MAFRD) (annex 4).
- In meantime, Kosovo Veterinary and Food Agency is committed to provide information for the World Animal Health Information System and collaborate in the activities of OIE in order to build the institutional capacities enabling to implement the mandate and strategy in the territory of Kosovo.

Country Information

Location:

- South-eastern Europe
- Border countries: Albania, Macedonia ,Serbia and Montenegro
- Coastline: none (landlocked)
- Map references: Europe

Area: total: 10,877 sq km

Climate: warm, dry summers and autumns and relatively cold winters with heavy snowfall

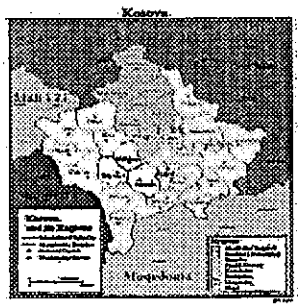
Elevation extremes:

- lowest point: Drini River 270 m
- highest point:: Gjeravica 2,674 m

Population: Estimated 2.200,000

Government type: Parliamentary democracy

Currency: Euro



Institutional Ret-up Related to Public Veterinary Services

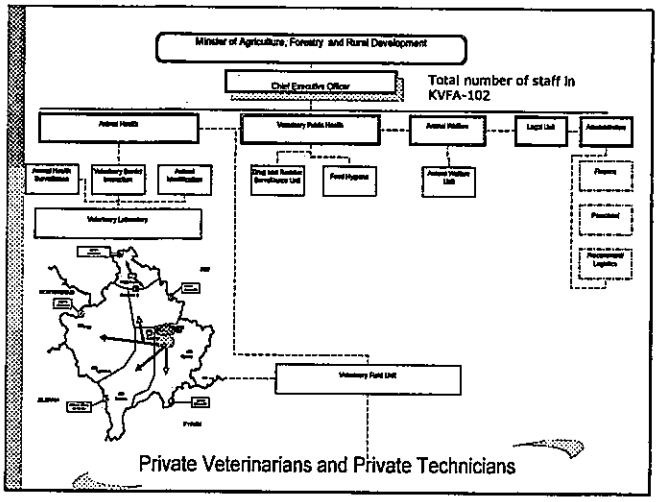
Name: **Kosovo Veterinary and Food Agency**

Responsibilities of KVFA (according to veterinary law nr. 21/2004)

- measures concerning live animals and biological products, semen, cells and embryos, by-products and plant products subject to veterinary requirements, relating to the:
- control of infectious and contagious diseases;
- notification of certain diseases specified by the Ministry;
- animal identification and registration;
- animal health conditions required for their movement;
- animal health conditions required for their import;
- measures, concerning products of animal origin relating to the
- requirements for their production and placing on the market

Continuation:

- conditions required for their import;
- measures relating to live animals and products of animal origin concerning:
- the prohibition on the administration and use of certain substances;
- the monitoring of certain substances and residues;
- animal waste and pathogens;
- measures concerning veterinary inspections relating to the export of live animals, products of animal origin and biological products, semen , cells and embryos, byproducts and plant products subject to veterinary requirements;
- certification with regard to veterinary controls;
- the relationship with other international organizations pertaining to veterinary matters.

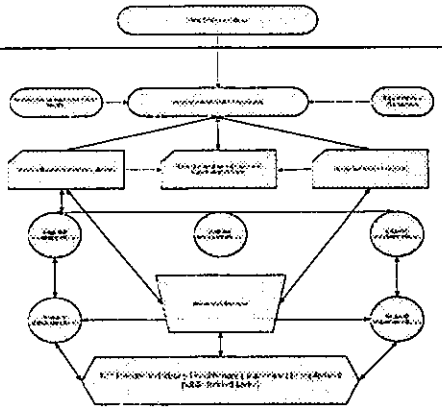


ANIMAL HEALTH DEPARTMENT

Duties and obligations of Animal Health Department

- develop a structured background surveillance programme
- establish a system of international disease surveillance
- create working instructions for dealing with the major epidemic, endemic and zoonotic diseases
- clarify the procedure for confirming the existence of epidemic disease
- prepare contingency plans for dealing with the major epidemic disease
- prepare contingency plans for dealing with the major epidemic disease outbreaks e.g. foot and mouth disease and bluetongue

Organogram of AHD



ANIMAL HEALTH SECTOR ACTIVITIES FOR 2004

vaccination activities

- Vaccination against Rabies 55.000 doses
- Treatment against Echinoccocus. 100.000 tablets
- Vaccination against Classical Swine Fever 55.000 doses
- Vaccination against Anthrax (Endemic Regions) 14.000 doses
- Vaccination against New Castle 1.500.000 doses
- Program for Bluetongue
- TBC- control 20.000 doses

Survey Activities for 2004

- Program for Bluetongue (longitudinal study on presence of bluetongue in Kosovo)
- Program for Brucellosis Bovine and Melitensis
- Program for Leucosis
- Program for Avian Influenza
- Program for New Castle
- Program for Salmonellosis
- Program for FMD
- Program TBC- control

VACCINATION ACTIVITES 2005

- Vaccination against Rables 55.000 doses
- Treatment against Echinoccocus. 110.000 tablets
- Vaccination against Classical Swine Fever 55.000 doses
- Vaccination against Anthrax (Endemic Regions) 16.000 doses
- Vaccination against New Castle 1.600.000 doses
- Vaccination against Brucellosis 65.000 doses

SURVEY ACTIVITIES: 2005

- **Program for Bluetongue**
- **Program for Brucellosis Bovine and Melitensis**
- **Program for Leucosis**
- **Program for Avian Influenza**
- **Program for New Castle**
- **Program for Salmonellosis**
- **Program for FMD**
- **Program TBC- control**
- **Program for Mastitis test**

FMD Sero-surveillance

- As per holdings census carried out during 2003, there are : **92000 cattle farms in Kosovo and 237000 animals of bovine species**

Sero-surveillance was based on the 99% confidence of detection of disease if the prevalence is more than 1%.

According to epidemiological calculations, 908 blood samples were taken from randomly selected bovine animals of different categories.

Samples were sent to the laboratory in Pirbright (UK) and subsequent results showed no presence of FMD in Kosovo

Technical support needed

- O.I.E requirements related to annual surveillance programs for FMD
- Introduction to the O.I.E reporting obligations related to FMD.
- Assistance in developing contingency plan
- Assistance in preparation of requests for as FMD free recognition
- Assistance in the establishment of disease reporting system to the O.I.E

Thank you for the attention !!!

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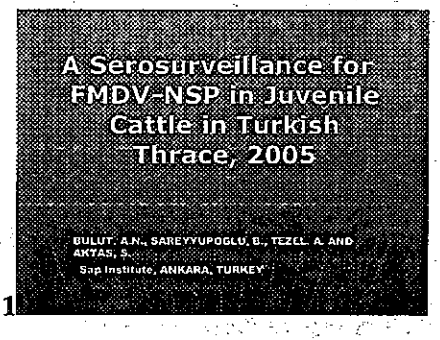
A Serosurveillance for FMDV-NSP in Juvenile Cattle in Turkish Thrace, 2005
BULUT, A.N., SAREYYUPOGLU, B., TEZEL, A. AND AKTAS, S.
Sap Institute, ANKARA, TURKEY

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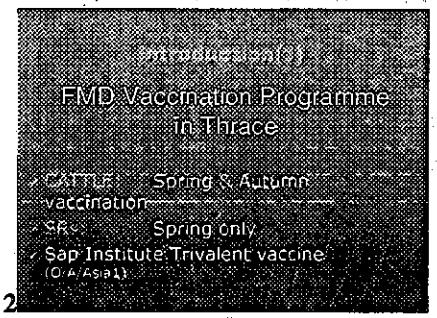
FMD Vaccination Programme in Thrace
Spring & Autumn vaccination
Spring only
Sap Institute Trivalent vaccine

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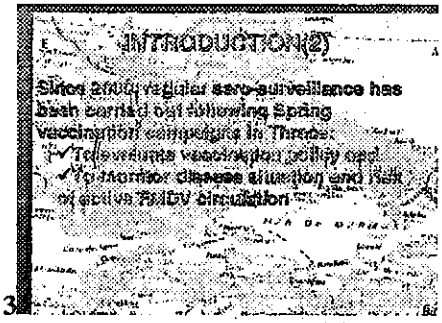
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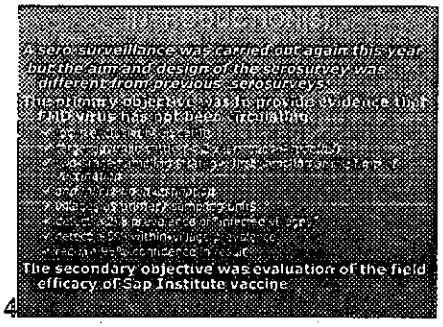
The secondary objective was evaluation of the field efficacy of Sap Institute vaccine

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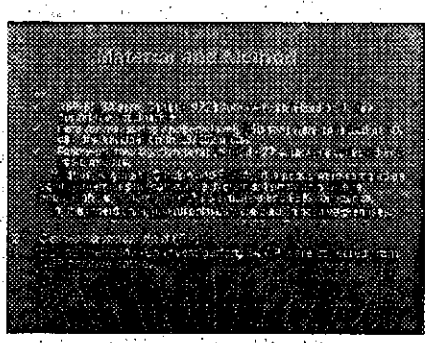

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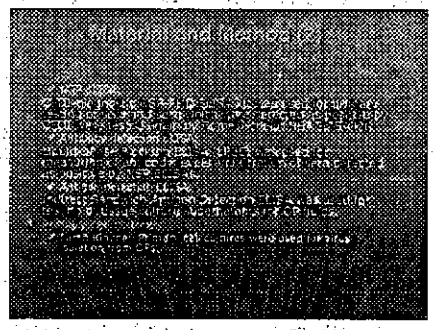

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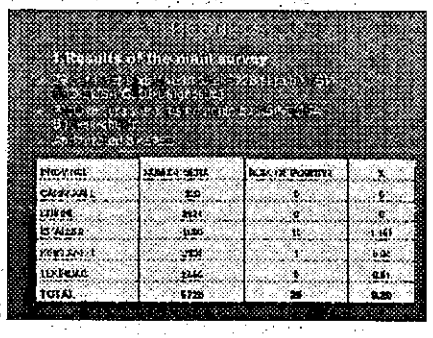

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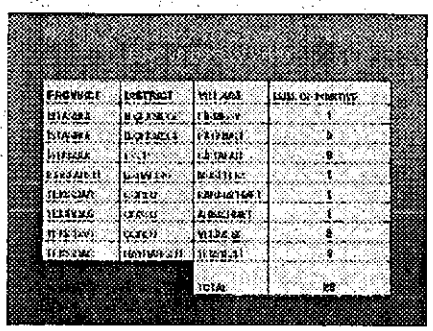

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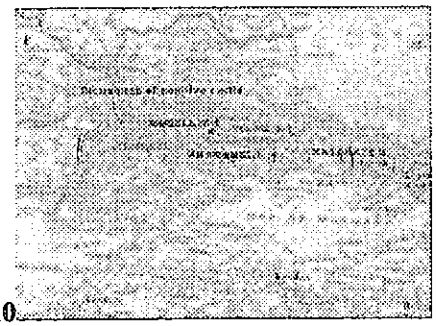

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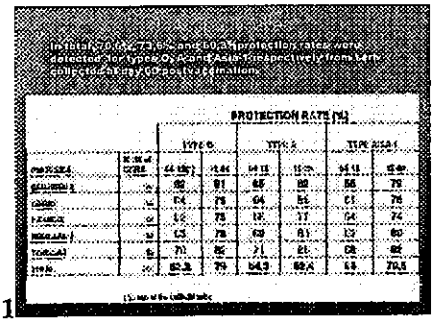

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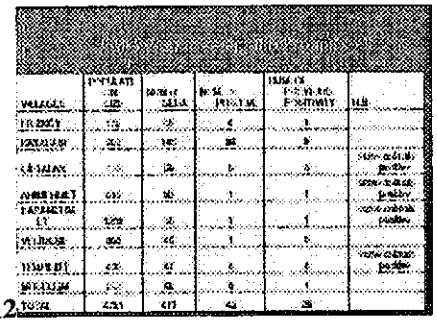

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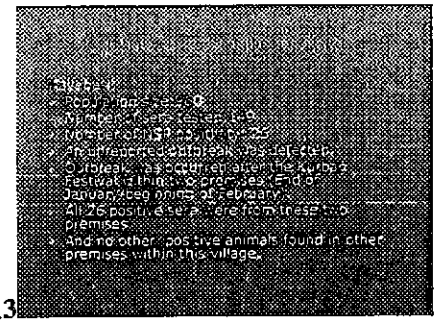

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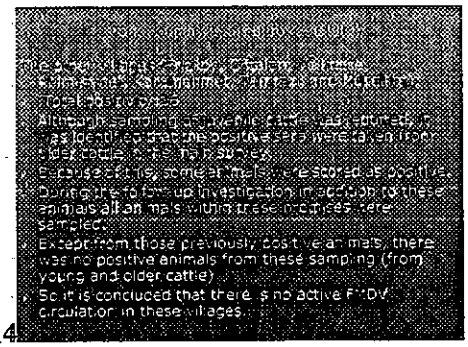

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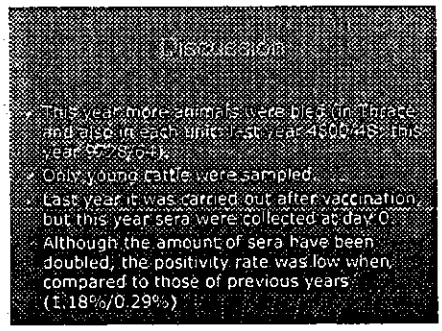
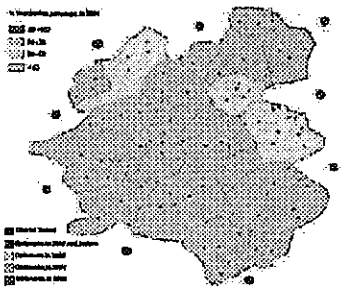
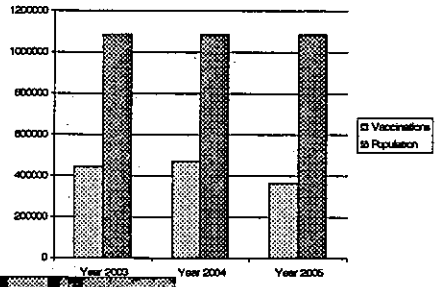


Appendix 6

Report on
The Participatory Epidemiological Investigation of FMD in Erzurum Province

Support of the training of veterinary officers in the participatory epidemiological investigation of FMD in Erzurum Province





PART TWO

Consultant's End of Assignment Report

Berhanu Admassu
Addis Ababa

On distribution across the province:

All the 98 villages surveyed reported having had an outbreak of FMD. Among the surveyed villages 64% of them have reported that they have encountered FMD outbreaks in 2005, while 17% of the villages reported that the last date of the outbreak in 2004 and the rest 19% of the villages recalled the date of the outbreak as being about 4-8 years back (see figure 2).

In a 5 week period:

During this investigation the teams have encountered 11 active FMD outbreaks in *Ciflik and Merdiven* (AŞKALE) , *Guzelyurt and Toparlak (MERKEZ), başpınarlar and kosk* (ŞENKAYA), *sirakonak,* (İSPİR), *muratbagi (HORSAN), serdarli bld (TORTUM), bellitas (HINIS) and Tüysüz* (ÇAT) villages.

On vaccination:

"The informants stated that FMD vaccination coverage in their villages were very low, because veterinary services rarely came and if they did, they often came during a time when many cattle were away to grazing areas.

They also noted that the teams did not stay long enough for the cattle to be brought from distant areas, and that many of the distant grazing areas had not been visited by the vaccination teams.

Informants from the veterinary services confirmed these problems and added that the lack of vaccination crushes made it extremely difficult to vaccinate in many areas.

The poor transport situation in the district veterinary offices is also mentioned as a causal factor for reaching late in the village during vaccination programme.

In fact most veterinary clinics were and still are without vehicle"

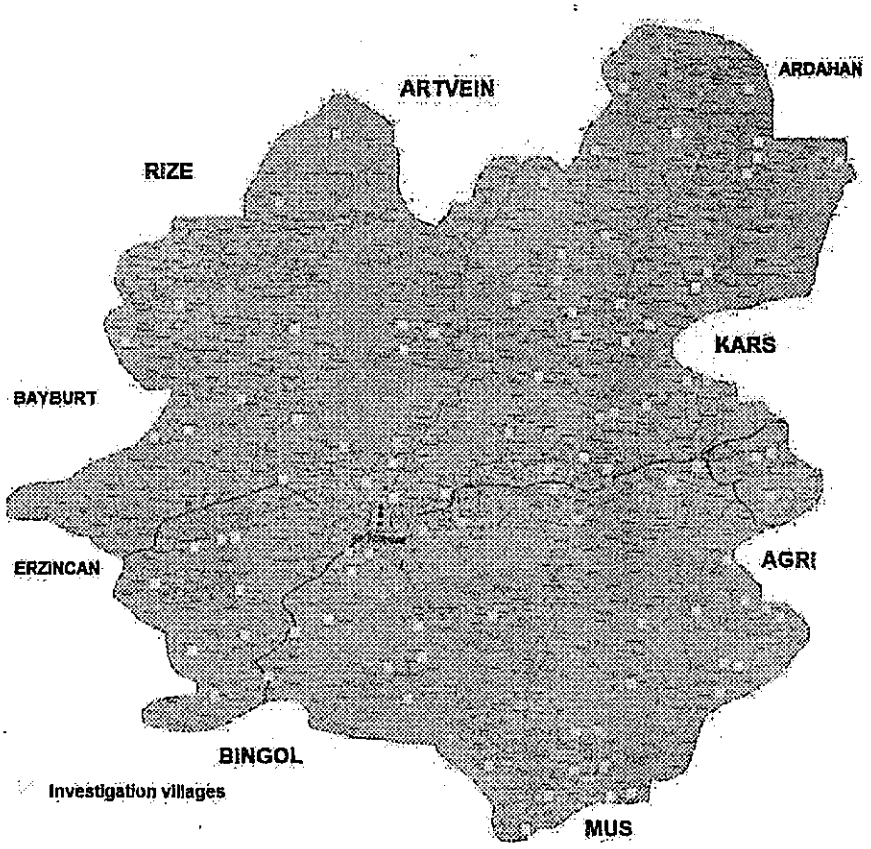
Summary and Selected findings from the Report:

Through an intense period of field work over a 5 week period, the FMD situation in one major Province of Turkey was rapidly assessed through use of participative epidemiology techniques, involving two teams undertaking visits to 98 villages and interviewing 670 persons.
The full report provides an exceptionally useful picture of the probable risk factors and practises that maintain FMD in this region. The methods are relatively new and had not been previously applied to FMD (possibly any disease) in Turkey. The results provide an indication of the scale of under-reporting, and of the delivery problems to be overcome.
An FAO consultant trained 6 veterinarians in the methodology and field work was financially supported via the EC Trust (MTF/INT/003/EEC).

Objectives
To gain information on the incidence and distribution of FMD in Erzurum Province and on patterns of disease incidence and spread through province wide epidemiological investigation. In addition, the study sought to collect information on the recent history of FMD circulation and community experience, through the process of participatory disease investigation methods in randomly selected villages from each district.

Study team composition and schedule
The survey team contained six veterinarians, who had previously been trained in participatory approach and methods and had experience of using the methods in the field. These investigators were selected from the provincial veterinary service and from the veterinary control and research institute. The investigators were received a ten days PE training. After the training they were practiced in three villages of Erzurum district for 3 days as pre-test and made discussions on the responses in order to develop experience and skill for the main practical fieldwork.
The PE disease investigation was started on 8th, August 2005 and completed on 20th September 2005. A total of 670 community informants participated in the PE disease investigation.

Map 1. Study area and randomly selected villages



Data

Selected results: (full results in the Part II, Consultancy Report)

4.2. Recent FMD outbreaks history

A retrospective investigation of village FMD outbreaks through targeted focus group and key informants was done in order to find out if there has ever been an outbreak of FMD in the village. If there has been an outbreak, the date of the last outbreak and the estimated number of animals affected was required. If there has never been an outbreak in the memory of any of the villagers, the earliest date since which group is sure that there have been no outbreaks is also required.

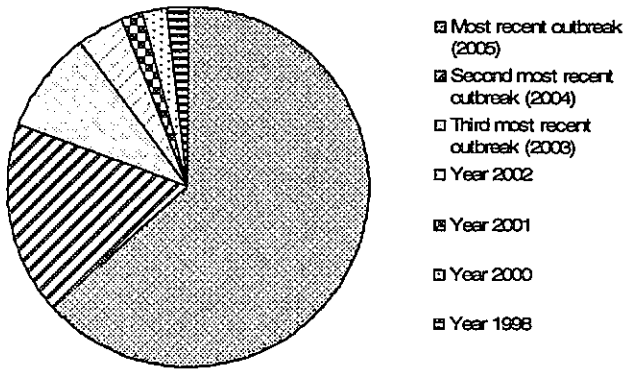
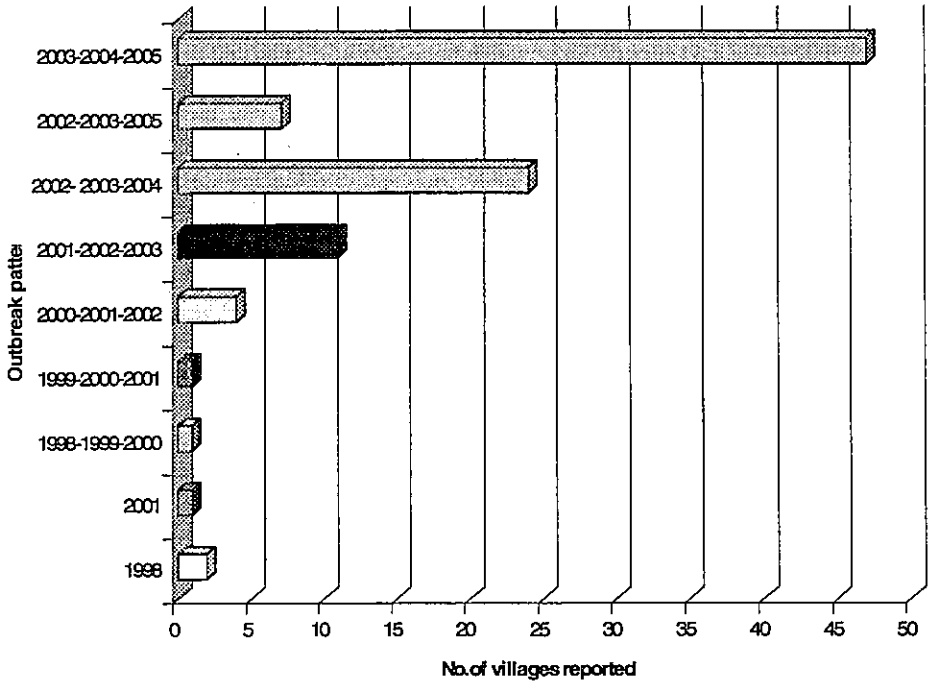


Figure 1. The percentage of investigated villages reported the last date of FMD outbreak between 1998 and 2005.

Informant's observation on the occurrence of FMD in their own herds, neighbouring herds was reported. All the villages surveyed reported having had an outbreak of FMD and occurred very frequently in their herds and also

they observed in the neighboring villages. Respondents provided the last date of FMD outbreaks between 1998 and 2005 For all surveyed villages, FMD outbreak is a common episode and the disease was not reported to animal health authorities at every occurrence.

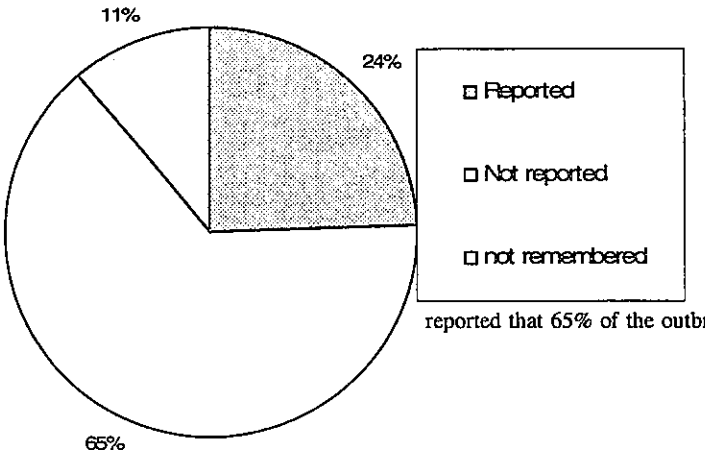
Figure 2. Pattern of FMD outbreaks between 1998-2005



All the 98 villages surveyed reported having had an outbreak of FMD. Among the surveyed villages 64% of them have reported that they have encountered FMD outbreaks in 2005, while 17% of the villages reported that the last date of the outbreak in 2004 and the rest 19% of the villages recalled the date of the outbreak as being about 4-8 years back (see figure 2).

During this investigation the teams have encountered 11 active FMD outbreaks in *Ciflik and Merdiven* (AŞKALE) , *Guzelyurt and Toparlak (MERKEZ), başpınarlar and kosk* (ŞENKAYA), *sirakonak,* (İSPİR), *muratbagi (HORSAN), serdarli bld (TORTUM), bellitas (HINIS) and Tüysüz* (ÇAT) villages.

Reporting outbreaks : Figure 3. Reporting status of FMD outbreaks as recalled by respondents



During the discussion informants reported that 65% of the outbreaks occured in

2004 and 2005 were not reported. The reporting of suspected outbreaks of disease is very low. According to the information, out of the reported 24 outbreaks only 18 were investigated by veterinary professionals. Informants have pointed out that incase of an outbreak community members and traders are reluctant to report and /or they do not want somebody to report it. Farmers consider that if an outbreak is reported to higher officials or veterinarians they fear that restriction of animal movements might placed on them. During an outbreak, the provincial, district and village animal health police force commission will immediately ban the entrance and exit of animals and animal products to and from the concerned area. Animal markets are also closed. Due to these fear many outbreaks are not reported.

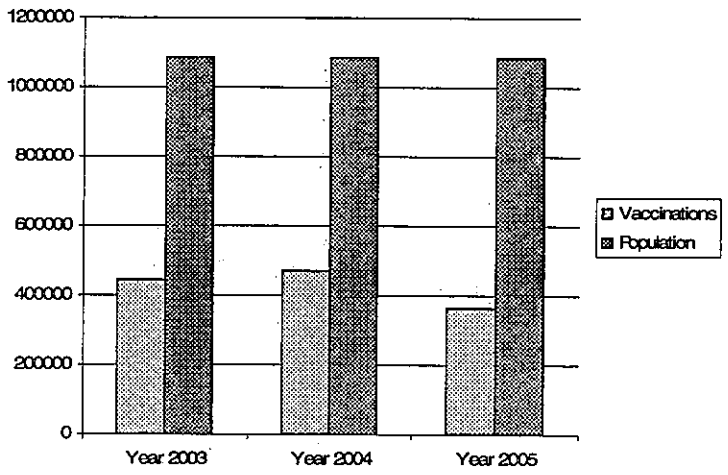
4.8. Vaccination history

Informants were asked in the interviews about their knowledge, attitudes and constraints in regard to FMD vaccination. They have reported that vaccination was carried out in 83% of the surveyed villages in 2005 and mainly it was a spring vaccination while 17% of the villages have not vaccinated their herd. Since the PE investigation was executed in August and September the report does not include the autumn 2005 vaccination result.

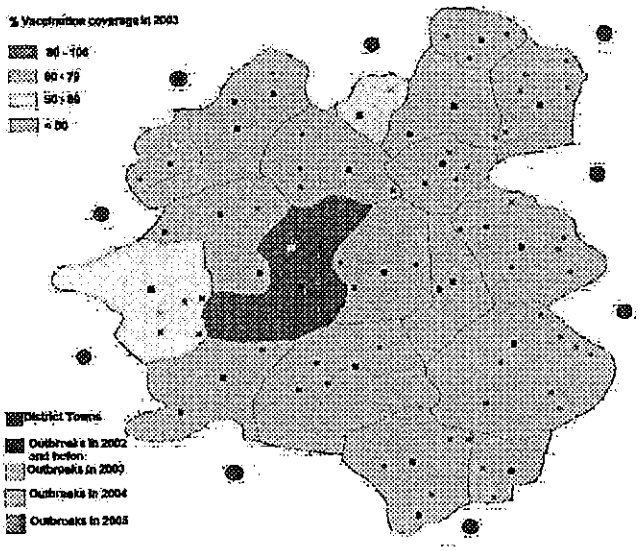
Table 11. The last date of FMD vaccination as recalled by respondents

Last date of vaccination	**Number of villages**
The 2005 spring vaccination	80
The 2004 spring vaccination	7
The 2004 autumn vaccination	1
The 2002 spring vaccination	1
No information	9

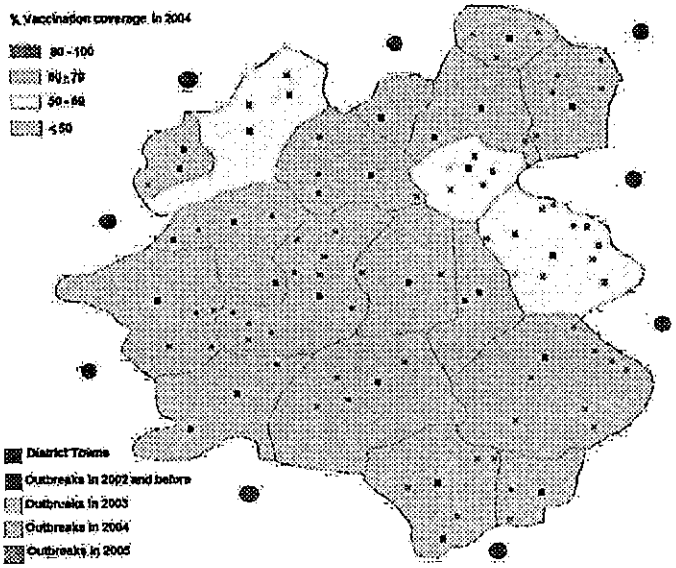
Figure 7. Three years FMD Vaccination achievements



Mass vaccination campaign twice in a year (spring and autumn) is practiced in the province. Frequently, the spring vaccination campaign is carried out between March and April and the autumn vaccination campaign in September and October. However, the vaccination coverage in all districts was analysed and mapped as follows (Map 4-6). Mapping the vaccination coverage is a useful exercise as it provides a very clear overview what has been achieved so far.

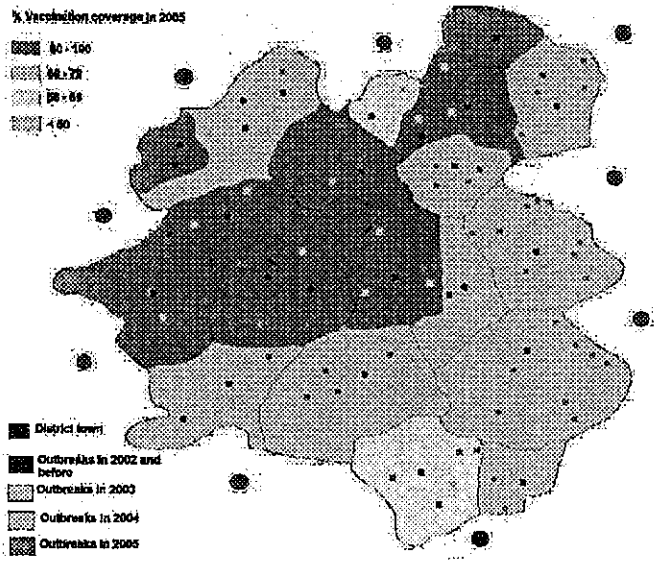


Map 4: Vaccination coverage during 2003 spring + autumn vaccination period



Map5: Vaccination coverage during 2004 (spring + autumn) vaccination period

Map 6.:Vaccination coverage during 2005 spring vaccination period



As shown on the above Maps and Figure 7, over the last 3years, 1.28 million vaccinations have been completed in a total estimated population of 3.3 million cattle and yet this has failed to control the disease. These conventional mass vaccination campaigns have been unsuccessful in achieving adequate coverage which favours endemic situation for prolonged period. However in some districts the vaccination coverage is improving from time to time and the number of outbreaks reported decreases as the vaccination efficiency increases.

The informants stated that FMD vaccination coverage in their villages were very low, because veterinary services rarely came and if they did, they often came during a time when many cattle were away to grazing areas. They also noted that the teams did not stay long enough for the cattle to be brought from distant areas, and that many of the distant grazing areas had not been visited by the vaccination teams. Informants from the veterinary services confirmed these problems and added that the lack of vaccination crushes made it extremely difficult to vaccinate in many areas. The poor transport situation in the district veterinary offices is also mentioned as a causal factor for reaching late in the village during vaccination programme. In fact most veterinary clinics were and still are without vehicle.

5. Summary and Conclusion

This PE investigation was an opportunity for veterinarians in Erzurum to practice PE methods. A few lessons learned about these methods were, the use of PE methods enabled about 670 informants to be involved in the investigation over a short time period and recorded the current FMD distribution.
The use of PE requires much concentration on the part of the investigators, careful listening and a willingness to cross check information on the spot using open and probing questions. Investigators also need to be constantly aware of their own behaviour and body language, and understand how this affects the interaction with informants. Fr people who are not accustomed to PE, this level of concentration can be tiring but with practice, becomes second nature. These points indicate that future VCRI investigations based on PE methods should include sufficient time for methodology development and fine-tuning of methods in the field.

Lessons learned about FMD participatory epidemiological investigation

1. The livestock owners were able to accurately define a number of clinical entities including FMD (Dabak),
2. The livestock owners had a remarkable understanding of many of the epidemiological aspects of FMD. They stressed that FMD or Dabak is mainly a disease of young cattle in their herds and they believed that older cattle were largely immune as a result the pervious vaccinations.
3. This investigation suggested that the long-standing persistence of FMD and identified the cattle movement to and from market and trade and introduction to susceptible herd as the primary cause. The statements of

livestock owners and the relative ranking of risk factors have clearly indicated that the grazing areas at the depression plains which are located between the mountains and plateaus followed by yayla pasture areas are an area of high FMD transmission. Most of the outbreaks reported in 2005 occurred in the month of May when animals are turned out to these grazing areas. The survival of FMD virus depends on the continued contact between infected animals and naive susceptible cattle. The mixing of newly purchased cattle from markets with unvaccinated (susceptible) young animals in the shared grazing areas provides an excellent setting for the dissemination of the disease.

4. All districts of the province are found to be infected with FMD (Dabak).
5. The reported cases occurred on a more or less regular basis, seasonal and outbreaks are less severe.
6. FMD outbreaks were observed every year or every two years in 90% of the investigated villages
7. The policy for controlling FMD (Dabak) is primarily through mass vaccination and so far the vaccination efficiency is below the required level.
8. The involvement of private veterinarians in the delivery of FMD vaccination is at its start stage in major towns and around commercial farms. Whilst, despite ongoing efforts, remote and marginal villages are not well covered and served. The reason is that private operators at the moment do not find remote and marginal areas attractive and economically viable.
9. Often inadequate veterinary surveillance: The ability of field staff at district and provincial level to undertake proper investigation of FMD outbreaks is very low. Again, lack of operational funds limits the ability of staff to travel to reported outbreaks.

Based on this information the conclusion of this participatory epidemiological investigation is that there was sufficient evidence to show that foot-and-mouth disease is still circulating in all districts of Erzurum Province. The pattern of disease outbreaks suggests that FMD is being maintained in an endemic status all over the province. The disease pattern and size of the population can be easily creating favorable condition to an endemic situation.

Further activities suggested

In order to improve FMD reporting, investigation, diagnosis and control of foot-and-mouth disease the following actions are recommended:

1. Improve the detection of outbreaks through fast and accurate disease reporting (all cases including rumours) is required. This requires improving the ability to early detection, rapid diagnosis and swift application of effective control measures.
2. Introduction of Market inspection and surveillance: It becomes very clear from the investigation that most of animal markets are ideal source of FMD. The absences of any checks at the point-of-entry to the market allow both infected and susceptible animals to enter and freely mix within marketplaces. Introducing Market inspection and surveillance should be started at least in to Erzurum animal market.
3. Quarantine and livestock movement control should be applied rigorously but in a way that imposes only the degree of restriction that is necessary to achieve control and that is realistic to gain compliance. Vaccination should be regarded as a secondary disease control process, after livestock movement control. It cannot be expected to be effective if movement control is not rigorously applied.

4. Review and strengthen the current strategic official vaccination practices
    - to involve private veterinary practitioners to enter into the vaccine market for the supply of vaccine and vaccinate as many animals as possible in order to obtain herd immunity levels of over 80%. The essential roles of government should be to regulate the quality of vaccine and its use in the field. Allowing the private sector to undertake vaccine supply and delivery could significantly reduce public expenditure on much of the FMD vaccination carried out and increase the ability to the public to concentrate on surveillance activities.
    - introduction of alternative vaccination delivery systems such as the use of para -veterinarians linked with private veterinarians. It can be started as a pilot in some remote and underserved areas and then intensify based on the outcome. As para-veterinarians are members of the local community, they can respond more quickly to any animal health needs. With careful training and with the support of veterinary services, they can assist with the collection of samples for disease surveillance, effectively and rapidly report outbreaks and provide data for veterinary research. They can contribute to animal identification systems, tracing systems and animal movement control systems. They can play an important role in mobilising and informing comunities about animal health issues. In remote, and transhumant communities, they move

with herds to highland pasture grazing areas and continue to provide these basic services. They can offer the opportunity to coordinate animal health surveillance and control across extensive grazing areas.

5. Establish a Provincial Disease Control Unit (PDCU) at the Erzurum Veterinary Control and Research Institute. FMD investigation and control should be a function of this unit and make required funds available so that the unit can respond promptly to reports of FMD. This unit should at all time have a car, the operational costs and manpower available to act quickly. The disease reporting system, presently operated needs to be introduced within this unit. The data obtained should be processed by the PDCU. The following activities are proposed:
    - Establishment of a good reporting system between all levels of partners, i.e. livestock owner, village, district, provincial and PCDU. The PCDU should be responsible of improving disease-reporting formats, mailing systems and the dissemination of information and provision of feedback to the reporter.
    - Establishment of a disease surveillance system able to detect FMD if it were present
    - Provide a central capability to undertake FMD diagnostic procedures, establish the ability to swiftly diagnose disease and conduct epidemiological surveys
    - Develop ability to swiftly react to emergency situations
    - Discovery of outbreaks and trace back to define the source of the disease.
    - Training and motivation of all veterinary staff on foot-and-mouth disease surveillance, investigation procedures and in specimen collection which is essential to the success of controlling disease outbreaks in endemic situation.
    - Improve the awareness of livestock owners to the requirements of FMD control to increase their compliance.
    - Undertake extension activities to livestock owners so that they understand the need to report FMD outbreaks immediately.
6. Although respondents in this survey ranked *Dabak* as the most frequent and important disease most of them have not aware of the losses. The disease generally causes only mild to moderate disease in particular in young and low-producing local breeds. The disease is more of a concern for small-scale farmers with higher producing animals. Although the observed mortality rate is very low the impact of the disease on reduced livestock production and other various losses is not well understood. To raise farmers concern for the disease and their willingness to cooperate in control activities, further study on the impact of FMD and the cost-benefit of FMD control should be considered.

Annex 1. Schedule for the field work implementation of participatory epidemiological investigation of FMD

DISTRICT	Villages to be investigated					Date of investigation	Team
MERKEZ	soğucak	yolgeçti	kırmızıtaş			08.08.05	A
MERKEZ	dereboğazı	kümbet	güzelyurt			09.08.05	B
MERKEZ	arıbahçe	umudum	toparlak			10.08.05	B
AŞKALE	ortabahçe	merdiven				11.08.05	B
AŞKALE	kavurmaçukuru					12.08.05	A
AŞKALE	çiftlik	yeniköy				13.08.05	A
ILICA	Çavdarlı	A.canören				14.08.05	A
ILICA	Paşayurdu	Elmalı				15.08.05	B
ILICA	Toprakkale	Kapılı				16.05.05	A
PASİNLER	B.tuy	Karavelet				17.08.05	B
PASİNLER	Pelitli	Ügümü	Y.danişment			18.08.05	A
TEKMAN	Başdere	Toptepe				19.08.05	B
TEKMAN	Karatepe					20.08.05	B
TEKMAN	Düzyurt	Güzeldere				21.08.05	B
ÇAT	Aşağıçat	Çirişli				22.08.05	B
ÇAT	Sarıkaya	Muratçayır				23.08.05	B
ÇAT	Tüysüz	Çayırtepe				24.08.05	A
OLTU	Çamlıbel	Yarbaşı				25.08.05	B
OLTU	Kaleboğazı	Elmadüzü				26.08.05	A
OLTU	Süleymanlı					27.08.05	A
NARMAN	Yukarıyayla					28.08.05	A
NARMAN	Sütpınar	Kışlaköy				29.08.05	B
NARMAN	Araköy	Gökdağ				30.08.05	A
KARAYAZI	Ulucanlar	Yalındal				31.08.05	A
KARAYAZI	Anıtlı					01.09.05	A
KARAYAZI	Köyceğiz	Duruca E	Karabey	Göktepe	Sukonak	02.09.05	B
KARAYAZI	Aşağı İncesu	Çaltılı				03.09.05	B
ŞENKAYA	hoşköy	söğütler	yoğurtçular			04.09.05	B
ŞENKAYA	başpınarlar	köşk				05.09.05	B
ŞENKAYA	dörtyol					06.09.05	A
İSPİR	başköy	çamlıkaya nahiyesi	sırakonaklar			07.09.05	B
PAZARYOLU	göztepe	konakyeri				08.09.05	A
KARAÇOBAN	Karaköprü	Molladavut	Çatalgül			09.09.05	A
HINIS	bellitaş	erence	ovakozlu			10.09.05	A
HINIS	halilçavuş	tipideresi	yayla konak			11.09.05	A
OLUR	çataksu	ormanağzı	yukarı karaca			12.09.05	A
KÖPRÜKÖY	savatlı	y.söğütlü	derebaşı	ılıcasu		13.09.05	B
HORASAN	bahçe	horumlar	muratbağı			14.09.05	B
HORASAN	yüzören	kırkgözeler	karabıyık			15.09.05	A
HORASAN	akkeren	danışment	hacıhalil			16.09.05	A
TORTUM	karli	ziyaret	alapinar	Çaylica		17.09.05	B
TORTUM	serdarli	cevizli (u.dere)				18.09.05	B

Annex 2. Last date FMD outbreak per district

	Districts	Number of villages investigated	Number of FMD outbreaks observed in						
			2005	2004	2003	2002	2001	2000	1998
1	HINIS	6	4	1		1			
2	TEKMAN	5	4		1				
3	HORASAN	9	7	2					
4	ÇAT	6	1	1	1				1
5	MERKEZ	9	8		1				
6	İSPİR	3	1			2			
7	NARMAN	5	4		1				
8	ŞENKAYA	6	6						
9	KARAÇOBAN	3	2	1					
10	KARAYAZI	10	9	1					
11	KÖPRÜKÖY	4	-	2	1		1		
12	PASİNLER	5	2	2	1				
13	AŞKALE	5	4	1					
14	ILICA	6	1	2	1			2	
15	PAZARYOLU	2	1				1		
16	TORTUM	5	4	1					
17	UZUNDERE	1	-	1					
18	OLTU	5	1	1	2				1
19	OLUR	3	3						
		98	62	16	9	3	2	2	2

Annex 3. Last date and pattern of FMD outbreak per surveyed village and sources of the outbreak

District	Surveyed village	Time of the outbreak occurred	Sources of the disease	Pattern of the outbreak at least for three years
HINIS	bellitaş	2004	ovaçevirme village	2002- 2003-2004
	erence	May-05	erzurum animal market	2003-2004-2005
	halilçavuş	May-05		2002-2003-2004
	ovakozlu	May-05	erzurum animal market	2003-2004-2005
	tipideresi	2002		2004-2003-2002
	yayla konak	Jun-05		2003-2004-2005
TEKMAN	Başdere	May-03		2001-2002-2003
	Düzyurt	Jun-05	güzeldere	2002-2003-2004
	Güzeldere	Jun-05	erzurum animal market	2002-2003-2004
	Karatepe	Aug-05	erzurum animal market	2002-2003-2004
	Toptepe	May-05	erzurum animal market	2002-2003-2004
HORASAN	akkeren	May-05	sheep came from Igdır	2003-2004-2005
	bahçekoy	May-05	erzurum and horasan animal market	2003-2004-2005

	danışment	May-05		2003-2004-2005
	hacıhalil	May-05	sheep came from Igdır	2003-2004-2005
	horumlar	Aug-04		2002-2003-2004
	karabıyık	Jun-05	erzurum and horasan animal market	2003-2004-2005
	kırkgözeler	May-04		2002-2003-2004
	muratbağı	Jul-05	erzurum and horasan animal market	2003-2004-2005
	yüzören	Jun-05	erzurum and horasan animal market	2003-2004-2005
ÇAT	Aşağıçat	May-04		2002-2003-2004
	Çayırtepe	May-98		1998
	Çirişli	Jun-04		2002-2003-2004
	Muratçayır	Jun-03		2001-2002-2003
	Sarıkaya	Jun-03		2001-2002-2003
	Tüysüz	May-05	erzurum animal market	2003-2004-2005
MERKEZ	arıbahçe	Jun-05	erzurum animal market	2003-2004-2005
	dereboğazı	May-05	erzurum animal market	2002-2003-2004
	güzelyurt	Sep-05	erzurum animal market	2003-2004-2005
	kırmızıtaş	May-05	erzurum animal market	2003-2004-2005
	kümbet	Apr-05	erzurum animal market	2003-2004-2005
	soğucak	May-05	erzurum animal market	2003-2004-2005
	toparlak	Jun-05	erzurum animal market	2003-2004-2005
	umudum	2003		2001-2002-2003
	yolgeçti	Jun-05	erzurum animal market	2003-2004-2005
İSPİR	başköy	Jun-02		2000-2001-2002
	çamlıkaya nahiyesi	Jun-02		2000-2001-2002
	sırakonaklar	Aug-05	neighbouring village	2003-2004-2005
NARMAN	Araköy	May-05	neighbouring village	2003-2004-2005
	Gökdağ	May-Jun-2003		2001-2002-2003
	Kışlaköy	Apr-05	narman market	2003-2004-2005
	Sütpınar	Jun-05	narman market	2000-2001-2002
	Yukarıyayla	Jun-05	narman market	2003-2004-2005
ŞENKAYA	başpınarlar	May-05	aşkale,sgöle,şnkaya hayvan pazarları	2003-2004-2005
	dörtyol	Jun-05	Oltu animal market	2003-2004-2005
	hoşköy	Jun-05		2003-2004-2005
	köşk	Aug-05		2003-2004-2005
	söğütler	Jun-05	aşkale,göle and şenkaya animal market	2003-2004-2005
	yoğurtçular	Jul-05	aşkale,göle and şenkaya animal market	2003-2004-2005
KARAÇOBAN	Çatalgül	2005	muş bulanık animal market	2003-2004-2005
	Karaköprü	2005	muş bulanık animal market	2003-2004-2005

	Molladavut	2004		2002-2003-2004
KARAYAZI	Anıtlı	Jun-05	ağrı ve horasan animal market	2003-2004-2005
	Aşağı İncesu	Jun-05	karayazı animal market	2003-2004-2005
	Çaltılı	Jun-05	karayazı animal market	2002-2003-2004
	Duruca E	May-05	neighbouring village	2003-2004-2005
	Göktepe	Jun-05	neighbouring village	2003-2004-2005
	Köyceğiz	Jun-05	erzurum animal market	2003-2004-2005
	Karabey	May-05	Villages from Tutak, Agri	2003-2004-2005
	Sukonak	May-05		2003-2004-2005
	Ulucanlar	2005	erzurum animal market	2003-2004-2005
	Yalındal	2004		2002-2003-2004
KÖPRÜKÖY	savatlı	Aug-04		2002-2003-2004
	y.söğütlü	Aug-03		2001-2002-2003
	derebaşı	2001		1999-2000-2001
	ılıcasu	2004		2002-2003-2004
PASİNLER	B.tuy	2005	erzurum animal market	2003-2004-2005
	Karavelet	2004		2002-2003-2004
	Pelitli	Jun-03		2001-2002-2003
	Ügümü	Apr-05	animal markets	2003-2004-2005
	Y.danişment	Jun-04		2002-2003-2004
AŞKALE	çiftlik	Aug-05		2003-2004-2005
	kavurmaçukuru	Jul-05	erzurum animal market	2001-2002-2003
	ortabahçe	Apr-05	aşkale animal market	2003-2004-2005
	yeniköy	2004		2002-2003-2004
	merdiven	May-05		2003-2004-2005
ILICA	A.canören	Jan-03		2001-2002-2003
	Çavdarlı	2000		1998-1999-2000
	Elmalı	Jun-05		2003-2004-2005
	Kapılı	2000		2000-2001-2002
	Paşayurdu	2004		2002-2003-2004
	Toprakkale	2004		2002-2003-2004
PAZARYOLU	göztepe	May-01		2001
	konakyeri	2005		2003-2004-2005
TORTUM	Alapinar	2004		2002-2003-2004
	Çaylica	2005	fromTaşoluk village	2003-2004-2005
	Karli	2005	dumlu village and erzurum animal market	2003-2004-2005
	Serdarli bld	Jul-05	erzurum,tortum and oltu animal markets	2002-2003-2005
	Ziyaretli	Jul-05		2002-2003-2005
UZUNDERE	cevizli	Sep-04		2002-2003-2004
OLTU	Çamlıbel	Sep-04		2002-2003-2004
	Elmadüzü	Aug-03		2001-2002-2003

	Kaleboğazı	May-03		2001-2002-2003
	Süleymanlı	Jun-05	Oltu animal market	2002-2003-2005
	Yarbaşı	Sep-98		1998
OLUR	çataksu	Jun-05		2002-2003-2005
	ormanağzı	Jun-05		2002-2003-2005
	yukarı karaca	Jun-05		2002-2003-2005

Appendix 7

Improving the Management of FMD Surveillance and Control Measures in Eastern Anatolia, Turkey

Summary of draft project document for actions in 2006-7

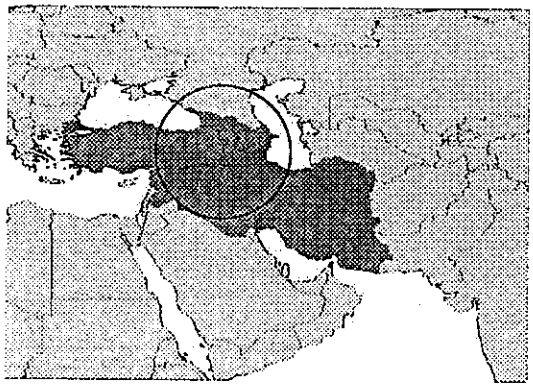
Direct Beneficiary:
Turkey

Indirect beneficiaries:

Georgia, Armenia
Southern Balkan countries

Component of the EUFMD/FAO support to regional control of FMD in the frontier zone :

Trans-Caucasian countries
Islamic Republic of Iran
Turkey



Acknowledgement

David Hadrill is extremely grateful to Dr Sinan Aktaş, Deputy Director of *Şap Enstitüsü* (FMD Institute), and to Dr Ufuk Dinler, Director of Erzurum Veterinary Control and Research Institute for their advice during the mission.

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Abbreviations

YTL	(new) Turkish Lire
DPC	Deputy Project Coordinator
FAOR	FAO Representative
FMD	foot and mouth disease
GDPC	General Directorate of Protection and Control
GoT	Government of Turkey
LOA	Letter of Agreement
NPC	National Project Coordinator
TOR	terms of reference
VCRI	Veterinary Control and Research Institute

Glossary of Turkish words

kaymakam	District mayor or headman
kurush	one hundredth of one Turkish Lire
muhtar	Village Headman
şap	foot and mouth disease

Tables

Summary of Proposal (EUFMD Secretariat)

- The aim is to provide technical support that will significantly reduce risk of disease movement through eastern Turkey into rest of Anatolia and to Caucasus countries.
- And to increase the likelihood of successful application of mass vaccination and other measures in the national FMD eradication programme whose start date is taken to be 2007.
- Two years of technical support to the GDPC to instigate management changes that will result in greater capacity to plan and implement vaccination based FMD control.
- Technical support to improve control of FMD in Provinces bordering to Georgia and Armenia, and to Iran, focussing on improved outbreak investigation and implementation of preventive measures.
- Builds on experience gained in epidemiologic investigations 2004-5, including application of PE (participatory epidemiology) investigations.
- Component of regional FMD protection program, including parallel actions in Caucasus and in Iran.

Introduction (EUFMD Secretariat)

Prevention of disease movement through the eastern borders of Turkey towards western Turkey, and into the Caucasus, is a major concern for the EUFMD Commission and an agreed part of the EUFMD Strategic Plan for 2005-8 is the re-enforcement of control measures that will reduce risk of entry and dissemination of EXOTIC virus incursions.

The support is also aimed to increase likelihood of success of measure to control ENDEMIC viruses present in eastern Turkey, under the national programme.

A concept note for the technical support project was prepared between FAO (EUFMD Secretariat) and GDPC, after liaison with the EC funded twinning project during June 2005. The concept note was presented in September 2005 at an eradication programme planning meeting in Ankara, and a consultant recruited to develop the project document in October, con-incident with the conclusion of the GDPC/SAP Institute/FAO activities in Erzurum.
The consultant's report and his draft of the project document have been circulated to GDPC for comments, and their comments incorporated, in November.

Note: the document including budgeting does not have EUFMD Secretariat's clearance and is for discussion purposes. It will be necessary for FAO to modify these according to its practices for project budgeting and administration.

Sections from the draft Project Document (Authors: David Hadrill, and GDPC Ankara)

Target area

It is proposed that the project has four administrative centres (offices) located at:

- The Head of Animal Health Department, Epidemiology and Animal Disease Combat Sections, GDPC, Ankara
- The FMD (*Şap*) Institute, Ankara,
- The Veterinary Control and Research Institute, Erzurum, and
- The Veterinary Control and Research Institute, Elazig.

The target area for field work is epidemiologically significant Provinces in eastern Anatolia, especially where there is risk of FMD entry and onward spread. Specifically, the following 14 (including Erzurum and Elazig) Provinces will be covered:

Erzerum	Elazig	Ankara
1. Agri	1. Bingöl	1. Afyon
2. Ardahan	2. Bitlis	2. Çorum
3. Artvin	3. Hakkari	3. ± Kastamonu
4. Bayburt	4. Muş	
5. Igdir	5. Siirnak	
6. Kars	6. Van	

Each Province is subdivided into Districts. Each District has a Ministry of Agriculture Office with a veterinarian or a veterinary technician. Typically, in Erzurum Province, Districts have 50 or 60 villages. However, in some Provinces elsewhere in Turkey there may be as few as 10 villages.

There is an option on including some provinces around Ankara, as indicated above. It is recommended to do so in order to follow up animal movement from Anatolia to the Ankara area, for trade or slaughter.

Project activities

Project purpose and outputs

The draft concept note for the project states the project's purpose, concept and outputs as follows.

Purpose: Establish into operation FMD management and monitoring systems that meet requirements of the Government of Turkey (GoT) FMD eradication strategy and which address stakeholders' participation issues in FMD control.

The idea:

- The Veterinary Control and Research Institutes (VCRI) Erzurum and Elazig are supported and developed to provide expert and independent regional monitoring of FMD epidemiology and the effectiveness of control measures. Lessons learnt can be used to inform, or roll-out "best practices and procedures" to other regions.
- Vaccine delivery modalities are identified, costed, and as far as possible evaluated during the four campaigns to occur in 2006 and 2007.
- A consultation and communications centre is established/operating to address reporting and policy implementation issues with stakeholders.
- The regional centre may be a sustainable approach after 2007, and act as training centre for rolling out the eradication monitoring service – e.g. development of local implementation (local disease control centres (LDCC), lessons to respond to FMD and other emergency events.

Outputs

1. Functional FMD surveillance and outbreak investigation unit with operational capacity for monitoring reporting rates, epizootic spread and delivery and impact of vaccination and other control measures;

2. Delivery procedures and modalities identified that enable campaigns to overcome vaccine delivery constraints and meet campaign targets;
3. Regional and provincial consultative procedures in place to enable stakeholders to participate in solving problems associated with FMD eradication strategy;
4. Communications capacity in place and operational to address requirements for disease reporting and uptake /compliance with control measures;

Activity plan

[Refer to Chart in Section 4.4]

Time chart

	Activity	2006												2007											
		J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D
1	**Project start-up and management**																								
1.1	Staff assignment/recruitment																								
1.2	Establish offices: Ankara, Erzurum, Elazig																								
1.3	Procurement: vehicles, office equipment, furniture, etc.																								
1.4	Plan implementation (coordination with GDPC vaccination)																								
1.5	Plan project staff training & study tour																								
1.6	Base-line surveys																								
1.7	Reporting																								
2	**Disease investigation and monitoring**																								
2.1	Actively search outbreaks																								
2.2	Review procedures and plans for vaccination																								
2.3	Control of outbreaks																								
2.4	Back and forward tracing																								
2.5	Support local disease control centres?																								
3	**Vaccination [undertaken by the authorities]**																								
4	**Consultation and communication**																								
4.1	Develop communications strategy																								
4.2	Convene meetings																								
4.3	Set up "hotline" for outbreak reporting																								
4.4	Subcontract media specialist																								
4.5	Organise workshops																								
5	**Training**																								
5.1	Epidemiology training & study tour																								
5.2	English language training																								
6	**Mid-term review and evaluation**																								

Inputs and costs

FAO inputs

Cost estimates for FAO inputs, as discussed with the FMD Institute Deputy Director, are shown in Table 1 below.

Table 1. Cost estimates of donor-funded inputs to proposed project.

	Item	quantity	unit	unit cost	subtotal
1	Resources for FMD investigation teams (Erzurum and Elazig)				
1a	4 WD vehicles	3	vehicle	35,000.00	105,000.00
1b	DSA for Task Force teams (4 persons * 2 teams * 100 days * 2 years)	1600	DSA	35.00	56,000.00
	DSA for Project Coordinators (4 persons * 50 days * 2 years)	400	DSA	35.00	14,000.00
	DSA for field visits from FMD Institute	100	DSA	35.00	3,500.00
	Fuel costs (40,000 km per veh per year; 10 km/litre = 240,000/10 litres)	24,000	litre	2.00	48,000.00
	Vehicle maintenance costs	3	per vehicle	1,000.00	3,000.00
1c	Salary of driver (2 drivers, 2 years)	4	annual salary	12,000.00	48,000.00
1d	Office furniture	2		750.00	1,500.00
	Computers - laptops	4	laptop	1,250.00	5,000.00
	Computers - desktops	4	desktop	1,000.00	4,000.00
	Printers	3	printer	200.00	600.00
	Photocopier	2	copier	400.00	800.00
	Consumables (paper, printer toner, etc)	lump sum			1,000.00
1e	Meetings for stakeholders (transport costs and DSA, 10 persons * 7 meetings)	70	participants	35.00	2,450.00
	English language training (per month @ 500.00 in Elazig and Erzurum, 3 mo. each)	6	month	750.00	4,500.00
	Epidemiology training (short course in EU for 8 veterinarians inc. travel and DSA) with study tour	8	course	7,500.00	60,000.00
	Other costs (fax machine, scanner, GPS equipment, maps, misc)	lump sum			10,000.00
	Base-line study (sero-survey: vacutainers, needles, cyotubes, test kits; &/or PRA survey)	estimate			10,000.00
					-
2	Support services - technical and operational				-
2a	Top-up of salary of National and Regional Coordinators (4 persons, USD 400/month)	96	per month	400.00	38,400.00
2b	FAO Technical Support Services from AGAH, Rome (2 missions * 2 weeks)	2	missions	8,000.00	16,000.00
2c	Consultants				-
	Participatory impact assessment of disease control & delivery options				-
	consultant to train assessors (10 days)				-
	consultant to help with the analysis and feed-back workshop (10 days)				-
	20 days fee plus DSA	20	day	500.00	10,000.00
	consultant travel				2,000.00
	Costs of other evaluation team member(s) if any				
3	Resources for stakeholder consultations/communications				
3a	Fee for contracted media specialist and				40,000.00

	production of materials				
3b	Establish Telephone Hotline	NO ?			
3c	Resources for workshops (easel, flip-chart paper, pens, refreshments, DSA and travel)	8	workshop	1,250.00	10,000.00
					-
4	"Unallocated" e.g. vaccine subsidy depending on options for vaccination delivery.	NO ?			
5	"Additional training component in Turkish language" - EU FMD Initiative				-
6	FMD diagnostic kits?				-
				total	**480,650.00**

Notes

1. The numbers (1a, etc.) in the left column correspond with those in the draft concept note.
2. The vehicle cost is for a 4-WD double cab pick-up, excluding VAT but including Turkish "special tax".
3. The DSA rate of USD 35.00 per day is the same rate that has been used in related a project and is considered to be a necessary incentive for Institute staff whenever they leave the office and go to the field.
4. The FMD (*Şap*) Institute in Erzurum has sufficient computers and office furniture, and so no provision is made for purchase of equipment for a third office there.
5. The base line survey costs will be estimated based on sample sizes to be calculated by the Deputy Director of the *Şap* Institute.
6. The monthly salary of the most senior Institute staff is USD 800.00 per month, less than that of drivers and general unskilled staff. It is considered necessary to offer a "top-up" to their salaries to encourage interest in and involvement with the project.
7. The cost of FAO Support Services should be entered by FAO.
8. Additional costs for monitoring (mid-term review) and evaluation (impact assessment) should be entered by FAO.

GoT inputs

An estimate of the Government of Turkey contribution is shown in table 2 below.

Table 2. GoT contribution to proposed project

item	quantity	unit	unit cost	subtotal
Veterinarians in Task Force (8 persons*24 months)	192	salary per month	750.00	144,000.00
Office rooms for 24 months in 2 centres	48	rent per month	500.00	24,000.00
Şap Institute - diagnostic services	2	estimate per year	20,000.00	40,000.00
Internet connection to (3 offices * 2 year)	6	rent per year	100.00	600.00
			total	**208,600.00**

Annex 1

Sections from project document –Activity and Implementation issues

4. 2 Activity plan

To achieve the outputs above, the following activities are indicated:

1 Project start-up and management
1.1 Staff assignment/recruitment
1.2 Establish offices: Ankara, Erzurum, Elazig
1.3 Procurement: vehicles, office equipment, furniture, etc.
1.4 Plan implementation (coordination with GDPC vaccination)
1.5 Plan project staff training & study tour
1.6 Base-line surveys
1.7 Reporting

2 Disease investigation and monitoring
2.1 Actively search outbreaks
2.2 Review procedures and plans for vaccination
2.3 Control FMD outbreaks
2.4 Back and forward tracing
2.5 Support local disease control centres?

3 Vaccination [undertaken by the authorities]

4 Consultation and communication
4.1 Develop communications strategy
4.2 Convene meetings
4.3 Set up "hotline" for outbreak reporting
4.4 Subcontract media specialist
4.5 Organise workshops

5 Training
5.1 English language training
5.2 Epidemiology training and study tour

6 Mid-term review and evaluation

Implementation considerations

1 Project start-up and management

1.1 Staff assignment/recruitment

A part-time National Project Coordinator should be based at the (GDPC). There should be two part-time Deputy (Regional) Coordinators, based at Erzurum and Elazig. One part-time Deputy (Regional) Coordinator based at Sap Institute, Ankara,
or
There should be three part-time Deputy (Regional) Coordinators, based at Sap Institute, Ankara, Erzurum and Elazig.

It is proposed that the part-time National Project Coordinator (NPC) and the Deputy Project Coordinator (DPC) positions are filled, respectively, by the Director of the National FMD (*Şap*) Institute and the Directors of the Erzurum and Elazig Veterinary Control and Research Institutes (VCRI). It is proposed that the Veterinary Task Force members (four vets each in Erzurum and Elazig) are assigned by the GoT.

It needs to be decided whether a Communications Officer is recruited to work together with the veterinary teams. If this position is created, he/she should be recruited according to normal procedures (advertise, short-list, interview). The preference from the FMD Institute representative consulted during the mission is that this post is not created, but that the Task Force members decide what external requirements there are from a media specialist, and then sub-contract the services. This approach risks under-participation by all stakeholders, particularly the villagers.

An alternative option is the appointment of an active Project Assistant, perhaps an Associate Professional Officer or UN Volunteer. Proposed TOR are given in the appendix and these TOR include both administrative and communications duties..

1.2 Establish offices: Ankara, Erzurum, Elazig

In Ankara two offices would be located in the GDPC and FMD Institute. It may be that the project does not require a separate office there, but can be managed by the NPC from his offices. In Erzurum and Elazig, FMD Institute, Ankara, the project offices would be located within the VCRI and FMD Institute.

1.3 Procurement: vehicles, office equipment, furniture, etc.
Three vehicles are required: one each for Ankara, Erzurum and Elazig. In Ankara, there are sufficient computers and no more need to be procured. The VCRI project offices need to be furnished and equipped.

1.4 Plan implementation (coordination with GDPC vaccination)
The General Directorate of Protection and Control (GDPC) is responsible for the national vaccine programme. It is desirable that the proposed project tests alternative strategies for implementation, but this may require a change in the law. For example, if proposed District-level Local Disease Control Centres were to plan and implement vaccination, this would apparently be outside existing Turkish legislation, under which sole responsibility is designated to the GDPC and Provincial Directorates.

1.5 Plan project staff training & study tour
The training will be planned during project inception. See Activity 5, below, for description of training required by project staff.

1.6 Base-line surveys
It is planned to survey Erzurum Province, where a pilot participatory epidemiology study has been carried out in 2005, and possibly one other province. The sero-survey would detect infection in cattle one year old and younger. It is expected that this would be a useful indicator of impact of the project and would be reassessed after two years.

The project will also utilise the findings of the participatory epidemiology exercise carried out in Erzurum Province in 2005 for base-line indicators. Some or all of the same indicators will be assessed at the end of the project implementation period in the final evaluation.

1.7 Reporting
Proposed reports are listed in the section on Project Management.

2 Disease investigation and monitoring

2.1 Actively search outbreaks
2.2 Review procedures and plans for vaccination
2.3 Control of outbreaks
2.4 Back and forward tracing
Activities 2.1 to 2.4 are the core of the disease investigation and monitoring component of the project. The introduction of these epidemiological principles will be new to the VCRI's and the region.

2.5 Support Local Disease Control Centres
Local (District) Disease Control Centres have been proposed previously, but are not operational. GoT representatives consulted during the mission were sceptical that they could have a role.

3 Vaccination [undertaken by the authorities]

Vaccination campaigns are carried out in spring (March-April) and autumn (September-October). The project's Veterinary Task Forces will assist the Provincial Directorates with planning these campaigns.

The recent participatory study found that vaccination currently reaches less than 50% of the target bovine population (Berhanu Admassu, personal communication). In the project, it is desirable to test options on vaccine delivery and compare results in different Districts in the project target area. For example, a subsidy on vaccine cost to farmers could be provided in some areas, but not others. Or the use of "community vaccinators" (villager community members who have received short training and then work under the authority of the veterinarian with responsibility for vaccination in the village) could be trialled. However, there appears to be reluctance on the part of GoT representatives met to try these new approaches. Reasons given include:

- If a subsidy is given in part of the project area, there will be problems with neighbouring areas that do not receive the subsidy.
- There is no provision in the current legislation for community vaccinators.
- There is a surfeit of trained manpower (vets and vet technicians).

Unless the recalcitrance to try new vaccine delivery methods is overcome, the project has limited options for testing innovative vaccine delivery modalities.

4 Consultation and communication

4.1 Develop communications strategy
The strategy will be developed together with a consultant Participatory Communications Specialist (see TOR in appendix) who will also be responsible for improving the communication skills of the veterinarians.

4.2 Convene meetings
To make the project successful, it is important to have the support of local leaders, in particular the *muhtar*, *kaymakam* and Province Governor. Meetings will be organised at which these leaders are present, together with representatives of the Veterinary Authorities and the police, who are responsible for livestock movement control. These meetings will take place in each Province. Members of the Task Force teams will develop relations and maintain frequent contact with key *muhtars* and *kaymakams*.

4.3 Set up "hotline" for outbreak reporting
The idea of a dedicated phone line for anonymous reporting is not considered useful by GoT representatives consulted. However, it is recommended that this is reassessed in project inception. For example, reporting might be encouraged if there is a phone-line coupled with a scheme in which a payment is made to anyone reporting a case that is followed up and proven to be FMD.

4.4 Subcontract media specialist
The media specialist will be charged with producing leaflets or whatever other media formats are appropriate for disseminating messages to raise awareness.

4.5 Organise workshops
Early in the project, there should be a launch workshop in each VCRI region. Key local figures (the *muhtar*, *kaymakam*, Province Governor, police inspectors, traders, and so on) will be invited. Workshops may be useful to brief Government and Private Veterinarians who are carrying out vaccination. There should also be workshops at which the findings of the mid-term review and evaluation are presented.

5 Training

5.1 English language training
Most staff members at the VCRI have low English language ability. English language training is necessary if project epidemiologists are to properly benefit from a short course in epidemiology plus study tour in Europe. It will also facilitate communication with and reporting to FAO as well as understanding of international, for example European Union, FMD documentation.

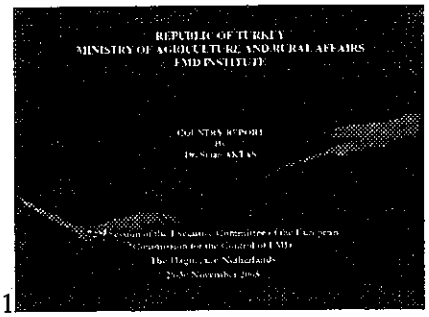
5.2 Epidemiology training and study tour
For the Study Tour, it is proposed that a centre of excellence in Europe for epidemiology (for example, the Free University of Berlin or the Veterinary Epidemiology and Economics Research Unit at the University of Reading) be contracted to provide a short, intensive course in basic epidemiology. The Study Tour should include a visit to a Veterinary Epidemiology Unit and should enable the participants to understand how disease investigation is carried out in Western Europe.

6 Mid-term review and evaluation

The mid-term review will provide preliminary recommendations on how to deliver FMD vaccination more effectively in the region, with potential application in a far wider area. The review will also provide an opportunity to assess progress and realign this as required in implementation of the remainder of the project.

The final evaluation will assess the impact of the project, and compare the assessment of indicators at the end of the project with the results from both the planned base-line sero-survey and the participatory epidemiology assessment that was completed prior to the start of the project.

Appendix 8



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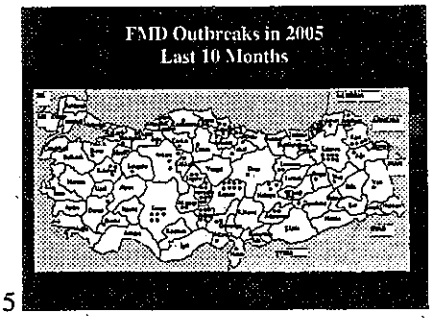

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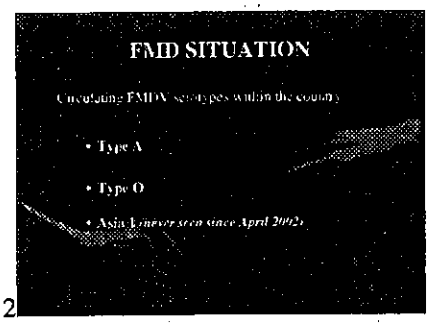

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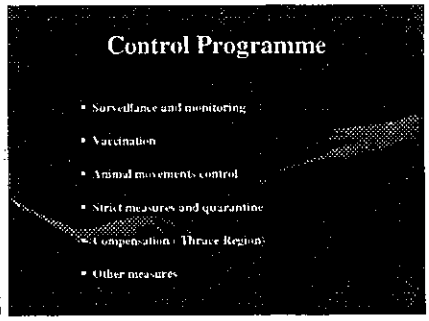

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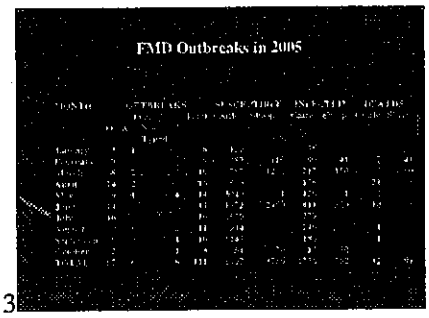

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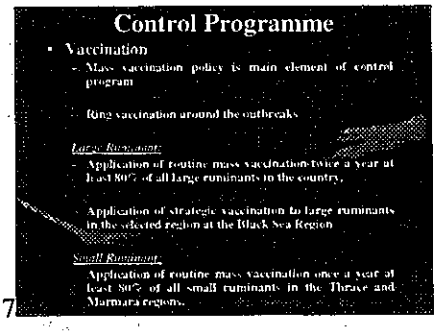

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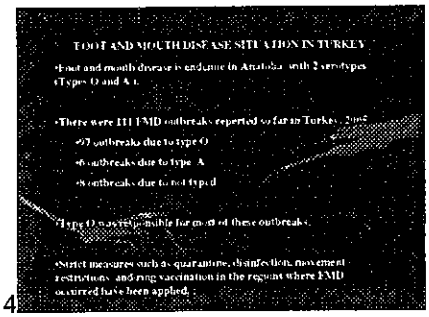

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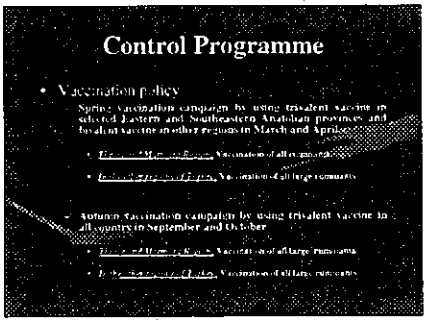

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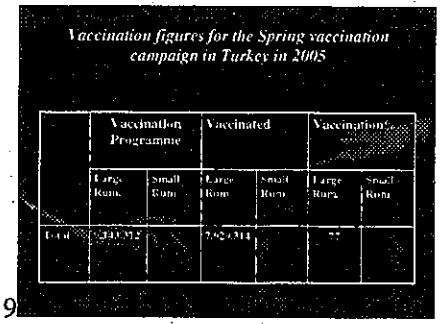

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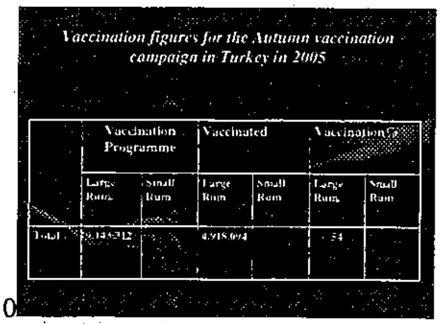

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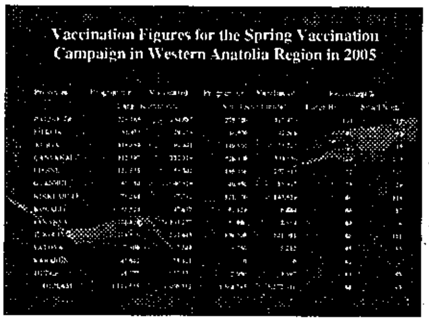

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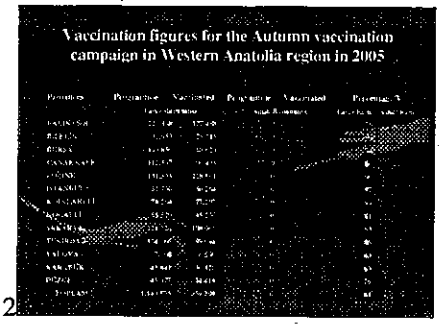

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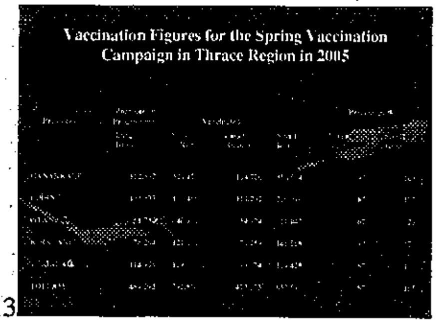

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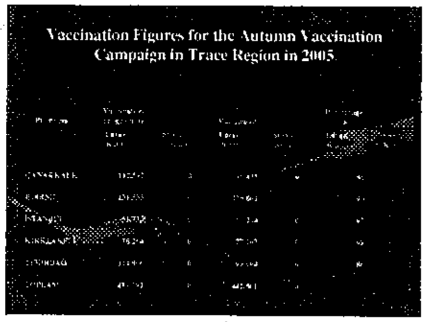

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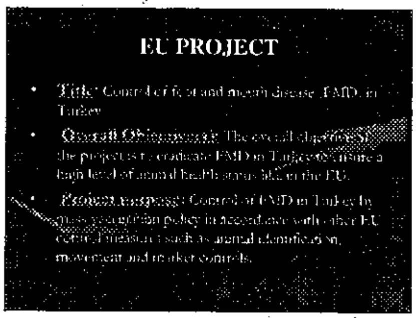

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EU PROJECT

- Activities
  - Vaccination
  - Sero-surveillance
  - Control measures
  - Cleaning and disinfection

18

EU PROJECT

- The aim of vaccination and surveillance programme in Thrace region

The aim of Republic of Turkey is to achieve the status of being FMD free with vaccination in Thrace by 2009. To attain this goal, the present programme will first establish regionalization of Turkey as Thrace and Anatolia in order to prevent animal movement from Anatolia. Second, vaccination of sheep and goat at a level of 100 % once a year will be targeted which was not considered previously. Identification and registration system for bovine animals will be operational by the start of the first vaccination campaign. The same rule will apply for ovine and caprine animals in Thrace. However, ovine and caprine animals in Anatolia, simultaneous action of identification is envisaged to be done during vaccination.

19

EU PROJECT

- The aim of vaccination and surveillance programme in Anatolia

In Anatolia, Republic of Turkey's aim is to ensure 100 % vaccination of ruminant population. Identification and registration system for bovine will also be operational.

20

EU PROJECT

Result:

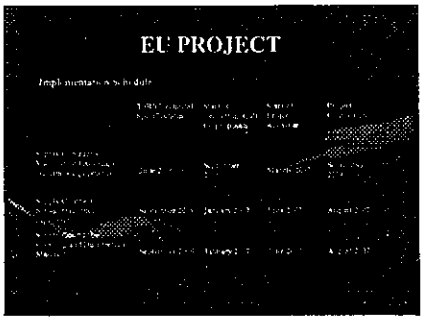
- Thrace region is recognized as officially FMD free with vaccination by OIE.
- The disease is taken under control in Anatolia with a high level of immunization of the main susceptible species.

21

EU PROJECT

22

EU PROJECT



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EU PROJECT

Costs of the phases

PHASES	COST (EU MILLION €)
STABLE ENDEMIC PHASE (1996-2003 =FP)	112.552.785
ERADICATION PHASE (2004-2013= 4 FP)	246.484.930
FREE PHASE (2014-2021 =4FP)	20.672.956

Appendix 9

Outline of Project Proposal:

Co-ordination of FMD surveillance and control in the Trans-Caucasus countries and strengthening of emergency management capacity

Direct beneficiary Countries:

Georgia, Armenia and Azerbaijan

Proposed Implementation date: 1/1/06

Summary

A 3 year PROGRAMME of support for FMD control is proposed, comprising the main elements of:
- support to maintain the FMD buffer zone from autumn 2005 to spring 2007, through provision of quality assured FMD vaccine for cattle and small ruminants, containing appropriate antigens;
- a Regional Co-ordination unit (FAO/OIE) for technical support and co-ordination, with an international expert, Russian speaking and based in Tbilisi, Georgia, to co-ordinate and provide inputs to assist countries in the transition towards international/EC standards for emergency management planning, monitoring of vaccination and FMD surveillance;
- support to undertake surveillance programmes, including improving laboratory quality assurance and information systems and direct support for laboratory tests (diagnostic reagents, kits, training).

Key Recommendations from Consultants reports 2004-5

1. Training of staff in epidemiology and diagnostics, diagnostic facilities and transparency have to be improved to introduce more risk-based vaccination and surveillance schemes.
2. An effective epidemiological unit for animal health decision making should be created.
3. Effective computerized national animal health information systems should be developed. A web-based regional animal health information system should be established to allow sharing of disease information between Georgia, Armenia and Azerbaijan, possibly including Turkey, Iran and Russia.
4. Storage facilities and logistics of vaccination campaigns should be improved as to ensure appropriate vaccine quality at the time of use.
5. Baseline sero-surveillance investigations are necessary to assess the FMD situation in the countries. Surveillance and control strategies should be developed and applied for entire countries, preferable the whole region.
6. Regional cooperation between the South Caucasus countries, and Turkey and Iran in FMD surveillance and control is necessary.
7. Close cooperation between animal health projects and governments in the region is recommended.

Conclusions and recommendations of the EUFMD Standing Technical Committee on the results of the buffer zone sero-monitoring in June 2005

8. In the animals sampled in Armenia and Azerbaijan the vaccination was generally effective in inducing high antibodies titres, irrespective of the age of the animals.
9. The results are consistent with, although do not provide proof of, current or recent virus circulation in the three countries. Assuming that the vaccination effect to elicit NSP response is identical in all study regions, the observed heterogeneity in NSP positivity rate may be interpreted as an indication of circulating infection in some counties.

Recommendations

10. Follow up investigations should be conducted in villages where positive NSP results were found with emphasis on young stock.
11. Investigations should be extended countrywide to provide baseline information. Follow up seromonitoring should include other susceptible species and should be risk based.
12. The results should be discussed with national veterinary services and regional cooperation on disease and surveillance and control should be strongly encouraged.
13. Cooperation with European institutions/laboratories on epidemiology and diagnostic support should be continued.

Objectives of the programme 2006-8 should include:

- Re-enforced regional bio-security, especially at the borders between the transCaucasus and Turkey and Iran.
- Reduced risk that TADS entry will result in high impact at national and regional level on livestock health, including spread to third countries.

To meet these objectives, a proposal for was developed in April 2005 (by FAO and OIE experts) with 3 main components:

1. Regional Coordination of national FMD prevention actions, policy development and implementation support.
2. Surveillance, information management, and emergency planning.
3. Laboratory capacity to support FMD surveillance and control programmes.

The Project Outputs[8] should be:

Outputs (by component)
Component 1: - Regional cooperation framework adopted - National TADS prevention (risk management) strategies formulated and implemented for FMD Component 2: - National Emergency management plans revised and tested - Regulatory controls reviewed - National FMD surveillance policies developed and implemented - National disease information systems upgraded, populated with relevant GIS information, able to cross-talk with Laboratory information and management system (LIMS), and adopted into routine use. (GIS to level of complete coverage of animal population) - National plans for continuing surveillance after project end, including laboratory capacity developed (end of project) including human resources
Component 3 – Laboratory - NRLs upgraded to safely undertake FMDV confirmation and serology (under review: at least inactivated virus only), - National capacity for FMD serology, serology for - SPs (LPBE/SPCE) for vaccination coverage and epidemiologic investigation/typing - NSP ELISA for virus circulation - upgraded to reach performance indicators for response time and integration with DVS - NRL capacity to confirm infection by antigen detection ELISA

[8] As proposed by the FAO/OIE project drafting group, April 2005.

Options inputs -and costs

Following the April 2006 planning meeting, discussions were held with country representatives and various options for supplying inputs identified.

Option 1. Baseline support package (vaccine supply phased out by spring 2007).
Option 2. Regional co-operation and technical support, Buffer Zone Vaccine supply (to end of 2008).
Option 3. Regional co-operation and technical support plus capacity building programme with conversion to national funded buffer zone vaccination in 2007-8.

These are indicated under THREE options, below. (note that Option 2 & 3 follows consultation in 10/2005 with countries – on the basis of the fourth option which had been presented at the Regional GF-TADS meeting, October 2005).

Options 1 and 2 *assume that the international project staff costs, and vehicle hire or supply, would be costed and provided by the overall EUFMD/EC programme.*

Option 1. Limited buffer zone support to spring 2007, provision of baseline regional technical support package

Cost: additional 1.0 million euro, which includes:
- allocation of 420,000 for purchase of OIE/EP grade trivalent vaccine for buffer zone vaccine, and in autumn 2006 /spring 2007 only to Georgia and Azerbaijan, sufficient for only maintaining the buffer zone for initial period (2006, spring 2007) ;
- national disease information system capacity building workshops, training;
- small allocation for diagnostic support to surveillance including contract for external quality assurance and training;
- Staff costs Deputy Co-ordinator, National Project Consultants, travel costs and allowances.

Excludes:
- staff costs of the international co-ordinator
- Major equipment or laboratory refurbishment
- Vehicles
- Vaccine for Armenia in autumn 2006/2007

Assumes: *the international project staff costs, and vehicle hire or supply, would be costed and provided by the overall EUFMD/EC programme*

Option 2. Buffer Zone to 2008, and technical support - (buffer zone vaccination until end of 2008) (*recommended by EUFMD Secretariat*)

In this option, if beneficiary countries are supplied with quality vaccine for the buffer zone until end of 2008, and support to implement national animal disease surveillance for FMD. Laboratory support is supplied to Armenia and Azerbaijan according to gaps in other support.

Cost: additional 2.54 million euro, which includes:
- allocation to purchase of OIE/EP grade trivalent vaccine for buffer zone vaccine, sufficient for maintaining the buffer zone at current levels to the end of 2008;
- national disease information system capacity building workshops, training;
- allocation for diagnostic support to surveillance including contract for external quality assurance and training;
- Staff costs Deputy Co-ordinator, National Project Consultants, travel costs and allowances.

Excludes:
- staff costs of the international co-ordinator
- Major equipment or laboratory refurbishment
- Vehicles

Assumes: *the international project staff costs, and vehicle hire or supply, would be costed and provided by the overall EUFMD/EC programme*

Option 2 Expenditure breakdown - 2006 (US$) (~ euro 636,615)

2006	*Regional*	*Georgia*	*Armenia*	*Azerbaijan*
Surveillance		21,797	21,797	21,797
Laboratory		19,360	77,635	67,635
Training/Workshops	29,260	8,722	5,556	5,556
National staff		41,167	3,167	3,167
Other	43,225			
Buffer zone vaccine	375,000[9]			
Total	447,485	91,046	108,154	98,154
Grand Total ($USD)				744,839
euro				636,615

Option 3. Regional co-operation and technical support plus capacity building programme with conversion to national funded buffer zone vaccination in 2007-8

In this option, if beneficiary countries agree to cover costs of maintaining the buffer zone vaccination, using quality assured vaccine under their national budgets then 90 % of the savings to the programme will be made available to support surveillance and control capacity building.

Cost: additional 1.7 million euro, which includes:

- allocation of 420,000 euro for purchase of OIE/EP grade trivalent vaccine for buffer zone vaccine, sufficient for only maintaining the buffer zone for initial period (2006, spring 2007);
- circa 700,000 euro (being 90% of the saving on vaccine purchase) available to be assigned to upgrading national capacity to undertake FMD prevention and emergency control programmes, lab equipment etc; priorities to be formulated at national level and agreed by EC and FAO project board;.
- allocation for diagnostic support to surveillance including contract for external quality assurance and training;
- Staff costs Deputy Co-ordinator, National Project Consultants, travel costs and allowances.

Excludes:

- staff costs of the international co-ordinator, vehicles.

Option 4. Regional Support Programme presented at OIE/FAO Regional Steering Committee

The costs of the programme of support included the international technical advisor, and costs of four vaccination campaigns in the buffer zone, and other support to laboratory upgrading (in Armenia and Azerbaijan). The value of the above support was estimated at 2.7 million euro, including current vaccine purchase commitments (equates to circa 2.1 million euro of fresh funding for period 2006-8).

Option 4 was revised after comments received at the GF-TADS meeting and following a visit by Secretary EUFMD Commission to Georgia and Azerbaijan in late October, and is presented as Options 2 and 3, above.

Each of the proposed options are in line with May 2004 meeting of the OIE/EC/FAO Tripartite on FMD control in the Caucasus, but differ in the level of operational support and likelihood of national sustainability. Following consultation with the countries, and between EC, FAO and the OIE in October and November 2005, it is hoped financing agreement will be agreed by end of December 2005.

Government contribution and commitments

Country beneficiaries are expected to commit to principles agreed at OIE Paris May 2004 meeting.

Countries participating in the actions that support FMD surveillance and control must:

[9] Figure excludes purchase for spring 2006 which was covered in 2005 budget.

- agree to meet international standards for reporting of FMD and other TADS, as given OIE International Animal Health Code;
- demonstrate commitment to regional action and co-ordination, through the early reporting of disease events to neighbouring countries, to sharing of information at regional steering committees;
- Demonstrate commitment to the phasing out of use of vaccines that do not meet international standards for potency and safety;
- Agree to adopt the principles of the FAO good emergency management practises (GEMP) and to engage in the pathway to develop and implement GEMP with national actions;
- Appoint a lead agency and a national coordinator for the project;
- Cover the cost of implementation (storage, transport, vaccination costs) of the vaccination programmes which use vaccine supplied by FAO;
- In addition, with each country before the project begins, agreement will be made on the allocation of in cash and/or in kind (for example office, and one or more full time project personnel) to support the project, according to subproject requirements which will be formulated and agreed with each Government. This may include specific refurbishment to laboratories or facilities where required for safe operating standards.

Project Management

- See main document
- Implemented from FAO headquarters (Budget Holder EUFMD Secretary), using UNDP/FAO admin system in each country for local purchases and payments.
- Project Co-ordination office in Tbilisi, co-ordinate inputs and delivery and reporting to FAO-HQ, management and technical support for PMUs in each country.

Project Management Units (PMUs) in each country with responsibility for work-plans each 6 months, progress reports. Co-ordination with other donors e.g. EC representation (EC-FSP/country delegation) on Project Steering/Advisory Committee (each 3 months) in each country.

Appendix 10

Annual OIE/FAO FMD Reference Laboratory Network Report
January – November 2005

FAO World Reference Laboratory and OIE Reference Laboratory for FMD (WRLFMD), Institute for Animal Health, Pirbright, UK: Jean-Francois Valarcher, Nigel Ferris, Nick Knowles, Bob Statham, David Paton

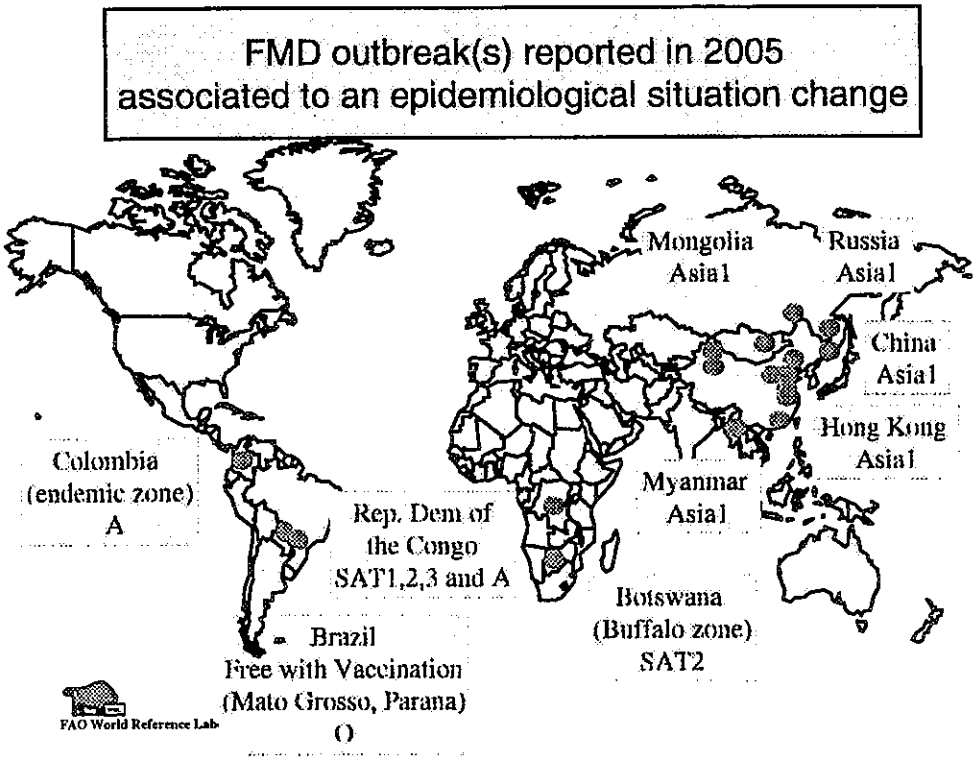
Centro Panamericano de Fiebre Aftosa (PANAFTOSA) and OIE Reference Laboratory for FMD, Rio de Janeiro, Brazil: Ingrid Bergmann, Viviana Malirat, Rossana Allende

Federal Governmental Institute, Centre for Animal Health (FGI ARRIAH) and OIE Reference Laboratory for FMD, Vladimir, Russia: Aleksey Shcherbakov, Valery Zakharov

OIE Regional Reference Laboratory for the Sub-Saharan continent, Gabarone, Botswana: Hervé Coupier, Lindani Mozola, George Matlho

1. Summary report on FMD outbreaks during year in question from surveillance region covered by reference laboratory

1.1. Countries that have reported FMD outbreaks in 2005 (January-November) and FMD serotypes related to those outbreaks (where known)



No data are available for 2005 from Handistatus on the global situation by country.

The SEAFMD website (http://www.seafmd-rcu.oie.int/index.php) provides maps showing countries in the region that have experienced outbreaks in each month of 2005 (Cambodia: not typed, Lao PDR: type O, Peninsular Malaysia: type O and A, Myanmar: type O and Asia 1, Philippines: type O, Thailand: type O and A, Vietnam: type O and A).

PANAFTOSA collects information on outbreaks in South America:
Number of reported FMD-infected farms in South America until week 44.

Country	Total	Type O	Type A	Type C	Clinical – epidemiological diagnosis
Bolivia	0				
Brazil	15	15			
Colombia	1		1		
Ecuador	41	27			14
Perú	0				
Venezuela	2	1	1		
Total	**59**	**43**	**2**	**0**	**14**

1.2. Overview and discussion of outbreak information
Highlighting changes in epidemiological situation, relative risk for disease spread and information gaps.

No FMD outbreaks were officially reported in FMD-free countries not using vaccination. FMD remained largely confined to traditionally infected areas between January and November 2005.

The OIE Scientific Commission for Animal Diseases has, at its meeting held from 13 to 19 January 2005, decided to restore the status "FMD free zone with vaccination" to the zone of Argentina situated north of the 42° parallel and the status "FMD free country with vaccination" to Paraguay. Columbia also gained the status "FMD free with vaccination in two new zones that were officially recognized as such in May 2005.

Since the reporting procedure of the ex-OIE List A diseases has changed, less information about FMD outbreaks in endemic countries is available. Only changes in the epidemiological situation of FMD are now reported in real-time.

For this period, epidemiological changes in FMD situation have occurred in Botswana (Buffalo zone / serotype SAT2), Brazil (Mato Grosso, / serotype O), China (serotype Asia1), Colombia (endemic zone / serotype A), Congo (Rep. Dem of the Congo / SAT1,2,3 and A), Hong Kong (serotype Asia1), Mongolia (serotype Asia1) and Russia (serotype Asia1).

The recent appearance of the Asia 1 serotype in China (east and west), Hong Kong, Mongolia, Myanmar, Russia, Tajikistan, along with the traditional occurrence of this serotype in India, Iran and Pakistan suggested that a single strain of Asia1 could be spreading throughout Asia. By collaborating with FGI ARRIAH (Russia), LVRI (China), PDFMD (India), Pakchong (Thailand), we were able to demonstrate that viruses belonging to five different genetic sub-lineages were responsible for those outbreaks.

At the end of this reporting period, type O FMDV has been recorded in the southern state of Mato Grosso do Sul in Brazil in an area previously free with vaccination.

A selection of the viruses received from various outbreaks around the world were further characterised by partial genomic sequencing and serological matching to vaccine strains. Phylogenetic analyses were performed by using complete VP1 gene sequences.

2. Clinical samples and FMDV isolates submitted to reference laboratories of the FMD network during the year in question

2.1. Tabulation of data on clinical samples received and serotyping results

Samples collected in 2005 in question:

Country	No. of samples	Virus isolation in cell culture/ELISA FMD virus serotypes							SVD virus	NVD	RT-PCR for FMD (or SVD) virus (where appropriate)			Laboratory
		O	A	C	SAT 1	SAT 2	SAT 3	Asia 1			Positive	Negative	Not determined	
Botswana	8					8					8			WRL
Brasil	15	15									13		2	PANAFTOSA
Burkina Faso	10									10		10		WRL
Cameroon	119				In progress									WRL
Colombia	1										1			PANAFTOSA
Cote d'Ivoire	6									6		6		WRL
Ghana	4									4		4		WRL
Hong Kong (China)	16	7						8		1	15	1		WRL
Iran	32	6	20							6	25	7		WRL
Ireland	11									11		11		WRL
Kenya	1				1						1			WRL
Mali	4	3								1	4			WRL
Pakistan	26**	19						2		7	25	1		WRL
Philippines	10	3								7	3	7		WRL
Saudi Arabia	14	11								3	11	3		WRL
Senegal	3									3		3		WRL
Sudan	3	3									3			WRL
Togo	16	4	1							11	3	13		WRL
Venezuela	7	2	5								7			PANAFTOSA
Vietnam	5	5									5			WRL
Zambia	2				2						2			WRL
Total	313	78	27		3	8		10		70	126	66	2	

Samples received at WRL in year in question, but collected earlier

Country	Year	No. of samples	on in cell culture/ELISA FMD virus serotypes							VSV		SVD virus	NVD	RT-PCR for I virus (where
			O	A	C	SAT 1	SAT 2	SAT 3	Asia 1	New Jersey	Indiana			Positive
Ecuador	2004	22	10							11	1			22
Hong Kong (China)	2004	1	1											1
Iran	2004	12		2					3				7	4
Kenya	2003-2004	14		2	1		7						4	14
Lao PDR	2003	1		1										1
Mali	2004	16		1									15	
Myanmar	2004	4	4											4
Pakistan	2004	2											2	2
Thailand	2004	9	1	2									6	9
Togo	2004	1	1											
Venezuela	2004	8	1	7										8
Zambia	2004	16					6						10	7
Total		106	18	15	1	6	7		3	11	1		44	50

FMDV	foot-and-mouth disease virus
VI/ELISA	FMDV serotype identified following virus isolation in cell culture and antigen detection ELISA
RT-PCR	reverse transcription polymerase chain reaction for FMD viral genome
NVD	no foot-and-mouth disease, swine vesicular disease or vesicular stomatitis virus detected
*	two samples were positive for O and Asia1
VSV	Vesicular stomatitis virus

2.2. Overview and discussion of samples received and serotyping results

Overview highlighting changes in patterns of sample receipts and information gaps.

In 2005, FAO WRLFMD received 366 clinical samples or FMDV isolates, collected between 2003 and 2005, for virus isolation and characterisation (TABLE 2). Samples were collected in 21 countries located in Europe, Asia and Africa. European samples were collected in the Republic of Ireland and were negative for FMDV by several techniques. African FMDV isolates were collected in ten countries (Botswana, Burkina Faso, Cote d'Ivoire, Ghana, Kenya, Mali, Senegal, Sudan, Togo and Zambia) between 2003 and 2005. FMD viruses obtained from the Middle East and from southern Asia were collected in three countries (Saudi Arabia, Iran and Pakistan) between 2004 and 2005. Strains collected in southeast Asia between 2004 and 2005 were obtained from Hong Kong, Myanmar, Philippines, Thailand and Vietnam.

FMD virus types O, A, C, SAT 1, SAT 2 and Asia 1 were isolated at the WRLFMD from the above listed submissions. As usual, type O was the most prevalent identified serotype. All of these viruses were further characterised by partial genomic sequencing (complete VP1 gene). In addition, complete VP1 sequences were received from FGI ARRIAH, LVRI-China and Pakchong-Thailand Regional Laboratories for comparison to sequences compiled in WRLFMD database.
A selection of specimens was also further studied regarding their antigenic relationship to vaccine strains.

During the same year PANAFTOSA received a total of 53 clinical samples, collected between 2004 and 2005, material that was sent for additional virus characterisation (molecular and/or antigenic, including vaccine matching) (TABLE 2), as the primary isolation and characterization is carried out in the country of origin.
FMD virus types O and A and Vesicular Stomatitis Virus New Jersey and Indiana 1 were characterized at PANAFTOSA from the above listed submissions by partial genomic sequencing (complete VP1 gene of FMDV and partial NS gene of VSV), and antigenic characterization was carried out by Indirect Sandwich ELISA and/or Complement Fixation Test Subtyping was carried out by Complement Fixation Test and selected specimens were studied regarding their antigenic relationship to vaccine strain by r relationship and Expectancy of Protection (EPP) assay.

3. Genetic and antigenic typing of FMD virus isolates submitted to the Reference Laboratory during the year in question

3.1 Tabulated data on isolates typed genetically and antigenically

3.1.1. Summary of genetic typing (one table for each serotype)

FMDV isolate	Region sequenced (bases)	Subtyping result	Reference for dendrogram	
Serotype O				
O/HKN/13/2004	VP1 (639)	O Cathay	Fig..5.5	WRLFMD
O/HKN/9/2005	VP1 (639)	O Cathay	Fig..5.5	WRLFMD
O/HKN/10/2005	VP1 (639)	O Cathay	Fig..5.5	WRLFMD
O/HKN/11/2005	VP1 (142)	O Cathay	Fig..5.5	WRLFMD
O/HKN/12/2005	VP1 (639)	O Cathay	Fig..5.5	WRLFMD
O/HKN/13/2005	VP1 (142)	O Cathay	Fig..5.5	WRLFMD
O/HKN/14/2005	VP1 (639)	O Cathay	Fig..5.5	WRLFMD
O/HKN/15/2005	VP1 (639)	O Cathay	Fig..5.5	WRLFMD
O/HKN/16/2005	VP1 (142)	O Cathay	Fig..5.5	WRLFMD
O/IRN/8/2005	VP1 (639)	O ME-SA (PanAsia)	Fig. 5.2	WRLFMD
O/IRN/9/2005	VP1 (639)	O ME-SA (PanAsia)	Fig. 5.2	WRLFMD
O/IRN/12/2005	VP1 (639)	O ME-SA (PanAsia)	Fig. 5.2	WRLFMD
O/MAI/1/2005	VP1 (639)	O WA	Fig. 5.1	WRLFMD
O/MAI/2/2005	VP1 (639)	O WA	Fig. 5.1	WRLFMD
O/MAI/3/2005	VP1 (639)	O WA	Fig. 5.1	WRLFMD
O/MYA/4/2004	VP1 (639)	O SEA (Mya98)	Fig. 5.7	WRLFMD
O/MYA/1/04*	VP1 (639)	O SEA (Mya98)	Fig. 5.7	TRRL
O/MYA/2/04*	VP1 (639)	O SEA (Mya98)	Fig. 5.7	TRRL
O/MYA/3/04*	VP1 (639)	O SEA (Mya98)	Fig. 5.7	TRRL
O/MYA/4/04*	VP1 (639)	O SEA (Mya98)	Fig. 5.7	TRRL
O/MYA/5/04*	VP1 (639)	O SEA (Mya98)	Fig. 5.7	TRRL
O/PAK/1/2005	VP1 (639)	O ME-SA (PanAsia)	Fig. 5.3	WRLFMD
O/PAK/2/2005	VP1 (639)	O ME-SA (PanAsia)	Fig. 5.3	WRLFMD
O/PAK/3/2005	VP1 (639)	O ME-SA (PanAsia)	Fig. 5.3	WRLFMD
O/PAK/7/2005	VP1 (639)	O ME-SA (PanAsia)	Fig. 5.3	WRLFMD
O/PAK/9/2005	VP1 (639)	O ME-SA (PanAsia)	Fig. 5.3	WRLFMD
O/PAK/10/2005	VP1 (639)	O ME-SA (PanAsia)	Fig. 5.3	WRLFMD
O/PAK/11/2005	VP1 (639)	O ME-SA (PanAsia)	Fig. 5.3	WRLFMD

O/PAK/12/2005	VP1 (639)	O ME-SA (PanAsia)	Fig. 5.3	WRLFMD
O/PAK/13/2005	VP1 (639)	O ME-SA (PanAsia)	Fig. 5.3	WRLFMD
O/PHI/1/2005	VP1 (639)	O Cathay	Fig. 5.6	WRLFMD
O/PHI/2/2005	VP1 (639)	O Cathay	Fig. 5.6	WRLFMD
O/PHI/3/2005	VP1 (639)	O Cathay	Fig. 5.6	WRLFMD
O/SAU/4/2005	VP1 (639)	O ME-SA (PanAsia)	Fig. 5.4	WRLFMD
O/SAU/5/2005	VP1 (639)	O ME-SA (PanAsia)	Fig. 5.4	WRLFMD
O/SAU/6/2005	VP1 (639)	O ME-SA (PanAsia)	Fig. 5.4	WRLFMD
O/SAU/7/2005	VP1 (639)	O ME-SA (PanAsia)	Fig. 5.4	WRLFMD
O/SAU/8/2005	VP1 (639)	O ME-SA (PanAsia)	Fig. 5.4	WRLFMD
O/SAU/9/2005	VP1 (639)	O ME-SA (PanAsia)	Fig. 5.4	WRLFMD
O/SAU/10/2005	VP1 (639)	O ME-SA (PanAsia)	Fig. 5.4	WRLFMD
O/SAU/11/2005	VP1 (639)	O ME-SA (PanAsia)	Fig. 5.4	WRLFMD
O/SAU/12/2005	VP1 (639)	O ME-SA (PanAsia)	Fig. 5.4	WRLFMD
O/SAU/13/2005	VP1 (639)	O ME-SA (PanAsia)	Fig. 5.4	WRLFMD
O/SAU/14/2005	VP1 (639)	O ME-SA (PanAsia)	Fig. 5.4	WRLFMD
O/SUD/1/2005	VP1 (639)	O EA-3	Fig. 5.1	WRLFMD
O/SUD/2/2005	VP1 (639)	O EA-3	Fig. 5.1	WRLFMD
O/SUD/3/2005	VP1 (639)	O EA-3	Fig. 5.1	WRLFMD
O/TAI/8/2004	VP1 (639)	O SEA (Mya98)	Fig. 5.7	WRLFMD
O/TAI/20/04R2*	VP1 (639)	O ME-SA (PanAsia)	Fig. 5.7	TRRL
O/TAI/36/04*	VP1 (639)	O SEA (Mya98)	Fig. 5.7	TRRL
O/TAI/37/04*	VP1 (639)	O SEA (Mya98)	Fig. 5.7	TRRL
O/TOG/1/2004	VP1 (639)	O WA	Fig. 5.1	WRLFMD
O/TOG/1/2005	VP1 (639)	O WA	Fig. 5.1	WRLFMD
O/TOG/3/2005	VP1 (639)	O WA	Fig. 5.1	WRLFMD
O/TOG/4/2005	VP1 (639)	O WA	Fig. 5.1	WRLFMD
O/VIT/1/2005	VP1 (639)	O Cathay	Fig. 5.7	WRLFMD
O/VIT/3/2005	VP1 (639)	O ME-SA (PanAsia)	Fig. 5.7	WRLFMD
O/VIT/4/2005	VP1 (639)	O SEA	Fig. 5.7 .	WRLFMD
O/VIT/1/05*	VP1 (639)	O Cathay	Fig. 5.7	TRRL
O/VIT/2/05*	VP1 (639)	O Cathay	Fig. 5.7	TRRL
O/VIT/3/05*	VP1 (639)	O ME-SA (PanAsia)	Fig. 5.7	TRRL
O/VIT/4/05*	VP1 (639)	O SEA (Mya98)	Fig. 5.7	TRRL
O/VIT/5/05*	VP1 (639)	O ME-SA (PanAsia)	Fig. 5.7	TRRL
O/VIT/6/05*	VP1 (639)	O SEA (Mya98)	Fig. 5.7	TRRL
O/VIT/7/05*	VP1 (639)	O Cathay	Fig. 5.7	TRRL
O/VIT/8/05*	VP1 (639)	O ME-SA (PanAsia)	Fig. 5.7	TRRL
O/VIT/9/05*	VP1 (639)	O SEA (Mya98)	Fig. 5.7	TRRL
O/VIT/10/05*	VP1 (639)	O SEA (Mya98)	Fig. 5.7	TRRL
O/Eldorado/MS/Bra/05 (4523-2)	VP1 (639)	O Euro-SA	Fig. 5. 17	PANAFTOSA
O/Eldorado/MS/Bra/05 (4523-3)	VP1 (639)	O Euro-SA	Fig. 5. 17	PANAFTOSA
O/Eldorado/MS/Bra/05 (4523-4)	VP1 (639)	O Euro-SA	Fig. 5. 17	PANAFTOSA
O/Eldorado/MS/Bra/05 (4583-7)	VP1 (639)	O Euro-SA	Fig. 5. 17	PANAFTOSA
O/Eldorado/MS/Bra/05 (4583-8)	VP1 (639)	O Euro-SA	Fig. 5. 17	PANAFTOSA
O/Eldorado/MS/Bra/05 (4583-9)	VP1 (639)	O Euro-SA	Fig. 5. 17	PANAFTOSA
O/Eldorado/MS/Bra/05 (4583-10)	VP1 (639)	O Euro-SA	Fig. 5. 17	PANAFTOSA
O/Eldorado/MS/Bra/05 (4583-11)	VP1 (639)	O Euro-SA	Fig. 5. 17	PANAFTOSA
O/Eldorado/MS/Bra/05 (4593-50058-2)	VP1 (639)	O Euro-SA	Fig. 5. 17	PANAFTOSA
O/Eldorado/MS/Bra/05 (4593-50058-3)	VP1 (639)	O Euro-SA	Fig. 5. 17	PANAFTOSA
O/Eldorado/MS/Bra/05 (814-4)	VP1 (639)	O Euro-SA	Fig. 5. 17	PANAFTOSA
O/Eldorado/MS/Bra/05 (815-3)	VP1 (639)	O Euro-SA	Fig. 5. 17	PANAFTOSA
O/Eldorado/MS/Bra/05 (837-4)	VP1 (639)	O Euro-SA	Fig. 5. 17	PANAFTOSA
O/Pichincha/Ecu/04 (050/04)	VP1 (639)	O Euro-SA	Fig. 5. 17	PANAFTOSA
O/Pichincha/Ecu/04 (064/04)	VP1 (639)	O Euro-SA	Fig. 5. 17	PANAFTOSA
O/Cotopaxi/Ecu/04 (067/04)	VP1 (639)	O Euro-SA	Fig. 5. 17	PANAFTOSA

O/Los Ríos/Ecu/04 (071/04)	VP1 (639)	O Euro-SA	Fig. 5. 17	PANAFTOSA
O/Carchi/Ecu/04 (072/04)	VP1 (639)	O Euro-SA	Fig. 5. 17	PANAFTOSA
O/Los Ríos/Ecu/04 (074/04)	VP1 (639)	O Euro-SA	Fig. 5. 17	PANAFTOSA
O/Esmeraldas/Ecu/04 (097/04)	VP1 (639)	O Euro-SA	Fig. 5. 17	PANAFTOSA
O/Cotopaxi/Ecu/04 (099/04)	VP1 (639)	O Euro-SA	Fig. 5. 17	PANAFTOSA
O/Imbabura/Ecu/04 (101/04)	VP1 (639)	O Euro-SA	Fig. 5. 17	PANAFTOSA
O/Pichincha/Ecu/04 (106/04)	VP1 (639)	O Euro-SA	Fig. 5. 17	PANAFTOSA
O/Trujillo/Ven/05 (21378)	VP1 (639)	O Euro-SA	Fig. 5. 17	PANAFTOSA
O/Zulia/Ven/05 (21386 IBHK)	VP1 (639)	O Euro-SA	Fig. 5. 17	PANAFTOSA
O/Mérida/Ven/04 (21237/04)	VP1 (639)	O Euro-SA	Fig. 5. 17	PANAFTOSA
Serotype A				
A/IRN/32/2004	VP1 (636)	A Asia (Irn96)	Fig. 5.10	WRLFMD
A/IRN/33/2004	VP1 (639)	A Asia (Irn96)	Fig. 5.10	WRLFMD
A/IRN/1/2005	VP1 (639)	A Asia	Fig. 5.10	WRLFMD
A/IRN/2/2005	VP1 (639)	A Asia	Fig. 5.10	WRLFMD
A/IRN/4/2005	VP1 (639)	A Asia	Fig. 5.10	WRLFMD
A/IRN/5/2005	VP1 (639)	A Asia	Fig. 5.10	WRLFMD
A/IRN/7/2005	VP1 (639)	A Asia	Fig. 5.10	WRLFMD
A/IRN/10/2005	VP1 (639)	A Asia	Fig. 5.10	WRLFMD
A/IRN/13/2005	VP1 (639)	A Asia	Fig. 5.10	WRLFMD
A/IRN/14/2005	VP1 (639)	A Asia	Fig. 5.10	WRLFMD
A/IRN/16/2005	VP1 (639)	A Asia	Fig. 5.10	WRLFMD
A/IRN/17/2005	VP1 (636)	A Asia (Irn96)	Fig. 5.10	WRLFMD
A/IRN/18/2005	VP1 (639)	A Asia	Fig. 5.10	WRLFMD
A/KEN/1/2003	VP1 (639)	A Africa	Fig. 5.8	WRLFMD
A/KEN/2/2003	VP1 (639)	A Africa	Fig. 5.8	WRLFMD
A/LAO/36/2003	VP1 (636)	A Asia	Fig. 5.11	WRLFMD
A/MAI/4/2004	VP1 (639)	A Africa	Fig. 5.9	WRLFMD
A/TAI/6/2004	VP1 (636)	A Asia	Fig. 5.11	WRLFMD
A/TAI/9/2004	VP1 (636)	A Asia	Fig. 5.11	WRLFMD
A/TOG/9/2005	VP1 (639)	A Africa	Fig. 5.9	WRLFMD
A24/Bogotá/Cundinamarca/Col/05	VP1 (639)	A Euro- SA (A24)	Fig. 5. 18	PANAFTOSA
A/Apure/Ven/05 (21335)	VP1 (639)	A Euro- SA	Fig. 5. 18	PANAFTOSA
A/Táchira/Ven/05 (21351)	VP1 (639)	A Euro- SA	Fig. 5. 18	PANAFTOSA
A/Mérida/Ven/05 (21366-A)	VP1 (639)	A Euro- SA	Fig. 5. 18	PANAFTOSA
A/Mérida/Ven/05 (21369)	VP1 (639)	A Euro- SA	Fig. 5. 18	PANAFTOSA
A/Mérida/Ven/05 (21374)	VP1 (639)	A Euro- SA	Fig. 5. 18	PANAFTOSA
A/Táchira/Ven/04 (20904)	VP1 (636)	A Euro- SA	Fig. 5. 18	PANAFTOSA
A/Táchira/Ven/04 (21203)	VP1 (639)	A Euro- SA	Fig. 5. 18	PANAFTOSA
A/Táchira/Ven/04 (21211)	VP1 (639)	A Euro- SA	Fig. 5. 18	PANAFTOSA
A/Barinas/Ven/04 (21218)	VP1 (639)	A Euro- SA	Fig. 5. 18	PANAFTOSA
A/Táchira/Ven/04 (21229)	VP1 (639)	A Euro- SA	Fig. 5. 18	PANAFTOSA
A/Yaracuy/Ven/04 (21270)	VP1 (639)	A Euro- SA	Fig. 5. 18	PANAFTOSA
A/Barinas/Ven/04 (21283)	VP1 (639)	A Euro- SA	Fig. 5. 18	PANAFTOSA
Serotype C				
C/KEN/1/2004	VP1 (633)		Fig. 5.12	WRLFMD
Serotype Asia1				
Asia1/Armenia/2000	VP1 (611)		Fig. 5.16	ARRIAH
Asia1/JiangSu/CHA/2005	VP1 (633)		Fig. 5.16	LVRI
Asia1/WuXi/JS/China/2005	VP1 (633)		Fig. 5.16	LVRI

Asia1/YanQuing/BJ/China/2005	VP1 (633)		Fig. 5.16	LVRI
Asia1/SanHe/HeB/China/2005	VP1 (633)		Fig. 5.16	LVRI
Asia1/Zhangjiakou/HeB/China/2005	VP1 (633)		Fig. 5.16	LVRI
Asia1/JingNing/GS/China/2005	VP1 (633)		Fig. 5.16	LVRI
Asia1/TongRen/QH/China/2005	VP1 (633)		Fig. 5.16	LVRI
Asia1/Georgia/2000	VP1 (622)		Fig. 5.16	ARRIAH
Asia1/Georgia/2001	VP1 (625)		Fig. 5.16	ARRIAH
Asia1/HKN/1/2005	VP1 (633)		Fig. 5.16	WRLFMD
Asia1/HKN/2/2005	VP1 (633)		Fig. 5.16	WRLFMD
Asia1/HKN/3/2005	VP1 (633)		not shown	WRLFMD
Asia1/HKN/4/2005	VP1 (633)		not shown	WRLFMD
Asia1/HKN/5/2005	VP1 (633)		not shown	WRLFMD
Asia1/HKN/6/2005	VP1 (633)		not shown	WRLFMD
Asia1/HKN/7/2005	VP1 (633)		not shown	WRLFMD
Asia1/HKN/8/2005	VP1 (633)		not shown	WRLFMD
Asia1/IRN/25/2004	VP1 (633)		Fig. 5.16	WRLFMD
Asia1/IRN/30/2004	VP1 (633)		Fig. 5.16	WRLFMD
Asia1/IRN/31/2004	VP1 (633)		Fig. 5.16	WRLFMD
Asia1/Mongolia/2005	VP1 (633)		Fig. 5.16	ARRIAH
Asia1/PAK/2/2004	VP1 (633)		Fig. 5.16	WRLFMD
Asia1/Amursky/RUS/2005	VP1 (633)		Fig. 5.16	ARRIAH
Asia1/Khabarovsk/RUS/2005	VP1 (633)		Fig. 5.16	ARRIAH
Asia1/Prymorsky/RUS/2005	VP1 (633)		Fig. 5.16	ARRIAH
Asia1/TAJ/1/2004*	VP1 (633)		Fig. 5.16	ARRIAH
Asia1/TAJ/2/2004*	VP1 (633)		Fig. 5.16	ARRIAH
Asia1/TAJ/3/2004*	VP1 (633)		not shown	ARRIAH
Asia1/TAJ/4/2004*	VP1 (633)		not shown	ARRIAH
Asia1/TAJ/5/2004*	VP1 (633)		not shown	ARRIAH
Asia1/TAJ/6/2004*	VP1 (633)		not shown	ARRIAH
Serotype SAT1				
SAT1/KEN/1/2005	VP1 (663)	SAT1 NWZ	Fig. 5.13	WRLFMD
SAT1/ZAM/27/2004	VP1 (663)	SAT1 NWZ	Fig. 5.13	WRLFMD
SAT1/ZAM/28/2004	VP1 (663)	SAT1 NWZ	Fig. 5.13	WRLFMD
SAT1/ZAM/29/2004	VP1 (663)	SAT1 NWZ	Fig. 5.13	WRLFMD
SAT1/ZAM/30/2004	VP1 (663)	SAT1 NWZ	Fig. 5.13	WRLFMD
SAT1/ZAM/31/2004	VP1 (663)	SAT1 NWZ	Fig. 5.13	WRLFMD
SAT1/ZAM/32/2004	VP1 (663)	SAT1 NWZ	Fig. 5.13	WRLFMD
SAT1/ZAM/1/2005	VP1 (663)	SAT1 NWZ	Fig. 5.13	WRLFMD
SAT1/ZAM/2/2005	VP1 (663)	SAT1 NWZ	Fig. 5.13	WRLFMD
Serotype SAT2				
SAT2/BOT/1/2005	VP1 (648)		Fig. 5.15	WRLFMD
SAT2/BOT/2/2005	VP1 (648)		Fig. 5.15	WRLFMD
SAT2/BOT/3/2005	VP1 (648)		Fig. 5.15	WRLFMD
SAT2/BOT/4/2005	VP1 (648)		Fig. 5.15	WRLFMD
SAT2/BOT/5/2005	VP1 (648)		Fig. 5.15	WRLFMD
SAT2/BOT/6/2005	VP1 (648)		Fig. 5.15	WRLFMD
SAT2/BOT/7/2005	VP1 (648)		Fig. 5.15	WRLFMD
SAT2/BOT/8/2005	VP1 (648)		Fig. 5.15	WRLFMD
SAT2/KEN/5/2004	VP1 (648)		Fig. 5.14	WRLFMD
SAT2/KEN/6/2004	VP1 (648)		Fig. 5.14	WRLFMD
SAT2/KEN/8/2004	VP1 (648)		Fig. 5.14	WRLFMD
SAT2/KEN/9/2004	VP1 (648)		Fig. 5.14	WRLFMD

SAT2/KEN/10/2004	VP1 (648)		Fig. 5.14	WRLFMD
SAT2/KEN/11/2004	VP1 (648)		Fig. 5.14	WRLFMD
*, not a WRLFMD Ref. No.				
O/IRN/20/2005		in progress		
O/IRN/21/2005		in progress		
A/IRN/22/2005		in progress		
O/IRN/23/2005		in progress		
A/IRN/24/2005		in progress		
A/IRN/25/2005		in progress		
A/IRN/26/2005		in progress		
A/IRN/27/2005		in progress		
A/IRN/28/2005		in progress		
A/IRN/29/2005		in progress		
A/IRN/30/2005		in progress		
A/IRN/31/2005		in progress		
O/PAK/14/2005		in progress		
O/PAK/15/2005		in progress		
O/PAK/16/2005		in progress		
O/PAK/17/2005		in progress		
O+Asia1/PAK/19/2005		in progress		
O/PAK/20/2005		in progress		
O/PAK/21/2005		in progress		
O+Asia1/PAK/22/2005		in progress		
O/PAK/24/2005		in progress		
O/PAK/25/2005		in progress		
O/Pakistan vaccine		in progress		

3.1.2. Summary of antigenic typing

FMDV isolate	Vaccines matched	r value by ELISA	r value by CF50	r value by VNT
Serotype O				
O Afg 2003/16	O Manisa			>1.0
O Bhu 2004/39	O Manisa			0.5
O Bhu 2004/40	O Manisa			0.44
O Eri 2004/1	O Manisa			0.43
O Eri 2004/2	O Manisa			0.36
O Eri 2004/3	O Manisa			0.04
O Hkn 2005/9	O Manisa			0.4
	O 3039			0.5
O Hkn 2005/15	O Manisa			0.33
	O Taiwan 3/97			0.21
	O 3039			0.51
O Irn 2004/6	O Manisa			0.47
O Irn 2004/15	O Manisa			0.62
O Irn 2004/20	O Manisa			0.47
O Irn 2005/12	O Manisa			>1.0
O Irn 2005/20	O Manisa			>1.0
O Irn 2005/23	O Manisa			>1.0
O May 2004/2	O Manisa	1		0.65
	3039	1		
	4147	0.61		
	O Phi 95	1		
	O Tai 189/87	0.86		

	O TNN 24/84	0.71	
O May 2004/3	O Manisa	>1.0	0.5
	3039	1	
	4147	0.71	
	O Phi 95	>1.0	
	O Tai 189/87	1	
	O TNN 24/84	0.86	
O Mai 2005/1	O Manisa		>1.0
O Mya 2004/1	O Manisa		0.6
O Mya 2004/2	O Manisa		0.69
O Pak 2005/3	O Manisa		0.81
O Pak 2005/7	O Manisa		0.65
O Pak 2005/9	O Manisa		>1.0
O Pak 2005/12	O Manisa		>1.0
	O TNN 24/84	0.75	
O Pak 2005/14	O Manisa		>1.0
O Pak 2005/16	O Manisa		>1.0
O Pak 2005/17	O Manisa		>1.0
O Pak 2005/24	O Manisa		>1.0
O Pak 2005/25	O Manisa		>1.0
O Phi 2004/4	O Manisa	1	
	3039	1	
	4147	0.61	
	O Phi 95	1	
	O Tai 189/87	1	
	O TNN 24/84	0.86	
O Phi 2004/5	O Manisa		0.26
O Phi 2004/6	O Manisa	1	
	3039	1	
	4147	0.68	
	O Phi 95	1	
	O Tai 189/87	1	
	O TNN 24/84	0.86	
O Phi 2004/7	O Manisa		0.21
	O Taiwan 3/97		0.30
O Phi 2005/1	O Manisa		0.43
O Phi 2005/2	O Manisa		0.35
O Phi 2005/3	O Manisa		0.3
O Sau 2005/4	O Manisa		0.78
O Sau 2005/8	O Manisa		0.68
O Sau 2005/9	O Manisa		0.95
O Sau 2005/10	O Manisa		0.83
O Sau 2005/14	O Manisa		>1.0
O Sud 2005/1	O Manisa		0.97
O Sud 2005/3	O Manisa		0.83
O Rwa 2004/2	O Manisa		0.69
O Rwa 2004/3	O Manisa		0.56
O Tan 2004/1	O Manisa		0.65
O Tan 2004/2	O Manisa		0.21
O Tan 2004/14	O Manisa		0.72
O Tai 2004/6	ASK	0.25	
	118/87	1	
O Tai 2004/8	O Manisa		>1.0
	189/87	1	
O Tai 2004/9	ASK	0.22	
	118/87	0.43	
O Tog 2004/1	O Manisa		0.69
O Tog 2005/1	O Manisa		0.55
O Tur 2000/5	O Manisa		>1.0
O Tur 2002/12	O Manisa		>1.0
O Tur 2003/3	O Manisa		>1.0
O Tur 2003/7	O Manisa		>1.0
O Uga 2004/4	O Manisa		0.43

O Uga 2004/5	O Manisa			0.19
O Uga 2004/6	O Manisa			0.28
O Uga 2004/18	O Manisa			0.3
O Vit 2005/3	O Manisa			0.59
O Zam 2000/2	O Manisa			0.6
O/Eldorado/MS/Bra/05(4523-2)	O1 Campos		0.62	
O/Eldorado/MS/Bra/05(4583-9)*	O1 Campos		0.56	
O/Eldorado/MS/Bra/05(4583-10)	O1 Campos		0.41	
O/Eldorado/MS/Bra/05(4583-11)	O1 Campos		0.48	
O/Eldorado/MS/Bra/05(814-7)	O1 Campos		0.31	
O/Eldorado/MS/Bra/05(837-2)	O1 Campos		0.45	

* Antigenic match of O/Eldorado/MS/Bra/05(4583-9) to vaccine strain O1 Campos studied by r relationship and Expectancy of Protection (EPP) assay.

EPP Value	**By VNT:**	**by ELISA:**
30 days post vaccination	87.96	82.91
30 days post revaccination	98.59	99.29

Serotype A

A Bhu 2003/7	A Irn96			0.24
	A 5925			0.55
	A Sau 95			0.47
	A22 Irq 24/64			0.22
	A Irn 2001			0.41
A Bhu 2003/40	A Irn96			0.31
	A 5925			0.55
	A Sau 95			0.4
	A22 Irq 24/64			0.15
	A Irn 2001			0.25
A Irn 1999/22	A 5925	0.61		
	A Irn 2001	0.61		
A Irn 2001/32	A22 Irq 24/64			0.18
	A24 Cruzeiro			0.05
	A May97			0.06
	A 5925	<0.1		0.45
	A Sau95			0.2
	A Irn 2001	<0.1		0.1
A Irn 2002/6	A Irn96			0.85
	A22 Irq 24/64			>1.0
	A24 Cruzeiro			0.05
	A May97			0.1
	A 5925	0.43		
	A Irn 2001	<0.1		
A Ken 2003/1	A22 Irq 24/64			0.26
	A15 Tai 1/60			0.1
	A24 Cruzeiro			0.07
	A Irn96			0.09
	A May97			0.05
	A Irn87			0.15
A Ken 2003/2	A22 Irq 24/64			0.28
	A15 Tai 1/60			0.15
	A24 Cruzeiro			0.08
	A Irn96			0.09
	A May97			0.07
	A Irn87			0.14
A Irn 2003/5	A22 Irq 24/64			0.13
	A24 Cruzeiro			No neutralisation
	A Irn96			0.14
	A May97			0.12

	A Tur 14/98	>1.0	
	A 5925	0.22	
	A Irn 2001	<0.1	
A Irn 2003/7	A22 Irq 24/64		0.13
	A24 Cruzeiro		0.02
	A Irn96		0.09
	A May97		0.06
	A 5925	0.23	0.12
	A Sau95		0.06
	A Irn 2001	<0.1	0.03
A Irn 2003/10	A22 Irq 24/64		0.18
	A24 Cruzeiro		0.07
	A Irn96		0.39
	A May97		0.14
	A Sau95		0.04
	A 5925	0.5	
	A Irn 2001	0.38	0.17
A Irn 2003/41	A22 Irq 24/64		0.33
	A24 Cruzeiro		0.05
	A Irn96		0.35
	A May97		0.06
	A 5925	0.61	
	A Irn 2001	0.4	
A Irn 2004/7	A22 Irq 24/64		0.67
	A24 Cruzeiro		0.05
	A Irn96		0.11
	A May97		0.09
	A Irn87		0.12
	A 5925	0.61	0.39
	A Sau95		0.13
	A Irn 2001	<0.1	
A Irn 2004/32	A22 Irq 24/64		0.16
	A24 Cruzeiro		No neutralisation
	A Irn96		0.4
	A May97		No neutralisation
	A Irn87		No neutralisation
	A 5925	0.43	0.27
	A Sau95		0.13
	A Irn 2001	0.25	0.1
A Irn 2004/33	A Irn96		>1.0
	A May97		0.16
	A Irn87		0.12
	A 5925		No neutralisation
	A Sau95		0.12
A Irn 2005/1	A24 Cruzeiro		0.08
	A Irn96		0.06
	A May97		0.14
	A Irn87		0.16
	A Irn 2001		0.09
A Irn 2005/4	A22 Irq 24/64		>1.0
	A24 Cruzeiro		0.06
	A Irn96		0.11
	A May97		0.14
	A Irn87		0.16
	A 5925	0.53	0.43
	A Sau95		0.18
	A Irn 2001	<0.2	0.07
A Irn 2005/5	A22 Irq 24/64		0.71
	A24 Cruzeiro		0.08
	A Irn96		0.1
	A May97		0.07
	A Irn87		0.17
	A 5925	0.61	0.51

	A Sau95		0.18
	A Irn 2001	<0.2	
A Irn 2005/7	A22 Irq 24/64		31
	A Irn96		0.05
A Irn 2005/17	A22 Irq 24/64		0.07
	A Irn96		0.19
A Irn 2005/22	A22 Irq 24/64		0.45
	A Irn96		0.05
A Irn 2005/28	A22 Irq 24/64		0.41
	A Irn96		0.05
A Irn 2005/29	A22 Irq 24/64		0.45
A Lao 2003/36	A22 Irq 24/64		0.13
	A15 Tai 1/60		0.26
	A24 Cruzeiro		0.06
	A Irn96		0.2
	A May97		0.36
	A Irn87		0.25
A Mai 2004/4	A22 Irq 24/64		0.55
	A Irn96		0.09
A May 2004/3	A Irn96		0.35
	A May97		0.44
	A Irn87		0.22
	A 5925		0.37
	A Sau95		0.19
A May 2004/4	A Irn96		0.2
	A May97		0.37
	A Irn87		0.17
	A 5925		0.05
	A Sau95		0.09
	A Irn96		0.05
A Pak 2003/9	A22 Irq 24/64		0.1
	A 5925		0.6
	A Sau95		0.31
	A Irn 2001		0.26
A Pak 2003/11	A22 Irq 24/64		0.1
	A 5925		0.51
	A Sau95		0.36
	A Irn 2001		0.23
A Pak 2003/77	A24 Cruzeiro		0.11
	A Irn96		0.18
	A May97		0.11
	A Irn87		0.22
A Syr 2002/5	A Tur 14/98	>1.0	
A Tai 2004/6	A24 Cruzeiro		0.07
	A Irn96		0.17
	A May97		0.26
	A Irn87		0.25
	ASK	0.25	
	118/87	1	
A Tai 2004/9	A24 Cruzeiro		0.05
	A Irn96		0.16
	A May97		0.26
	A Irn87		0.29
	ASK	0.22	
	118/87	0.43	
A Tur 2002/14	A Tur 14/98	>1.0	
A Tur 2003/5	A22 Irq 24/64		0.14
	A Sau95		0.13
	A Irn 2001		0.18
A Tog 2005/9	A22 Irq 24/64		0.21
	A Irn96		0.09
A Vit 2004/4	A24 Cruzeiro		0.1

	A Irn96	0.5	0.16
	A May97	>1.0	0.28
	A Irn87	<0.2	0.23
	A 5925		0.15
	A Sau95		0.11
	Tai ASK S9	0.7	
	A Ind 17/82	0.3	
	A Sau 23/86	0.9	
	A22 Irq 24/64	>1.0	
A Vit 2004/5	A Irn96	0.4	
	A May97	>1.0	
	A Irn87	0.9	
	Tai ASK S9	0.9	
	A Ind 17/82	<0.1	
	A Sau 23/86	0.9	
	A22 Irq 24/64	0.4	
Asia1			
Asia1 Hkn 2005/1	As Ind 8/79		0.35
	As Shamir		0.58
Asia1 Hkn 2005/2	As Ind 8/79		0.39
	As Shamir		0.87
Asia1 Ind 1980/10	As Shamir	0.45	
	WBN 117/87	0.48	
Asia1 Ind 1981/15	As Shamir	1	
	WBN 117/87	1	
Asia1 Irn 2004/10	As Ind 8/79		0.13
	As Shamir		0.91
Asia1 Irn 2004/30	As Ind 8/79		0.58
	As Shamir		>1.0
Asia1 Irn 2004/31	As Ind 8/79		0.62
	As Shamir		0.52
Asia1 Pak 2003/67	As Ind 8/79		0.16
	As Shamir		0.55
Asia1 Pak 2003/76	As Ind 8/79		0.11
	As Shamir		0.48
Asia1 Pak 2004/1	As Ind 8/79		0.13
	As Shamir	>1.0	0.74
	WBN 117/87	1	
Asia1 Pak 2004/2	As Ind 8/79	>1.0	0.12
	As Shamir	>1.0	0.39
	WBN 117/87		
Serotype C			
C Ken 2004/1	C Oberbayern		0.28

3.2. Overview and discussion of typing results

3.2.1. FMDV serotype O

From Africa, FMD viruses of serotype O collected in Sudan belonged to the EA-3 topotype and were closely related to those collected in 2004 (Fig 5.1). Isolates of the same serotype collected in Mali and Togo were related and belonged to the West Africa (WA) topotype (Fig 1). Isolates collected in Sudan and in Togo showed a good matching with O Manisa by VNT.

From Southern Asia, FMD viruses of serotype O were collected in Iran, Pakistan and Saudi Arabia. Isolates collected in Iran and Pakistan belonged to the PanAsia strain (ME-SA topotype) and were closely related to those collected in Nepal and Bhutan in 2004 (Fig. 5.2 and 5.3). Isolates of serotype O collected in Saudi Arabia belonged to the PanAsia strain and were closely related to those collected in Iran in 2004 (Fig 5.4). Isolates from these countries were shown to have a very good matching with O Manisa by VNT.

From East Asia, FMD viruses of serotype O collected in Hong Kong and the Philippines belonged to the Cathay topotype (Fig 5.5 and Fig 5.6). Some of the isolates collected in Vietnam also belonged to this topotype. Genetic differences could be observed between isolates collected in different countries. However genetic relationships were demonstrated between isolates collected in each country and those collected in 2003 and 2004 in the same place (Fig. 5.7).
Other isolates of serotype O collected in Myanmar, Thailand and Vietnam belonged to various topotypes and sub-lineages (Fig 5.7). Isolates collected in Myanmar in 2004 belonged exclusively to the SEA topotype (Mya98 strain) and were closely related to isolates collected in 1999, 2000 and 2002 in the same country. Vietnamese viruses collected in the same year belonged either to the ME-SA topotype (PanAsia strain) or to the SEA topotype (Mya98 strain). These isolates were very closely related to isolates collected in 2004 and 2005 in Thailand.
Isolates belonging to the Cathay topotype collected in Philippines were shown to have a good match to O Manisa, 3039, 4147, Phi 95, Tai 189/87and O TNN 24/84 by ELISA and those collected in Hong Kong had a moderate match to O Manisa and 3039 by VNT. Other isolates of serotype O collected in Myanmar, Thailand and Vietnam had a good matching by ELISA and /or VNT to O Manisa, 189/87 and moderate to O ASK.

From South America, The type O isolate responsible for the outbreaks recorded in the FMD-free with vaccination area in Mato Grosso do Sul, Brazil belonged to the Euro-SA topotype, being endogenous from the continent, and with homology values between 90-93% to the strains that have sporadically re-appeared in the Southern Cone of the continent in the years 2000, 2002 and 2003 (Fig 5.17). It was subtyped as O1 (Fig 6). Vaccine matching gave satisfactory results by r relationships and Expectancy of Protection (EPP) (by VNT and ELISA), with vaccines containing strain O1 Campos.
The other FMD viruses of type O characterized in the continent were from episodes in still endemic countries (Ecuador and Venezuela), all belonging to the Euro-SA topotype, although from different lineage than that causing the emergence in the Southern Cone (Fig 5.17)

3.2.2. FMDV serotype A

From Africa, Kenyan isolates of serotype A were identical to each other and very closely related to one of the Kenyan vaccine strains, K5/80, with percentage identity values of 99.69% (2 nucleotide difference) (Fig. 5.8). FMDV isolates collected in Mali and Togo were related to isolates collected in Cameroon in 2000 (Fig 5.9). By VNT, Isolates collected in Kenya had a moderate match to A22 IrQ 24/64 and poor to A15 Tai 1/60, A24 Cruzeiro, A Irn 96, A May 97 and A Irn 87. Isolates collected In Mali and Togo had a good and poor match to A22 Irq 24/64, respectively. Both of these isolates had a poor match to A Irn96.

From Southern Asia, FMD viruses collected in Iran belonged to the Asia topotype (Irn 96 strain or unnamed sublineages) (Fig 5.10). All these isolates were closely related to those collected in the same country in 2003 and 2004. By VNT and for most of the isolates, isolates collected in Iran in 2005 had a good match to A22 Irq 24/64 and A5925 but a poor match to A Irn 96, A May 97, A Irn 87 and A Irn 2001.

From East Asia, isolates were collected in Lao PDR and Thailand in 2003 and 2004, respectively. These viruses were closely related to those collected in Southeast Asia (Fig 5.11). The FMDV isolate of serotype A from Lao PDR was closely related to isolates collected in Malaysia and Thailand in 2003 and 2004, respectively. All isolates of type A collected in Thailand in 2004, except one, were closely related to each other and to some collected in the same country in 2003. By Elisa, isolates collected in Vietnam had a very good matching to A May 97, A Irn 87, ASK, A Ind 17/82, A Sau 23/86 and A22 Irq 24/64. By VNT, isolates collected in Malaysia, Thailand and Vietnam good to poor matching to A May 97, A Irn 96 and A5925.

From South America, occurrence of FMDV Type A was recorded in Colombia, specifically in Bogotá, Department of Cundinamarca. No outbreaks have been confirmed in this area since September 2002 (twenty-nine months). A precise characterization of the agent was undertaken and it was found to have a high level of homology with the A24 Cruzeiro reference strain, Fig. 5.18, matching at 638 out of the 639 nucleotides. As a result of laboratory testing and epidemiological investigations carried out around the outbreak and in in-contact farms, the likelihood of a field origin has been ruled out and it was assumed that the outbreak was caused by a laboratory virus strain.

The other FMDV type A characterized in the continent were from episodes in a still endemic country (Venezuela), and all isolates were placed within the Euro-SA cluster (Fig 5.18)

3.2.3. FMDV serotype C

FMDV of serotype C was collected in Kenya in 2004. This isolate appeared to be very closely related (99.84%; 1 nucleotide difference) to the Kenyan vaccine strain, K267/67 and to previous outbreaks that country in 1983 and 1996 (Fig. 5.12). By VNT a weak match was shown to C Oberbayern.

3.2.3. FMDV serotype SAT1 and SAT2

SAT1 isolates collected in Zambia in 2005 were very closely related to isolates collected in the same country in 2004 (Fig 5.13). This shows that this outbreak is not yet under control. A SAT1 virus collected in Kenya, was not closely related to any other SAT 1 virus (Fig. 5.13).

SAT 2 isolates collected in Kenya belonged to two different sublineages (Fig. 5.14). Two FMDV isolates were very closely related to the Kenya vaccine strain, K65/82 (99.54 and 99.69 % nt identity, respectively). The others were closely related to viruses isolated from outbreaks of FMDV in Tanzania and Malawi in 2004. SAT2 viruses collected in Botswana were closely related (Fig 5.14) to an FMDV isolate collected in African buffalo in the same country in 1998 (not shown on phylogenetic tree) supporting the supposition that this outbreak has probably an origin in wildlife.

3.2.4. FMDV serotype Asia1

Asia1 serotype remained restricted to Asia.
Viruses belonging to five different sublineages are circulating in Asia (Fig 5.15):
-One FMDV isolate of serotype Asia 1 collected in Iran was closely related to those collected in Iran and Afghanistan in 2001
-Other FMDV of serotype Asia 1 collected in Iran were closely related to viruses collected in Pakistan between 2002 and 2005, Tajikistan in 2004 and Hong Kong in 2005.
- FMD viruses collected in India in 2004 belonged to a unique sub-lineage.
- Finally, FMDV isolates collected in Myanmar were related to viruses collected in Myanmar or Thailand a few years earlier.

The Asia 1 virus responsible for outbreaks in China and Russia were also closely related to each other (less than 0.79% difference) and to viruses from India (Tamil Nadu) isolated in 1980-81 (1.42-1.74%). It can be suspected that these outbreaks are vaccine related, although Indian viruses from 1980-81 do not match with any known vaccine strains of Asia 1.
FMDV isolates collected in Mongolia were closely related to isolates collected in China and Russia between May and July 2005. By VNT and/or ELISA it appears that Asia 1 Shamir should provide a good coverage. Some isolates collected in Pakistan, Iran and Hong Kong showed a good match by ELISA to Asia 1 Shamir and A Ind 8/79. However by VNT, isolates from these countries have shown a better match to Asia 1 Shamir than to Asia 1 Ind 8/79. Isolates collected in India in 1980 and 1981 that are closely related to viruses responsible the outbreaks in Russia and China had a good match to Asia 1 Shamir and WBN 117/87.

4. Overall conclusions

FMDV is still active in many parts of the world. An improvement of the global surveillance for FMD has occurred this year. Different reasons can explain this observation such as the existence of projects on FMD funded by FAO or other organisations in different parts of the world and also by the good collaborations between several FMD laboratories (WRL FMD, FGI ARRIAH, BVI, Pakchong RRL, Lanzhou, VRI). However, the situation in the Middle East remains a concern because a very low number of clinical samples were submitted in 2005 from this area.

Serotype O remains the most prevalent serotype. FMDV of serotypes A and SAT show the highest degree of genetic and antigenic variability. In 2005, the spread of Asia 1 in Asia and the confirmation of serotype C in Africa were the two main novelties.

The epidemic of FMD serotype Asia 1 was in reality caused by viruses that belong to five different sublineages. It has become increasingly clear that China has a key role in the control of the spread in Asia.

The occurrence of serotype C in Kenya in 2004 was confirmed and the isolate was closely related to a vaccine strain. The report of type C in Pakistan in 2004 was not confirmed by analysing samples detected positive in this country. The infrequent occurrence of serotype C and the relatedness of the Kenyan isolate to a vaccine strain raises the question of whether it would be pertinent to globally cease vaccination against this serotype (except in areas where wild-type viruses are proved to be circulating, e.g. Brazil).

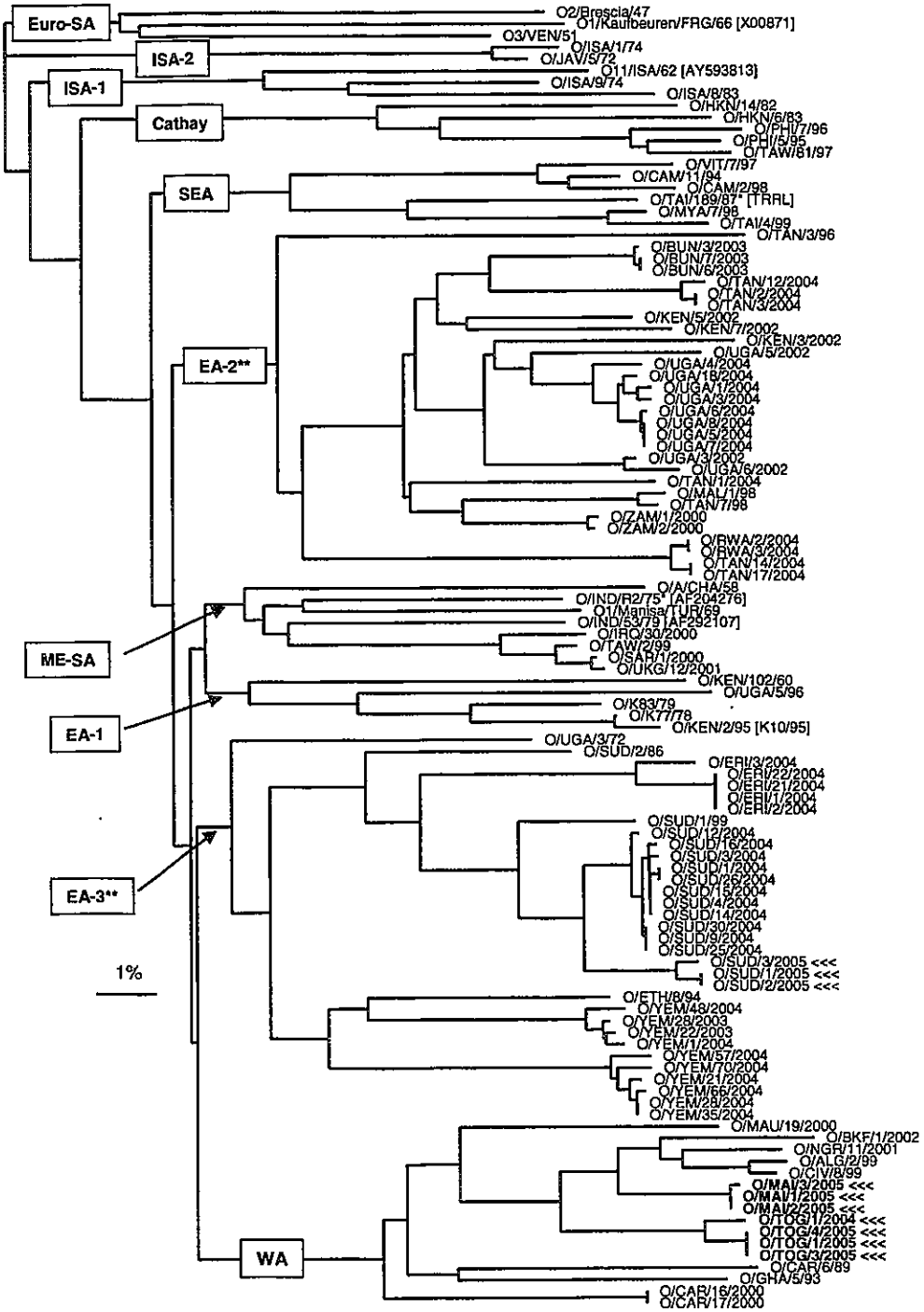
Based on VNT and ELISA assays, O Manisa and Asia1 Shamir remain very appropriate as vaccine strains to protect against most field isolates. For serotype A, different vaccine strains are necessary to provide a full coverage. It is noticeable that some recent isolates collected in Iran gave a good matching to A22 Iraq 24/64.

Vaccine matching studies carried out with FMDV strains circulating in South America indicated that strains O1 Campos, A24 Cruzeiro and C3 Indiana l remain appropriate as vaccine strains to protect against field isolates.

Global surveillance will be improved by continuing efforts to solicit sample submissions, however, the cost and difficulties of sending infectious goods by air remains a considerable constraint. Efforts to improve the global surveillance must be pursued by supporting financially the coordination of reference laboratories for FMD such as the OIE/FAO network of reference laboratories for FMD.

5. Appendix of dendrograms

Fig. 5.1. Neighbor-joining tree comparing the complete VP1-coding sequences of type O FMDV collected in Africa (Mali, Sudan and Togo)



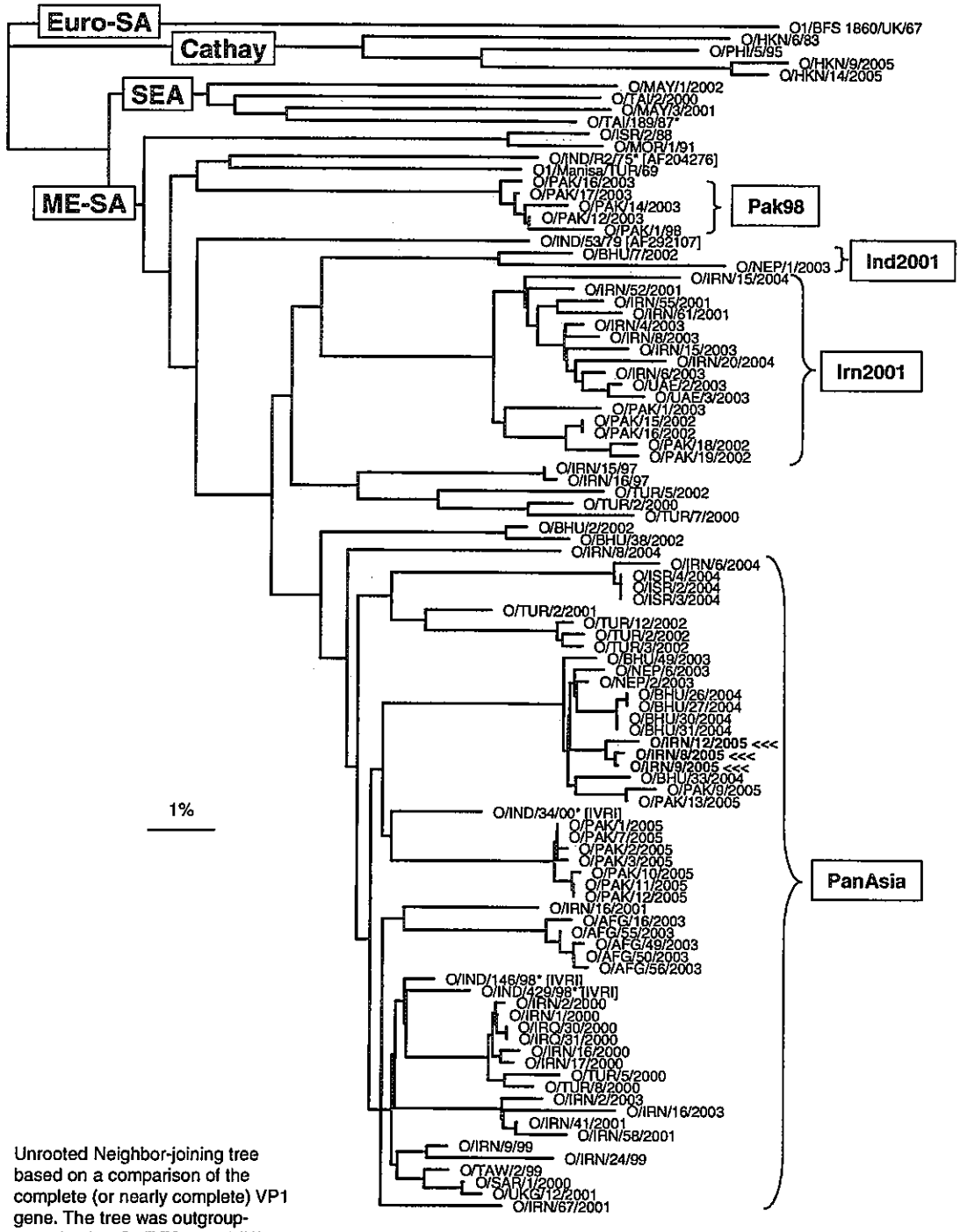
Unrooted Neighbor-joining tree based on a comparison of the complete VP1 gene (~639nt). The tree was outgroup-rooted using the Euro-SA topotype sequences.

* Not a WRLFMD Ref. No.

** proposed new topotypes

N.J. Knowles R. J. Midgley & J.-F. Valarcher, 10 October 2005

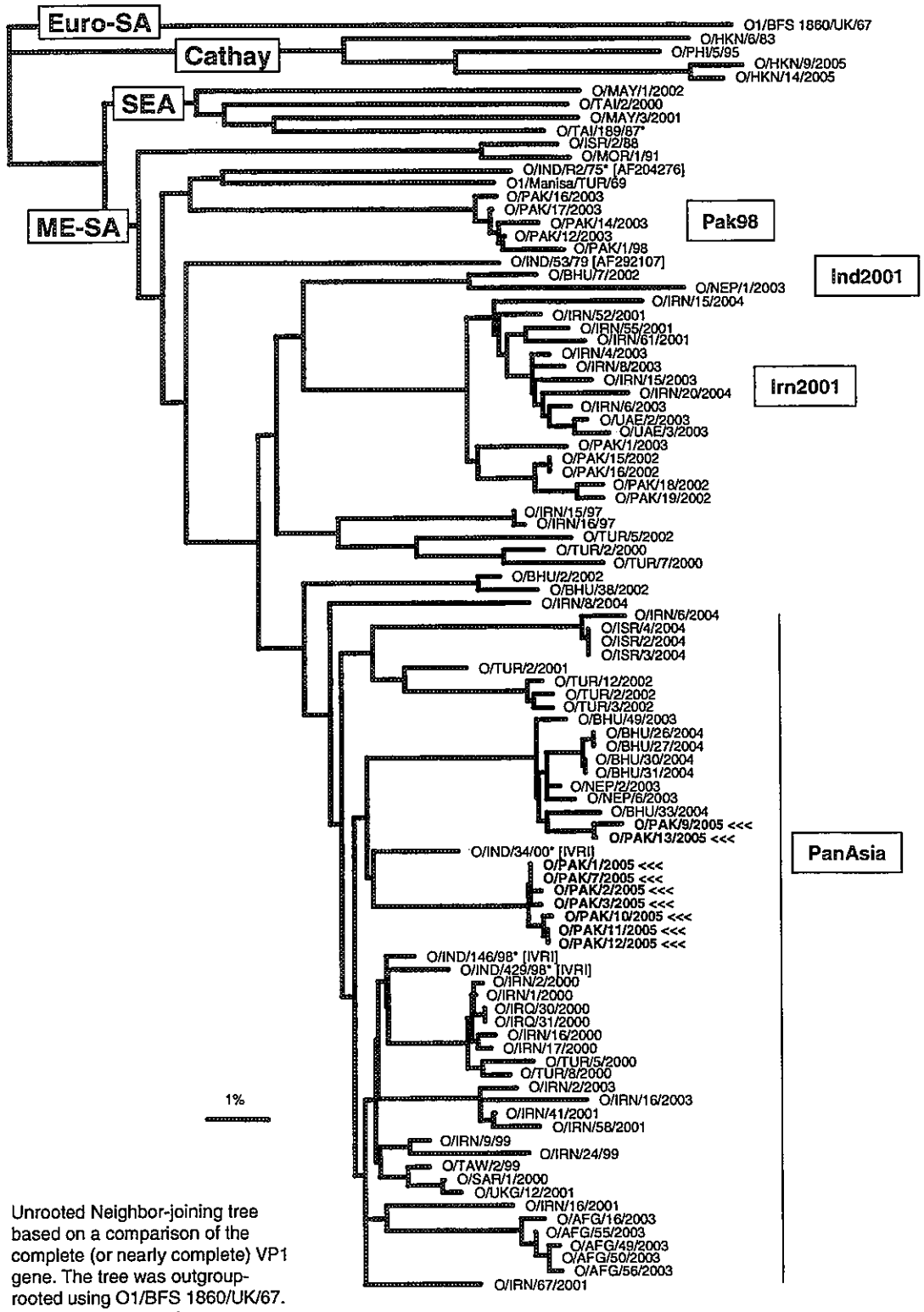
Fig. 5.2. Neighbor-joining tree comparing the complete VP1-coding sequences of type O FMDV collected in Iran



Unrooted Neighbor-joining tree based on a comparison of the complete (or nearly complete) VP1 gene. The tree was outgroup-rooted using O1/BFS 1860/UK/67.
*, not a WRLFMD ref. no.

N.J. Knowles, R.J. Midgley & J.-F. Valarcher, 10 October 2005

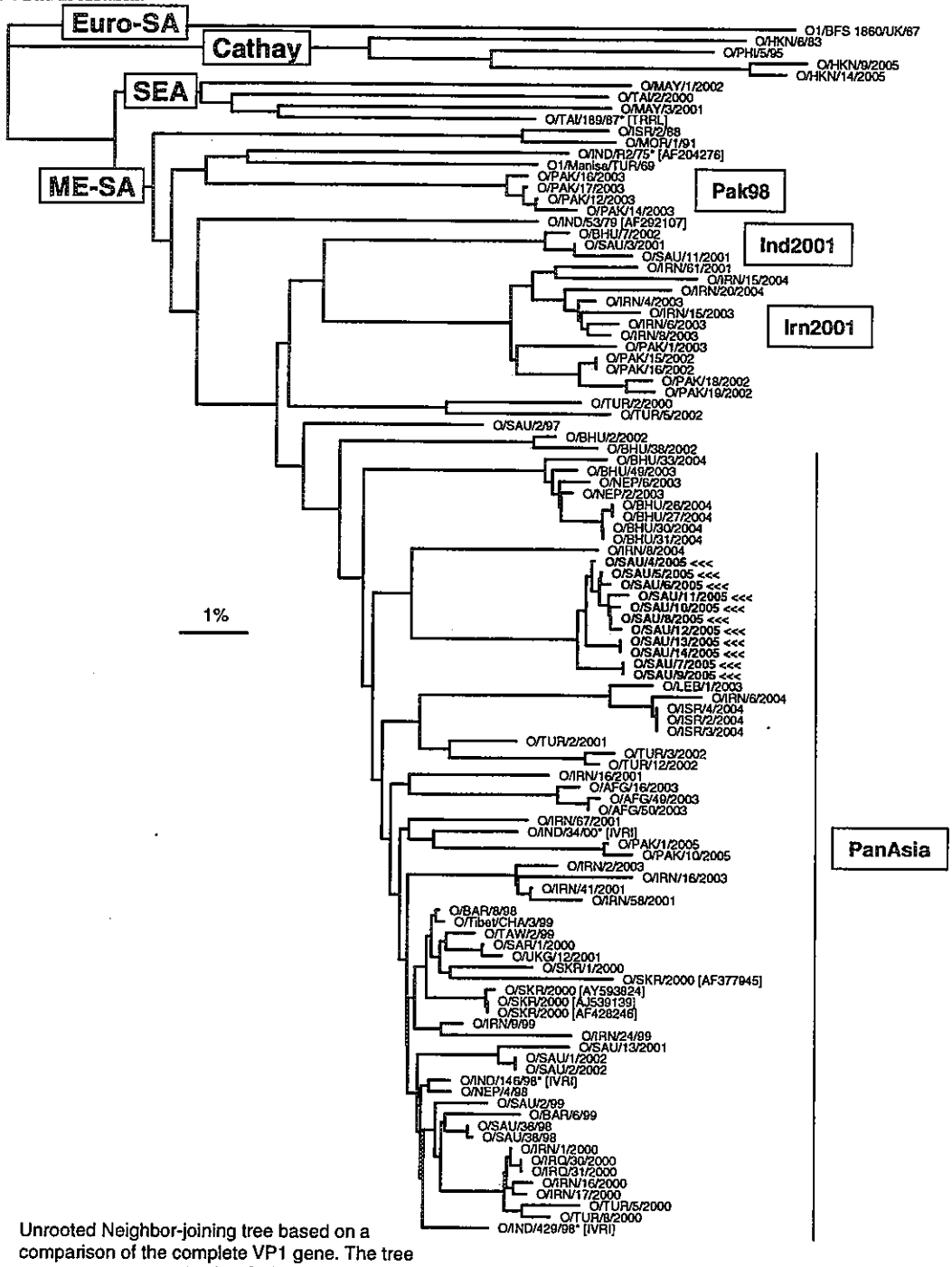
Fig. 5.3. Neighbor-joining tree comparing the complete VP1-coding sequences of type O FMDV collected in Pakistan



Unrooted Neighbor-joining tree based on a comparison of the complete (or nearly complete) VP1 gene. The tree was outgroup-rooted using O1/BFS 1860/UK/67.
*, not a WRLFMD ref. no.

N.J. Knowles, R.J. Midgley & J.-F. Valarcher, 22 June 2005

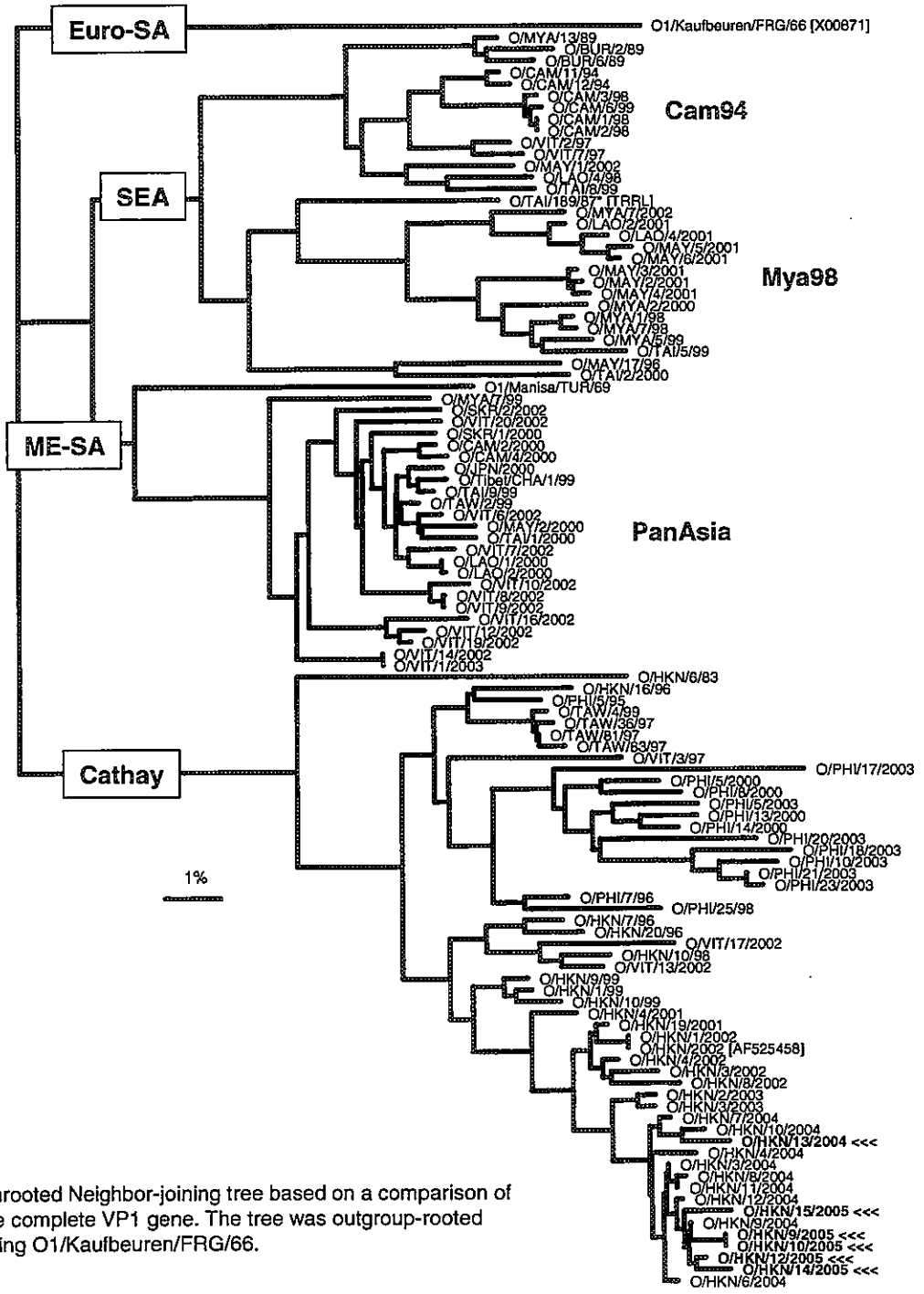
Fig. 5.4. Neighbor-joining tree comparing the complete VP1-coding sequences of type O FMDV collected in Saudi Arabia.



Unrooted Neighbor-joining tree based on a comparison of the complete VP1 gene. The tree was outgroup-rooted using O1/BFS 1860/UK/67. *, not a WRLFMD ref. no.

N.J. Knowles, R.J. Midgley & J.-F. Valarcher, 5 September 2005

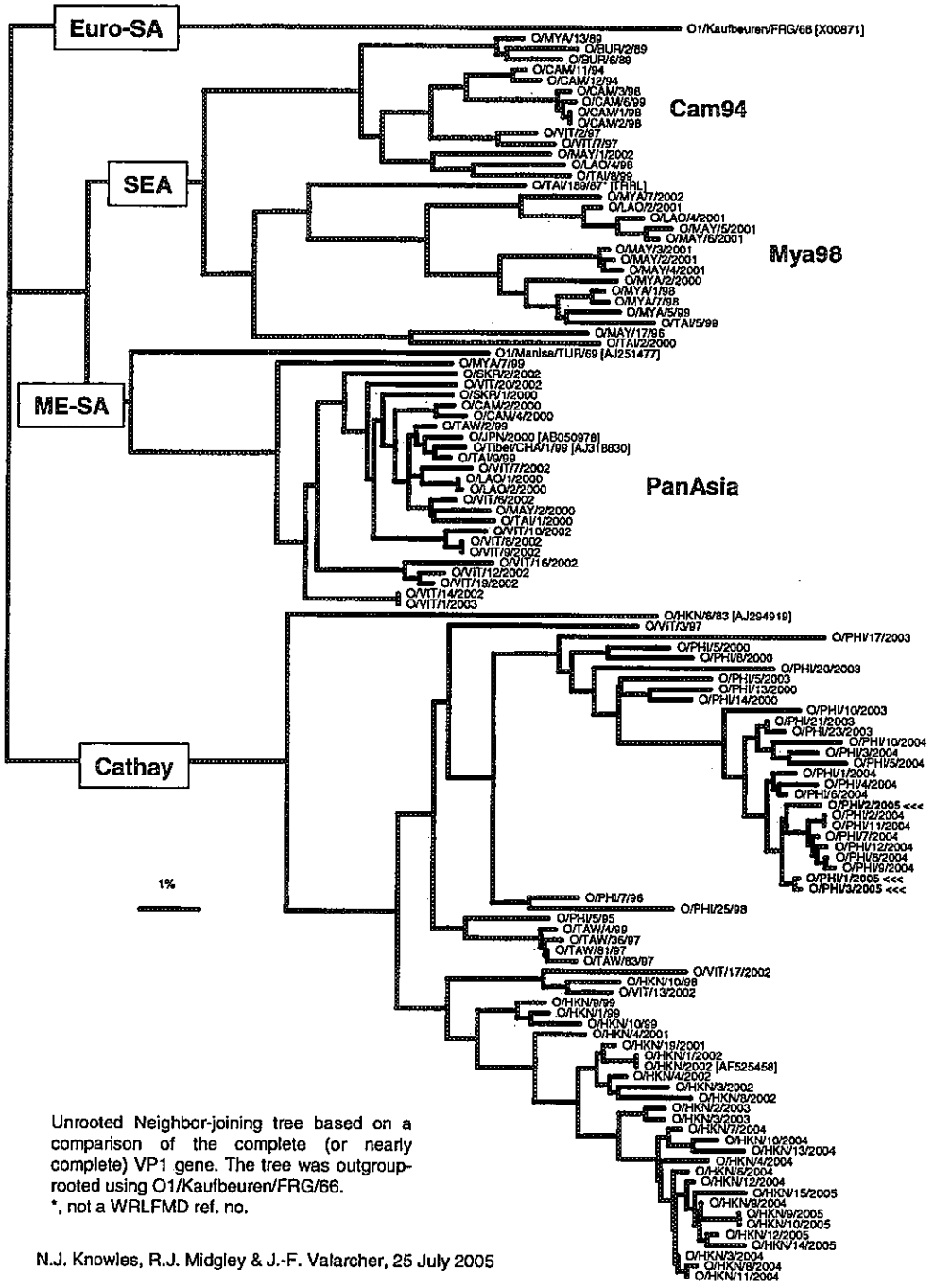
Fig. 5.5. Neighbor-joining tree comparing the complete VP1-coding sequences of type O FMDV collected in Hong Kong.



Unrooted Neighbor-joining tree based on a comparison of the complete VP1 gene. The tree was outgroup-rooted using O1/Kaufbeuren/FRG/66.

N.J. Knowles, P.R. Davies, R.J. Midgley & J.-F. Valarcher, 7 June 2005

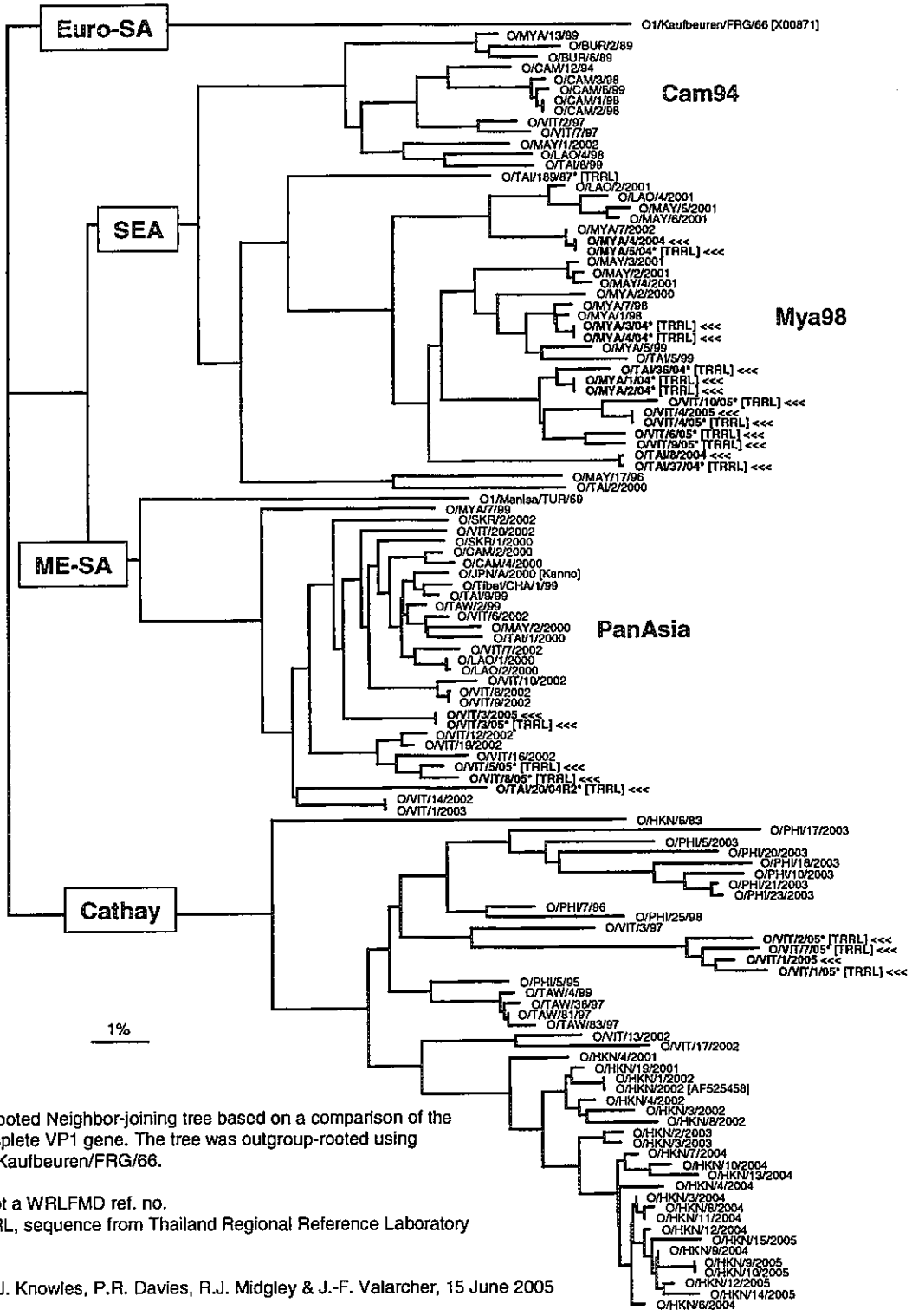
Fig. 5.6. Neighbor-joining tree comparing the complete VP1-coding sequences of type O FMDV collected in Philippines.



Unrooted Neighbor-joining tree based on a comparison of the complete (or nearly complete) VP1 gene. The tree was outgroup-rooted using O1/Kaufbeuren/FRG/66.
*, not a WRLFMD ref. no.

N.J. Knowles, R.J. Midgley & J.-F. Valarcher, 25 July 2005

Fig. 5.7 Neighbor-joining tree comparing the complete VP1-coding sequences of type O FMDV collected in Thailand, Myanmar and Vietnam. Some of these sequences have been supplied by Pakchong RRL for FMD.

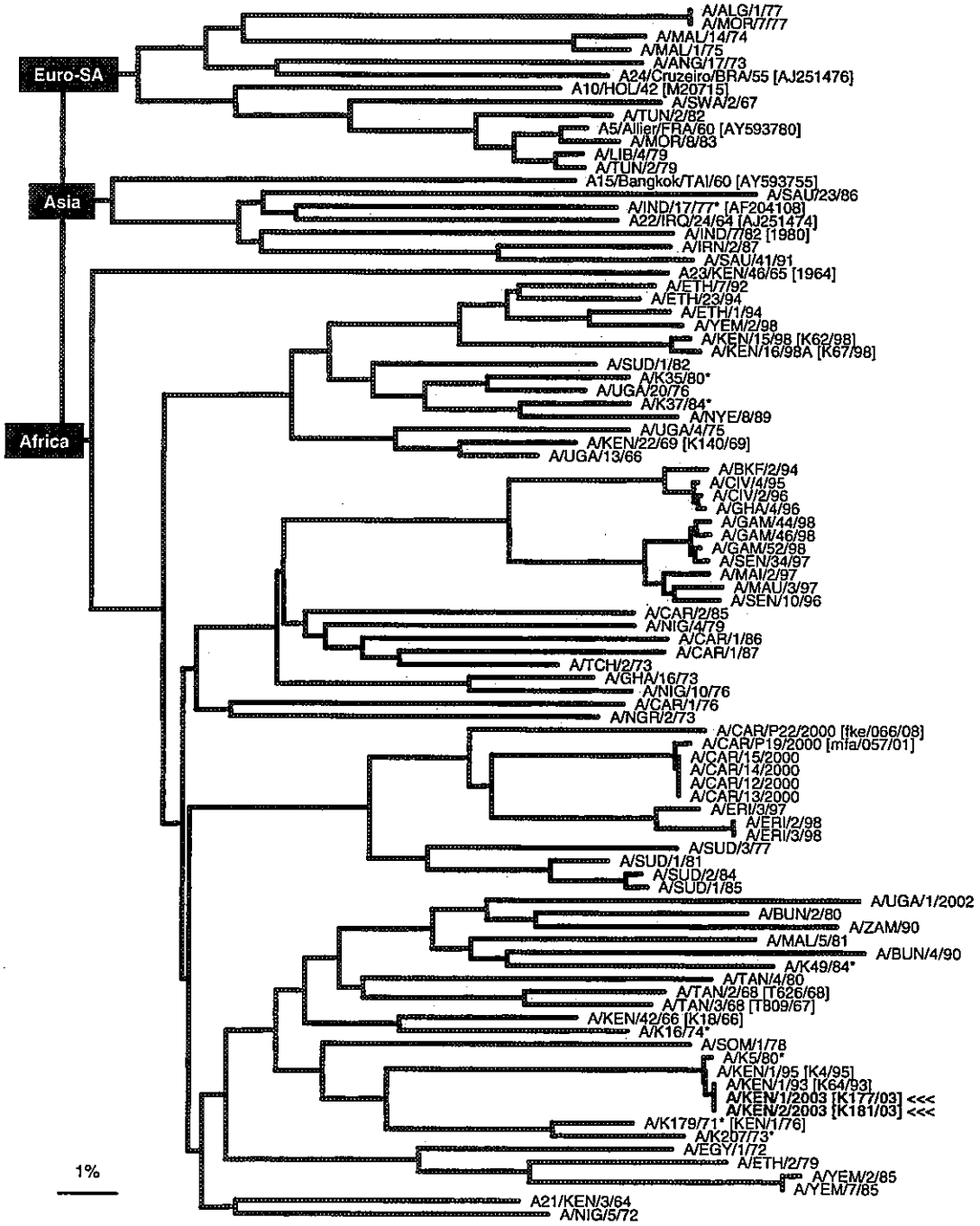


Unrooted Neighbor-joining tree based on a comparison of the complete VP1 gene. The tree was outgroup-rooted using O1/Kaufbeuren/FRG/66.

* Not a WRLFMD ref. no.
TRRL, sequence from Thailand Regional Reference Laboratory

N.J. Knowles, P.R. Davies, R.J. Midgley & J.-F. Valarcher, 15 June 2005

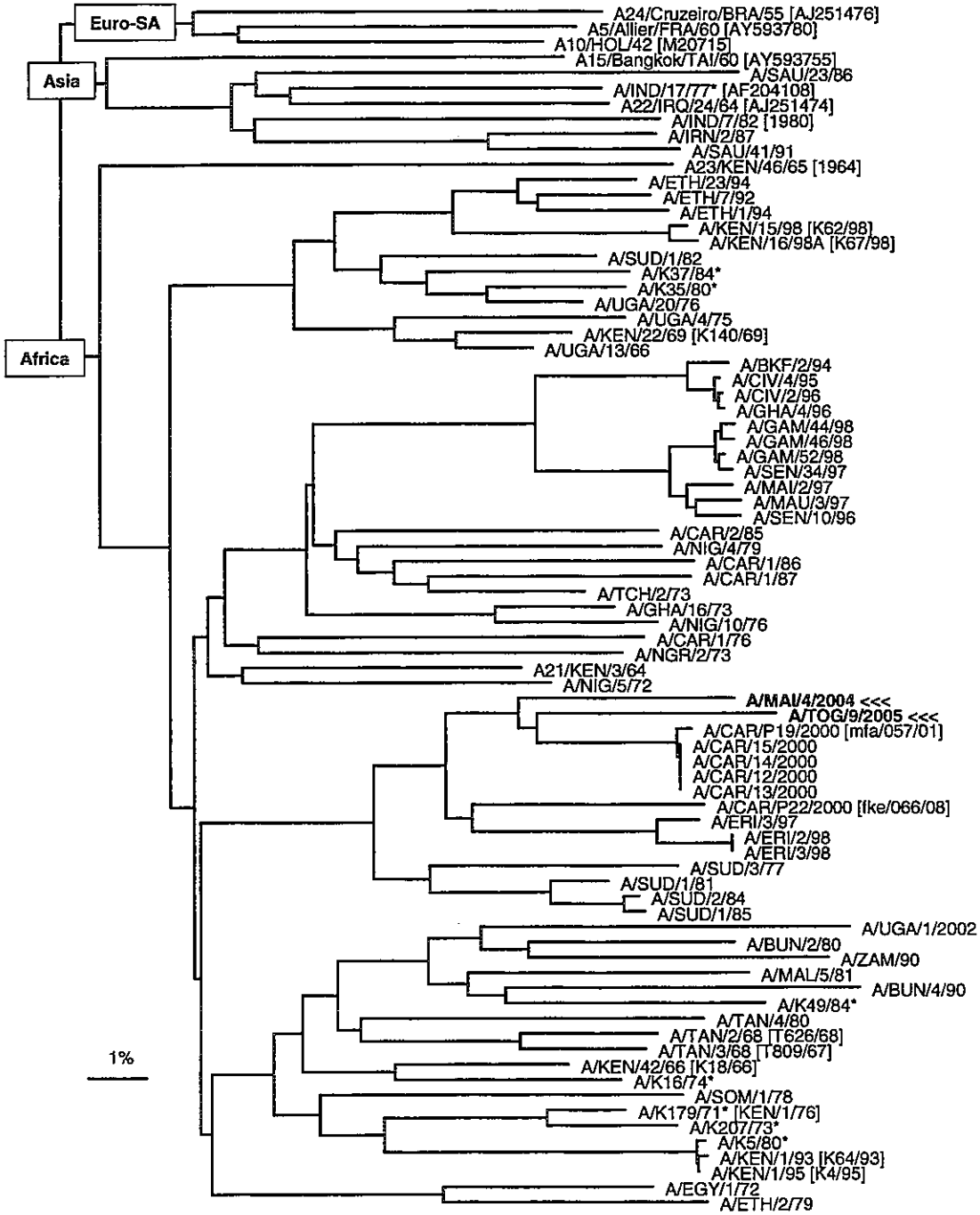
Fig. 5.8. Neighbor-joining tree comparing the complete VP1-coding sequences of type A FMDV collected in Kenya.



Unrooted Neighbor-joining tree based on a comparison of the complete VP1 gene.
The tree was outgroup-rooted using members of the Euro-SA topotype.

N.J. Knowles, P.R. Davies, R.J. Midgley & J.-F. Valarcher, 15 February 2005

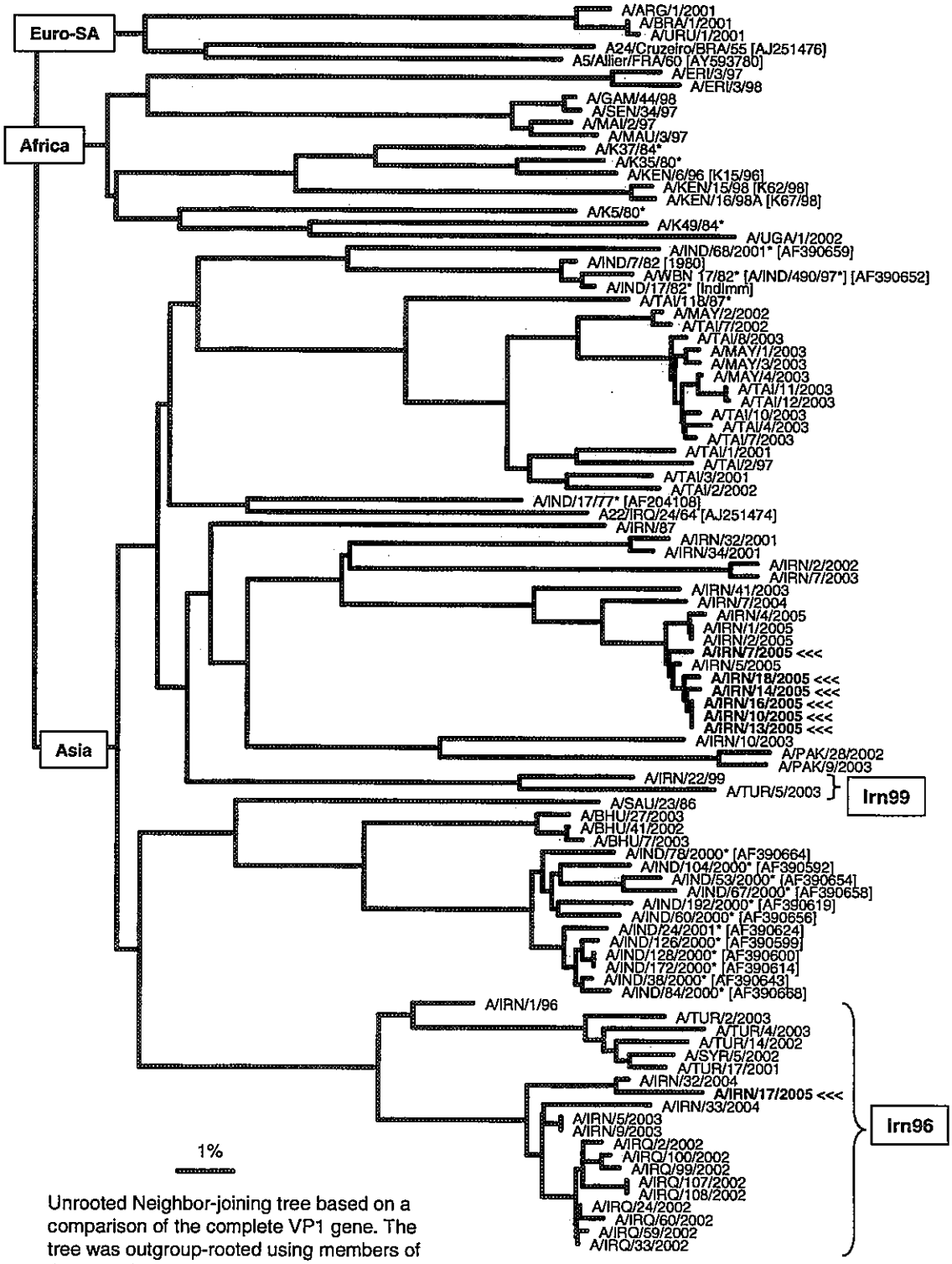
Fig. 5.9. Neighbor-joining tree comparing the complete VP1-coding sequences of type A FMDV collected in Togo and Mali.



Unrooted Neighbor-joining tree based on a comparison of the complete VP1 gene.
The tree was outgroup-rooted using members of the Euro-SA topotype.

N.J. Knowles, R.J. Midgley & J.-F. Valarcher, 10 October 2005

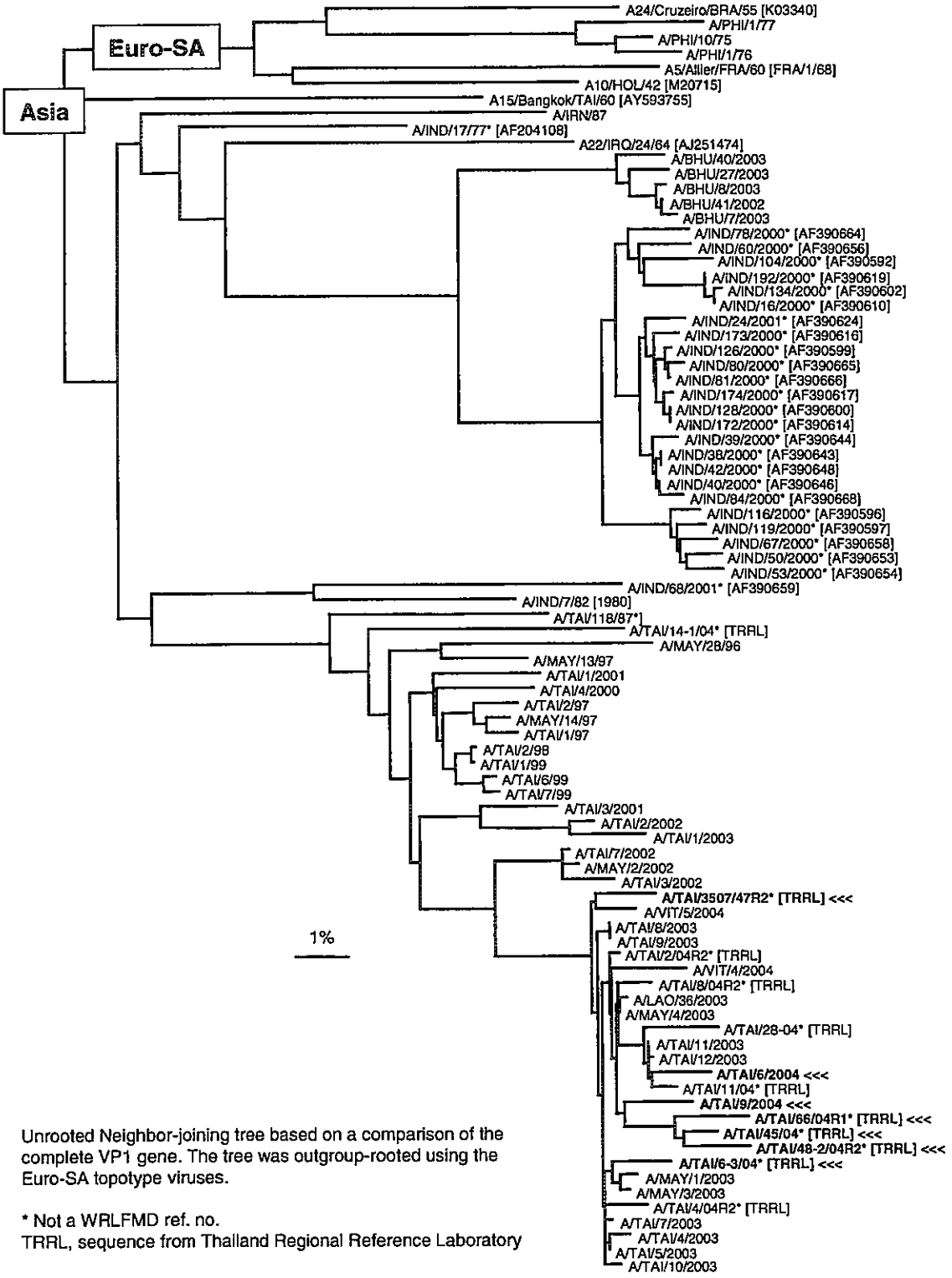
Fig. 5.10. Neighbor-joining tree comparing the complete VP1-coding sequences of FMDV serotype A collected in Iran



Unrooted Neighbor-joining tree based on a comparison of the complete VP1 gene. The tree was outgroup-rooted using members of the Euro-SA topotype.

N.J. Knowles, R.J. Midgley & J.-F. Valarcher, 10 October 2005

Fig. 5.11. Neighbor-joining tree comparing the complete VP1-coding sequences of type A FMDV collected in Lao PDR and Thailand.

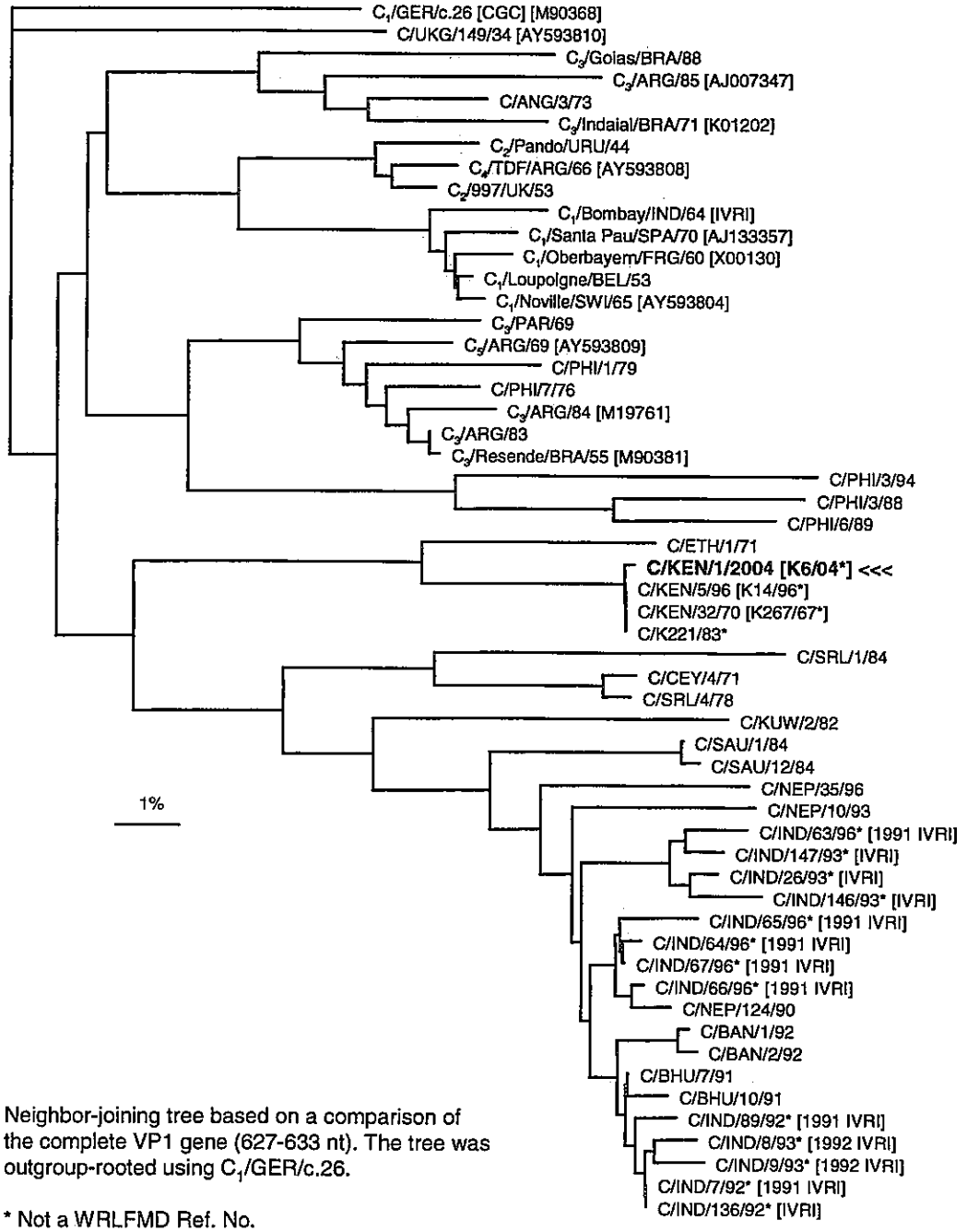


Unrooted Neighbor-joining tree based on a comparison of the complete VP1 gene. The tree was outgroup-rooted using the Euro-SA topotype viruses.

* Not a WRLFMD ref. no.
TRRL, sequence from Thailand Regional Reference Laboratory

N.J. Knowles, P.R. Davies, R.J. Midgley & J.-F. Valarcher, 15/06/2005

Fig. 5.12. Neighbor-joining tree comparing the complete VP1-coding sequences of type C FMDV collected in Kenya.

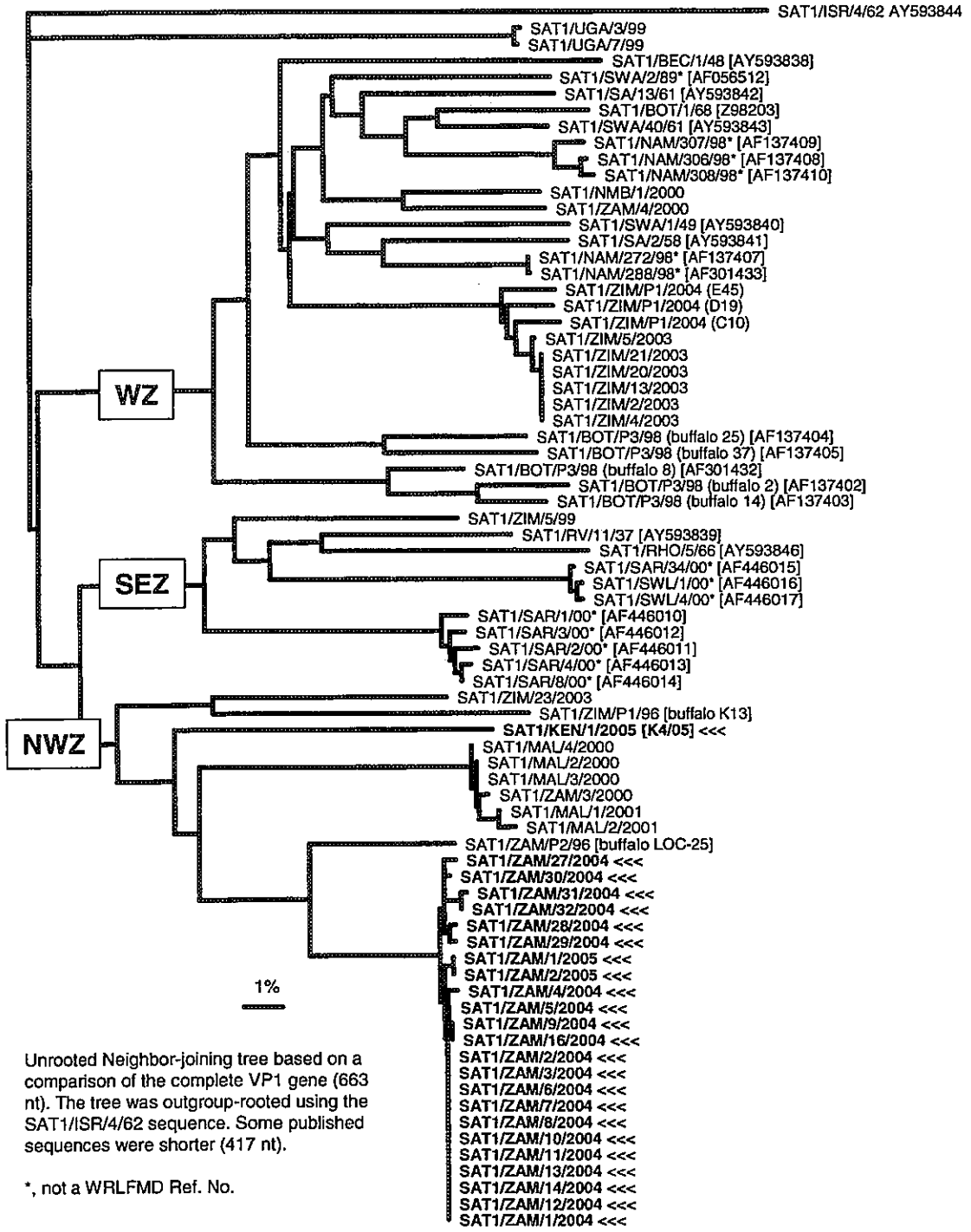


Neighbor-joining tree based on a comparison of the complete VP1 gene (627-633 nt). The tree was outgroup-rooted using C_1/GER/c.26.

* Not a WRLFMD Ref. No.

N.J. Knowles, R.J. Midgley, P.R. Davies and J.-F. Valarcher, 22 March 2005

Fig. 5.13. Neighbor-joining tree comparing the complete VP1-coding sequences of type SAT1 FMDV collected in Kenya and Zambia.

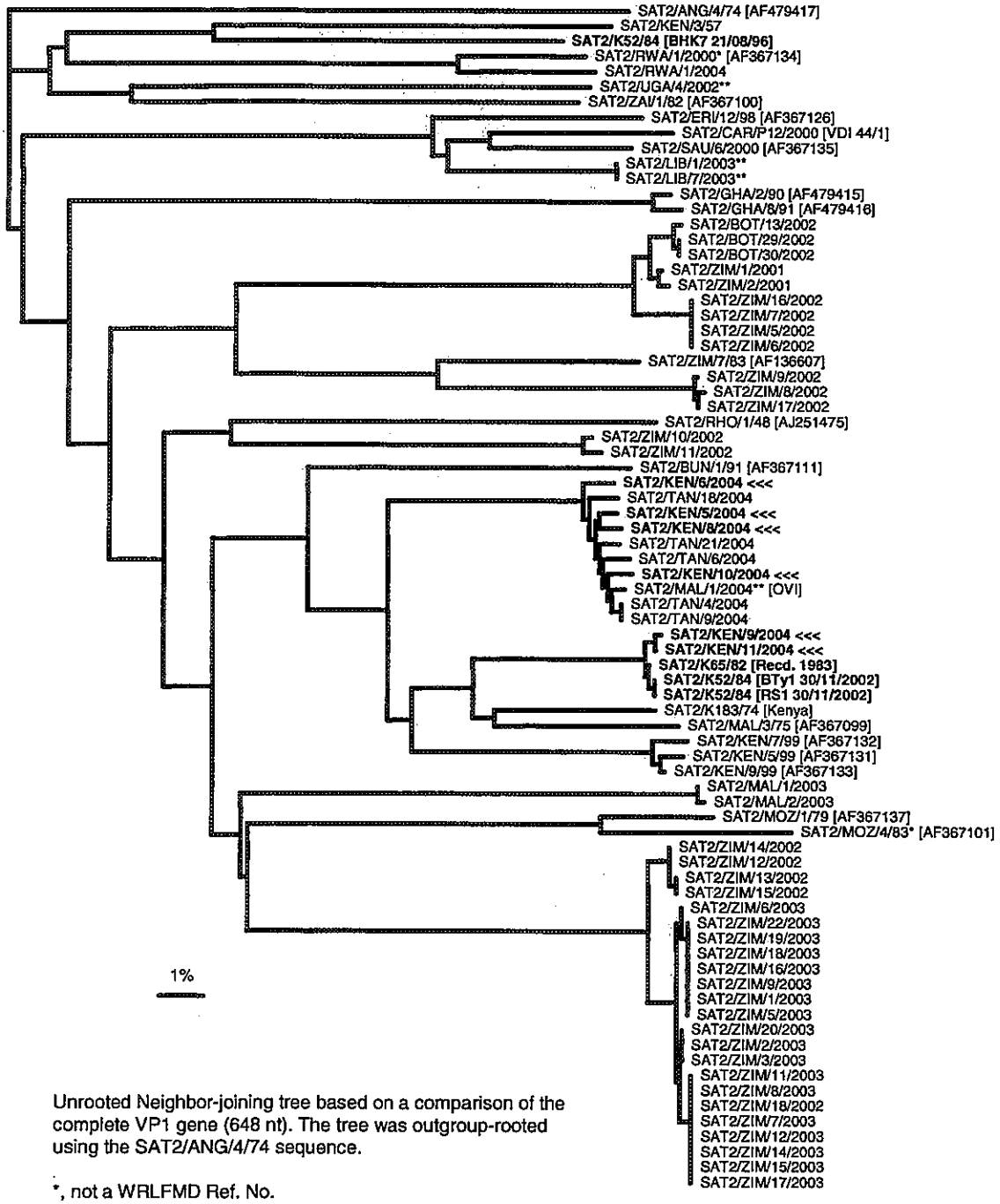


Unrooted Neighbor-joining tree based on a comparison of the complete VP1 gene (663 nt). The tree was outgroup-rooted using the SAT1/ISR/4/62 sequence. Some published sequences were shorter (417 nt).

*, not a WRLFMD Ref. No.

N.J. Knowles, R.J. Midgley and J.-F. Valarcher, 13 September 2005

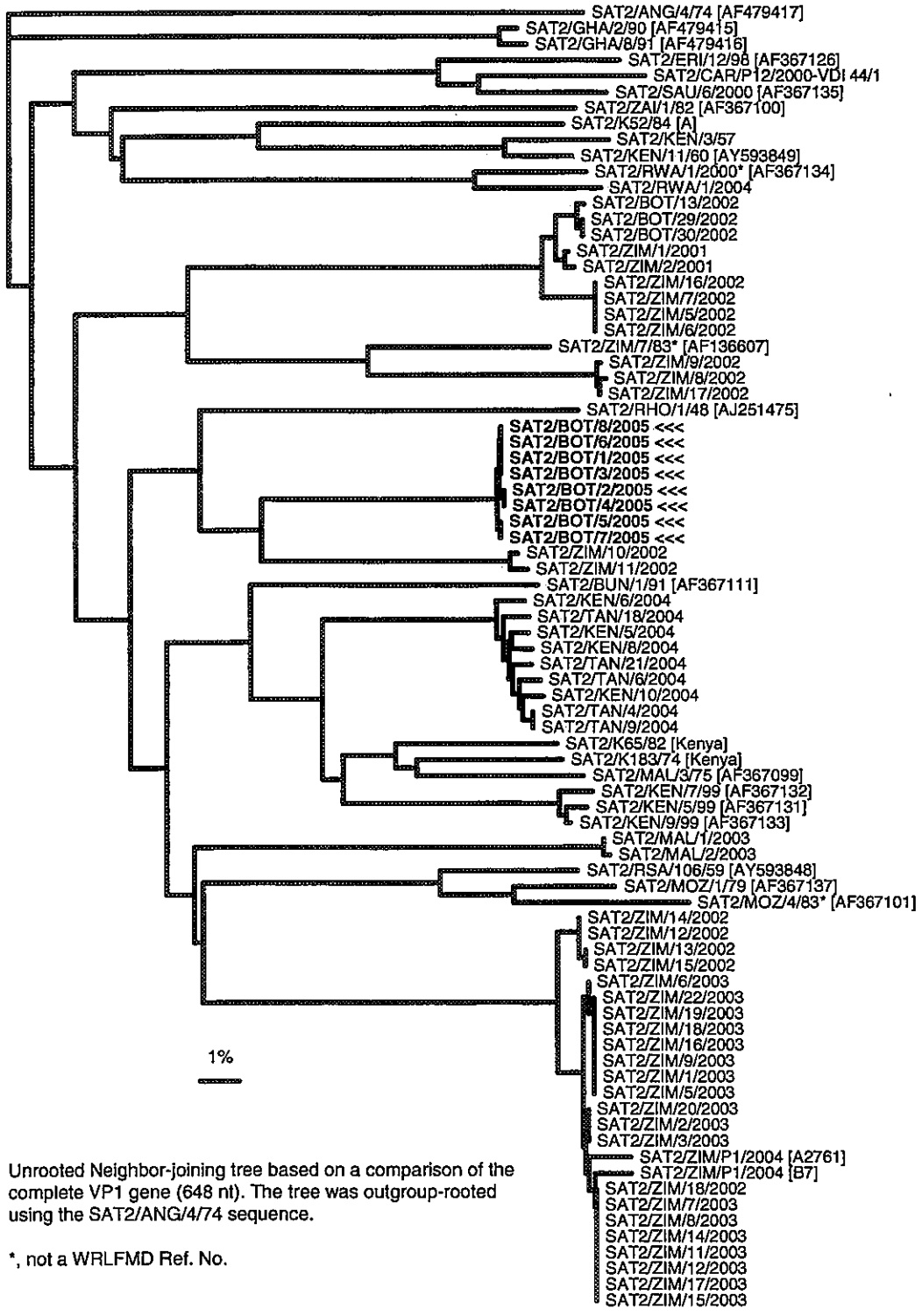
Fig. 5.14. Neighbor-joining tree comparing the complete VP1-coding sequences of type SAT2 FMDV collected in Kenya.



Unrooted Neighbor-joining tree based on a comparison of the complete VP1 gene (648 nt). The tree was outgroup-rooted using the SAT2/ANG/4/74 sequence.

*, not a WRLFMD Ref. No.
**, Some sequences were shorter (384 to 418 nt).

Fig. 5.15. Neighbor-joining tree comparing the complete VP1-coding sequences of type SAT2 FMDV collected in Botswana.

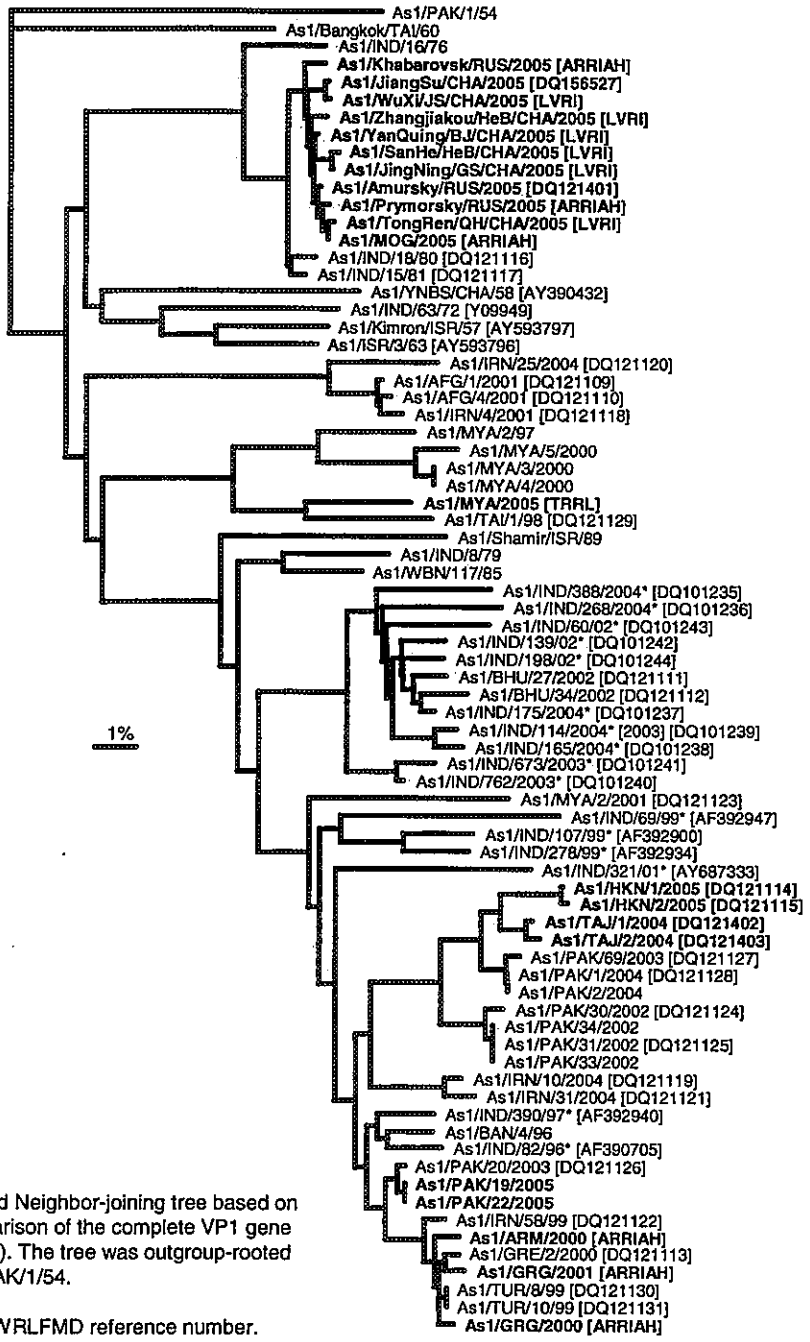


Unrooted Neighbor-joining tree based on a comparison of the complete VP1 gene (648 nt). The tree was outgroup-rooted using the SAT2/ANG/4/74 sequence.

*, not a WRLFMD Ref. No.

N.J. Knowles, R.J. Midgley and J.-F. Valarcher, 12 September 2005

Fig. 5.16. Neighbor-joining tree comparing the complete VP1-coding sequences of type Asia1 FMDV collected in Afghanistan, China, Hong Kong, India, Iran, Myanmar Pakistan and Russia. Some of Sequence have been provided by FG ARRIAH (Mongolia and Russia), LVI (China), Pakchong RRL (Myanmar), Plum Island Animal Disease Center (Afghanistan) and PDFMD (India)



Unrooted Neighbor-joining tree based on a comparison of the complete VP1 gene (~633 nt). The tree was outgroup-rooted using PAK/1/54.

* Not a WRLFMD reference number.

N.J. Knowles & J.-F. Valarcher, 28 October 2005

Fig. 5.17. Neighbor-joining tree comparing the complete VP1-coding sequences of type O FMDV collected in South America.

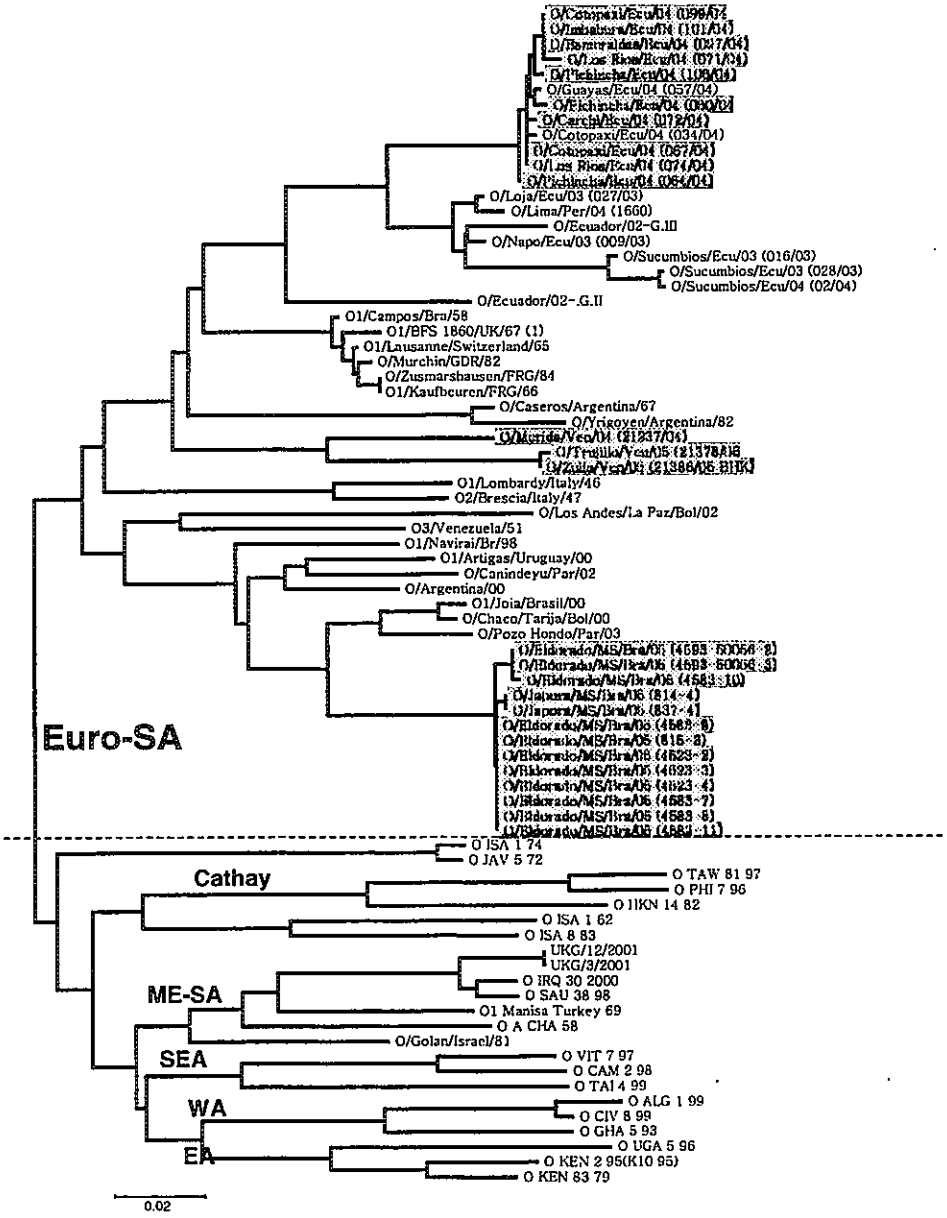


Fig. 5.18. Neighbor-joining tree comparing the complete VP1-coding sequences of type O FMDV collected in South America.

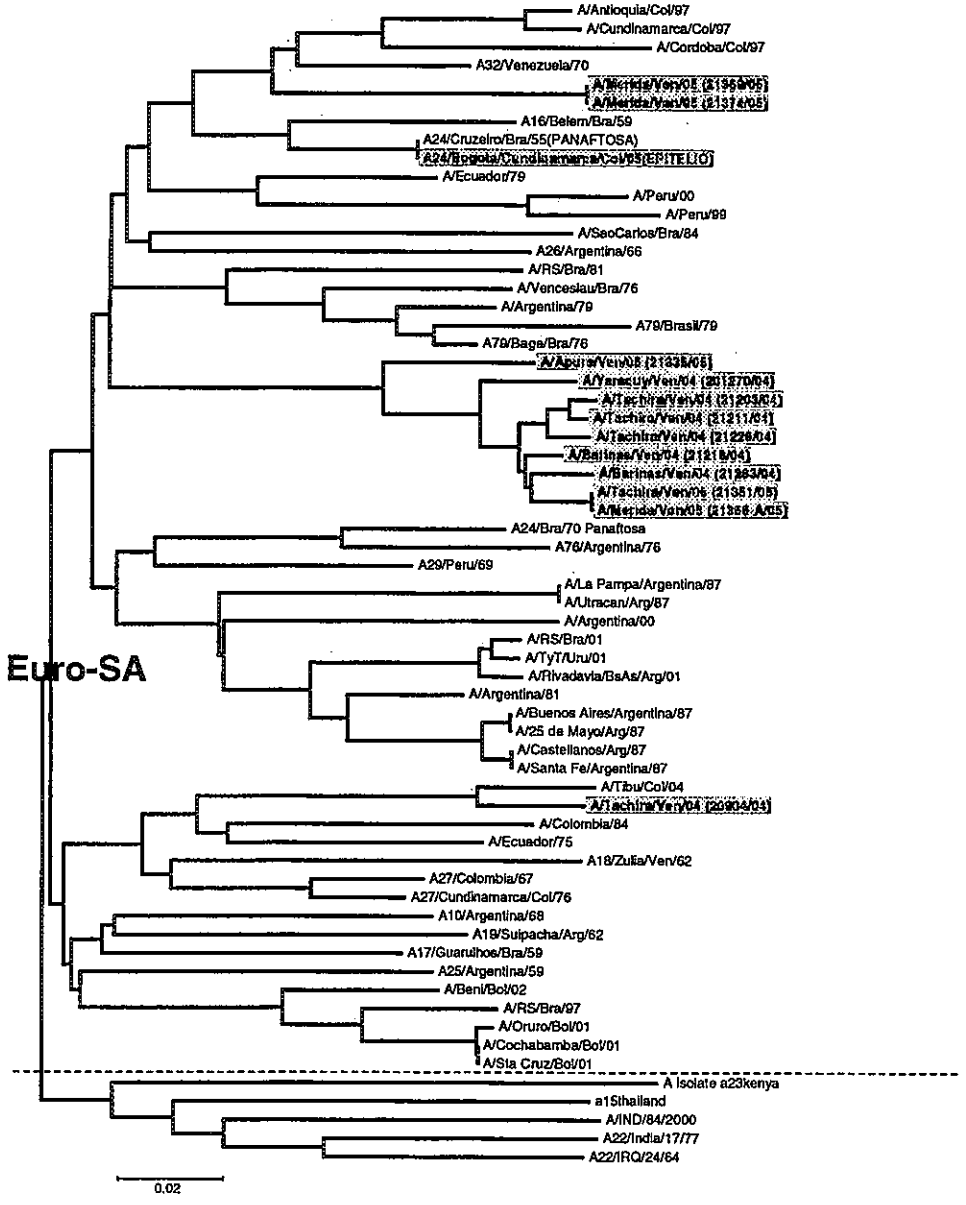
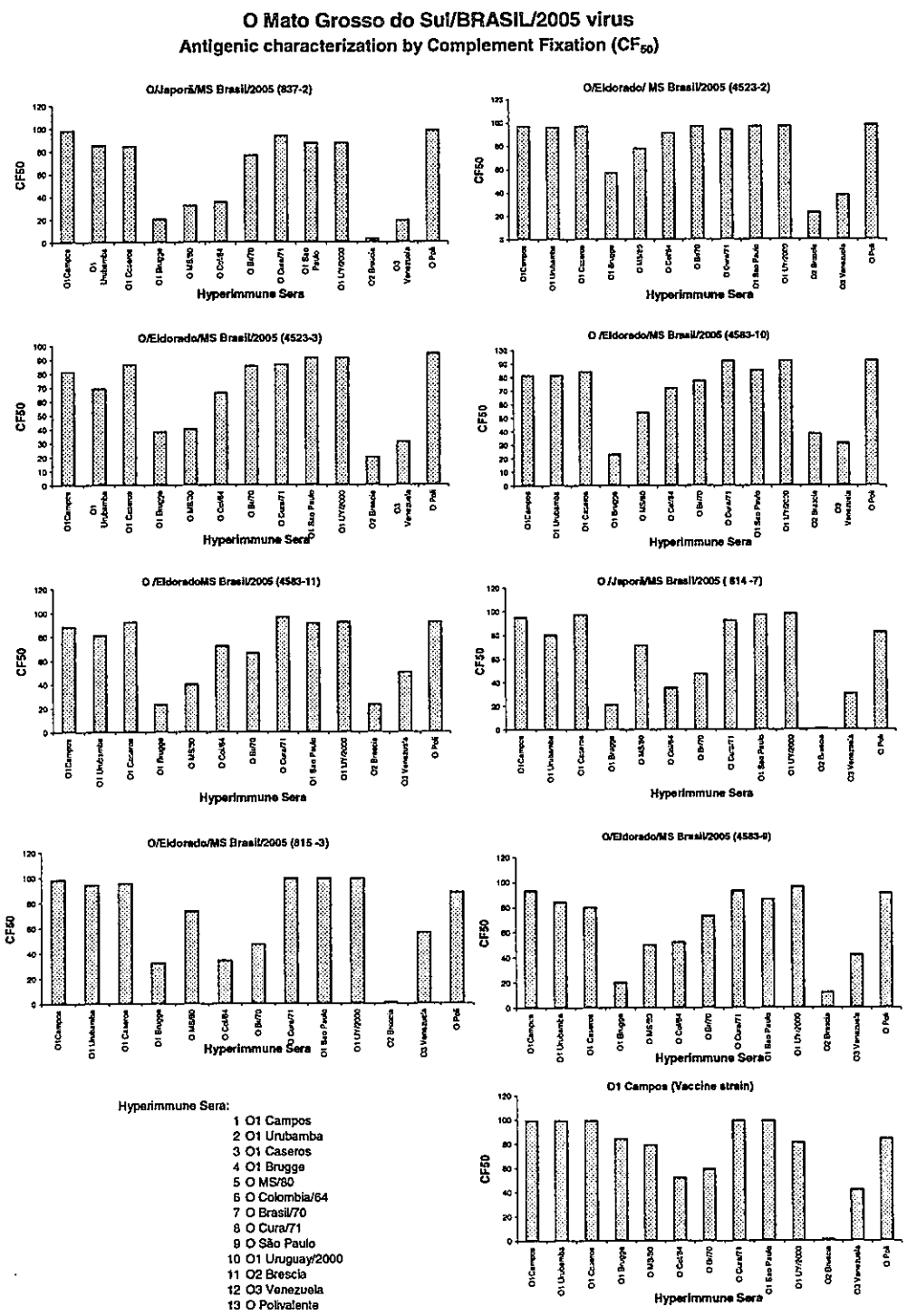


Figure 6. Antigenic characterization of FMDV strains type O collected in Brazil



Appendix 11

Support to FMD Virus observation

-Addressing information gaps that affect vaccine bank management and control programmes
-Report of the EUFMD Secretariat

1

Two Key Problems

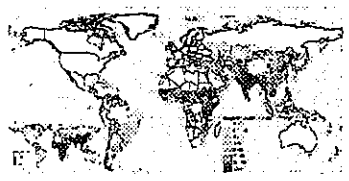
- Lack of sample submission to reference laboratories (RLs) from many endemic areas
- Lack of data exchange between RLs

2

Problem identification - 1. Lack of samples

- Lack of collection from field to NRLs
- Lack of submission NRLs to OIE/FAO RRL for virus typing
- Pilot studies –support from EUFMD:
  - Sudan –northern (2005; first samples for >15 years)
  - Kenya (6 of the 7 FMD types present)
  - Niger - mission 20th November 2005
- Indirect Success:, missions - NSP study Zimbabwe 2004 and Hong Kong 2005 – SATs and Asia-1 viruses

3



4

Experience gained

- Money not only constraint
- Effort to transport samples by air to RRL can be immense
- Missions of (FAO) technical officers can make a big difference – motives of some European labs are not fully trusted
- Isolation of FMD labs in endemic countries – need for supportive network
- Administratively heavy - Time needed

5

Next phase

- Build on experience and effective collaborations
- Where feasable, select key NRLs serving epidemiologically diverse, regional virus catchment
- West Africa: mission 1 (14 days) to Niger, for two catchment zones - Lake Chad and Volta river
  - Mission will identify if low cost support is feasable to achieve regular virus submission
  - Subsequent missions according to progress e.g. Mali
- Sudan; need for similar mission – samples from one outbreak only.
- Potential follow up through small project grants to support surveillance in areas that African and European experts agree are epidemiologically important
- Review progress at each Executive -6 monthly

6

2. Lack of data exchange between Reference Laboratories

- Identified as a problem for many years;
- OIE ad hoc group on vaccine and antigen banks
- CA- FMD & CSF laboratories –Workpackage
- April ad hoc group meeting – 4 OIE RRL represented
- Agreement reached on proposed OIE/FAO network for FMD RRL

7

Supporting timely information exchange – helping the network function

- Complex reasons for lack of information exchange
- Not just RRL – some key NRLs also
- Result:
  - User needs not being met
- No easy solutions –time and care required
- Trust must be built
- NEW initiative –deserves support

8

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- Support could be in the form of:
  - Contract for Phase XIX – External Quality Assurance to relevant RLs (with CRL to support EU)
  - Contract to develop a portal for sharing laboratory data between partners (RLs, FAO, OIE,..)
    - Access to defined users
    - Searchable
    - Direct data upload into FAO TAD tracking and alert system (EMPRES-I)
  - Contract for typing services – reporting to FAO via web portal when available, e-mail in standard form
  - Support (EUFMD Secretariat or via Contract) to - network
    - Advocacy to bring other RLs into datasharing network
    - RL meetings,
    - Funding reagent exchange – grant to RLs
    - Human resources - Technical support
- FAO/OIE neutrality – resolve problems

9

- Potential budget
- EUFMD MUL Trust Fund
- FAO Regular Program
- (EC MTF/INT/003/EEC)

10

Appendix 12

Equipping the FMD early responders:

Development of a tool kit to support problem-centred training

1. Scope of the paper

This document was prepared by the Working Group established at the 36th General Session of the EUFMD Commission, April 2005. The Session report specifies that:

31. The need for a common training course was endorsed and the Secretariat was urged to pursue the further definition of the precise requirements and the detailed consideration of the structure, content, management and financing of the training programme.

32. The EUFMD Secretariat should urgently convene a working group with clear terms of reference to further investigate the definition of appropriate training. The working group should be convened within one month of the General Session and would be expected to bring forward to the Executive Committee detailed proposals for the structure, content, management and financing of an appropriate training course within six months of its appointment.

EUFMD/FAO is grateful for the support given by the member countries (and DG-SANCO) to support participation of their experts (Annex 1) in the working groups, and for hosting two meetings in London (DEFRA) on 21st May and in Lyon (ENSV) on 13th September. This document was assembled by FAO (Robson and Sumption) with module outlines prepared by national/EC experts, whose interest and efforts are greatly appreciated.

2. Introduction

Training is implicitly needed to implement the 2003 EU directive on FMD. Delivering training is a national responsibility. However, to ensure common approaches across EU with regard to the prevention of FMD, common competencies can be defined for the key roles recognised by the directive. In return a common curriculum can be defined to help develop these competencies. This proposal involves the creation of a "tool kit" for use by those designing national FMD-related training programmes, easily adapted to meet local language and context requirements, and run as whole courses or used as components.

3. Background

The context for training is defined by the EU Directive 2003/85/EC on community measures for the control of foot-and-mouth disease. Further background is available from a survey carried out among EUFMD member countries (36th Session), which lists priorities for training from a national perspective, and a review of training resources prepared by the working group.

This proposed FMD training design document:

- lists some of the basic assumptions that fix the parameters for the proposed FMD training
- outlines module content and training methods based on these assumptions
- sets out resource requirements, a possible timetable and a project structure to develop, test and deliver an initial set of modules

The proposed work is also consistent with FAO's strategic direction in knowledge management and knowledge-sharing in the area of animal health, and more generally agricultural biosecurity.

4. Working Assumptions

The training working group listed some of the working assumptions behind the proposed training programme as follows:

- *Key requirements:* the EU directive implicitly requires training of staff involved in local and national control of FMD in activities such as outbreak control (Article 4-14), establishment of protection/surveillance zones (21-44), diagnosis (71), contingency planning (72), running realtime alert exercises (73), establishment of national and local disease control centres (74-77), establishment of an effective national expert group on the disease, and procedures for handling contaminated animals.

- *Priority groups and subjects:* veterinary-trained staff should be first priority for training. Topics covered should reflect the priorities assigned in the recent EUFMD training questionnaire. Of these, recognising clinical disease (to enable differential diagnosis) was seen as the highest priority. The key initial target group should be levels 2/3 as defined in the training survey (private veterinarians and area veterinary managers working in the public sector). This cohort is large and could involve 3-5,000 professionals across the EUFMD member countries.

- *National disease control:* different approaches could be appropriate for training of national level disease control staff (level 4). At this level, the lower numbers (possibly 100-500 across the region), language ability, the greater need for decision making skills and the need to adapt the curriculum to changes in science and international standards, suggest greater use of interactive, workshop or situation based training.

- *Curriculum:* in order to standardise the training for levels 2/3 and to ensure common approaches to implementing the EU directive, while reaching this large, geographically-dispersed group, the chosen training approach(es) will need to involve a clearly documented curriculum. This can be supported by technology in the form of interactive exercises, audiovisual materials, etc.

- *Training resources*: access to relevant information on-line, in-text books and CD-ROMS (e.g. AVIS) in Europe is assumed to be generally good, so the new training resources required should be restricted to those needed to develop skills in making decisions during realistic problem situations.

- *Languages:* pilot training materials for level 2/3 will be made available initially in English, and subsequently translated into French, Turkish and Russian. Training for Level 4 will be in English or French.

- *Refresher courses and follow up:* even in countries where the disease has occurred within the last 5 years, there is a need to refresh memories of clinical signs (more so where the disease has occurred less recently). Following training, it is assumed that testing at periodic intervals (for instance every 5 years) would be sufficient for level 2/3 staff. Some form of continuing professional development (hours/days at refresher or scientific workshops) might be more appropriate for level 4.

- *Disease experience:* Some kind of live field experience is more important than controlled disease outbreak simulations (such as those run by the IAH), which in turn are more useful than the study of "textbook" examples without live animals. However, it is recognised that running a programme to provide field experience requires considerable resources on the part of the host country, which may divert efforts to control a particular outbreak.

- *Integration of training:* training should fit in with existing training offered by institutions in the country; maximum use should be made of existing disease-related materials (AVIS; IAH; other institutions).

- *Assessment:* assessment of levels of competence attained by trainees should be taken within the context of the EU directive. It is assumed that some form of automated assessment (such as online assessment) will be useful for levels 2/3, because of the higher number of participants in this group. For level 4, the smaller numbers, and more complex material would suggest other forms of assessment – e.g assignments, reports. It may also be appropriate to develop some form of international certification for this group.

- *Rapid iterative development of materials:* initial training design for the first module(s) should be undertaken quickly, and validated through pilot workshop(s) which should also be used to test and develop early versions of technology-based materials, to be held within 12 months.

5. Challenges

How to make the most of existing materials - the project will need to obtain copies of all relevant training materials (given experience in 2001 DEFRA materials may be particularly useful).

How to ensure synergy with other initiatives – the initiative is innovative in the field, and should be relevant for other epizootic diseases, which should generate some new opportunities to develop the approach and possibly, reduce costs in years 2 and 3 (e.g. under the DG-Research funded Epizone project, and relating to FAO's capacity building for avian influenza control).

How to ensure that participants are "warmed up" – some means is needed to ensure that training participants are committed and enthusiastic to take part in formal training sessions. The main options for addressing this are a programme of preparatory work (possibly using distance learning tools); reward and recognition for attendance; and subsequent follow up by managers.

How to address the problems of participant availability and cost of running face-to-face workshops? Again, one option is to use some form of distance learning for parts of the modules – users could log-on to a website (or use a CD-ROM) to take a preparatory session at a time convenient to them. In its online form, this training preparation would be made available over a limited period and could include discussion forum and student assignments. This would have the benefit of cutting down time in workshops and builds commitment. The approach is only feasible on a large scale where internet access is widely available. This is the case in most EU countries.[10]

How to meet diverse needs (orientation for new staff, periodic refresher course, induction at times of emergency, etc) This will need to be addressed in the design of the modules, with definition of a core of essential content to serve the emergency audience, and further layers for other groups.

How to ensure that the tool kit is useful. This will be addressed by involving national authorities in the design stages and extensive testing/piloting to ensure it meets local needs.

6. Outline of module content and methods

Content
The planned training toolkit covers three types of modules:

- Area control (modules 1-4)
- National control (modules 5-7)
- Administrative: localising the training programme (modules 8-9)

	Module	Contents	hours study	audience (training survey classification)
1	early disease recognition and response	*diagnosis; follow up; prevent spread*	40	2/3, 4
2	control at local level – setting up local disease control centres	*teamwork, communications, decision-making/risk-based resource allocation*	40	2/3, 4
3	humane slaughter and carcase disposal (and preliminary disinfection)		10	2/3, 4
4	organising cleaning and disinfection	*why/how; communicate rationale; know if it is being done properly*	10	2/3, 4
5	gathering and analysing local information	*regional and national control; dealing with the press/media*	40	4
6	national control strategies	*vaccination; decision support tools; exit strategies; case studies,*	40	4

[10] For an example of this approach in practice see FAO's FODEPAL project developed by the Latin America Regional Office in Santiago.

		communicate with stakeholders; expert groups; demonstrating freedom from infection		
7	preparedness for outbreaks, contingency planning	*contingency planning and simulation exercises*	40	4
8	localising the training for a new country		-	-
9	trainer guide to using the modules		-	-

A draft set of module curricula are at Annex 2.

Methods
The modules will use the following training methods:

- *Classroom sessions:* depending on the subject to be covered, the classroom sessions may involve some of the following methods: lectures/presentations; facilitated discussions, group work/exercises (eg factors to take into account when designing a simulation exercise), individual work from workbooks or using multimedia (interactive CD-ROM with questions, animation, photographs on investigation, differential diagnosis. This can be used in the classroom or be distributed separately); review and commenting on video case studies of animals in location (to highlight issues of differential diagnosis, investigation, biosecurity do's and don't's).

- *E*-learning: users will be able to log onto a protected website to access electronic presentation materials and/or worksheets as preparation for eventual classroom training. Materials will be available over a limited period, supervised by a facilitator. Participants will be required to submit course work for review (checked electronically, or by the facilitator). Participants will also have the possibility to take part in moderated discussions on a given subject

The toolkit will consist of a number of different training "products" in the form of presentation materials, video, multimedia CD ROMs or online tests, according to the subject of the module in question, with supporting documentation in the form of Trainer's Guides

7. Resource requirements, timetable and project structure/roles

Summary of resources and costs

Item	Resource	Cost ($'000)
classroom materials	training designer	100
multimedia 1 module – all	various	70 – 520
video	various	70
testing	programmer/multimedia design	50
e-learning deployment	hardware, software and facilitator	130
programme management	some project management resource, depending on the extent of programme	70 – 150
travel, general operating expenses and project support costs (2 years)		140
total		**630 – 1160**

[Supporting assumptions for these resource estimates are available at Annex 3]

Partner contributions

- Local workshop costs; provision of facilities, national participants costs to be covered by host Government;
- Local Training Officer; to be provided by countries on part time basis in each country participating in pilot program evaluation or language localisation

Timetable

The development of the tool kit can proceed at a pace to be decided by the EUFMD Executive Committee. One possible approach would be as follows:

Year 1

1. Develop e-learning materials for modules 1 and 7.

2. Set up and run e-learning facility (registration and training management software) in one country for disease recognition (module 1) for pilot cohort (70); follow with e-learning for contingency planning (module 7) in English across EUFMD members (30).

3. Identify video or any other pre-existing materials; make video for modules 1 and 7

4. Develop classroom training materials for modules 1 and 7 in English, with one country willing to localise, and run a pilot to test module 1 in one country (1 week followed by two week gap for modifications, then 2 weeks to complete), and a second institution to host an EU-wide pilot on contingency planning (1 large event).

Project costs for year 1:

- *e-learning infrastructure and facilitation (110)*
- *video (40)*
- *classroom materials (50)*
- *management/coordination (30)*
- *operating costs (70)*

total: $300,000

Outputs – two tested modules, video and training materials, and e-learning infrastructure in place. Pilot training for approximately 100 participants.

[Partner contribution – part time training officer, participant costs; training venues; national trainers]

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Year 2

1. Multimedia development for module 1.

2. Develop Online testing for module 1 and module 7.

3. Translate materials for module 1 into Turkish, French and Russian. Work with national partners to run pilots for localised module in one country for each language. Review whether e-learning would be appropriate for each language (in Russia and Turkey, it may be possible with support from some regional/provincial institutional partner to provide for computer access), and if so pilot approach.

4. Pilot Classroom deliveries of module 1 in Turkey, France and one Russian-speaking country.

5. Roll out of module 7 to up to 300 participants.

6. Further Module Development and piloting (2, 5 and 6) in one language.

Project costs for year 2:

- e-learning facilitation (20)
- video (40)
- classroom materials (50)
- management/coordination (30)
- multimedia development (70)
- online testing (50)
- operating costs (70)

total: $330,000

[Partner contribution – part time training officer, participant costs, training venues for 3 workshops, training delivery]

Outputs - module 1 delivered to 300 participants (in Turkish, French and Russian) and handed over for local delivery; module 7 delivered to 300 participants; modules 2, 5 and 6 tested with approximately 130 participants

Structure/roles

The current informal Training Working Group includes a range of stakeholders. Moving to the creation of specific training deliverables which make up the tool kit will require clarity of the various roles to be performed:

We propose a structure of:

- *Project steering group* - from EUFMD members - review project progress.
- *Training designer* – resource appointed for the project, to be skilled in instructional design and also to have a sound background in epidemiology.
- *Expert Group* – EUFMD members nominate small group of technical experts to sign off on curricula, training outlines, delivered materials, pilot delivery.
- *Programme manager* – run steering and expert group meetings (as needed); prepares 6 month progress reports to EUFMD Executive/EC; finalise methodology/approach; liaise with national partners to organise testing, localisation, etc; where external suppliers are used, prepare, award and manage contracts to develop materials; set up QA processes.

- *Training material providers* – contracted services - undertake further design, development and testing of materials as appropriate.

- *Delivery partners* – contracted to localise materials (where needed) and deliver training.

8. Conclusion

This outline sets out a menu of options with estimated costs which can be used to help deliver training to underpin the EU FMD directive with one possible timetable. The programme can be undertaken as a whole, or in a staged approach by module/by method.

Annex 1
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Annex 2.
Outline of curricula for Modules

Module 1: "early disease recognition and response" (make diagnosis; follow up; prevent spread)

Content/scope
The module covers

- Revision course on FMD infection and epidemiological aspects (transmission pathways between countries and within countries) required to be understood in this and subsequent modules.
- Initial disease recognition
- Samples to confirm clinical diagnosis/procedures to follow, with EU 2003 directive as the basis (and more specifically 2000/428/EC).
- Tracing backwards and forward, investigative skills (and communications), ~detective skills/epidemiology.
- Prevention of the spread of disease (personal, by the vet), animal movement restrictions, etc., biosecurity measures.

Objectives:
Following completion of this module, participants will be able to:

- recognise clinical signs and undertake differential diagnosis in different species
- age lesions
- establish the probable times window when infection first occurred, and other significant windows (entry, and peak virus shedding)
- take correct samples in line with EU directive to confirm
- correctly identify sources of infection from case study examples
- recommend correct actions to be taken immediately to prevent further spread of disease while awaiting confirmation
- advise on immediate bio-containment - including personal disinfection
- use different communication approaches to elicit information required and to report their findings
- adjust their actions in relation to the scenario found/epidemiological situation

This module should take as a basis the requirements of following EU directive articles

4: Measures in case of suspicion of outbreak
5: Movement onto and off a holding in case of suspicion
7: Temporary control zone
8: Preventive eradication programme
10: Measures in case of confirmation
13: Epidemiological inquiry
14: Additional measures in case of confirmation

Delivery options:

- facilitated workshop involving presentation
- student use of interactive CD
- video case studies (of recent outbreak) and discussion
- on-line assessment exercise

Module 2: Control at a local level (Setting up local disease control centre(s) (LDCC), communication, decision making, risk-based resource allocation)

Content/scope

The module covers:

- Awareness of the different roles which staff in the LDCC must fulfil (allocation of field tasks, tracing, personnel, accommodation, field operations, communications, biosecurity, epidemiology, finance and procurement, licensing, records control, surveillance, IT systems (including GIS). It must be noted that some of these work areas can be combined and dealt with by one individual.

- The importance of clear communication patterns; defined roles and responsibilities, to avoid duplication or gaps; regular updates of staff involved and contact details; reciprocal arrangements with National DCC.
- Definition of responsibility of LDCC manager, who will take final responsibility for veterinary decisions.
- Definition of responsibilities of managers of cells within the LDCC.
- Provision of information and feedback to NDCC, press, stakeholders and operational partners at defined and agreed points in time.
- **Allocation of local and national resource (assuming mobile staff) based on need and national picture.**
- Awareness of training needs and training needs resolution. This involves decision making about achievement of training standards, assessment of abilities and capabilities and balancing immediate needs of the LDCC with National demands.

Objectives

Following completion of this module, participants will be able:

- To identify and communicate relevant information to all team managers and staff within the LDCC on a daily basis (or as required).

- To facilitate problem resolution within the LDCC, as a result of an overall understanding of the process.

- To ensure that all reports to the NDCC or any other organisation or body requesting information are complete and accurate, and are despatched on time.

- To ensure that any changes in policy are implemented as required.

- *To ensure that decisions regarding resource allocations are made on the basis of rational and proportionate assessment of risks and the developing disease picture.*
- *To assess and allocate training needs within the LDCC and ensure that the skills base which is required is matched to the business need, depending on the stage of the outbreak and the availability of staff.*

This module should take as a basis the requirements of the following EU directive articles:

- It seems to me that this module facilitates the co-ordination of every aspect of 2003/85/EC, providing, as intended, local control and provision of information regarding each facet of FMD control as the outbreak progresses.

Delivery options: facilitated workshop involving presentation, active involvement in scenario-based exercises; video case studies (of recent outbreak) and discussion; table top exercises, observation of real LDCCs in action.

Module 6: *National control strategies (vaccination; decision support tools)*
Exit strategies (incl. demonstrating freedom from infection)

Content/scope
The module covers:

- Decision taking process for the appropriate control measures
  - risk assessment of situation in own and adjacent country/zone
    - collection of data on susceptible population,
    - economic links, personal contacts
    - geographical and meteorological conditions
  - pre-emptive culling (area around an outbreak, dangerous contacts, animal welfare requirements, carcass disposal, cleansing and disinfection, decontamination of products/equipment)

- emergency vaccination
  - decision to use either suppressive or protective vaccination
  - regional approach, seize of vaccination and surveillance area
  - **declaration of the free area**, measures to prevent incursion of disease into free area, supporting evidence (OIE!)
  - suppressive vaccination (coordination of pre-emptive cull and vaccination, biosecurity)
  - protective vaccination, coordination of vaccination campaign, selection of herds to vaccinate, decision on small herd,
- Rules applicable in surveillance area surrounding the vaccination zone, possibilities of reducing the surveillance area, formulation of a request to Commission for reducing the surveillance area to the necessary minimum
- Design and implementation of a large scale serological surveillance
  - preparation of the post-vaccination survey
    - establishment of the logistics for sampling and testing,
    - designation of additional labs (see EUFMD guidelines)
    - selection of priority herds for sampling (with a view to trade in products)
    - Decision on small herds
  - classification of herds
    - Decision taking on surveillance results,
    - follow-up, re-sampling confirmatory tests,
    - final decision on herd classification
- Organisation of slaughter under controlled conditions of herds with confirmed positives for NSP
- Rules on the movement of vaccinated and unvaccinated animals and their offspring from vaccination areas
- Collating data in support of a claim for regaining the free status (EC and OIE requirements)

Objectives:
Following completion of this module, participants should be able to prepare:
- a decision on a particular control strategy, in particular with emergency vaccination by collecting and weighting arguments for one or the other control strategy
- an action plan for the implementation of post outbreak/ vaccination surveillance
- a detailed skeleton for a report to the OIE in order to regain disease free status
- a draft scenario for a possible simulation exercise

Delivery options:
- facilitated workshop involving presentation,
- student simulation of various strategies
- discussion; on-line assessment exercise

Outline for Module 7

Module 7: contingency planning and simulation exercises

Content/scope
The module covers
- Methods applied and requirements for drafting and development of contingency plans
- Development of up-to-date operations manuals
- Methods to increase disease awareness
- Planning real alert exercises/simulation exercises concerning resources (staff, time equipment)
- Development and application of realistic exercise scenarios for real alert exercises/simulation exercises
- Establishing of national, regional and local disease control centres (avoiding duplication to Module 2)
- Task orientated real alert exercises/simulation exercises (e.g. communication exercise like animal disease reporting, cleansing and disinfection, application of geographical information systems etc.)
- Quality assurance and standardisation of real alert exercises/simulation exercises
- Collaboration of neighbouring Member States or countries
- Data requirements, data bases and communication/information systems in real alert exercises/simulation exercises

Objectives:
Following completion of this module, participants will be able to:

- Develop and implement contingency plans considering different outbreak scenarios
- Planning of sufficient facilities, equipment, personnel and other appropriate material for rapid eradication
- establish vaccination plans including using vaccination criteria in densely populated areas
- use appropriate communication methods between animal disease control centres of different administrative levels
- coordinate FMD control measures between crisis units
- collaborate with competent authorities of neighboured Member States or countries
- prevent avoidable damages to the environment in event of an outbreak
- recommend correct actions to be taken immediately to prevent further spread
- plan and carry-out real nation-wide or regional alert exercises/simulation exercises
- select appropriate scenarios and data for real alert exercises/simulation exercises
- use different communication approaches within real alert exercises/simulation exercises
- select appropriate areas real alert exercises/simulation exercises
- revise and adjust contingency plans and real alert exercises/simulation exercises according to the actual situation in the field
- calculate costs for real alert exercises/simulation exercises

This module should take as a basis the requirements of following EU directive articles

1: Subject matter and scope
72: Contingency plans
73: Real-time alert exercises
Annex X: Criteria for the decision to apply protective vaccination and guidelines for the emergency vaccination programmes
Annex XVII: Criteria and requirements for contingency plans

Delivery options: facilitated workshop involving presentation, student use of interactive CD; national and international animal disease reporting systems, animal health databases, herd and identification databases; on-line assessment exercise

Annex 3: notes on detailed resource estimates

Assumption
Material development for major area modules (1, 2) and national modules (5,6,7) – will require 200 hours study materials – 40 hours preparatory e-learning; 120 hours classroom; 40 hours worth of multimedia.

Supporting costing assumptions and detail for resource estimates are provided for:

- classroom materials development
- Multimedia
- Video
- Assessment tools
- E-learning delivery infrastructure and facilitation
- Programme management

classroom materials development
Presentations and materials to support facilitated discussions courses for use at distance - through e-learning - or in a workshop/classroom. Use pre-existign materials wherever possible. Discussion and facilitation in groups online.

Resource: training designer with animal health experience for 18 months

Cost: **$100,000**

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Multimedia
Multimedia materials costing, per 40 minute lesson (approximately 20 screens), assuming curriculum is already defined for 12 lessons per large module (equivalent to 8 hours)

Subject expert for content creation - $1800
Instructional design (storyboarding, etc) - $3000
Production and transfer to web/CD - $1200

12 lessons @ $6000; for first module = $70,000. (based on experience of FAO's WAICENT Outreach group)

NB: if multimedia is required for **each** module, cost of content could be up to $400,000 and the ~80+ lessons would require coordination (9 months contract - $50,000)

Cost (1 module): **$70,000**
Cost (other modules): **$450,000**

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Video
Video case studies – 10 x 15 minute video segments (some filmed on location of actual cases; others role-played with a farmer; some during exercises) – will need to be carefully scripted.

Aim for hand-held digital camera footage (some with lighting, where animals are indoors) and possibly also sound equipment for role playing. Four countries/different animal production systems.

Planning and preparation - $15000

Estimate a ratio of useful minutes to minutes filmed of 1:20. This would require up to 30 days work on location @ $1500 per day (for camera/sound person; project/subject specialist and local expert/lighting) - $45,000.

Editing and preparation for use $10,000

Total cost: **$70,000**

Assessment tools

Tools to capture student responses. These could be in the form of an interactive quiz – test your FMD knowledge, spot the deliberate mistakes, etc – to be developed at one per module.

Cost (5 tests): $50,000

e-learning additional delivery costs

install server and run FODEPAL-like e-learning pilot for 2 area modules and 1 national - $20,000

course registration and management software for distance learning (FODEPAL as the backbone) – $50,000

facilitator to run modules 1,2 and 7 e-learning components as a pilot over a period of 8 months - $60,000

cost: $130,000

Programme management

Management costs will depend on phasing of programme – if full programme over a 3 year period, upper estimate; if less intense and/or over shorter period - (1/2 modules, some multimedia, etc) – take lower estimate

Cost: $70-150,000

Appendix 13

Report on the Closed Session of the FAO EUFMD Research Group at Greifswald, Insel-Riems, Germany. 20-23 September 2005

Kris De Clercq

Item 1 – Election of the Chairman
Item 2 – Adoption of the Agenda
Item 3 – Update on the EUFMD Commission
Item 4 – FMD risk and the review of priority antigens

Item 5. Regional risk situation: Risk of FMDV from Central Asia to Turkey

- EUFMD should play an active role in the information exchange about FMD in central Asia (including Afghanistan and Pakistan), Iran and Turkey.
- The FAO and OIE animal health projects working in this geographical region should seek to improve exchange of information including increased detailed surveillance and reporting, including identification of species, virus strains, number of animals, precise location of clinical disease and virus isolation, etc. focusing on border areas.
- Turkey should be encouraged to continue to organise sero-surveillance in Thrace region and EUFMD should continue to support these studies.
- Turkey should be encouraged to extend active surveillance studies in Eastern Anatolia.

Item 6. Review of support required to FMD Laboratories for quality assurance

- The pilot study for external quality assurance revealed differences in the sensitivity of virus isolation systems, even where apparently similar cell lines were in use.
- Western Balkan, Former Soviet Union including Transcaucasian Countries mainly rely on antigen detection ELISA, liquid phase blocking ELISA plus or minus NSP ELISA for their diagnostic needs.
- Next year's proficiency testing will concentrate on a wider distribution of the existing live virus proficiency panel used in the pilot study along with a distribution of a serology and antigen detection ELISA panel based on inactivated materials.
- The serology proficiency panel should be applicable to both non-structural and structural protein antibody tests and the priority serotypes are O, A, Asia 1 and SAT 2.

Item 7. Progress on technical questions relating surveillance post-emergency vaccination

- Progress on technical questions relating to surveillance post-emergency vaccination
- Suggestions made by the EUFMD RG for modification of the PVS guidelines were not adopted. The OIE position was that requests for modification must come from a member country.
- The EUFMD executive committee should consider if there is any need to change the current OIE guidelines and terminology to better reflect the European approach to PVS.

Progress report on NSP test validation and gaps remaining

- Studies to address knowledge gaps in validation data from sheep, goats, water buffalo and pigs should be supported, in particular data should be generated on the specificity of NSPEs in vaccinated animals of those species.

Use of NSP for detecting infection in vaccinated pigs in Hong Kong

Data on the use of NSPEs for detecting infection in vaccinated pigs, based on specimens collected in the Hong Kong Special Administrative Region (HK-SAR) were presented.

- The findings support that clinical disease in pigs might be required to generate a good antibody response to NSP.
- The relative sensitivities of the UBI "testing system" and the Cedi test were equivalent and both were better than the Bommeli CHEKIT ELISA.

Post-vaccination surveillance guidelines and their application

Serosurveillance can substantiate rather than demonstrate freedom from infection after an outbreak. Different combinations of tests can be used in series to improve the overall diagnostic specificity but sensitivity remains a limiting factor in achieving the required level of confidence within small herds.

- Probang-sampling followed by RT-PCR is insufficiently sensitive unless three serial samples are tested.
- Possible solutions to the "small herd problem" include: (i) not vaccinating them; (ii) vaccinating them but increasing the number of small herds "sampled" to increase the probability of detecting infection or (iii) applying a vaccinate-to-kill policy.
- The algorithm combining initial cedi test, retest of positives by cedi and final confirmation by the svanova ELISA currently provides the best available serodiagnostic system within Europe, with respect to diagnostic specificity after vaccination. Combinations, including in-house tests proven to provide equivalent performance, may also be appropriate.

Designing post-vaccination surveillance

Preliminary results were presented on the use of a new software tool to optimise herd sensitivity whilst maintaining a minimum herd specificity by altering the numbers of samples taken per herd and the cut point at which a farm would be considered positive.

- The current NSPEs are fit for purpose to substantiate freedom of FMD at a 5% prevalence at herd level and 2% prevalence between herds.

Alternative view – application of NSP

The number of sera were determined that would have to have been tested during the 2001 FMD outbreak in the Netherlands, if the surveillance provisions of the 2003 EC directive had been in force at that time and a vaccination to live policy had been enforced within 2 km of each infected premises. Assuming the absence of infection, approximately 10% of the vaccinated farms would have tested positive after two rounds of herd sampling. A decision tree was presented based on a previous EC directive 200/428/EC on control of SVD; according to this approach singleton seropositive animals would be culled and the herd would be retested.

Overall Recommendations

- The 3 inter-related issues raised in these papers should be dealt with separately, i.e. (i) demonstrating freedom from infection, (ii) defining what PVS findings would constitute a new FMD outbreak and (iii) removing animals from seropositive herds to mitigate risk.
- The risk remaining after applying different surveillance strategies should be evaluated.

A EUFMD workshop on design and interpretation of post vaccination serosurveillance

Objectives:

Given the current FMD-free status without vaccination in Europe and the possibility of a future outbreak with vaccination-to-live used as an emergency measure and being followed up by post vaccination serosurveillance to return to the favoured status of free without vaccination:

(1) design and implementation of a serosurvey : (a) to detect infected herds/flocks or (b) to prove freedom from infection
(2) how to interpret and follow-up seropositive animals and/or herds/flocks
(3) how laboratory test results can be used for rational decision-making
(4) to identify the resources required to undertake the preferred strategy

Participants

(1) Decision-makers: CVOs, heads of NDCCs and others
(2) Technical: laboratory-based experts and veterinary epidemiologists
(3) Representatives of DG-SANCO and OIE

Outputs: report which will assist the working group to finalize guidelines for specific epidemiological situation

Item 8. Sero-monitoring of virus circulation and FMDV vaccination in the Caucasus

Three presentations were made by Drs Carsten Potzsch, Emiliana Brocchi and Matthias Greiner on the serosurveillance conducted in the vaccination buffer zone in the trans-Caucasus region (Armenia, Azerbaijan and Georgia). The objectives of the serosurvey were to estimate the level and describe the geographical distribution of antibodies to structural (SP) and non-structural proteins (NSP) and to interpret the findings in relation to the effect of vaccination and evidence for circulating infection. In the buffer zone the trivalent vaccine produced by

ARRIAH, Russia was used in the previous two years. The survey was designed as a two stage (selection of villages and animals within the village) random sampling with emphasis on young animals. The study was aimed at the detection of 10% intra-herd and 10% inter-herd prevalence.
For Armenia, the overall sero prevalence for O, A and Asia were 83% 92% and 93% respectively. The figures for Azerbaijan were 69%, 93% and 90% and for Georgia 47%, 42% and 34%. In Georgia the village level SP prevalences were highly variable whilst in Armenia and Azerbaijan the distribution was more homogeneous and positive sera scored high antibody titres.

The overall NSP prevalence for Armenia was 15%, for Azerbaijan 8% and for Georgia 3%. The distribution gave evidence of spatial clustering. There was no association between age and NSP seroprevalence, suggesting that repeated vaccination with unpurified vaccines cannot explain alone the finding of NSP sero-reactors.

- Follow up investigations should be conducted in villages where positive NSP results were found with emphasis on young stock.
- Investigations should be extended countrywide to provide baseline information.

Item 9. Developments in FMD control decision support systems
Decision making is becoming more difficult and complex with increasing availability of information and increasing demands from stakeholders and the general public to get every decision right. Decision support systems (DSS) can be used in planning for epidemics, risk mapping and resource allocation as well as exploring different strategies such as stamping out, vaccination and combinations of these.

The use of mathematical models during outbreaks to predict spread has proved more controversial.

Item 10. Laboratory bio-security
- Under special conditions it will be of advantage to allow laboratories not meeting the security standards for FMD laboratories adopted in 1993 to carry out the laboratory diagnosis of FMD with methods, which do not require the propagation of virus. However, these exceptions should not compromise the efforts to exclude the escape of FMDV from laboratories in FMD – free countries.
- A working group should study the differences between the FAO guidelines for FMD labs and the requirements of the OIE containment group IV and prepare a proposal for a possible revision of the OIE requirements.

Item 11. Virus inactivation studies – progress report
A short summary of the known data on FMDV inactivation kinetics in milk and milk products was given. What is known about FMDV survival in meat and meat products and the input required for an analysis from a risk assessment point of view was described. Preliminary results of a risk assessment on the risk of FMDV in pork from vaccinated animals were presented. A scenario tree for the analysis was demonstrated and it was concluded that the risk of FMDV in pork from vaccinated pigs was low, however, the uncertainties inherent in the assessment is significant.
- It is recommended that relatively large scale studies are done in order to provide statistically significant data. The studies should be designed so they can provide D and Z-values of FMDV inactivation in products of interest.
- It should be considered if large parts of the studies could be performed in countries with endemic FMD.

Item 12. Risk assessment/management papers for review

- In all recent European outbreaks wildlife were not implicated in the spread of FMD and the outbreaks could be controlled without any specific action devoted to wild species, native or exotic.
- Although a high proportion of gazelle have been seropositive after being involved in FMD outbreaks in Israel, the prevalence of antibodies dropped indicating that the virus did not circulate on its own within the gazelle population.
- A meta-analysis used to quantify the transmission rate from FMD carrier animals was presented. The analysis showed that the risk to infect cattle is very low, but the risk of infection of other susceptible species might be 11% per month per carrier. Analysis of the percentage of carrier cattle after infection showed on average 61% carriers at 28 days post-infection with a half time of about 6.3 months.

Item 13. FAO EUFMD RG Workplan 2005-2007

Appendix 14

FAO EUFMD RG WORKPLAN 2005-2007

Theme		Task (*blue italic = associated task*)	Who	Draft/frequency	Completion
1. Global Surveillance	1.1	Global surveillance maps/models	Liaison person (**DP**) to actions between CA, FAO and OIE	Yearly progress report	Ongoing
	1.2	*Establish regular risk reporting – virus types circulating in Iran, Pakistan, Afghan...*	*FG, MH, DP (link)*	*3 monthly*	*Should be ongoing*
	1.3	Improving delivery of viruses from risk areas (WG1)	***Secretariat, WRL***	Yearly report on gaps/progress	Ongoing
	1.4	*Vaccine strain matching*	*Contact point: DP CRL , CA,OIE/FAO network of ref labs, ImproCon project*		
	1.5	Priority antigens for the European Ag banks	***WRL***	6 months Every 2 years	Ongoing
	1.6	Minimum size of vaccine stocks in EU vaccine banks – position paper	**AD**, (Paul Barnett), KS, AEF	Outline Progress report 2006	2007 (pre-General Session)
	1.7	Type C vaccination/eradication position paper	**KS**, DP, KDC, SoA (+FAO colleagues)	Draft1 –January	Open Session - 2006
2. Prevention		Strategy for prevention of FMD entry into Europe – group should review risks and interventions	**FM/MB,** AEF, (KS)	2006 –progress report	2007 (April)
3. Sero-monitoring		Design sero-monitoring in vaccination zones –Thrace and Trans-Caucasus - refine, re-design - support future official status (Thrace)	**MB**, KDC, DS, SiA, MG, (CP)	by Feb- 2006. Results – Open Session	Ongoing
4. EQA FMD Diagnostics		Establish EQA support for 2006– virus detection and serology (inc. clear demarcation of funding under CRL and FAO support)	**DP**, KDC, HY, GG, BH	Meet to co-ordinate with CRL.	Open Session (ongoing)

				Agreement/contract – end Nov	
5. PVS		Post vaccination surveillance – Position papers guidelines * link to OIE ad hoc groups - Test/optimise guidelines through simulation at workshop (using selected scenarios) - Complete analysis on sheep and pigs, buffalo	**KDC***, DP*, AD, EB*, DS, MG, AEF* **Secretariat** GG, KDC, DS	 Spring 2006 WS OS 2006	end 2005 OS 2006
6. DSS		Decision support systems – develop position paper on validity, applicability, gaps	**Secretariat** (links also with CA)	OS 2006	
7. Biosecurity		Biosecurity guidelines – follow up required: - paper should be updated by paper recommending updates covering other situations - review gaps between standards of FAO and OIE	**BH**, SoA, HY, AEF	First report –end 2005-	OS 2006
8. Virus inactivation		Inactivation studies	**SoA**, MG, AD, SiA (IAH-Don King, MB)	interim Nov 2005 OS 2006	
9. Pen-side test		Pen-side tests position paper (prev WG13)	**DS**, HY, BH, MB, (Naci Bulut, Nigel Ferris)		OS 2006
10. LCP		Laboratory Contingency Plans Scaling up diagnostic capacity (prev WG11): Workshop on upscaling serology –only interesting for eastern European countries, particularly that are not candidate countries Need information on capacity of laboratories (needed for EUFMD – Executive Com)	**Secretariat** (link to CA - Tony Garland) **Secretariat, GG, CA**	Send guidelines from Cordoba around immediately CA will send around as Manual (check timetable- end 2007)	 Survey by April 2006 – to include LCPs and EQA, existing capacity.
11. Diagn. Reagent Bank		Diagnostic reagent banks (prev WG10): - clear recommendation needed; update position paper with latest RG paper	**BH**, AD, EB, AEF		Spring 2006

		so this could be used in tender			
12. Potency test		Potency test evaluation (Turkey) - *FMD_ImproCon* - Position paper on potency tests in pigs - do we require vaccines to be tested in pigs, and are there new alternatives? *link to China – *Update monitoring vaccination campaigns (Chania paper) and Workshop on vaccine QA (OIE/EP) – in West Asia*	**Link person (SiA, KDC)** *AD, BH, SoA, AEF, (Paul Barnett*)* **FAO/OIE**	OS 2006	
13. Sample transport		Sample transport guidelines – update text; include new options	BH (Nigel Ferris) (OIE –Jim Pearson)	Update Vilmos P paper for 2005 report	1/12/05
14. Training		*Training /knowledge management*	*Secretariat*		
15. Meeting		Open meeting Israel 17-20/10/2006	**HY, Secretariat** KDC, AD, DP	by end November 2005	
16. Meeting		Closed meeting (October 2007) (Netherlands, Italy,....)	**Secretariat**		

SiA: Sinan Aktas; SoA: Soren Alexanderson; EB: Emiliana Brocchi; MB: Mark Bronsvoort; KDC: Kris De Clercq; AD: Aldo Dekker; GG: Georgi Georgev; MG: Matthias Greiner; BH: Bernd Haas; FM: François Moutou; DS: Donal Sammin; HY: Hagai Yadin; DP: David Paton; KS: Keith Sumption; CP: Carsten Pötzsch; AEF: Alf-Eckbert Füssel; FG: Francis Geiger; MH: Manzoor Hussein; EC: Erika Carlsson; WRL: World Reference Laboratory; CRL: European Community Reference Laboratory.

CA = Co-ordination Action – FMD and CSF laboratories (DG-Res).

Appendix 15

STATEMENT 1

MTF/INT/011/MUL - TF number 904200

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

Financial Report as at 21 November 2005

	US$	US$	Eur	Eur
Balance as at 1 January 2005		168,822		134,551
Interest received	3,974		3,167	
Contribution from member countries (As per statement 2)	305,643	309,617	243,597	246,765
Expenditure				
Commission Secretary	157,354		125,411	
Consultant	20,643		16,452	
Admin. Support Personnel	71,931		57,329	
Contracts	46,061		36,711	
Duty Travel	53,982		43,024	
General Operating Expenses	18,239		14,536	
Expendable Equipment	14,444		11,512	
Non-Expendable Equipment	60		48	
Total Expenditure		(382,714)		(305,023)
Balance as at 21 November 2005		95,725		76,293
Balance restated at UN Exchange rate of 21 November 2005				81,845

STATEMENT 2

TRUST FUND No. 9042.00 - MTF/INT/011/MUL -
Inter-Regional - European Commission for the Control of Foot-and-Mouth Disease

Status of Contributions as at 21 November 2005
(expressed in US$)

ORACLE CODE: TF-AGADD-TFAA970089122

Member Governments	Outstanding 31/12/2004	Contribution due for 2005	Received up to 21/11/2005	Arrears and transaction costs on contributions abolished b/	Outstanding 21/11/2005
ALBANIA	13.00	3,000.00	2,992.16	20.84	0.00
AUSTRIA	16.31	9,200.00	9,216.31		0.00
BELGIUM	12.99	15,300.00	15,277.65	35.34	0.00
BULGARIA	8.22	9,200.00	9,194.99	13.23	0.00
CYPRUS	3,000.00	3,000.00	3,000.00		3,000.00
CROATIA	2,609.00	3,000.00	3,000.00	9.00	2,600.00
CZECH REPUBLIC	0.00	9,200.00	9,186.97	13.03	0.00
DENMARK	8.37	15,300.00	15,286.74	21.63	0.00
FINLAND	8.50	9,200.00	9,200.00	8.50	0.00
FRANCE	16.82	30,500.00	30,500.00	16.82	0.00
GERMANY	8.45	30,500.00	30,503.45	5.00	0.00
GREECE	10.00	9,200.00	9,188.31	21.69	0.00
HUNGARY	-9,200.00	9,200.00	0.00		0.00
ICELAND	403.00	3,000.00	3,403.00		0.00
IRELAND	20.00	9,200.00	9,200.00	20.00	0.00
ISRAEL	15.35	3,000.00	3,008.04	7.31	0.00
ITALY	1,695.78	30,500.00	0.00		32,195.78
LITHUANIA	5.00	3,000.00	3,000.53	4.47	0.00
LUXEMBOURG	0.00	3,000.00	0.00		3,000.00
MACEDONIA	5,633.26	3,000.00	3,001.03	32.23	5,600.00
MALTA	13.51	3,000.00	2,991.99	21.52	0.00
NETHERLANDS	8.29	15,300.00	15,295.18	13.11	0.00
NORWAY	0.00	9,200.00	9,187.17	12.83	0.00
POLAND	0.00	15,300.00	0.00		15,300.00
PORTUGAL	8,690.15	9,200.00	0.00		17,890.15
ROMANIA	13.29	15,300.00	0.00	13.29	15,300.00
SERBIA and MONTENEGRO (ex YUG.)	9,210.00	9,200.00	0.00	10.00	18,400.00
SLOVENIA	42.32	3,000.00	3,042.32		0.00
SPAIN	20.87	15,300.00	15,282.00	38.87	0.00
SWEDEN	15,325.00	15,300.00	30,595.00	30.00	0.00
SWITZERLAND	8.56	15,300.00	15,308.56		0.00
TURKEY	0.00	15,300.00	15,286.98	13.02	0.00
UNITED KINGDOM	0.00	30,500.00	30,495.00	5.00	0.00
YUGOSLAVIA a/	81,511.30	0.00	0.00	81,511.30	0.00
TOTALS	119,127.34	381,700.00	305,643.38	81,898.03	113,285.93

a/ The arrears of the former Socialist Federal Republic of Yugoslavia are abolished in accordance with the resolution of the 71st Executive Committee.
b/ Transaction costs arising on previous years' contributions will not be included in the 2006 call for funds letters as contributions outstanding.

STATEMENT 3

MTF/INT/004/MUL - TF number 909700

FOOT AND MOUTH DESEASE - EMERGENCY AID PROGRAMME

Financial Report as at 21 November 2005

	US$	US$	Eur	Eur
Balance as at 1 January 2005		41,232		32,862
Interest received		790		630
Expenditure				
Consultancy	0		0	
Duty travel	0		0	
Expendable Procurement	0		0	
Support Costs	0		0	
Total expenditure		0		0
Balance as at 21 November 2005		42,022		33,492
Balance restated at UN Exchange rate of 21 November				35,929

STATEMENT 4

MTF/INT/003/EEC - TF number 911100

FOOT AND MOUTH DISEASE

Financial Report as at 21 November 2005

	US$	US$	Eur	Eur
Balance as at 1 January 2005		55,284		44,081
Interest received	2,201		1,754	
Contribution received	0		0	
		2,201		1,754
Expenditure				
Consultancy	(5,004)		(3,988)	
Duty Travel	33,110		26,389	
Contracts	32,200		25,663	
General Operating Expenses	3,826		3,049	

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