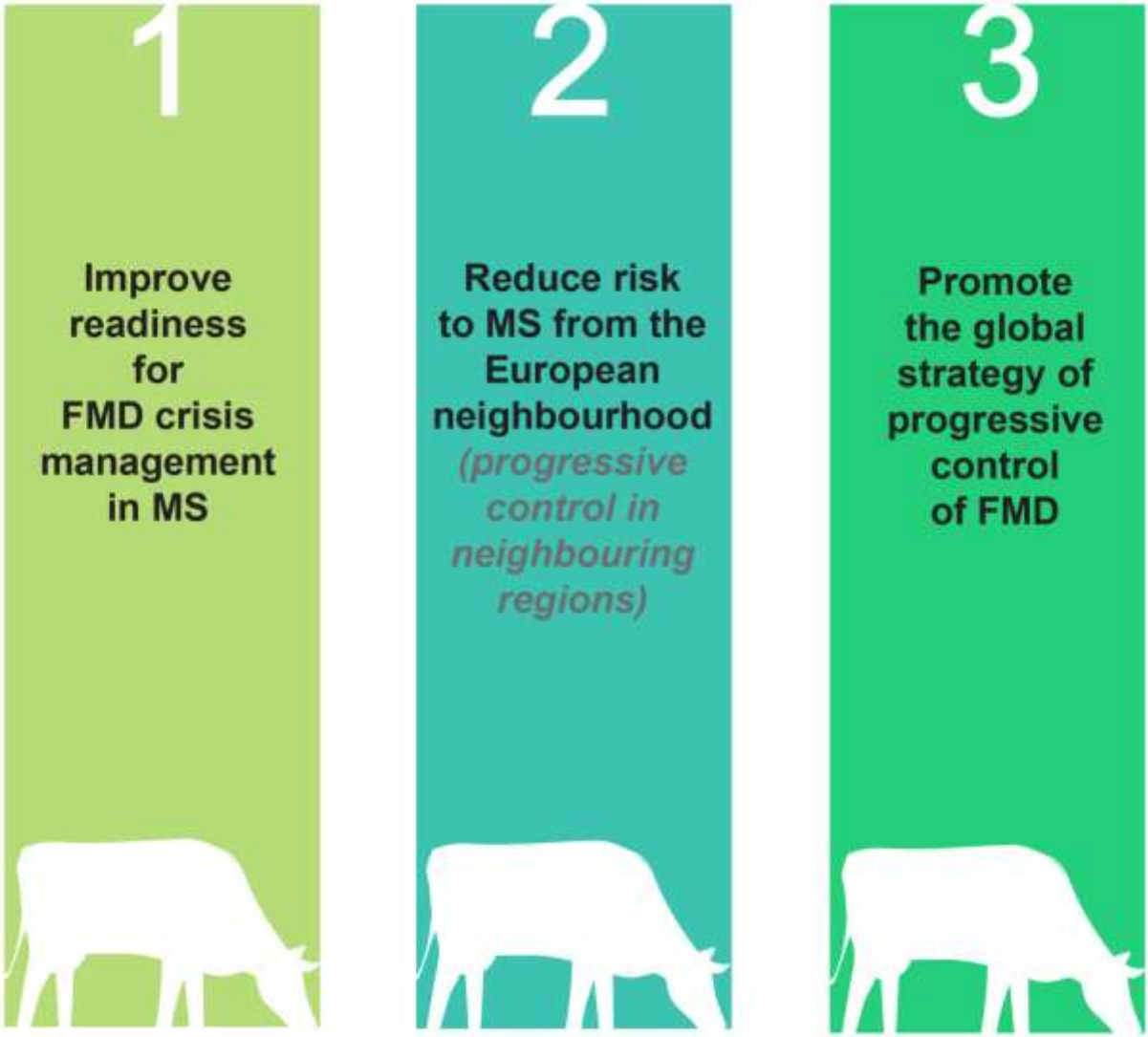
# Recent activities (2011-2012) of the EuFMD Commission

3 PILLARS of the EuFMD

*and their relationship to the 3 Pillars of the New Strategic Plan*

The EuFMD programme of activities since the 39th Session in 2011 had **9 components**, and this leaflet indicates how these components contribute to improvement in capacity to prevent and control the impact of the disease in European member states through **3 "Pillars"** of support that help maintain the high European FMD health status.




Pillar 1 *activities* involve services that directly assist member states to better prepare for FMD emergencies. *Activities* in Pillar 2 and Pillar 3 aim at reducing the risk of FMD incursions, working with and through international partnerships.

*At all times the Commission, working with the EC (DG-SANCO), maintains a continuous availability of expertise and mechanisms for emergency response to a FMD crisis in the European neighbourhood*


III
3 PILLARS of
the EuFMD

## 1.1 Capacity building for FMD outbreak investigations: the Real-time FMD training programme

The EuFMD runs **real-time** outbreak investigation courses in Nakuru, Kenya, showing European state vets the key elements of **outbreak investigation** and **disease recognition**, in an area with predominantly European dairy breeds of cattle. In Kenya, FMD is endemic and disease is commonly reported particularly in the Rift Valley province where there are a large number of cattle. Through assistance from the Kenyan Department of Veterinary Services, suitable outbreaks are recruited in the area surrounding Nakuru. After a day of classroom-based teaching, the trainees lead an investigation of a real outbreak of FMD focussing on the clinical and epidemiological aspects required if an exotic incursion were to occur in a member state. This is followed by a survey of the outbreak area where trainees establish local risk factors for spread of infection in order to establish putative control measures. The course culminates in the rapid production and presentation of a relevant situation report, an essential skill for any exotic disease incursion. Each course in 2012 exposed trainees to a **unique outbreak situation** and a range of lesion ages from which relevant epidemiological reports and hypotheses for local spread were generated. This process included being exposed to real-life problems in outbreak investigations such as contact tracing and obtaining accurate farm histories. Attending and investigating real outbreaks in the field offers a unique learning experience for veterinarians many of whom have never seen clinical disease. Through the courses, trainees are also exposed to new developments relevant to FMD. In diagnosis they get the opportunity to use newly developed diagnostic tools such as lateral flow devices for NSP antibody detection. In epidemiology there is the opportunity to use novel data collection methods through smartphone technology and the "**EpiCollect**" application. It is only by using these tools in the field that trainees get to learn their relative merits in disease investigation and control. **Knowledge transfer** is encouraged to allow broader benefits to member states.

*Over 200 trained since 2009 (38th Session) with 9 Courses and > 90 European vets trained since 2011 since 39th GS; 5 trainees selected as trainers; Areas covered by course are disease recognition, outbreak investigation, lesion ageing, examination and sampling, diagnostic testing, penside tests, epidemiology, rapid assessment of risk factors for local spread*

## 1.2 Real-time FMD training: partnerships with other FMD free countries

The EuFMD was requested by the Australian Department of Agriculture, Fisheries and Food (DAFF) to provide expertise in real-time training in FMD outbreak investigation using the existing EuFMD real-time training model. An agreement was reached whereby DAFF would provide funds to EuFMD through FAO in return for this service, and through this mechanism, develop training that will help both DAFF and European MS relevant to the problem of delayed recognition and response. The first full-fledged real-time training weeks on FMD in Nepal were held in November-December 2012 and February-March 2013. They included Australian veterinary professionals (private as well as state / government vets), herd health advisors and 5 Nepalese veterinary officials per course. **FMD outbreaks** were identified nearby Kathmandu, thus limiting travelling time to a bare minimum. The outbreaks were ongoing which provided participants with FMD lesions of all sorts, ages, sizes and in different species.

On the second field day, teams went across the fields to investigate farms with and without FMD for possible risk factors for FMD. This offered a very nice opportunity for both Australians and Nepalese to go along together and learn from each other. The funds provided by Australia have contributed to expand EuFMD training services to EuFMD member states, thereby **benefitting** European veterinarians as well as Australians and Nepalese.

*80 Australian vets to be trained over 8 courses; http://www.beefcentral.com/news/news-archive/article/2720; 5 local vets trained per course; Funds support improved EuFMD training services to Europeans*

## 1.3 Modelling and Decision Support Tools for FMD Contingency Planning

The use of **disease spread models** and decision support tools can make a valuable contribution to FMD contingency planning and preparedness. At the 39th General Session, it was recommended that member states consider the use of such tools, and that the secretariat should provide **support** to assist members wishing to engage with this area. A plan for implementing this recommendation was presented to the EuFMD CVOs (including non-EU CVOs) at a meeting in Horsens, Denmark in June 2012. The first FMD modelling training workshop of this program was held in **Vienna** in October 2012, with expert trainers from the USA and UK covering modelling, its application to contingency planning and the use of decision support tools to inform policy; 16 trainees from eight countries attended. There was very **positive feedback**, with enthusiastic suggestions on how to further develop the support program. The regional basis of the workshop (most attending states were neighbours of Austria) facilitated cross-border discussions, including the possible benefits of modelling cross-border disease outbreaks to inform contingency planning. Options for further development of this element of the EuFMD work program are under consideration to maintain this positive momentum. These may include further training workshops for other countries, targeted support for clearly expressed needs, and integration with other elements of training and support.

*Vienna workshop attended by 16 trainees; two each from Austria, Serbia, Croatia, Hungary, Slovakia, Slovenia, Czech Republic, Malta. Trainers from USA and UK Model used: North American Animal Disease Spread Model (NAADSM)*

## 1.4 Balkan Support: FMD Emergency Preparedness Network Proposal

Supporting the Balkan veterinary authorities to develop their emergency preparedness for FMD is a key priority for EuFMD. A laboratory gap analysis project for the West Balkans and Moldova has been managed by the World Reference Laboratory, Pirbright Institute, to inform plans for FMD diagnostic capacity building; this analysis is almost complete. At a meeting of West Balkan CVOs in Denmark in June 2012, the need for epidemiological support and contingency planning was communicated to the Secretariat. In addition, the EuFMD has been kept informed of other EC-funded activities under IPA to support rabies and classical swine fever capacity building in the West Balkans; this has helped identify complementarities and avoid duplication. These activities have informed EuFMD proposals for coordinating support to the region, under a proposed Balkan FMD Emergency Preparedness Network. This would have an element covering epidemiology, contingency planning and the use of models where needed, and an element covering laboratory capacity building. The proposed network would cover the West Balkans, Moldova, and Greece and Bulgaria as EU-member state network leaders. Further discussions with the veterinary authorities in the proposed network members will be held to identify their needs and priorities and how these may be supported to improve FMD emergency preparedness.

*Emergency response team veterinarians trained in FMD recognition, diagnosis and response (in Real-Time Courses) from all West Balkan territories.*
*Lab Gap Analysis managed by WRL, Pirbright, covering Croatia, Serbia, Bosnia, Kosovo, Montenegro, FYROM, Albania and Moldova.*
*Proposed FMD Emergency Preparedness Network: to include above states plus Greece and Bulgaria. IPA rabies/CSF project: EC funded, covers West Balkans; several areas in which their work is similar to EuFMD –potential to avoid duplication, increase efficiency.*

## 1.5 Maintaining confidence in disease freedom in South-East Europe: Development of a risk based surveillance programme for Thrace Region

The region of **Thrace** is a key area for reducing the risk of an FMD incursion into Europe. In order to support the veterinary authorities of Turkey, Greece and Bulgaria in their efforts, the EuFMD has developed a program for **risk-based surveillance** to increase the level of confidence that the region is free from disease. This would augment and strengthen existing surveillance activities. Once fully active, a functioning risk-based surveillance system could also contribute following the eradication of any possible future FMD outbreak in the Thrace region, providing the authorities with a useful tool to quantify the degree of confidence provided by post-outbreak risk-based surveillance. A **workshop** to progress this was held in Istanbul in September 2012, attended by two state veterinarians from Bulgaria, Greece and Turkey. The workshop was facilitated by a consultant who had developed a framework for these activities and a model to estimate the degree of confidence they would provide. A further workshop session on this topic was held during the annual Tripartite Group meeting on 13th February 2013, to analyze existing data and identify practical actions to move the project forward, and the CVOS of the three countries agreed on actions to commence in 2013. EuFMD has proposed a surveillance and data management agreement and the program is expected to start from the 40th Session in late April.

*Thrace region of Turkey, Greece and Bulgaria key control point for FMD. Early identification of disease essential.Risk-based surveillance can increase the level of confidence in disease freedom.*

## 1.6 Research to address policy issues arising from recent FMD crises - Wild Boar and FMD

Following the 2011 FMD outbreak in Bulgaria which involved wild boar, the EuFMD initiated research projects in the role of **wild boar** in FMD epidemiology. In Turkey, the role of wild boar in FMD spread in Anatolia was investigated, led by the SAP Institute, Ankara. Wild boar were hunted and sampled in Erzurum, Gümüşhane, Kastamonu and Samsun. FMDV was isolated from mouth area tissue from one wild boar hunted and sampled in Gümüşhane. The isolated FMDV was serotyped as **Asia-1**. It indicated that FMDV was transmitted to wild boar population from one of outbreaks which occurred in Gümüşhane since June 2011. **Genetic analysis** data showed clearly that Asia-1 virus detected from this wild boar was closely related to cattle isolates detected in the region. In addition, very high **NSP** antibody positive prevalence and SP antibody seropositivity were detected in all provinces, except from Rize which was define as negative province. High NSP antibody positivity indicated FMD infection in the wild boar population in the region, although it was not clear whether recent or previous infection in domestic population was responsible. In Bulgaria, a project is being conducted to investigate the ecology of wild boar and to develop a method for non-invasive sampling for FMD. Wild boar are captured, sedated and GPS collars are attached to them to track their movements. The utility of a variety of methods of **non-invasive sampling** are evaluated. This will inform planned work in collaboration with the Friedrich Loeffler Institute, Germany, to further develop a method for detecting FMD virus in samples of saliva taken from wild boar by non-invasive means.

*Anatolia: 252 wild boar sampled; 51 (20.2%) positive for FMD antibodies; FMD virus detected in one of the sampled wild boar, related to a virus which caused outbreaks in cattle locally.*
*Bulgaria: 14 wild boar collared with GPS devices. Good GPS data obtained for 10, including one which entered Romania by crossing Danube, then returning.*
*Baits for non-invasive sampling evaluated, to be investigated further in FLI, Germany.*

## 1.7 Bringing policy makers and FMD scientists together; the 2012 EuFMD Open Sessions at Jerez, Spain

The **Open Session** of the Standing Technical Committee and Special Committee on Research of the EuFMD was held in Jerez de la Frontera, Spain, in October 2012. The Open Session has become the biggest FMD research meeting in the world, providing a unique and valuable forum for scientists and policy makers to meet and present cutting edge research, with open discussion of the ways in which FMD science can inform policy. Over **220 delegates** attended, with more than 70 oral presentations and over 30 poster presentations covering the state of the art of FMD research today. With **multiple parallel sessions** and side-meetings, researchers and stakeholders had opportunities to interact and take an in-depth approach to issues of particular relevance to them.


*220 participants. Over 70 talks and more than 30 posters. Delegates from Europe, Africa, Asia, North and South America and Australia*


3 PILLARS of
the EuFMD

*EuFMD countries have land borders with 11 frequently FMD affected countries in West Eurasia/Middle-East*

## 2.1. Practical Epidemiology for Progressive Control (PeP-C)

Veterinary Services often indicate that epidemiology training for their staff would be useful in order to implement activities to progress along **Progressive Control Pathway (PCP).** In response, EuFMD has developed a course in ***Practical Epidemiology for Progressive Control*** **(PeP-C**). This four week practical epidemiology training course helped provide state veterinary services with the epidemiology and basic economic skills needed to support activities in the progressive control pathway for FMD. This course is aimed at countries where FMD is endemic, and was first offered in the **West Eurasia region** (in particular Georgia, Armenia, Azerbaijan, Turkey, Iran and Egypt) in late 2012. The **course outline** included:

- **Week 1**: Outbreak investigation (10-14 September 2012); including information on prevalence, incidence, diagnostic tests, risk factors
- **Week 2**: Value chain, socio-economic impact assessment (1-5 October 2012); including information about risk, costs and benefits of FMD control, measuring FMD impact.
- **Week** 3: Surveys: SP, NSP, questionnaires and monitoring vaccination campaign (12-16 November 2012); including sample size, survey design, data entry, analysis of data.
- **Week 4**: Control Strategy development (10-14 December 2012); putting it all together: detailing a component of FMD control strategy for presentation and discussion.

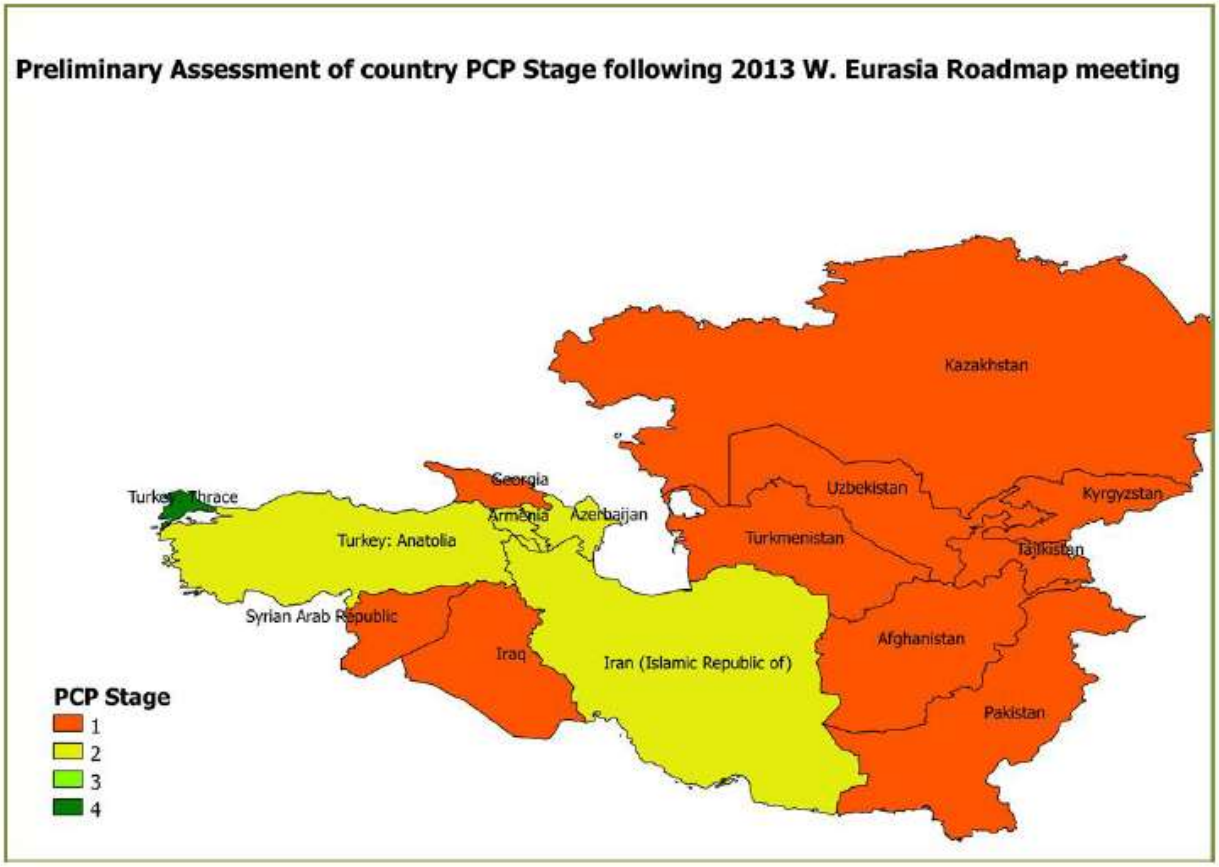
The course was based around the **Progressive Control Pathway** (**PCP**) and was very **practical** with lecture time minimised and students learning whilst working on problems using case-studies. Field work was included in weeks one and three, and involved an FMD outbreak investigation and implementation of a survey.

*PeP-C: 4 week course, held in one-week blocks.Participants from Turkey, Iran, Egypt, Armenia, Azerbaijan, Georgia. Establishes a network of epidemiology and laboratory specialists who are familiar with how to use the PCP approach – and who will the database and other tools to assess risks as the FMDV situation changes*

## 2.2. West Eurasia FMD Roadmap for Progressive Control

The **West Eurasia roadmap for progressive control of FMD** was first established in Shiraz, Iran in 2008, following a series of devastating FMD epidemics that swept across Turkey and which arose in West Eurasian countries such as Pakistan, Afghanistan and Iran. Together with FAO regional projects supporting FMD management in Central Asia, the Roadmap has succeeded to bring the vet services of **14 West Eurasia countries** together on an annual basis and to engage these countries to undertake actions in line with the **Progressive Control Pathway** (PCP) for FMD that have the aim of establishing sustainable national strategies for FMD management. Given the frequency of FMD epidemics sweeping across the region, and the huge investment needed to effectively prevent FMD circulation and spread across borders, regional support services as well as national technical support is needed. The EuFMD support has focused on promoting the PCP and regional co-ordination meetings, and on targeted national support to achieve progress on the PCP towards responsible, sustainable FMD management. EuFMD provides the **secretariat** for the West Eurasia Roadmap meetings, including the 2012 Istanbul meeting and the **2013 Baku** meeting. The roadmap meetings are an opportunity for countries to review their control activities, assess their progress along the PCP, and raise issues for regional co-ordination including better detection of new events, improved effectiveness of vaccination programmes, and progress in animal movement control across international borders. The 4th Roadmap Progress Review was held in Baku, Azerbaijan in April 2013 and surveyed vaccination use and animal identification, registration and movement management systems as well as Regional PCP progress.

*Roadmap countries: Turkey, Iran, Iraq, Syria, Armenia, Azerbaijan, Georgia, Kazakhstan, Kyrgyzstan, Uzbekistan, Turkmenistan, Tajikistan, Pakistan, Afghanistan.Organizations: EuFMD, EC, OIE, FAO, Gf-tads*



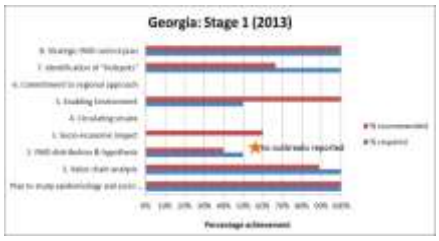
## 2.3. Supporting the progressive control of FMD in Iran

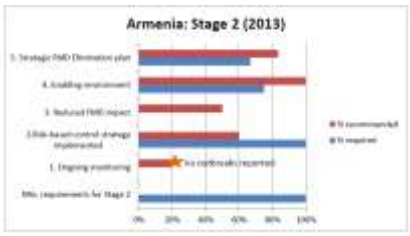
**Iran** is a strategically important country for the control of FMD in the European neighbourhood; virus strains from Pakistan and Afghanistan regularly spread to Iran, and from there to Turkey and West Eurasia, posing a risk of incursion into Europe. EuFMD has worked with the Iranian veterinary authorities since 2005 to improve the **national surveillance** for FMD and to develop an improved national FMD management strategy based on a comprehensive analysis of FMD risk and management options. The current Phase has **5 main goals** aimed at strengthening the systems (lab and epidemiological) on which national and subnational management of the risk are based, including design of a movement control and management systems. The EuFMD assistance is financially very small compared to national investment, but significant in terms of potential for optimising national efforts. EuFMD consultants provide **continuing support** for epidemiological analysis of outbreaks, assessment of disease trends, vaccination coverage data and laboratory results reporting. A monthly report on project activities and disease data ensures the flow of information is maintained. In the key province of West Azerbaijan (in North-West Iran), the support has significantly improved **local capacity** (laboratory and disease management) in the area next to Turkey and the Trans-Caucasus. FMD outbreaks can now be confirmed at local level and effect of control measures assessed at Province level, a first. An in depth epidemiology study, the first of its kind in Iran, provided key data on risk factors and intervention which is informing the continued development of FMD control in the area. As part of the laboratory strengthening program, EuFMD consultants have provided training to establish the quality assurance of the new, decentralised system of FMD diagnostic laboratories, with the aim of achieving serotype confirmation within 5 days. National vaccine quality assurance systems are being revised following a mission to collaboratively conduct a joint FMD vaccine potency test, another first. EuFMD also supports the submission of samples from Iran to the World Reference Laboratory as part of the regular project activities, and this is significant for vaccine selection for Turkey, West Eurasia and European vaccine banks.

*Iran: strategic importance for FMD spread from Pakistan/Afghanistan to WestEurasia. Key activities: epidemiological support, laboratory support, vaccine quality assessment, study of risk factors for FMD spread*

## 2.4. Strengthening FMD Control in the Trans-Caucasus

EuFMD has supported FMD control in the **Trans-Caucasus Countries (TCC)** since 2000. The most recent Phase of support, which aimed at achieving progress in national management capacity, has just come to an end, having started in 2010. The activities conducted under this included: **Improved FMD monitoring and control** (each country to complete their PCP Stage requirements and advance in PCP; **Vaccination campaigns** every 6 months, risk-based (funded by project in 2010 & 2011); **Serosurveys**: NSPs, SP, investigation of NSP clusters; **Simulation exercises** and epidemiology training; **Monthly data** on demographics, vaccination and surveillance provided to EuFMD; Monthly reports to EuFMD). **Enhanced laboratory capacity to support FMD monitoring and surveillance** (NSP, SP and Ag ELISA and PCR capacity developed; **Investigations** of NSP clusters: probangs, swabs, PCR, sequencing; **Field outbreak** investigation training; **Sample management** decision trees & reporting arrangements in place; Annual serosurveys; **Participation** in WRL proficiency trial scheme. The most recent activities included: *March 2012*: 150,000 doses of trivalent Merial vaccine supplied by EC to act as regional strategic reserve for TCC (Expires March 2014); *August 2012*: investigation of NSP positive clusters, samples taken with probangs; *November 2012*: Desktop simulation exercise for all three TCC, held in Georgia; *February 2013*: Real-time PCR training course, during which samples from August NSP cluster mission were analyzed.





## 2.5. The changing risk environment: incursions of sub-Saharan African FMD viruses into North Africa

Following the political turmoil in Egypt and Libya in 2011, **movement patterns of livestock** in the border regions between southern Egypt and Libya and sub-Saharan Africa have changed, with border security compromised on the borders of Libya with Chad, Niger and Algeria. Higher meat prices in Libya have facilitated the inward flow of animals and animal products from sub-Saharan Africa, increasing the risk of new diseases being introduced.

In March 2012, serotype **SAT2 FMD** was detected in Egypt and, separately, in Libya, and soon after, other African origin FMDV were detected suggesting multiple virus incursions. As animal populations in Egypt and Libya were not vaccinated against SAT2, this new serotype posed a new and alarming risk for further spread within the region and beyond. In coordination with other FAO units (ECTAD, EMPRES, CMC-AH, FAO Cairo and FAO Tunis), EuFMD took a number of actions to address this threat.

- Rapid assessment field missions to Egypt in March.
- Follow-up missions to Egypt in April and May to advise on the development of control strategies.
- Laboratory support mission to Libya in June.
- Provision of laboratory training in FMD diagnosis to affected or at-risk countries through workshops and supply of diagnostic kits.
- Training in surveillance for FMD in high risk border zones provided to affected and at-risk countries.
- Coordination workshop on management and vaccination strategy for affected and at-risk countries.
- Support to the development of FAO regional strategic response policies, including input into a planned support project for Libya.

*Laboratory training in Cairo for Egypt, Libya, PAT (Gaza), PAT (WB), Jordan*
*Laboratory training in Paris, hosted by ANSES, coordinated with REMESA, for Algeria, Tunisia, Mauritania, Chad, Niger, Lebanon. Surveillance training in Larnaca for Egypt, Israel, Jordan, PAT (Gaza).*
*Management and vaccination strategy workshop in Rabat for Morocco, Algeria, Tunisia, Libya and Mauritania.*

## 2.6. Neighbourhood FMD risk monitoring through laboratory network support and monthly reporting

Following decisions and recommendations of the regular EuFMD Sessions (Rome, in 2005, 2009, 2011), the EuFMD supports **improved risk monitoring** through submission by affected countries of FMD samples to the WRL, and since 2011, through supporting three laboratory networks in the region neighbouring Europe to maintain the flow of information and laboratory activity on FMD. This contributes to knowledge of FMD risks posed to member states.

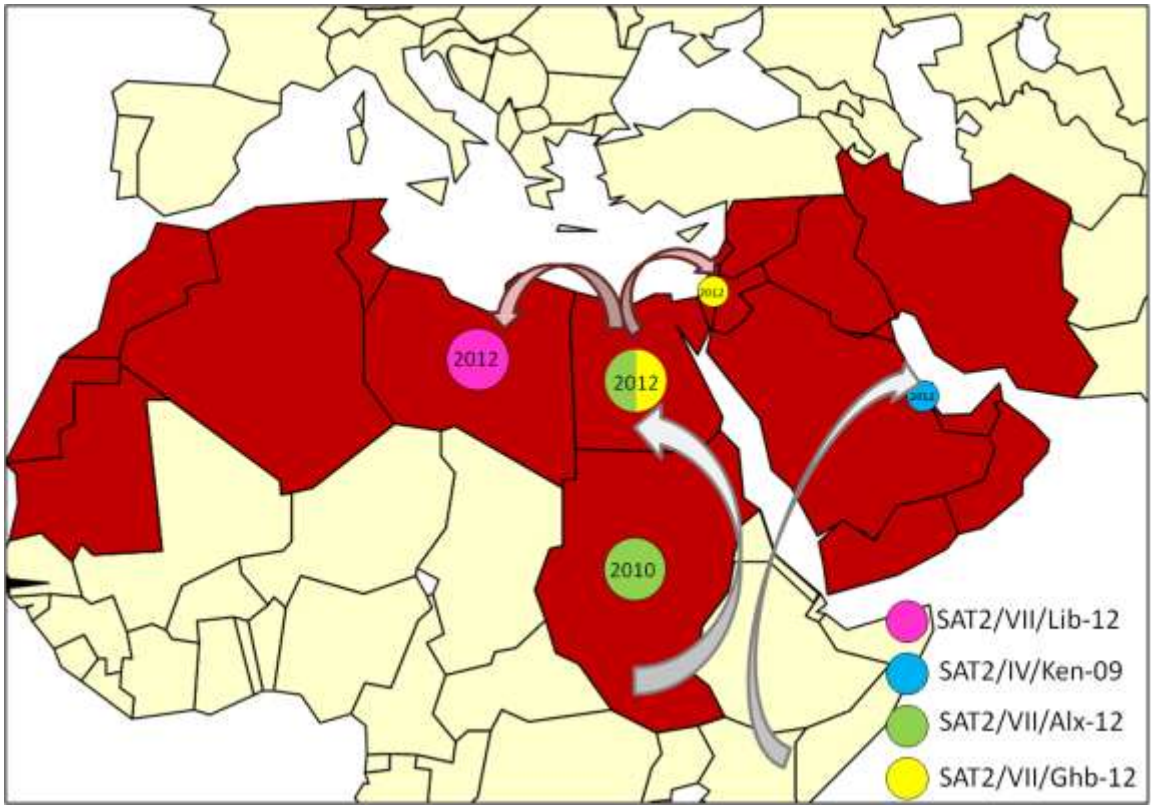
*Monthly report compiled from FMD laboratory contacts in WestEurasia, middle-east, eastern Africa and West/Central Africa to better identify new threats to the vaccination programmes used in the European neighborhood and risk of incursions to Europe. This system enables prioritization of sample shipments to WRL Pirbright (results reported to OIE/FAO). Given the current instabilities in sub-Saharan West Africa, it is important to be able to provide information on virus threats to EuFMD and REMESA countries.*

**WELNET** is the West Eurasian Laboratory Network which is part of the West Eurasia roadmap. Information from this area is of key relevance to EuFMD. Most recently, EuFMD funded and coordinated the transport of FMD samples from Iraq to the SAP Institute, Turkey (WELNET leader laboratory), where they were analysed. The molecular epidemiological output demonstrated the trans-border spread of type A FMD between Turkey and Iraq.

**RESOLAB** is the West/Central African laboratory network. EuFMD provides limited support to its FMD sub-network to support the provision of risk information relevant to REMESA countries in North Africa.

**EARLN** is the East African Regional Laboratory Network; EuFMD provides limited support to its FMD sub-network.

The multiple incursions of sub-Saharan FMD strains (including SAT2) into Egypt and Libya in 2012 highlight the ongoing risk posed by these areas, and the clear benefits of engaging with the sub-Saharan laboratory networks. This can inform risk management for EuFMD member states and REMESA states in North Africa. All EuFMD activities in this region are coordinated with FAO EMPRES, in particular the USAID-funded Identify project to support African laboratories.



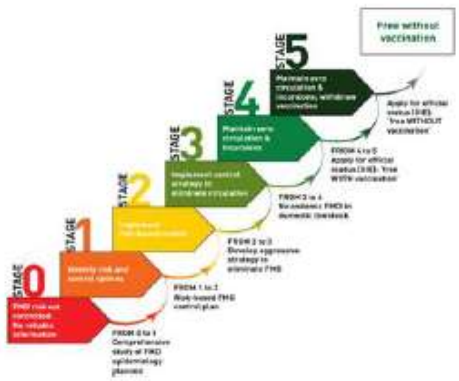

3 PILLARS of
the EuFMD

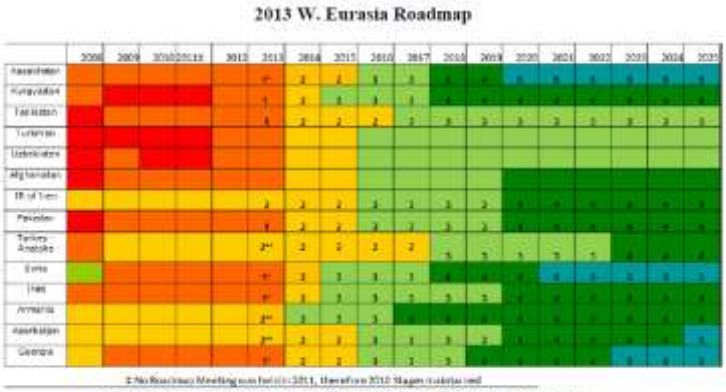
## 3.1 Monthly Report on the International FMDV circulation

The **EuFMD** produces a monthly report on the **Global FMD situation**, providing key input in global knowledge of FMD events and global risk management. This report is compiled and managed by a short-term professional (STP) animal health officer, a state veterinarian from an EuFMD member state on a six-month temporary posting in Rome with the Secretariat. The STP assembles the report, circulates to all OIE and FAO international reference Centres (IRCs), FMD laboratory network animators and Leading Laboratories, and complies their responses into a Monthly report by the 20th day of each Month. This is an important tool for **focussing efforts** to improve surveillance and provides a valuable measure of the outcomes associated with supporting countries or NRLs to type and submit samples to IRCs. Although this system started only in January 2012, EuFMD now gets information from most IRCs, including India and China and is also used by IRCs (indicators being the maps in their reports to meetings).

## 3.2 Progressive Control Pathway for FMD (PCP-FMD)

The PCP-FMD is a framework for planning and assessment of national activities and was developed by EuFMD, with FAO,in 2008 and has been since 2011 a **Joint Tool** of **EuFMD-FAO-OIE**. In 2011-12 the PCP was used as a tool for in all national assistance activities supported by the EuFMD/EC programme and EuFMD has provided expertise gained in the European neighbourhood to assist other regions to develop Long term Roadmaps for FMD control, as part of meetings organised by FAO and OIE under the Gf-TADS Framework. The EuFMD experts have continued to refine the guidance and associated PCP tools, for use by national experts in endemic countries, and have developed a training programme, the Practical Epidemiology for Progressive Control-Course(**PeP-C**) to train national staff in the application of the **PCP approach**.




## 3.3 Supporting the FMD reference laboratory services needed in Europe, and for global surveillance

The EuFMD, with EC support, has provided a contract of 150,000 USD per year to the **Pirbright laboratory** to provide international reference centre services to assist **typing of FMDV**, to produce an **Annual Global Surveillance** report (for OIE/FAO) and provide **proficiency test services** free of charge to the non-EU NRLs in the European Neighbourhood, complementing the service to the 27 EU NRLs that is supported under the EU CRL-FMD contract.

The aim is that all EuFMD members fulfil their obligation agreed at the 38th Session to be able to confirm FMDV within 24 hours of sample receipt, at their own NRL or another with which they have an agreement.