

8th West Eurasia FMD Roadmap Meeting of the GF-TADs

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Report



Food and Agriculture
Organization of the
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Vision for the West Asia Roadmap for FMD Control

Regional cooperation among Eurasian countries for the progressive control of FMD leading towards freedom of clinical disease by 2025 for regional economic development, food security, and poverty alleviation.

Видение Дорожной карты по контролю ящура в Западной Евразии

Региональная кооперация между Евразийскими странами в целях прогрессивного контроля ящура ведет к свободе от клинического проявления болезни к 2025 г. для экономического развития и снижения уровня бедности.

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Abbreviations

ANSES	French Agency for Food, Environmental and Occupational Health & Safety
ARRIAH	Federal Centre for Animal Health
CIRAD	French agricultural research and international cooperation organization
CVL	Central veterinary laboratory
CVO	Chief Veterinary Officer
EpiNet	Epidemiology Network
EuFMD	European Commission for the Control of Foot-And-Mouth Disease (an Inter-Governmental Commission based in the FAO)
FAO	Food and Agriculture Organisation of the United Nations
FMD	Foot and mouth disease
FMDV	Foot and mouth disease virus
FMD WG	FMD Working Group
GF-TADs	Global Framework for the Progressive Control of Transboundary Animal Diseases
ISO	International Organization for Standardization
LFD	Lateral Flow Devices
LIMS	Laboratory information management system
LMT	Laboratory Mapping Tool
NCP	National Control Programme
OIE	World Organisation for Animal Health
PCP	Progressive Control Pathway
PPP	Public-Private Partnership
PSO	PCP support officer
PTS	Proficiency testing schemes
PVM	Post-Vaccination Monitoring
PVS	Performance of Veterinary Services
RAG	Regional Advisory Group
RBSP	Risk Based Strategic Plan
RNA	Ribonucleic Acid
RT-PCR	Real Time polymerase chain reaction
SSIG	Small Scale Vaccine Immunogenicity Studies
TCC	Trans Caucasus
VNT	Virus Neutralisation Test
WEA	West Eurasia
WeiNet	West Eurasia Laboratory Network
WRL-FMD	World Reference Laboratory for Foot and Mouth Disease, Pirbright Institute, UK

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Report of the meeting

Background

- In 2008, the representatives of Veterinary services of 14 countries (Afghanistan, Armenia, Azerbaijan, Georgia, Iran, Iraq, Kazakhstan, Kyrgyzstan, Pakistan, Syria, Tajikistan, Turkey, Turkmenistan and Uzbekistan) had their first FMD regional meeting in Shiraz, Iran. All countries pledged on this Vision **“Regional cooperation among Eurasian countries for the progressive control of FMD through public and private partnerships leading towards freedom of clinical disease by 2020 for economic development and poverty alleviation”**.
 - ✓ The participants considered that the stepwise approach provides good criteria for the countries to measure their progress. They also recognized that in order to progress along the pathway to control and eradicate FMD at the regional level, the prerequisite is to first focus efforts at the national level, ensuring increase national investment in FMD control.
 - ✓ However, the implementation of the Roadmap vision required to co-ordinate the set of national efforts under an overall framework of progressive risk management to reduce the impact of FMD in the region: sharing of information, technical knowledge, possible donor support, between countries within the region, beneficiaries of the action.
 - ✓ The objectives set out at that time were to provide countries with tools to enable them to better know and understand the situation of FMD. This knowledge, not only on their territory, but also in the region, would support them in anticipating the incursion, or even the progression of the virus within the region.
 - ✓ Since 2009, regular follow-on meetings were convened by the Eu-FMD and FAO.
- The global conference on FMD (Bangkok, June 2012) gave the opportunity to present the PCP, its stages and its clearly defined ‘gateways’ between these stages. As a result, the adoption of the FAO-OIE Global Strategy for the control of FMD, with its three inter-related components: improving global FMD control, strengthening Veterinary Services and improving the prevention and control of other major diseases of livestock.
- From 2013 on, the GF-TADs FMD working group involved in the organization of the roadmap meetings, in collaboration with EuFMD, with the objectives to monitor progress in FMD control in the region, assess the national control progress and share information on circulating viruses.

The established regional Secretariat provides co-ordination of the supportive services, particularly to promote the laboratory (WelNet) and the epidemiology (EpiNet) networks, developing cross-border coordination.

Throughout the years, with types A, O and Asia-1 regularly circulating, the region faced of incursion of new serotypes, new lineages and strains of FMD viruses from other virus pools: serotypes A/Asia/Iran-05 in 2008, O/ME-SA/PanAsia2 in 2009, O/ME-SA/PanAsia and A/Asia/Sea-97 in 2014 and A/Asia/G-VII lineage.

All posed an ongoing threat of incursions of viruses originating in neighboring regions and highlighted the need to adapt the vaccine selection to the new circulated strains, taking note of the continuing epidemic of serotype Asia -1 in Turkey, Iran, Pakistan and Afghanistan, and of serotype A Iran 05, and O Panasia II in at least these same countries.

West Eurasian countries benefited from these meetings and improved their knowledge and management of FMD on disease situation, risk assessment, contingency plan, simulation exercise, selection of vaccine strains and vaccine effectiveness studies. The quality of vaccines used in the region is improved, meeting the international standards (OIE Manual of Diagnostic Tests and Vaccines for Terrestrial Animals) and free of NSP for differential diagnosis between infected and vaccinated animals. The global strategy thus far has been successfully implemented in the 14 countries of the West Eurasia roadmap, using the PCP approach. All progressed, of which 4 are now in PCP stage 1, 3 in provisional stage 2, 5 in stage 2, and 2 having zone(s) with OIE FMD free status, with or without vaccination.

Objectives

The objectives of the eighth regional Progressive Control Pathway for FMD (PCP-FMD) meeting are to:

- share information on changes in FMD risk for the countries directly affected by FMD virus circulation within the West Eurasia FMDV ecosystem, and provide recommendations on priority vaccines for use by countries in the region;
- assess the progress of each country along the Regional Roadmap towards the Vision first identified at the Shiraz Meeting in 2008;
- update the Roadmap for regional FMD control in West Eurasia countries between 2019 and 2025, using the principles of the PCP-FMD;
- present the updated version of the PCP guidelines, its implications for stage progression, and share examples of best practices in the national application of the PCP-FMD;
- strengthen the support of the FAO, the OIE and the Regional Advisory Group on FMD, to assist countries preparing national FMD control programmes, project proposals for increased investment on FMD control and submissions to the OIE for control programme endorsement and possible FMD status recognition for countries and zones;
- better plan activities and achieve regular communication between the reference and national laboratories in the region, within WelNet;
- present a comprehensive review of the epidemiology of FMD in West Eurasia, to summarize the findings and lessons learnt in ten (10) years (since 2008), within EpiNet.

Outcomes and outlook

The expected outcomes of the meeting are:

- the commitment of participants to regional cooperation in control of FMD is reconfirmed and timetable for the regional vision is updated;
- the West Eurasia FMD roadmap 2018-2025 is updated with the revised projections of each participating country;
- participants are familiarized and updated on the current regional FMD situation and the progress made in FMD control, the main risk factors for virus transmission and the new version of the PCP principles;
- international organizations reconfirm their assistance to countries to progress along the regional Roadmap, in the development, implementation and monitoring of their national control programmes, and in design associated investment/ support projects;
- participants recognize the risks associated with weaknesses in the regional and national FMD control programs, and empower the Regional Advisory Group to give attention and effort to the work needed between meetings;
- participants agree on the priorities and gaps identified in the action plan for 2019-2020, for potential support by the international community and development partners.

Recommendations discussed at the end of the meeting are included in Annex 1.

Session 1. Opening and welcoming remarks

The eighth West Eurasia FMD Roadmap meeting of the GF-TADs was celebrating the 10th Anniversary of the roadmap for the region since it was launched in 2008 in Shiraz. In this very first meeting, the region adopted the “Shiraz declaration” for “a regional cooperation for the progressive control of FMD leading towards freedom from clinical disease by 2020”. It brought together the Directors of Veterinary Services and FMD points of contact from thirteen countries, representatives of Pirbright Institute, ANSES, ARRIAH, Boehringer Ingelheim, as well as EuFMD, FAO and OIE to facilitate the meeting.

The meeting was officially opened by Dr Alireza Rafiepoor, Head of IVO (Iran Veterinary Organization), OIE Delegate of Iran, Dr Fabrizio Rosso representative of EuFMD, Mr Gerold Boedeker, Head of the FAO Representation in IRAN and Dr Jean-Philippe Dop, Deputy Director General of the OIE. They highlighted the signal of organising this meeting in Shiraz, the same city as in 2008, a way to celebrate our achievements since it was launched. They insisted on the regional approach under the GF-TAGDs framework, on the importance of strengthening the capacity of veterinary services, as component 2 of the FMD Global Strategy and on the need for access to good quality vaccines. After 10 years of regular meetings, with synergized energies and actions, the countries progressed in different ways on the control of FMD and understood how important to consider is time when planning to control FMD, with short and long-term deadlines.

The Deputy Governor of the Fars province officially opened the workshop.

The agenda and list of participants are in annex 2 and 3 respectively.

Session 2. West Eurasia and the FMD Global Strategy

❖ Overview of global and regional FMD Situation

[Donald King / Pirbright Institute, WRL]

FMD is considered to have endemic status in West Eurasia, where viral serotypes O, A, and Asia 1 regularly cause outbreaks in domesticated species. Data from field outbreaks provides a vital source of information that is used to understand the epidemiological of the disease. However, our regional perspective is currently biased by the fact that sample submissions to international FMD Reference Laboratories predominantly come from only four countries (Pakistan, Afghanistan, Iran and Turkey). Collated results for samples tested at ARRIAH (Russia), ŞAP Institute (Turkey) and WRL-FMD (UK) provide evidence for increased dominance of serotype O during 2018, in contrast to 2016/17 when serotype A was more frequently detected in the region.

The majority of serotype O samples represent two sub-lineages (called ANT-10 and QOM-15) within the O/ME-SA/PanAsia-2 lineage. Of particular note is the emergence in Punjab, Pakistan, of what appears to be a new O/ME-SA/PanAsia-2/ANT-10 antigenic variant. Spread of this lineage needs to be closely monitored, especially in cases where there is evidence for vaccine failure in the field.

Other endemic FMDV lineages in the region include A/ASIA/Iran-05 (two sub-lineages named SIS-13 and FAR-11) and Asia 1/Sindh-08. A number of countries in the region have also experienced cases due to the exotic A/ASIA/G-VII lineage from South Asia. However, there have not been any reports of further spread of this lineage into new countries during 2018/19. Other risks for the region include O/ME-SA/Ind-2001 (a lineage from Pool 2 [India/Bangladesh/Nepal] which has entered countries in the Persian Gulf) and O/EA-3 (a lineage from sub-Saharan Africa countries that has recently caused outbreaks in Israel and Palestine).

The OIE/FAO FMD Laboratory Network (<https://www.foot-and-mouth.org>) encourages countries to submit appropriate clinical samples for laboratory analyses (testing is free-of-charge), for further information or assistance with shipments, please contact donald.king@pirbright.ac.uk.

❖ **10 years after Shiraz, 2008: how far have we progressed towards the vision? History and progress of the Regional Roadmap**

[Giancarlo Ferrari and Carsten Pöttsch / EuFMD]

The initial concept of the PCP was mainly borrowed from the Hazard Analysis Critical Control Point (HACCP) concept, considering that the identification (and control) of critical control points would have led to a progressive decrease of the incidence of FMD. The development of the PCP prior to the first Roadmap Meeting in 2008 was reviewed, as well as the PCP outline and requirements from 2008 and until the 2nd version of the PCP guidelines in 2018. The PCP-FMD has been developed by FAO and EuFMD to assist and facilitate FMD endemic countries to progressively reduce the impact of the disease and the load of FMD virus.

The development of the vision for the West Eurasia Roadmap for FMD Control from 2008 until 2016 was discussed. Amending the vision might be necessary: if countries do not progress beyond stage 2, it will impede the achievement of the current vision of freedom of clinical disease by 2025.

The potential need for amendments in the RBSP template were highlighted. The participants proposed to have a more logical follow-up from the risk assessment plan as requirement for stage 1, to the RBSP for stage 2 and to the official control programme as a requirement for PCP stage 3.

The decision to move at higher stages (above 2) would imply the goal of eliminating FMD, either at zonal or country-wide level. Countries embarked into stage 3 can apply for official endorsement of their national programs to the OIE, as acknowledgement of the validity and reliability of the program. Differently from the previous PCP edition, the endorsement of the national control program will locate the country at stage 4 of the PCP.

The presentation was followed up with a break out group discussion: “Celebrating progress, addressing challenges: ways forward and the revision of the regional vision”.

❖ **Presentation of outcomes of breakout groups and plenary discussion**

[Giancarlo Ferrari and Carsten Pöttsch]

A SWOT analysis was used as framework for analysing strengths and weaknesses of the PCP approach in West Eurasia and the opportunities and threats faced to progress along the PCP. Hereafter are reported the main outcomes of the exercise.

Strengths: willingness to achieve free status, possibility to bring FMD into focus, competitiveness among countries to reach higher status.

Weaknesses: lack of regional engagement and leadership that has led to a weak follow up between two successive regional roadmap meetings.

Opportunities: implement regional studies on animal movement and socio economic, control of other diseases using PCP principles, opportunity to design and implement systems at regional level such as early warning and vaccination monitoring.

Threats: political commitment and financial support, geopolitical differences that affect regional ownership, rapid genetic evolution of FMD viruses, vaccine availability.

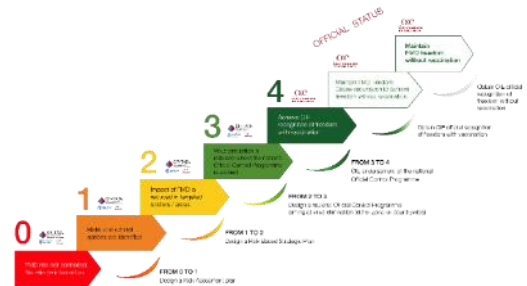
❖ PCP-FMD training -second edition of the PCP guidelines and requirements for stage progression

[Bouda Ahmadi / EuFMD]

The Global Strategy for FMD control, with its three components, namely 1) improving global FMD control, 2) strengthening veterinary services, and 3) improving the control of other major diseases, is linked to the PCP-FMD, identified as a major tool of Component 1, whereas the OIE's PVS pathway is a key implementation and assessment tool of the Component 2.

The new version of the PCP-FMD was explained to participants as a stepwise approach working tool to develop FMD control programs in countries where FMD is endemic, providing systemic frameworks for planning and evaluating field interventions and enable realistic disease control objectives to be defined and achieved.

The main changes in this new version is the two main domains clearly defined, namely a GF-TADs one covering the lowest stages of PCP-FMD (0 to 3) and an OIE one, covering the 4th stage and above, with the recognition of OIE status with, then without vaccination and the endorsement of a National Control Programme (NCP) as a gateway to stage 4.



Main principles of PCP-FMD were then presented and detailed requirements of stage 1 to stage 3 were discussed. Costs and benefits of joining a PCP-FMD for countries were mentioned. Vaccination, monitoring mechanisms and revenue forgone because of direct losses and limited trade export opportunities were listed as the main costs incur at stage 2. Benefits include loss reduction, possibility of international trade and access to markets, improved controlling other diseases and improved reputation of the livestock sectors.

The presentation was concluded by remarking that the optimum PCP position will be different for each country. PCP stage 2 gives immediate benefits at low cost, especially if public-private partnership (PPP) is applied and moving from PCP stage 3 to higher stages needs a thorough economic analysis.

Session 3. Countries reports

During the first two days of the meeting, each country had the opportunity to develop, on the basis of a template circulated before the meeting, a presentation describing the FMD situation in their territory. Participants had a 15-minute slot, after which 5 minutes of questions and answers allowed the assembly to clarify certain points of the presentations. Summaries of country information, as well as details of the evaluation of the respective PCP-FMD steps, are provided in Annexes 4 and 5.

Session 4. WelNet and EpiNet

❖ Report on EpiNet activities

[Lasha Avaliani / EpiNet Leader]

The EpiNet leader provided information regarding the implementation of the EpiNet work plan drawn in 2017, during the FMD Epidemiology and Laboratory Networks Meeting in Tbilisi. Some topics have been already implemented, such as (i) assessment of needs for epi assistance to EpiNet countries (survey monkey), (ii) database of identified EpiNet co-leaders, covering each country (name, email), (iii) sharing of information regarding existing documents, using those of Georgia as a first example, (iv) voluntary sharing of information regarding existing documents from all countries, (v) data sharing on

vaccination/outbreaks, **(vi)** assistance in serological survey design and analysis, assessment of FMD control measures, **(vii)** planning and implementation of SSIG in Georgia and Azerbaijan and **(viii)** assistance/guidance in RBSP development and amendment.

However, these 1.5-year implementation of the EpiNet work plan showed the involvement of the country representatives, except for the Trans Caucasus countries and Turkey, was either very poor or even totally absent for many countries. The EpiNet leader asked the country delegations to be more supportive. Therefore, several topics in the work plan have not been implemented and will be put in force for 2019-2020.

❖ **Report on WelNet activities**

[Abdulnaci Bulut / WelNet Leader]

During the network meeting held in Tbilisi in 2017, participants agreed on activities to be achieved through the FMD Laboratory Network, WelNet. The workplan designed then included 5 points: **(i)** Participate in annual proficiency test scheme (PTS), **(ii)** Assess the capacity/capability and performance of the national veterinary diagnostic laboratories, **(iii)** Train on FMD diagnosis and build up laboratory diagnostic capacity, **(iv)** Establish early detection systems to detect upcoming risks, **(v)** Continue to organise webinars and evaluation meetings. The poor communication between laboratories of the West Eurasia Roadmap is identified a partial reason for not fully achieving this workplan.

- i. Only 5 countries participated in the Proficiency Testing Scheme (PTS) conducted by the Pirbright Institute in 2018. Three, with no national Reference Laboratory, couldn't be involved, and others faced shipment difficulties.
- ii. The Laboratory Mapping Tool (LMT), prepared by FAO to evaluate laboratory capacity/ capability could not be delivered to the points of contact to assess their laboratories.
- iii. Up to now, no progress could be made on FMD training to build up laboratory diagnostic capacity.
- iv. The establishment of an early detection system in the region, to detect upcoming risks, particularly in the endemic setting area, still did not progress. This system should be considered as a strategic goal to be achieved in the next 2 years.
- v. An online e-learning course on post vaccination monitoring (PVM) was conducted by EuFMD, involving Armenia, Azerbaijan, Georgia and Turkey. It was followed by a workshop on PVM and surveillance design, gathering the same 4 countries. This resulted in the implementation of an immunogenicity study to evaluate the vaccines used in Trans-Caucasian countries.

Some bilateral collaboration studies on diagnosis, vaccine production and quality control of vaccine have been implemented, led by the Şap Institute. In this framework, a training on diagnosis and quality assurance for vaccine was conducted for participants of Azerbaijan and several courses were provided to participants from Pakistan.

❖ **Sharing risk information example**

[Abdulnaci Bulut / Turkey]

Information sharing is one of the crucial components to eliminate the risk and meet the vision of the West Eurasia Roadmap to control FMD. A statement of intention was signed between 6 countries, Armenia, Azerbaijan, Georgia, Iran, Russia and Turkey to initiate a real-time risk information sharing among countries of the Trans-Caucasian region (TCC project), in addition to some capacity building activities. To enable the information sharing on vaccinations and FMD outbreaks, two databases were created. Turkey and Trans-Caucasian countries have already shared data and gap should be overcome on involving Iran and improving involvement of Russia.

Among the other achievements within this TCC Project, the countries organised multi-country simulation exercises for FMD (in Georgia in 2016 and planned in 2019 in Turkey), a workshop on capacity building for clinical surveillance to reach zonal stage-3 in Georgia and Azerbaijan, a workshop on Post-

vaccination monitoring and vaccine effectiveness. Progress evaluation and activities planning are regularly assessed in joint meetings.

This initiative was recognised as a good, well conducted example in terms of data and information sharing, capacity building, early detection, surveillance design and assessment, programme development and risk reduction. Participants agreed on the interest of developing such an initiative among the remained area in the West Eurasia region, a particularly endemic area for FMD. A parallel price survey on live animal and meat would enable a better understanding of the situation.

❖ **LFD-penside test**

[Labib Bakkali Kassimi / ANSES]

Foot-and-mouth disease (FMD), caused by infection with foot-and-mouth disease virus (FMDV), is one of the most economically devastating diseases affecting artiodactyls. Identification of circulating strains is important for efficient FMD control. However, due to shipping requirements of potentially infected samples, the cost of sample submission to reference laboratories remains a major obstacle. A cost-effective and safe method for shipment of samples from FMD-suspected cases, based on the inactivation of FMDV on lateral flow devices (LFDs) has been developed and validated in ANSES laboratory, which allows subsequent detection and typing of FMDV by RT-PCR and virus rescue using RNA transfection. The protocol is under validation on freshly collected clinical samples through collaboration in endemic countries in order to test the performance and safety of the entire process directly in the field. This project will contribute to demonstrate that using LFDs is a safe way for room-temperature, dry-transport of inactivated FMDV samples from endemic areas. The protocol should help promoting submission of FMD suspected samples to reference laboratories by reducing the cost of sample shipment and thus characterization of FMDV strains circulating in endemic regions.

❖ **Progress on Small Scale Vaccine Immunogenicity Studies (SSIG) and PVM**

[Giancarlo Ferrari and Carsten Pöttsch / EuFMD]

The small-scale immunogenicity studies were outlined from the perspective of using such studies for evaluating the capacity of a vaccine to induce an adequate immune response (prior to a large-scale use of the vaccine or prior to purchase large amount of vaccine) and from the perspective of implementing those studies to measure the immune response induced by the vaccine along with the implementation of the vaccination campaign.

SSIG can assist countries in overcoming the complexity of designing and implementing large scale serological survey to estimate immunity at population level during or after the completion of a vaccination campaign. An indirect estimation of the expected level of immunity at population level can be made through the combination of vaccination coverage data with the immune response observed in the animals enrolled in the field immunogenicity study.

❖ **Example of SSIG (GEO/AZE with SAP and IZSLER Labs)**

[Tamila Aliyeva / Azerbaijan]

A small-scale trial has been conducted in Azerbaijan and Georgia to estimate the immunity of the population targeted for protection by vaccination is the core of PVM. It is a key indicator of how well vaccination has been carried out, whether or not protection against infection is likely and to evaluate the immune response to vaccination as a method for vaccine selection.

After describing the goals, study design and protocol, sample collection schedule, the two countries presented the outcomes of the study, covering animals vaccinated with vaccines provided by Shelkovskiy biokombinat.

In Azerbaijan the study was carried out in Kurdamir region, in a cattle milk production farm "Azersun" and, for small ruminants, in a small private farm. The vaccine used was a tetravalent: A/SAU2015 (GVII), A/TUR 2014, O/PanAsia-2 ANT 10, Asia-1/TUR 2015. All collected samples (from 0 to 90 days) have been

tested in the Central veterinary laboratory before shipped to the SAP Institute (Turkey). In Georgia, the trial was carried out in 12 private farms (mixed cattle and small ruminants), where animals were vaccinated with a tetravalent vaccine: A/GVII, A/Iran 2005, O/PanAsia-2, Asia-1/Shamir. All collected samples (from 0 to 90 days) have been tested in the national veterinary laboratory and shipped to the SAP Institute (Turkey).

Confirmatory testing and virus neutralisation test (VNT) will take place at the SAP Institute (Ankara) and the OIE Reference Laboratory (IZSLER Brescia, Italy). A comparative study will be conducted for the ELISA results from the IZSLER (in-house), the SAP Institute (LPBE) and the TCC laboratories (IZSLER kit).

❖ **Break-out EpiNet and WelNet groups**

[Giancarlo Ferrari and Carsten Pöttsch]

The respective group discussions highlighted the lack of communication within the network members. Support was requested from the international organisations on mapping migration routes of animals, shipment of samples to RL. Lack of LIMS¹ in most countries also was a challenge for efficient and timely exchange of information.

To understand how to better develop the activities of the workplans developed during the FMD Epidemiology and Laboratory Networks Meeting in 2017, specific topics have been discussed in EpiNet and WelNet break-out groups. They focused on risk information collection, analysis and sharing (including animal mobility - market price - vaccination) for EpiNet and on proficiency testing, national laboratory capacity and performance, risk information sharing for WelNet.

EpiNet: more assistance is requested from regional representations of international organisations in order to better communicate with EpiNet members. Activities should be focused on the sharing of risk information related to livestock rearing practices, pastures along the borders, market prices of livestock and meat. The use of GIS should be promoted for better understanding of risk hot-spots, including animal movement patterns, markets and pastures. The group proposed to promote and implement in other areas of West Eurasia the information sharing system implemented between Transcaucasus and neighbouring countries.

WelNet: the participants noted the lack of appointed National Reference Laboratory in some countries, voiced the need encourage and support the proficiency test schemes and highlighted the relevance to carry out an exercise to assess capacity of laboratories in the WestEurasia. The use of FAO/LMT (Laboratory Mapping Tool) questionnaire would be appropriate for such an assessment, with a need to have clear identification of points of contact for each country. The results of the assessment can be the basis for the definition of the training needs, that could be provided by the SAP Institute, having already indicated its willingness to organize trainings for other National Reference Laboratory in the region. The early detection of circulating FMDV strains should, for instance, be improved through bilateral agreements for the exchange of samples and test results.

Session 5. Changes in FMD risks and recommendations on priority vaccines for use in the region

❖ **Report on vaccines and vaccination programmes across the region (survey)**

[Satenik Kharatyan (ARM) and Tengriz Chaligava (GEO)]

13 countries participated in the vaccination survey, among which 4 notified FMD cases in 2018-2019, with A, O, Asia1 serotypes circulating. As per previous years, most of the surveyed countries reported vaccination of both small and large ruminants; The vaccination campaigns, for which only 5 countries coordinate with their neighbouring countries, involved private and public vets and stay very similar from year to year, usually with different policies throughout the national territory. The quality of vaccines

¹ Laboratory information management system

used is increasing over years. Vaccine matching tests are conducted by Sap Institute, WRL Pirbright, WRL Pirbright or ARRIAH for some countries, most of them use 6PD50 and >6PD50 vaccine but only 5/13 countries declared testing vaccine effectiveness, either in national laboratory or in external laboratories. See Annex 6 for more details.

Session 6. Building capacity and strengthening partnerships

❖ Getting started with Public-private partnerships for progressive control

[Djahne Montabond / FMD-WG, OIE]

Following the outcomes of the technical item 2 of the 85th OIE General Session (*Public-Private Partnerships: expectations of private sector partners for international animal health and livestock sector development programmes*), the OIE initiated a 3-year initiative, with the support of the Bill and Melinda Gates foundation and the collaboration of CIRAD, to support Member Countries to develop, if and when relevant, sustainable Public-Private Partnerships (PPPs) to strengthen Veterinary Services.

An on-line survey of PPPs resulted in the identification of the existence of 3 types of partnerships (clusters). This typology is described in a brochure (see www.oie.int/publicprivatepartnerships) released at the 86th General Session of OIE: **(Cluster 1, Transactional PPP)**, initiated and funded by the public sector, with contract or sanitary mandate, **(Cluster 2, Collaborative PPP)**, a joint commitment between the public sector and end-beneficiaries, often driven by trade and export interests, therefore jointly initiated and funded, **(Cluster 3, Transformative PPP)**, often initiated by private companies to achieve long-term sustainable business returns and/or a public good commitment. The examples described helped participants to better understand the concept.

The numerous success stories reported during the on-line survey showed that, for veterinary services, PPPs are already well developed around the world and can be used as examples for future candidates. Based on a subsequent expert consultation, conducted in 2018, with 42 international public and private experts, an OIE PPP Handbook of guidelines to support development of impactful and sustainable PPP in the veterinary domain is being prepared and will be released at the 87th OIE General Session, in May 2019. E-learning modules are being developed in collaboration with EuFMD. The participants were thus invited to contact OIE to organize further training activities, creating a PPP community of practice. The countries' public Veterinary Services were encouraged to consider such collaborations with the private sector in the control of FMD and invited to discuss this in a working group session.

❖ Group discussions (How OIE, FAO and EuFMD can assist countries in PCP progress and towards OIE endorsement of plans)

[Neo Mapitse / OIE, Bouda Ahmadi / EuFMD]

The attendees were grouped in two groups to discussing examples of PPP applied to WelNet and EpiNet. The main items mentioned and discussed by the EpiNet participating countries are as follows.

Pakistan: PPP has been going on in Pakistan for some years now, mainly focused on giving authorities to private sectors to: **a)** provide trainings to private veterinarians, **b)** conduct surveillance activities including sample collections and testing, as well as vaccination. Government covers the costs based on a memorandum of understanding.

Iran: Transactional contract enable to certify and train private veterinarians to conduct FMD vaccination. Collaborative PPP exists **a)** with so-called "mega dairy farms" authorized by the government to conduct their own vaccination (planning and implementation) under the supervision of authorized private veterinarians employed in these farms, **b)** with veterinary councils to train private veterinarians to conduct surveillance activities, such as sampling, testing and vaccination, **c)** with private vaccine manufacturers to supply the increasing demand to reliable vaccines.

Turkey: The government has developed contract exists **a)** with veterinary associations and with livestock (sheep and goat) unions/associations to promote animal health and to implement animal identification programme, **b)** with private veterinarians at provincial level, working for larger farms on vaccination and animal identification (ear tags).

Kazakhstan: PPP are developed **a)** with veterinary association (council) to issues licenses for veterinarians to work as qualified vets, **b)** with private veterinarians to proceed with the vaccination for nine animal diseases (vaccines are provided free of charge) and **c)** with private sector for training (e-training and face-to-face) and for veterinary sanitary activities.

The issues along the PCP-FMD that the Veterinary Services could engage with the private sector and the categories of the key stakeholders in both public and private sector were presented to provide a foundation for the discussions. The participating countries in the laboratory network group listed number of PPP initiatives in the fields of diagnostics and vaccine production.

- Contracts between the Central veterinary laboratory (CVL) and the private sector laboratories were for services in testing of animal products and by-products for food safety, standardization of test methods and protocols including the introduction of ISO standards. Some CVL were involved with private sector vaccine production laboratories for development of new vaccine strains.
- Boehringer Ingelheim gave examples PPP initiatives with countries for (i) long term vaccine development and supply, provision of technical expertise in vaccine manufacturing with Iran, (ii) exchange of technical knowhow, standardization, develop SOP and capacity for vaccine matching and (iii) research and development of vaccines.
- Provision of training to the public services in collaboration with universities, training on HACCP and biosecurity in private sector laboratories, including training of inspectors in slaughterhouses.
- Accredited veterinarians registered with the respective national Veterinary Board/Council for ease of regulation, was identified as a vehicle for implementing the PPP initiative especially in providing services.

The immediate challenges identified by countries to implement the PPP initiatives were the lack of enabling environment especially the appropriate legislation, strategies to engage with the private sector, lack of knowledge of private sector laboratories needs and identification of areas for mutual benefit. Existing tools such as PVS reports (including the Laboratory specific PVS evaluation) were identified as potential source of information on potential areas for PPP.

The laboratory network of the West Eurasia Roadmap requested the international organisations to provide some guidelines on the PPP initiative for the VS to engage with the private sector on FMD control.

Session 7. Roadmap conclusion

❖ Celebrating our progress

[Kazakhstan, Pakistan, Georgia]

In 2008 the 14 countries involved in the implementation of the FMD Roadmap of the GF-TADs for West Eurasia (Armenia, Azerbaijan, Afghanistan, Georgia, Iran, Iraq, Kazakhstan, Kyrgyzstan, Pakistan, Syria, Tajikistan, Turkey, Turkmenistan and Uzbekistan) agreed to a commitment to implement a stepwise roadmap to achieve disease control and, eventually, FMD freedom.

The meeting demonstrated the considerable improvement achieved in the quality of vaccines used to meet the international standards (*OIE Manual of Diagnostic Tests and Vaccines for Terrestrial Animals*) and the increasing reference to SP/NSP tests to differentiate infected and vaccinated animals.

As a consequence, the West Eurasian countries progress on a proper FMD control. With their regular regional coordination, from the 46% of countries without any information on the FMD situation on their territory (stage 0) in 2008, now all countries have at least accessed stage 1 (gaining understanding on the epidemiology of FMD). Some even have progressed to stage 2, where the risk-based control measures are implemented to reduce the impact of FMD in one or more livestock sectors or achieved an FMD free status (with or without vaccination) recognized by OIE for part of their territory (Turkey and Kazakhstan). The participants recognized the real progress of some countries.

As a first step, the objective proposed is to ensure all countries reached at least in PCP stage 2 by 2022, with a significant support of the GF-TADs FMD Working Group.

❖ **Presentation of the new vision for the Roadmap**

Taking into account all the information received during the meeting, the participants discussed on the best way to achieve the vision proposed in Shiraz in 2008, a *“Regional cooperation among Eurasian countries for the progressive control of FMD through public and private partnerships leading towards freedom of clinical disease by 2020 for economic development, food security, and poverty alleviation”*, the deadline of which has now been postponed to 2025.

However, to achieve the Shiraz vision, all countries should, at least, have reached PCP stage 3 by 2025, eliminating all sign of FMD clinical disease in the region. Looking at the roadmap outlooks after the Shiraz meeting in 2019, with 4 countries still in PCP stage 1, this seems hardly reachable. So, to progress, participants requested a regular and clear support of the GF-TADs FMD Working Group and a limited proposal of new provisional stages.

Priorities have been drawn by participants for the 2020 roadmap meeting:

- develop motivation/incentives for countries to progress;
- International Organization should support Afghanistan, to clearly engage this country in the common vision (without engaging Afghanistan, we cannot achieve our vision);
- widely develop bilateral cooperation on transparency on FMD situation in the region, with timely sharing of information sharing and diseases reporting;
- advance on resources mobilization, budget availability, farmers awareness, pre-movement and pre-export testing of animals;
- improve laboratory diagnosis;
- develop cooperation for the activities of ME-WEA roadmaps, including Welnet and EpiNet

❖ **Presentation of the updated Roadmap**

[D. Montabord / OIE]

At the end of the two first days, the two interview panels, encompassed by the non-voting members of the RAG, interviewed representatives of participating countries, to discuss about their FMD situation, their plan for the coming years and the main identified gaps and challenges. The conclusions of each of these interviews were presented, in closed sessions, to the members of the RAG, for voting on the PCP-FMD stages to which each country can be validated.

The final version of the Roadmap for 2019 is shown in the following page.

❖ **Next West Eurasia Roadmap meeting**

Azerbaijan offered to host the 9th meeting of the WEA FMD Roadmap.

8th FMD Roadmap meeting for West Eurasia (4 - 6 March 2019, Shiraz, Iran)
Presentation of provisional roadmap for 2008-2025, based on self-assessment questionnaires

Countries	Validated Stages												Provisional Stages (not validated)					
	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Afghanistan (<i>absent</i>)	0	1	1	1	1	1	1	1	1	1	1	1	2	2	3	3	3	4
Armenia	2	2	2	2	2	2	2*	2*	2	2	2	2	2	2	3	3	3	4
Azerbaijan																		
Absheron peninsula	2	2	2	2	2	2	2*	2*	2	2	2	2	3	3	3	3	4	4
Remaining	2	2	2	2	2	2	2*	2*	2	2	2	2	2	2	3	3	4	4
Georgia	2	1	1	1	1	1	2*	2	2	2	2	*	3	4	FwV	FwV	FnV	...
Iran	2	2	2	2	2	2	2	2	2	2	2	2	2	2	3	3	3	3
Kazakhstan																		
9 northern regions	1	1	1	1	1	1	2*	FnV	FnV	FnV	FnV	FnV	FnV	FnV	FnV	FnV	FnV	FnV
5 southern regions	1	1	1	1	1	1	2*	**	**	FwV	FwV	FwV	FwV	FwV	FwV	FwV	FwV	FwV
Kyrgyzstan	1	0	0	0	1	1	2*	2*	2*	2*	2*	*	3	3	3	4	4	4
Pakistan	0	1	1	1	1	1	2*	2	2	2	2	2	2	3	3	3	3	3
Tajikistan	0	1	1	1	1	1	1	1	1	1	1	1	1	2	2	2	2	2
Turkey																		
Thrace				FwV	FwV	FwV	FwV	FwV	FwV	FwV	FwV	FwV	FwV	FwV	FwV	FnV	FnV	FnV
Anatolia									2	2	2	2	3	4	4	FwV	FwV	FwV
Turkmenistan	0	0	0	0	1	1	1	1	1	1	1	1	1	2	2	3	3	4
Uzbekistan	0	1	1	1	1	1	1	1	1	1	1	1	2	2	3	3	3	4

Assessed by RAG Middle-East

Iraq		1	1	1	1	1	2*	2*	2*	2*	2*	2*	2	2	3	3	3	3
Syria		1	1	1	1	1	2*	2*	2*	2*	2*	2*	2	3	3	3	3	3

* provisional status given to the country (countries had six months to provide additional information including Control Plan; if no, they will be downgraded to the previous stage)

** country/zone having entered the OIE pathway for recognition of an FMD free zone with vaccination

FwV : Free with vaccination **FnV** : Free without vaccination

* The plan has been received and reviewed by the WG for further update of the PCP stage after the review will be finalised

*	0	1	2	3	4	OIE
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Annex 1 - Recommendations



Recommendations of the 8th meeting of the FMD Roadmap for West Eurasia Shiraz, Iran 4-6 March 2019

Considering:

- The Vision pledged on by the representatives of Veterinary services of the 14 countries (Afghanistan, Armenia, Azerbaijan, Georgia, Iran, Iraq, Kazakhstan, Kyrgyzstan, Pakistan, Syria, Tajikistan, Turkey, Turkmenistan and Uzbekistan) having their first FMD regional meeting in Shiraz, Iran in 2008: **“Regional cooperation among Eurasian countries for the progressive control of FMD through public and private partnerships leading towards freedom of clinical disease by 2020 for economic development and poverty alleviation”** and the need to adapt it to the new FMD situation and the progress made in the region;
- The adoption of the **FAO-OIE Global Strategy** for the control of FMD (Bangkok, June 2012) with its 3 inter-related Components respectively on (1) the control of FMD, (2) the reinforcement of Veterinary Services and (3) the combined control of FMD with other animal diseases;
- The results of previous FMD regional Roadmap meetings which took place since 2008 (Shiraz/2009; Istanbul/2010; Istanbul/2012; Baku/2013; Astana/2014; Almaty/2015 and Bishkek/2016);
- The tools provided to the countries to support them in anticipating the incursion, or even the progression of the virus within the region;
- The FMD Progressive Control Pathway (**FMD PCP**), major tool for the implementation of the activities under **Component 1 of the Global Strategy**, with its stepwise approach to measure the national progress to control and eradicate FMD and, to do so at the regional level, the prerequisite to first focus efforts at the national level, ensuring increase national investment in FMD control;
- The new elements developed to better operationalize the FMD PCP since it was firstly launched in Shiraz (Iran) back in 2008, and its revision in 2018, including two distinct domains, namely: (i) a GF-TADs and (ii) an OIE domain with the former and the latter covering the lowest and highest stages of the FMD PCP respectively;
- The progressive reinforcement of the capacity of the Veterinary Services of the countries, under **Component 2 of the Global Strategy**, demonstrated as driver and guarantee for the efficacy and sustainability of the FMD specific measures put in place for the set of critical competences of the **PVS evaluation tool** relevant for each PCP-FMD Stage;

- The importance of creating an appropriate enabling environment for the Veterinary Services to be better prepared to deal with the combined control of other priority animal diseases, as per **Component 3 of the FMD Global Strategy**;
- That, since 2008, some countries of the region are still in Stage 1 of the PCP-FMD and that, for moving into Stage 2, they are required to present a comprehensive risk-based strategic plan;
- That other countries have progressed along the PCP, accessing stage 2, and expressed the will to get further on the PCP, targeting the recognition of an FMD free status for specific zones on their territory;
- The possibility offered by EuFMD and the GF-TADs Working Group to provide specific support for countries in PCP-FMD Stage 1 under their on-going work plan, through the **PCP support officer system (PSOs)** to process in risk assessment and draft their Risk Based Strategic Plan, required to progress to Stage 2;
- That the implementation of the Roadmap vision requires to co-ordinate the set of national efforts under an overall framework of progressive risk management to reduce the impact of FMD in the region: sharing of information, technical knowledge, possible donor support, between countries within the region, beneficiaries of the action;
- That, three FMD virus serotypes are regularly circulating in the region (currently represented by the O/ME-SA/PanAsia-2, A/ASIA/Iran-05 and Asia/Sindh-08 lineages), and that new exotic FMD virus strains can enter the region from other endemic virus pools (such as A/ASIA/G-VII in 2015);
- That the vaccine selection has to be adapted to address the FMD viruses that are circulating in the region and potential incursion of new FMD virus lineages;
- The important role of the Regional Advisory Group (RAG) for West Eurasia, composed of three CVOs and the leaders of the Epi and Laboratory Regional networks to analyse and present the results of the assessments to the participating countries;
- The high risk of transboundary spread of FMDV among West Eurasian countries, due to the great disparity on the market prices in the livestock sector;

The 13 countries attended: Armenia, Azerbaijan, Georgia, Iran, Iraq, Kazakhstan, Kyrgyzstan, Pakistan, Syria, Tajikistan, Turkey, Turkmenistan and Uzbekistan, agree:

1. To elect the CVO/Delegate of Iran as a new member of the West Eurasia Regional Advisory Group, for a 3-year period, in replacement of the CVO/Delegate of Georgia²;
2. To use the assessments of the 8th regional FMD Roadmap Meeting (Shiraz, 2019) as a basis to update the Roadmap Table for the West Eurasian countries.

² The 2019 RAG for West Eurasia is composed of:

Voting members

- CVOs or their representatives of Kazakhstan (Chairperson), Azerbaijan and Iran
- Dr Lasha Avaliani (Leader of the regional epidemiology network, EpiNet) and Dr Abdalnaci Bulut (Leader of the regional laboratory network, WelNet)

Non-voting members

- GF-TADs FMD Working Group members
- PCP experts

The countries recommend, for a better implementation of the Global FMD Control Strategy at regional level:

➤ **General**

1. the participants of the Roadmap to continue the Roadmap process for West Eurasian countries to work towards freedom from clinical FMD in West Eurasia by 2025; the next meeting is proposed to be held in 2020, considering the proposals from Azerbaijan as a host country;
2. sub-regional FMD meetings be organised among neighbouring countries under the GF-TADs umbrella to ensure **(i)** the harmonisation objectives and modalities of vaccination strategies; **(ii)** the improvement of information sharing on outbreaks, animal movements/migration routes and hot spots, market prices, to gain a clear understanding of FMD situation in this sub-region;
3. in order to ensure appropriate vaccine selection and vaccine registration processes, to share and update information on FMD virus serotypes and topotypes both circulating and threatening the region, and on vaccines used (e.g. table including manufacturers and specific vaccine strains lead by WelNet);
4. to establish reasonable timeframe to submit documentation and receive feedback from the FMD Working Group and the RAG.

➤ **Countries**

5. when they have not progressed from PCP Stage 1 since the beginning of the Roadmap process, to be encouraged to develop their RBSP to reach at least Stage 2 of the PCP-FMD by 2022; the GF-TADs FMD Working Group will support through the system of PCP Support Officers (PSO);
6. to support and strengthen the West Eurasia Epidemiology (EpiNet) and Laboratory (WelNet) networks to share good practices, lessons learnt and build capacity in the countries, in order to allow application of the PCP-FMD principles; priority support should be given to countries in PCP-FMD Stage 1 and Stage 2, where a range of technical areas should be strengthened;
7. to make the most possible effort, on regular basis, to collect and deliver samples to FAO/OIE Reference Laboratories for full characterization of the field isolates, especially in case of suspicion of introduction of new strain or modification of strain currently circulating in the region;
8. to promote the implementation of immunogenicity studies, based on Post Vaccination Monitoring (PVM) guidelines, and share the results to assess and evaluate immune response to the different vaccines used in the region.

➤ **Reference laboratories**

9. to continue to provide FMDV diagnostic support to the West Eurasian countries, particularly in **(i)** facilitation of shipment of FMD samples, **(ii)** participation in proficiency testing programmes and **(iii)** vaccine matching;
10. to continue working on the development and evaluation of rapid test kits (Lateral Flow Device - penside test) and their potential use to simplify shipment of samples, to assist countries with limited resources and access to advanced

laboratory diagnostics, for the early detection and rapid response to FMD outbreaks;

11. to support all National FMD Reference Laboratories within the region to participate in proficiency testing schemes (PTS) organised by international reference laboratories;

12. to publish information about circulating strains in the region.

➤ **EpiNet and WelNet**

13. to facilitate the sharing of best practices, operational procedures and other working documents through an information platform accessible to all West Eurasian countries;

14. to encourage the active participation of nominated Points of Contact to the epidemiology and laboratory networks (EpiNet and WelNet);

15. the WelNet group (with support from the international reference laboratories), to consider whether common reference strains can be used to calibrate laboratory assays, used to assess heterologous antibody responses of vaccines (in support of PVM);

16. to encourage bilateral coordination between countries sharing borders for the timely sharing of information on outbreaks and disease management activities;

17. to encourage the sharing of information for the development of a regional map of risk hotspots (live animal markets, slaughterhouses, migration routes, shared pastures).

➤ **The supporting organisations**

18. to provide technical backstopping to countries for their progression along the PCP;

19. to facilitate and assist the implementation of regional studies on animal movement and socio-economic analysis; in this regards international organizations are invited to promote trainings, workshops and the development of tools to collect and analyse risk information based on animal mobility;

20. to develop tools to facilitate the selection of vaccine strains, in order to improve the capacity of countries in the region to define risk profiles for the definition of vaccine strain priorities;

21. to promote the training material available on the EuFMD e-learning website;

22. to continue to conduct training workshops on international standards and guidelines and on the various PCP-FMD tools (experience sharing by countries at advanced level of implementation of the PCP-FMD should be included in the training);

23. to promote the Public-Private Partnerships (PPPs) concept and to support West Eurasian countries to develop, if and when relevant, sustainable PPPs to strengthen Veterinary Services.

Vaccine recommendations, based on FMD virus lineages circulating in the region

OIE/FAO Reference Laboratories and WelNet recommend that Veterinary Services ensure that the vaccines used are appropriate for the viruses circulating in the region and are in line with OIE standards. Based on data recently collated by the OIE/FAO FMD Reference Laboratory Network (<https://www.foot-and-mouth.org>), the following FMDV lineages are circulating in the region and should be addressed by a vaccine tender:

- O/ME-SA/PanAsia-2
- A/ASIA/Iran-05
- A/ASIA/G-VII
- Asia-1/Sindh-08

Additional considerations for vaccine selection:

- [1] In order to help select the most appropriate vaccine, it is suggested that countries examine recent vaccine-matching data reported by FMD Reference Laboratories, and also request that vaccine manufacturers provide empirical data to demonstrate the efficacy of their products against the circulating FMD virus lineages in the target host species (either as individual monovalent components, or after formulation of a multivalent product sold to the market).
- [2] The potency of vaccines should be at least 3PD₅₀ (50% protective dose), but countries may wish to consider the significant benefits of a higher potency vaccine (6 PD₅₀ or higher) for increased effectiveness. Please note that we recommend that Asia1 Shamir vaccine should have a minimum potency of 6PD₅₀.
- [3] While selecting vaccines, countries should also consider epidemiological risks posed by FMD virus circulation in neighbouring regions. In particular, in addition to the FMD virus lineages listed above, the O/ME-SA/Ind-2001 lineage has also spread widely in many different parts of the world, including the Persian Gulf States of the Middle East.

The participants thank the Government of Iran, the Government of Italy and the European Union for collaborating with FAO, OIE and EuFMD under the GF-TADs programme, to successfully convene the 8th GF-TADs Regional PCP-FMD Roadmap Meeting for West Eurasia in Shiraz.

Done in Shiraz, March 6th, 2019

Annex 2 - Agenda



Food and Agriculture
Organization of the
United Nations



8th Regional FMD West Eurasia Roadmap Meeting of the GF-TADs

Shiraz, Iran - 4-6 March 2019

Chamran Grand Hotel

Agenda

Day 1 - 4 March 2019

Schedule	Topic	Chair/Facilitators/speaker
08:00 - 09:00	Registration	All
Session 1: Opening and welcoming remarks		
Chair : Dr Naser Rasouli (Deputy Director of International Affairs from IVO)		
09:00 - 09:30	Representative of Republic of Iran and international representatives - Alireza Rafiepoor - Fabrizio Rosso - Gerold Boedeker - Jean-Phillippe Dop - The Governor of the Fars Province or his deputy	Head of IVO EuFM Representative FAO Representative Iran OIE Deputy DG
	Objectives and Adoption of the agenda	OIE
	Official group photo	
09:30 - 10:00	<i>Coffee-break</i>	
Session 2: West Eurasia and the FMD Global Strategy		
Chair : Dr Nihat Pakdil (OIE Delegate of Turkey) + Jean-Phillippe Dop		
10:00 - 10:30	Overview of global and regional FMD Situation	WRL-FMD
10:30 - 11:00	10 years after Shiraz, 2008: how far have we progressed towards the vision? History and progress of the Regional Roadmap	Giancarlo Ferrari and Carsten Pöttsch



Schedule	Topic	Chair/Facilitators/speaker
11:00 - 11.45	Break-out groups discussion: Celebrating progress, addressing challenges: ways forward and the revision of the regional vision <ul style="list-style-type: none"> ◦ Group 1: Turkey, Armenia, Azerbaijan, Georgia, Iran, Pakistan, Iraq, Syria ◦ Group 2: Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan, Uzbekistan, Russian Federation 	Giancarlo Ferrari and Carsten Pöttsch
11:45 - 12:30	Presentation of outcomes of breakout groups and plenary discussion	All
12:30 - 13:30	<i>Lunch</i>	
13:30 - 14:00	PCP-FMD training -second edition of the PCP guidelines and requirements for stage progression	B. Ahmadi
Session 3: Countries reports Chair : Dr Tursyn Kabduldanov (OIE Delegate of Kazakhstan) + Fabrizio Rosso		
14:00 - 15:00	<ul style="list-style-type: none"> • 15 minutes presentation and 5 minutes question and answers per country • Stage 1: Tajikistan, Turkmenistan, Uzbekistan 	
15:00 - 16:00	<ul style="list-style-type: none"> • 15 minutes presentation and 5 minutes question and answers per country • Stage 2 (provisional or final): Kyrgyzstan, Pakistan, Syria, 	
16:00 - 16:30	<i>Coffee-break</i>	
16:30 - 17:50	<ul style="list-style-type: none"> • 15 minutes presentation and 5 minutes question and answers per country • Stage 2: Iraq, Armenia, Azerbaijan, Iran 	
17:50	Closure of day 1	
18:00 - 19:30	Closed sessions: interviews with countries to review their PCP-FMD questionnaires and control activities (TKM, TJK, UZB; 30 min per country)	Closed sessions: interviews with countries to review their PCP-FMD questionnaires and control activities (KGZ, PAK, SYR; 30 min per country)

Day 2 - 5 March 2019		
08:00 - 09:00	▪ <i>Closed Meeting WG - RAG</i>	
Session 4: WelNet and EpiNet : planned activities and results, lessons learnt in ten years since 2008 and future possible achievements Chair : Dr Khurshid Ahmad (OIE Delegate of Pakistan) + Andriy Rozstalnyy		
09:00 - 9:15	Report on EpiNet activities: state of implementation of the workplan 2018-2019, strengths/weaknesses, achievements and benefits	EpiNet leader L. Avaliani
09:15 - 09:30	Report on WelNet activities: state of implementation of the workplan 2018-2019, strengths/weaknesses, achievements and benefits	WelNet leader A. Bulut

Schedule	Topic	Chair/Facilitators/speaker
09:30 - 10:45	Sharing risk information example: data -sharing among the Caucasus countries	A. Bulut
09:45 - 10:00	LFD-penside test (Lateral Flow Device - penside test)	L. Bakkali-Kassimi (ANSES)
10:00 - 10:30	Break-out EpiNet and WelNet groups <ul style="list-style-type: none"> ○ EpiNet: risk information collection, analysis and sharing (animal mobility - market price - vaccination) ○ WelNet: proficiency testing, national lab capacity and performance, risk information sharing (lab capacity - lab results - vaccine quality) 	
10:30 - 11:00	<i>Coffee-break</i>	
11:00 - 11:30	Break-out groups (continued)	
11:30 - 12:30	Progress on Small Scale Vaccine Immunogenicity Studies (SSIG) and PVM (Joint activity of WelNet and EpiNet)	G.Ferrari, C. Pöttsch
	<i>Example of SSIG (GEO/AZE with SAP and IZSLER Labs)</i>	T. Aliyeva
12:30 - 13:00	Presentation of break-out groups outcomes and plenary discussion	Rapporteurs for WelNet, EpiNet and SSIG groups
13:00 - 14:00	<i>Lunch</i>	
Session 3 (cont'd): Countries reports		
Chair : Dr Housain Al Soliman (OIE Delegate of Syria)		
14:00 - 14:20	<ul style="list-style-type: none"> ● <u>Progress towards PCP Stage 3 zones and above : Georgia</u> 	Georgia rep.
14:20 - 15:20	<ul style="list-style-type: none"> ● 15 minutes presentation and 5 minutes question and answers per country ● <u>Maintaining FMD freedom: Kazakhstan, Russian Federation</u> ● <u>Strategy in Anatolia and maintaining freedom in Thrace: Turkey</u> 	
15:20 - 15:50	<i>Coffee-break</i>	
Session 5: Changes in FMD risks and recommendations on priority vaccines for use in the region		
Chair : Dr Rahym Ashyrov (OIE Delegate of Turkmenistan) + Afzal Muhammad		
15:50 - 16:10	Report on vaccines and vaccination programmes across the region (survey)	S. Kharatyan (ARM) and T. Chaligava (GEO)
16:10 - 16:20	Risk of new strains incursion to the region: WelNet expert group opinion	WRL - ARRIAH
16:20 - 16:30	Priority vaccines to be used in the region in 2019	WRL - ARRIAH
17:30	Closure of day 2	
17.30 - 19:30	Closed sessions: interviews with countries to review their PCP-FMD questionnaires and control activities (ARM, GEO, KAZ; 30 min per country)	Closed sessions: interviews with countries to review their PCP-FMD questionnaires and control activities (AZE, TUR, IRN, IRQ; 30 min per country)

Schedule	Topic	Chair/Facilitators/speaker
Day 3 - 6 March 2019		
07:30 - 09:00	▪ <i>Closed Meeting WG - RAG</i>	
Session 6: Building capacity and strengthening partnerships Chair : Dr Tamilla Aliyeva (OIE Delegate of Azerbaijan) + Carsten Pöttsch		
9:00 - 09:20	Getting started with Public-private partnerships for progressive control	D. Montabord
9:20 - 10:10	Group discussions (How OIE, FAO and EuFMD can assist countries in PCP progress and towards OIE endorsement of plans) (30 minutes) <ul style="list-style-type: none"> ○ Building awareness and engagement for FMD control ○ Think-tank on communication priorities, engaging private sector, on partners for training delivery 	N. Mapitse - B. Ahmadi
10:10 - 10:30	Feedback of groups discussion	
10:30 - 11:00	<i>Coffee-break</i>	
Session 7: Roadmap conclusion Chair : Dr Lasha Avaliani (OIE Delegate of Georgia) + Giancarlo Ferrari		
11:00 - 11:15	Celebrating our progress: speakers from Kazakhstan, Pakistan, Georgia	Oral statements
11:15 - 11:30	Presentation of the new vision for the Roadmap	Chairman, RAG
11:30 - 11:45	Presentation of the updated Roadmap for regional FMD control in West Eurasia countries between 2019 and 2025, using the principles of the PCP-FMD	D. Montabord
11:45 - 12:15	Round the table - confirming the vision, reconfirming support and assistance	
Session 8: Final Discussions and Report Chair : Dr Alireza Rafiepoor (OIE Delegate of Iran)		
12:15 - 13:00	Priorities to be addressed at the 2020 Roadmap meeting	All participants
	Recommendations of the 8 th Roadmap meeting	FMD-WG member
13:00	Closure of the meeting	
13:00 - 14:00	<i>Lunch</i>	

Countries interviews

Panel 1	Panel 2
Djahne Montabord (OIE)	Neo Mapitse (OIE)
Giancarlo Ferrari (EuFMD)	Fabrizio Rosso (EuFMD)
Labib Bakkali-Kassimi (ANSES)	Donald King (Pirbright Institute)
Andriy Rozstalnyy (FAO)	Carsten Pöttsch (EuFMD)









Day 1 - 4 March 2019




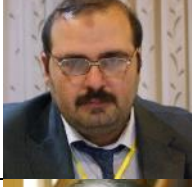





Panel 1	Panel 2
▪ Turkmenistan	▪ Kyrgyzstan
▪ Tajikistan	▪ Pakistan
▪ Uzbekistan	▪ Syria










Day 2 - 5 March 2019

Panel 1	Panel 2
▪ Azerbaijan	▪ Armenia
▪ Georgia	▪ Turkey
▪ Kazakhstan	▪ Iran
	▪ Iraq

Annex 3 - List of participants

N°	Country / Organization	Name Last name	Position	Photo
Countries				
1	Armenia	Hovik BATIKYAN	Chief specialist Veterinary Inspection, State Service for Food Safety of the Ministry of Agriculture	
2	Armenia	Satenik KHARATYAN	Head of department of Molecular Biology and Serology of SCRAAFSA SNCO	
3	Azerbaijan	Jeyhun ALIYEV	Head of the Risk Assessment Department of the Azerbaijan Food Safety Institute	
4	Azerbaijan	Tamilla ALIYEVA	Deputy chairman	
5	Georgia	Lasha AVALIANI	OIE Delegate Head of Veterinary Department	
6	Georgia	Tengiz CHALIGAVA	Deputy head of EDP division-Epidemiologist	
7	Iran	Reza HASSANZADEH	IVO.NRLASD.FMD Laboratory Director	
8	Iran	Seyed Bahman NAGHIBI	General Director of Animal Health Department	

N°	Country / Organization	Name Last name	Position	Photo
9	Iran	Alireza RAFIEIPOOR	Head of Iran Veterinary Organization	
10	Iran	Naser RASOULI BEIRAMI	Deputy Director for Specialized Organizations, Public Relations and International Affairs	
11	Iraq	Shakir FRAYYEH NAZZAL	Head of Monitoring and surveillance / epidemiology department	
12	Iraq	Layth MOHAMMED SALIH ABDULRASOOL	FMD PCP focal Point	
13	Kazakhstan	Tursin KABDULDANOV	Delegate - Deputy Chairman of Committee of Veterinary control and Supervision	
14	Kazakhstan	Nurlan SBANOV	Deputy Director General of the RSE "Republican Veterinary Laboratory"	
15	Kyrgyzstan	Murat ABDURAYEV	Head of the department of antiepzootic supervision	
16	Kyrgyzstan	Joldoshbek KASYMBEKOV	Director Center for Veterinary Diagnostic and Expertise for Northern Region	
17	Pakistan	Khurshid AHMAD	Animal Husbandry Commissioner/ CVO	

N°	Country / Organization	Name Last name	Position	Photo
18	Russia	Nikita LEBEDEV	Advisor to the Head of the Federal service for veterinary and phytosanitary surveillance	
19	Syria	Mazen DIB	Head of Laboratories	
20	Syria	Housain AL SOLIMAN	Director of Animal Health	
21	Tajikistan	Abdulvakhob AVGONOV	Head of the National Center Diagnostics for Food Security	
22	Tajikistan	Sharofiddin SHUKUROV	Veterinary Department of the Committee for Food Security	
23	Turkey	Abdulnaci BULUT	FMD Expert, Leader of WELNET	
24	Turkey	Veli GÜLYAZ	Acting Deputy General Director	
25	Turkey	Nihat PAKDİL	Deputy Secretary of Ministry, CVO	
26	Turkmenistan	Batyr AMANOV	Main specialist of animal health department	

N°	Country / Organization	Name Last name	Position	Photo
27	Turkmenistan	Rahym ASHYROV	Head of animal health department	
28	Uzbekistan	Abdurashid FOZILOV	Director of Regional center for animal diseases diagnosis and food safety of the Bukhara region	
29	Uzbekistan	Tulkinjon YULCHIEV	Head of the Animal Health Division of the Veterinary Department of Andijan Veterinary Department	
Experts/Observers				
30	WRLFMD	Donald KING	Head of the Vesicular Disease Reference Laboratory Group, TPI; FAO World Reference Laboratory for FMD (WRLFMD)	
31	ANSES	Labib BAKKALI KASSIMI	Head of FMD Reference Laboratory	
32	ARRIAH	Svetlana KREMENCHUGSKAI A	Leading Researcher	
33	ARRIAH	Aleksei SHCHERBAKOV	Head of Laboratory Federal Centre for Animal Health (FGBI "ARRIAH")	
34	Boehringer-Ingelheim	Nicolas DENORMANDIE	Scientific Director Veterinary Public Health Center Africa, Middle East, Latin America	
35	Boehringer-Ingelheim	Stéphane IMBERT	Regional Director Veterinary Public Health Center	

N°	Country / Organization	Name Last name	Position	Photo
EuFMD				
36	EuFMD	Bouda AHMADI	EuFMD team	
37	EuFMD	Giancarlo FERRARI	Veterinarian Istituto Zooprofilattico delle Regioni Lazio e Toscana	
38	EuFMD	Carsten POTZSCH	EuFMD Component manager Consultant veterinary epidemiologist	
39	EuFMD	Fabrizio ROSSO	Animal Health Officer	
FAO				
40	FAO Budapest	Daniel BELTRAN-ALCRUDO	Animal Health Officer FAO Regional Office for Europe and Central Asia	
41	FAO Teheran	Gerold BOEDEKER	Head of FAO Representation in IRAN	
42	FAO Teheran	Shahin KARAMI		
43	FAO Pakistan	Afzal MUHAMMAD	Project Coordinator FMD Management Specialist	

N°	Country / Organization	Name Last name	Position	Photo
44	FAO FMD-WG	Andriy ROZSTALNYY	Animal Health Officer	
OIE				
45	OIE Paris	Jean-Philippe DOP	Deputy Director General Institutional Affairs and Regional Activities	
46	OIE FMD-WG	Neo MAPITSE	Head of the Status Department	
47	OIE FMD-WG	Djahne MONTABORD	Technical Advisor	
48	OIE Astana	Ruth OLIVA ABASCAL	Technical Assistant	
Interpreters				
49	Interpreter	Vladimir BURDENKOV	Interpreter	
50	Interpreter	Yuryi BURDENKOV	Interpreter	

Additional participants of Iran

N°	Name Last name	Position / Structure
1	Dr Reza Amrabadi	Head of Fars Animal Diseases Management
2	Dr Javad Emami	Expert of Epidemiological Studies (West Azarbaijan)
3	Mr Naser Frootan	Deputy of Logistic (I.V.O)
4	Dr Mohammad Habibi	
5	Mr Reza Hassanzadeh	Head of Animal Disease Diagnosis
6	Dr Sedigheh Kazeminia	Deputy of animal Health (Kerman)
7	Dr Akbar Khorasani	Head of Diagnosis Laboratory of Razi Institute
8	Dr Bahman Abedi Kiasari	Director General for Specialized Organizations, Public Relations & International Affairs (IVO)
9	Dr Alisafar Makenali	Deputy Health of Iran Veterinary Organization(IVO)
10	Dr Yaghoob Mohandes	Director General of Fars Vererinary Office
11	Dr Mehdi Raffii	Director General of Ghom Vererinary Office
12	Dr Mohammad Rashtibaf	Deputy of animal Health (Khorasan Razavi)
13	Dr Ghasem Rezaianzade	Deputy Treatment of Iran Veterinary Organization(IVO)
14	Mr Alireza Safakhoo	Reporter (I.V.O)
15	Dr Alireza Sholepash	Head of Epidemiological Studies
16	Dr Hassan Wishte	Director General of Animal Diseases Management
17	Ms Fateme Zarean	Head of Public Relations (I.V.O)

Annex 4 - Summary of contents of country reports

Armenia



PCP-FMD Stage

2016

2

2019

2

**OIE PVS
evaluation**

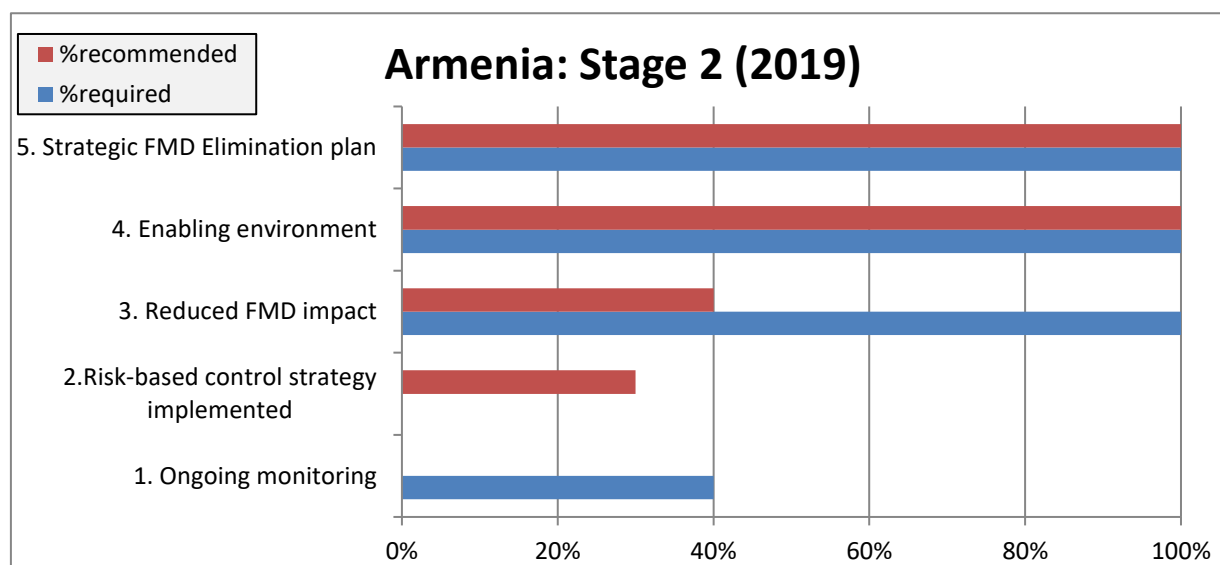
2007

Provisional Roadmap 2019

	Validated Stages												Provisional Stages (not validated)					
	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Armenia	2	2	2	2	2	2	2*	2*	2	2	2	2	2	2	3	3	3	4

* indicates a provisional status given to the countries (countries had 6 months to provide additional information including a Risk Based Strategic Plan - if not, they will be downgraded to the previous stage)

Achievement of required and recommended outcomes for the PCP Stage 2 (self-assessment):



FMD outbreaks & surveillance

- Last outbreak in 2016 (Armavir marz- Arazap village)
- No FMD clinical cases in previous years

FMD Control Measures

- Passive and active surveillance countrywide
- Serological monitoring carried out in 2018
- Vaccination campaigns (100 % susceptible cattle (2/y, re-vaccination calves every 3m, up to 18m) and SR in risk zone (1/y))
- Vaccine: efficiency $\geq 6PD50$, strains A Iran 05, A/G-VII O PanAsia2, Asia1 Sindh 08, (ARRIAH)
- **NSP-Ab** to estimate the circulation of FMDV in different high risk hotspot and in the rest of the country
- **SP-Ab** to assess the effectiveness of the vaccination campaign and estimate sero-conversion in vaccinated LR and SR populations

Other notes and priorities for the future

- Participate in PT 2009-2018
- Strengthen laboratory capacity
- Updated and reviewed SOPs for laboratory and field works
- Control of animal movement, increased at the borders
- Meetings of National FMD Taskforce Group every 2-3 months to monitor RBSP activities
- Improve public awareness, communication activities and cooperation with public and private sector
- Objective to achieve zonal PCP stage 3 in candidate areas (Megri region and Jermuk community) by 2020, prior to the whole country by 2022
- Field training planned for sample collection and shipment to the laboratory
- Continuous advanced training courses for inspectors, field veterinarians and laboratory staff

National shortcomings

- Gaps in animal identification system
- Compensation system and carcass destruction system to develop
- Insufficient number of vaccines for small ruminant, and of diagnostic tests
- Need for improvement of early warning system for transboundary diseases

Azerbaijan



PCP-FMD Stage

2016 2

2019 **2**

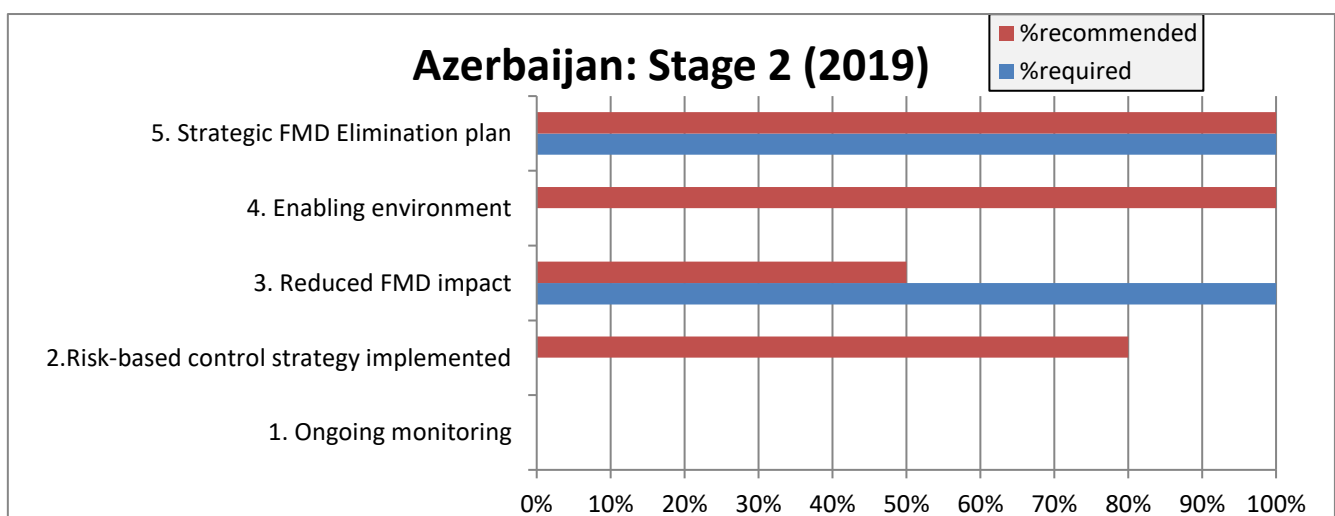
OIE PVS evaluation **2015**

Provisional Roadmap 2019

	Validated Stages												Provisional Stages (not validated)					
	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Azerbaijan																		
Absheron peninsula	2	2	2	2	2	2	2*	2*	2	2	2	2	3	3	3	3	4	4
Remaining	2	2	2	2	2	2	2*	2*	2	2	2	2	2	2	3	3	4	4

* indicates a provisional status given to the countries (countries had 6 months to provide additional information including a Risk Based Strategic Plan - if not, they will be downgraded to the previous stage)

Achievement of required and recommended outcomes for the PCP Stage 2 (self-assessment):



FMD outbreaks & surveillance

- No outbreak in 2016-2018
- Stable epizootic situation

FMD Control Measures

- Passive surveillance
- Vaccination campaign in spring and autumn (LR), 1/y for SR
- Changed policy of vaccination (planned to cover 100% for LR twice annually and SR once a year in 2019).
- LR (70-85% coverage): tetravalent vaccine with A, O, Asia-1
- SR (25-30% coverage): A, O
- Monitoring and evaluation of vaccination campaign: vaccine coverage, SP level
- Decrease of NSP prevalence over past 3 years
- NSP 2017: # 3% NSP (LR and SR)
- Animal movement control (for religious holidays)

Other notes and priorities for the future

- National FMD taskforce group updated
- Changes in structure of labs and vet services, evaluation of cold chain during vaccination campaign
- Participation in EuFMD webinars
- Development of national FMD control strategy
- Evaluation of the implementation of updated RBSP
- Identified risk zones (border with Iran and Armenia, neighborhood of live markets, rayons nearby seasonal animal movements) / Low risk: border with Russia and with Georgia
- Twinning project in process between CVL and OIE Reference Laboratory (Teramo, Italy)
- Renovation of labs and training, improvement of lab capacities (1 RVL, 7 regional labs)
- Trainings for state and private vets, inspectors, farmers, stakeholders, laboratory specialists
- Public awareness: stakeholders, farmers, breeders, ... (on TV, website and other mass-media)
- Synergic actions: with brucellosis, PPR, ... use of same sero samples / animal movements, awareness programmes, trainings for veterinarians
- Recent changes in the vet legislation: texts under approval process
- Strengthening of vet-sanitary measures for slaughtering
- Small-scale immunogenicity study carried out for naïve animals

National shortcomings

- Animal identification=> Identification for cattle planned in pilot rayons, including Absheron, then the whole country
- Early warning system to develop
- Need for harmonization of vet legislation with international standards
- Animal movement control

Support needed

Georgia



PCP-FMD Stage	
2016	2
2019	*
OIE PVS evaluation	2009

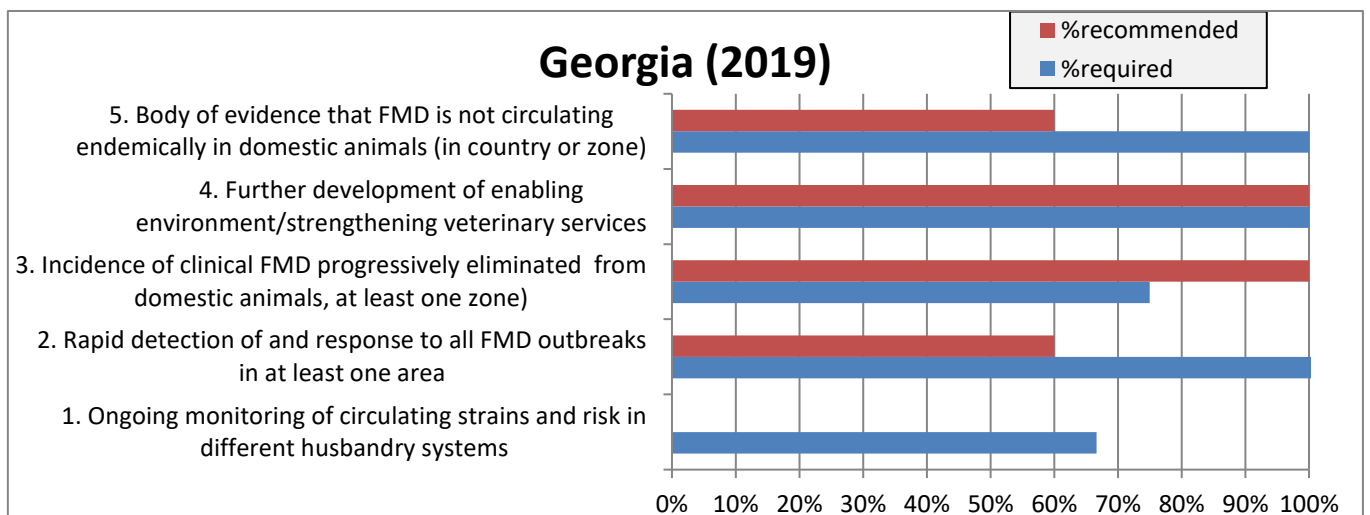
Provisional Roadmap 2019

	Validated Stages											Provisional Stages (not validated)						
	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Georgia	2	1	1	1	1	1	2*	2	2	2	2	*	3	4	FwV	FwV	FnV	...

* indicates a provisional status given to the countries (countries had 6 months to provide additional information including a Risk Based Strategic Plan - if not, they will be downgraded to the previous stage)

* The plan has been received and reviewed by the WG for further update of the PCP stage after the review will be finalised

Achievement of required and recommended outcomes for the PCP Stage 2 (self-assessment):



FMD outbreaks & surveillance

- 10 suspicion reported in 2018, no outbreak detected

FMD Control Measures

- Vaccination A-Iran 05; A G - VII, O-PanAsia2; Asia1-Shamir (*Sholkovo*)
- Since 2016, the vaccination strategy was switched to risk-based vaccination approach
- NSP-SP sero-survey in 2018 (high risk and low risk areas outside candidate zone, along animal migration routes, villages in candidate area) shows possible small circulation of the virus with less and less prevalence over past 3 years
- Seropositive samples are smaller in candidate zone defining that zone is well selected

Other notes and priorities for the future

- Self-assessment, using PVS tool, done (last PVS in 2009).
- Migration control measures (vet surveillance points along the migration routes)
- RBSP updated to become Official control programme
- Contingency plan under development
- Simulation exercise (July 2016)
- Refresh training on FMD for state and private veterinarians, regional workshops and meeting
- Awareness campaigns, awareness meetings for private vets
- Large stakeholders support (FMD training, leaflets, RBSP, National Animal Health Program Steering Committee chaired by the first deputy minister of MEPA)
- FMD control contributes to other major TADs (similar approach for RBSP on Rabies; candidate zones also for Brucellosis, PPR and TB control; joint resources for establishing and maintaining cold chain, practical guidelines/SOPs and training)
- Naïve animal study (unfavorable preliminary results; sample retested in Sap institute)
- Clinical survey in the FMD free candidate zone, using Epicollect app.
- Selection of the candidate region for free zone, based on the geographical situation (surrounded by a river, with 3 bridges, controlled for reason of Geographical Indication of a special grape, no migration, no animal market (all animals exported for slaughter), no boat able to cross (river surrounded by mountains)
- Georgia plans to apply for stage 3 for the whole country
- Willingness of Georgia to share all materials with other countries of the region

Future plans:

- Finalise and submit the FMD official control plan to OIE
- Finish clinical survey in part of candidate zone and strengthen animal movement control
- Advocate compensation policy
- Finalise contingency plan
- Strengthen national animal identification and traceability

National shortcomings

- Animal identification and traceability

Support needed

Islamic Republic of Iran



PCP-FMD Stage

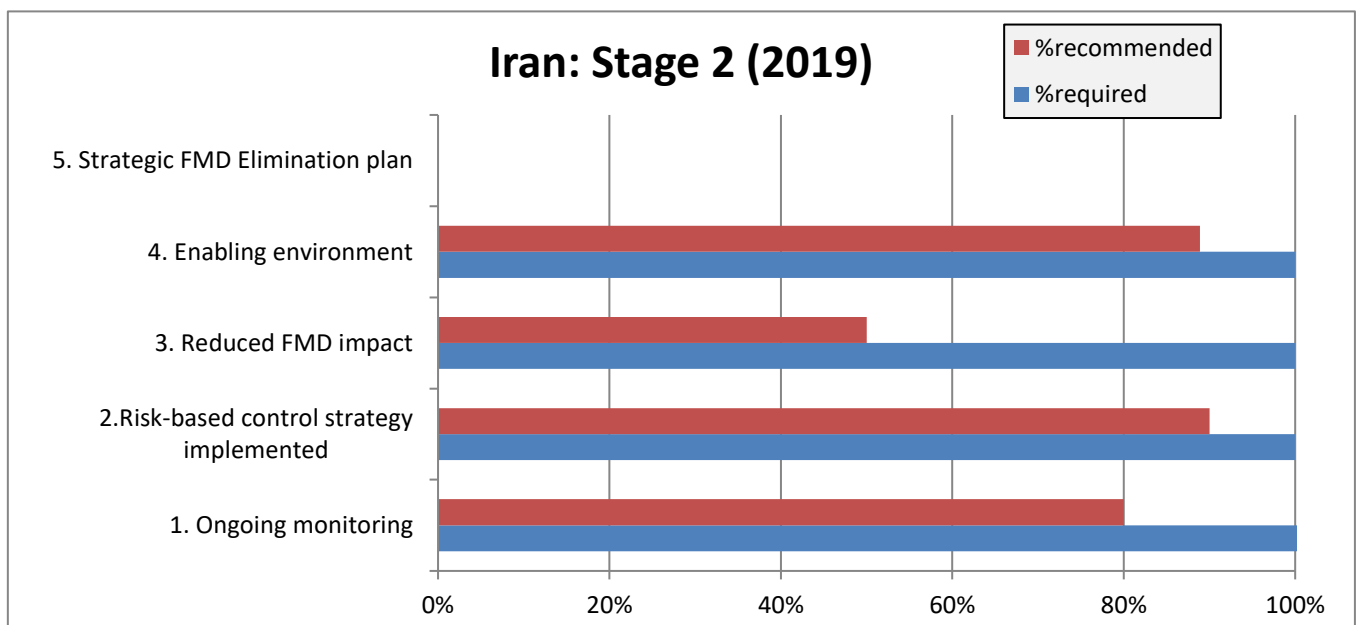
2016 2

2019	2
OIE PVS evaluation	2010

Provisional Roadmap 2019

	Validated Stages												Provisional Stages (not validated)					
	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Iran	2	2	2	2	2	2	2	2	2	2	2	2	2	2	3	3	3	3

Achievement of required and recommended outcomes for the PCP Stage 2 (self-assessment):



FMD outbreaks & surveillance

- FMD is endemic in cattle and small ruminants: number of outbreaks stable for a few years
- Serotypes identified in 2018:
 - A
 - A/Asia/IRAN 05/ SIS 13
 - A/Asia/G IIV
 - O (O/ ME-SA/ panasia 2 / Qom 15)
 - Asia-1 (Asia 1/ Asia/ Sindh 08)
- Samples submitted to central vet lab (522/742 positive, 103 Identification, 103 sequencing, 14 vaccine matching)

FMD Control Measures

- Good data collection

Other notes and priorities for the future

- Iran consider to control LSD and PPR along with FMD

National shortcomings

- Epidemiological data analysis to be improved
- Identification of strains needed in the vaccine
- Vaccine assessment (field and laboratory)

Support needed

- Analytical epidemiology training and Practice
- RBSP planning

Islamic Republic of Iraq

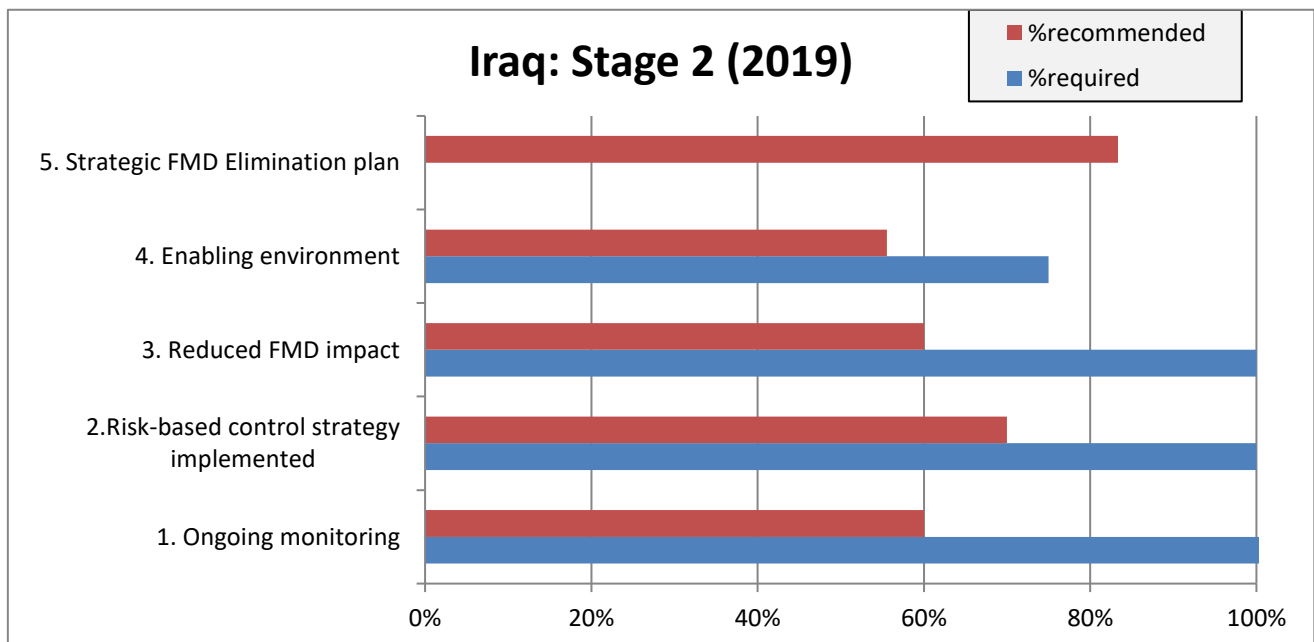


PCP-FMD Stage	
2015	2*
2017	2*
OIE PVS evaluation	

Provisional Roadmap 2019

	Validated Stages												Provisional Stages (not validated)					
	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Iraq		1	1	1	1	1	2*	2*	2*	2*	2*	2*	2	2	3	3	3	3

Achievement of required and recommended outcomes for the PCP Stage 2 (self-assessment):



FMD outbreaks & surveillance

- FMD outbreaks notified in 2017-2018 (LR and OV)

FMD Control Measures

- FMD vaccination campaigns for the whole country
- (2/y LR) with a high potency vaccine (> 6PD50), 1/y SR)
- Trivalent vaccine (A, O, Asia-1)
- NSP evaluation

Other notes and priorities for the future

- Main objectives of RBSP
- VS supports development of skills to diagnose other major TADs (PPR, IBR, LSD, BVD)

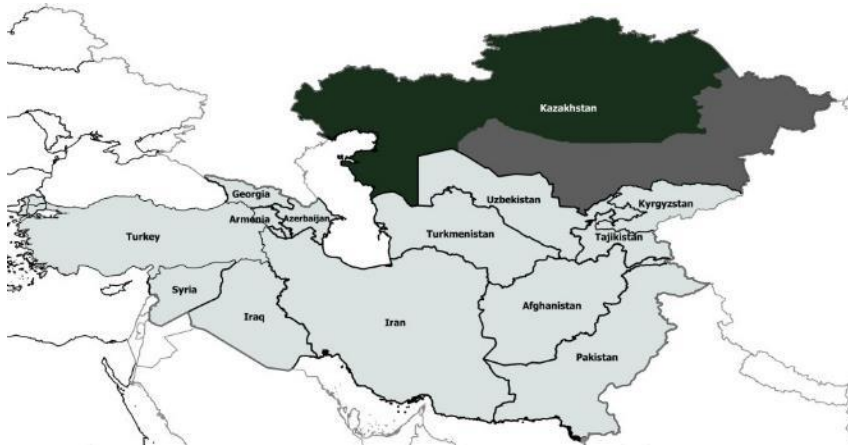
National shortcomings

- Need for PVS evaluation
- Need to implement control strategy all over the country
- Lack of awareness of farmers and participation of private sector to implement the control strategy
- Disability to send samples to reference laboratories
- Instable security situation (Northern and Western parts of the country)
- Lack of policies to control animal movements

Support needed

- Training for vet staff of terrorist affected areas
- Rebuild and re-equip vet labs
- Workshop on FMD surveillance and epidemiology
- Submit samples to reference labs
- Technical support to revise the RBSP
- PVS

Kazakhstan



PCP-FMD Stage

2016

Not assessed

2019

Not assessed

OIE PVS evaluation

2018

The country has entered the OIE pathway (recognised FMD-free zone without vaccination + application for the endorsement of the national official control programme for FMD) and was therefore not assessed at the Roadmap meeting

Provisional Roadmap 2019

Kazakhstan	Validated Stages													Provisional Stages (not validated)					
	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	
9 northern regions	1	1	1	1	1	1	2*	FnV	FnV	FnV	FnV	FnV	FnV	FnV	FnV	FnV	FnV	FnV	
5 southern regions	1	1	1	1	1	1	2*	**	**	FwV	FwV	FwV	FwV	FwV	FwV	FwV	FwV	FwV	

* indicates a provisional status given to the countries (countries had 6 months to provide additional information including a Risk Based Strategic Plan - if not, they will be downgraded to the previous stage)

FMD outbreaks & surveillance

- Last FMD outbreak in 2013
- Zoning (Northern without vaccination, Southern with vaccination)

FMD Control Measures

- Purified vaccines, trivalent (A, O, Asia-1) (5 subtitles), > 6PD50, from Vladimir
- Control of vaccines imported
- Surveillance targeted to susceptible animals
- SP studies
- In free zone with vaccination, 100% LR, SR, Pigs vaccinated (2/y for LR, 4/y for calves until 18m)

Other notes and priorities for the future

- Plan developed for control, prevention and elimination of FMD
- Identification of farm newborn animals
- Emergency veterinary response plan
- FMD simulation exercises in 2016 and 2018
- Zoning: 49 control posts created within the country,
- Plans for an extension of the territory with free status without vaccination
- Numerous laboratories built and equipped since 2014

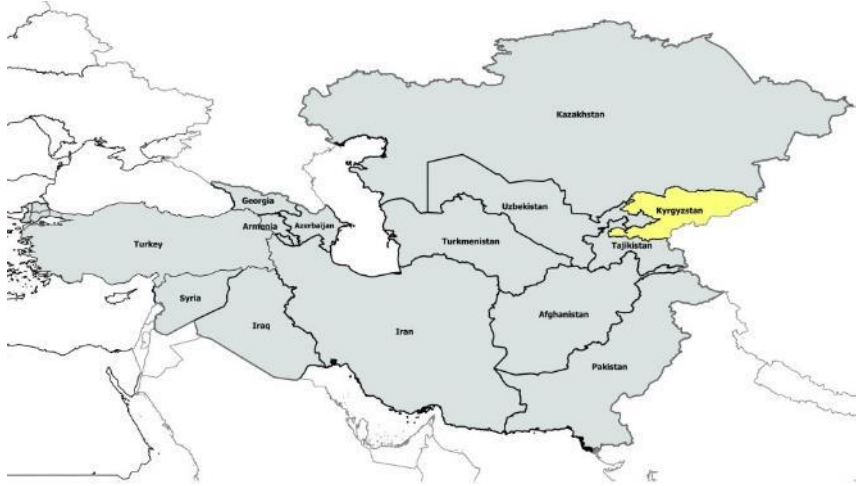
National shortcomings

-

Support needed

-

Kyrgyzstan



PCP-FMD Stage

2016 2*

2019 *

OIE PVS evaluation 2016

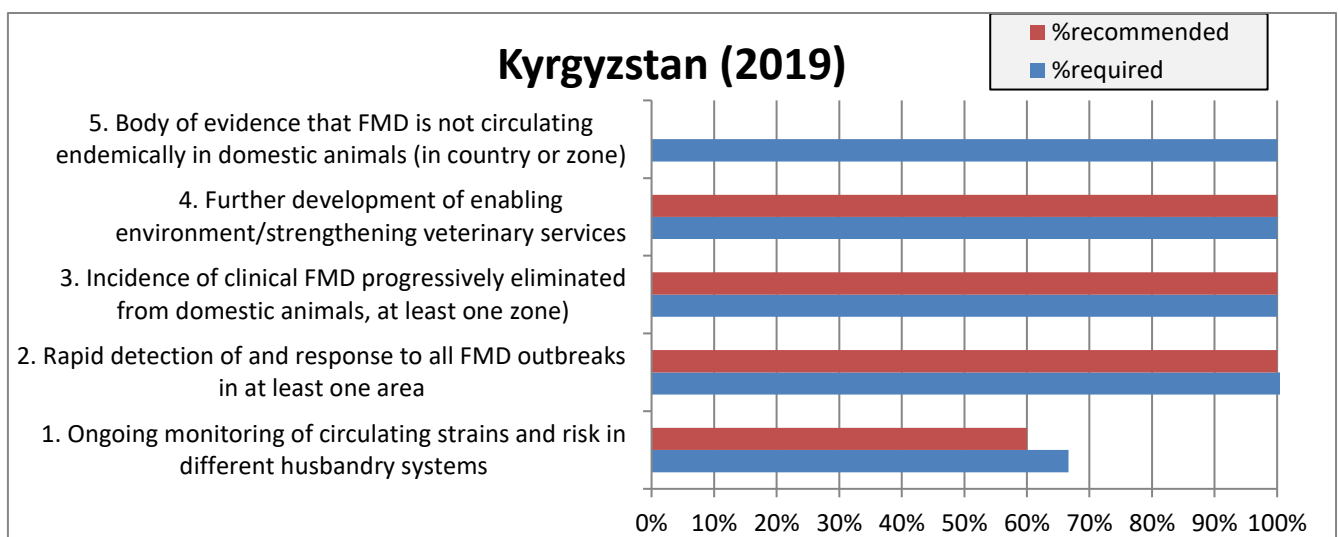
Provisional Roadmap 2019

	Validated Stages												Provisional Stages (not validated)					
	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Kyrgyzstan	1	0	0	0	1	1	2*	2*	2*	2*	2*	*	3	3	3	4	4	4

* indicates a provisional status given to the countries (countries had 6 months to provide additional information including a Risk Based Strategic Plan - if not, they will be downgraded to the previous stage)

* The plan has been received and reviewed by the WG for further update of the PCP stage after the review will be finalised

Achievement of required and recommended outcomes for the PCP Stage 3 (self-assessment):



FMD outbreaks & surveillance

- 2008 Type O, Panasia-2
- 2014 : type O
- No other outbreak since then
- Implementation of quarantine and biosafety measures planned in case of outbreak

FMD Control Measures

- NSP detection in 2016 (6% LR), 2017 (4% LR, 5% SR), 2018 (3.6% LR, 1.7% SR, 0% pigs)
- Control of FMD immunity in 2016, 2017 and 2018 (serotypes Asia and O)
- Yearly vaccination plans take into account FMD situation in and outside of the country and results of NSP monitoring (# 3.3 milions/yer in cattle // planned increasing from 1.6 to 1.9 milions cattle from 2019 to 2021)
- Passive surveillance by private vets
- FMD coordination group
- Emergency plan approved

Other notes and priorities for the future

- Enhance control of vet drugs, optimized lab network (staff trained in ARRIAH, 3 internal Inspection posts)
- Over 30 training modules for field vets (including FMD): covered > 3,000 vets and > 5,000farmers
- Seek for a zone FMD free status with vaccination
- Plan a Stage 3 in the northern part of KGZ, around Issyk Kul lake, and, by 2022, stage 4 in the whole country
- MoU signed with UZB, TJK, KAZ and CHN to control TADs
- APIU project: monitoring of TADs and other diseases (FMD, PPR, Newcastle, Pasteurellosis, equine diseases, echinococcosis, brucellosis)
- 3 internal control posts planned to be established at the border between the PCP stage 2 and stage 3 zones
- Osh and Bishkek labs (ref labs) ISO 17025-2009 accredited for FMD in farm animals
- Lab staff IATA trained
- 2 simex conducted on 2 diseases (including FMD)
- MoU signed with 5 countries

National shortcomings

- Epidemiology
- Sampling and laboratory testing
- Biological security

Support needed

- Drafting NCP for stage 3

Pakistan



PCP-FMD Stage

2016 2

2019 **2**

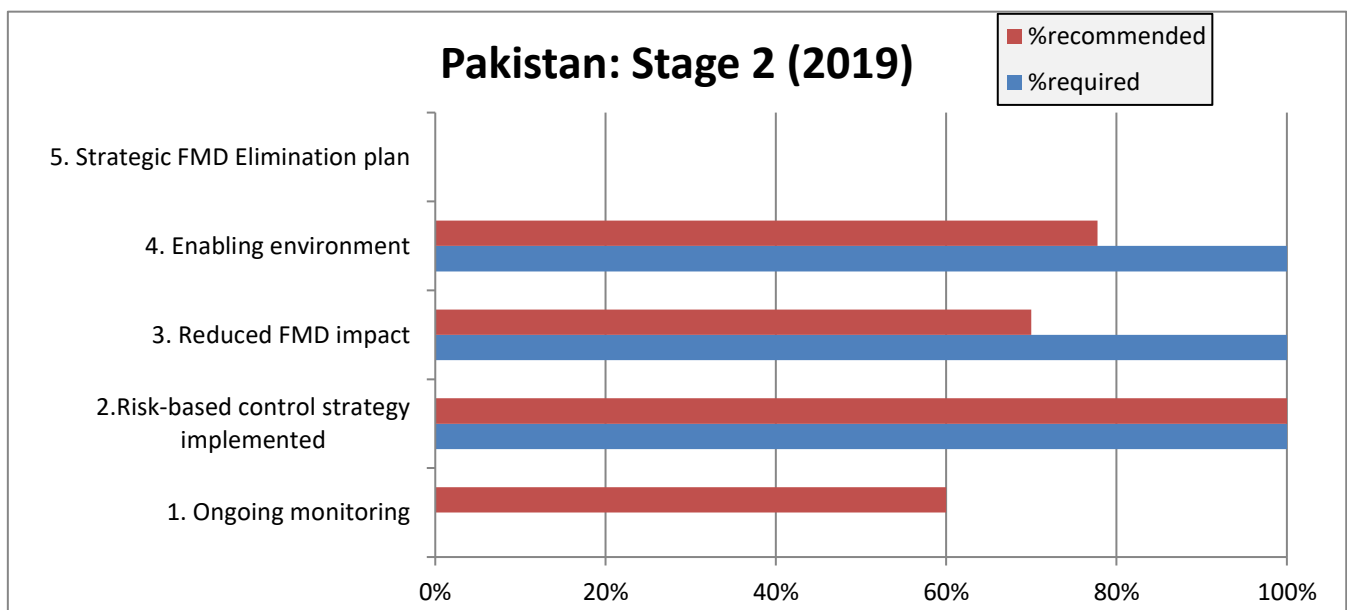
OIE PVS evaluation 2014

Provisional Roadmap 2019

	Validated Stages												Provisional Stages (not validated)					
	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Pakistan	0	1	1	1	1	1	2*	2	2	2	2	2	2	3	3	3	3	3

* indicates a provisional status given to the countries (countries had 6 months to provide additional information including a Risk Based Strategic Plan - if not, they will be downgraded to the previous stage)

Achievement of required and recommended outcomes for the PCP Stage 2 (self-assessment):



FMD outbreaks & surveillance

- FMD endemic
- 850 outbreak suspicions in 2017
 - Serotype A, O, Asia 1 and mixed
 - 300 ELISA-negative
- 384 outbreak suspicions in 2018
 - Serotype A, O, Asia 1 and mixed
 - 112 ELISA-negative
- Strains genotyped by WRL (Pirbright Institute) and ARRIAH

FMD Control Measures

- Vaccine matching studies (WRL in 2017, ARRIAH in 2018)
- Vaccination of cattle and buffalos

Other notes and priorities for the future

- Pakistan works toward the development of a free zone with vaccination in the South part of the country, separated from the rest of the country by the river Satluj
- Protection zone planned as a buffer zone in the North of Satluj river
- Progress in the synergy to control other diseases (cold chain, legal framework, trainings, biosecurity)
- Improvement of vet services (governance in handling other diseases, technical skill in sample collection, vaccination campaigns)
- Improvement of laboratory capability (ELISA lab facilities)

National shortcomings

- Animal identification system, starting with the proposed FMD free zone
- Local production of good quality vaccine
- Update of legal framework
- Preparation of FMD control and contingency plans for FMD-PCP Stage 3

Support needed

- Technical assistance (training on diagnostic, epidemiology, workshop to design surveillance, vaccination strategy, animal movement at national/regional levels)

Syria



PCP-FMD Stage	
2015	2*
2017	2*
OIE PVS evaluation	2008

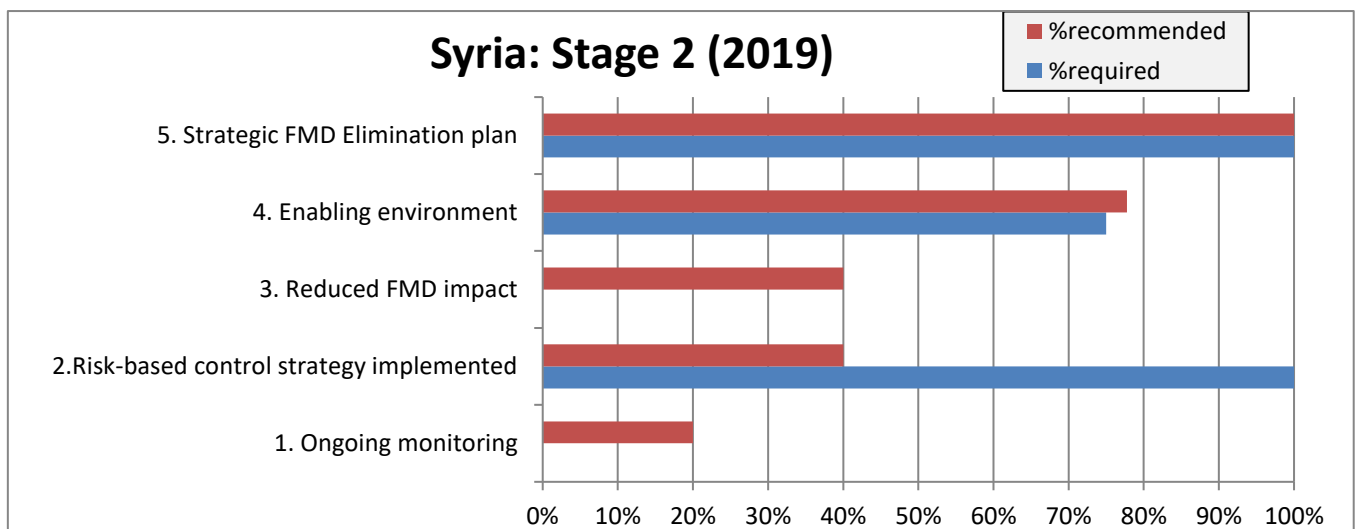
The 2017 PCP Stage for Syria has been assessed as part of the Middle East Roadmap meeting in October 2017

Provisional Roadmap 2019

	Validated Stages												Provisional Stages (not validated)					
	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Syria		1	1	1	1	1	2*	2*	2*	2*	2*	2*	2	3	3	3	3	3

* indicates a provisional status given to the countries (countries had 6 months to provide additional information including a RBSP - if not, they will be downgraded to the previous stage)

Achievement of required and recommended outcomes for the PCP Stage 1 (self-assessment):



FMD outbreaks & surveillance

-

FMD Control Measures

- FMD is a notifiable disease for all susceptible animals and wildlife
- Disease epidemiology unit in charge of field disease investigation and report
- Active and passive surveillance (most of Syrian provinces)
- Vaccines (O pan Asia2- A Iran 05- Asia 1), compulsory and free (2/y for LR, 1/y for SR)
- LR and SR annual serosurvey (21days post-vaccination Ab, with ELISA, provided with vaccine)
- Tests conducted: ELISA (Ag and Ab), NSP-Ab ELISA, Cell culture, RT-PCR)

Other notes and priorities for the future

- Syria participates in proficiency tests
- Civil society, private vets, and vets syndicate support and help in vaccination campaigns and samples collection in crisis areas
- Participating in RBSP training in Lebanon in 2018 (EuFMD) and FAO trainings
- Organise training courses for field vets in provinces and field training for FMD diagnosis
- Organise group meetings for farmers
- Numerous animal movements (Bedouins for seasonal movements, grazing pastures, near villages, Awasi flocks moving deep in Syrian desert)
- New project with FAO to study value chain analysis for animal diseases
- RBSP prepared and sent to FMD-WG in March 2019
- PPR National Strategic Plan prepared with FAO
- Compulsory and free of charge vaccination for other TADs (S&G pox, brucellosis, Pasteurellosis, IBR, Enterotoxemia, Anthrax)
- Lab diagnostic free of charge

National shortcomings

- Difficulty in providing NSP ELISA kits
- Crisis areas: problems with diagnostic material, kits, lab equipment, technical staff, training and vet activities (surveillance, early detection, vet support to breeders)
- Results of titration tests to detect Ab levels should be complied with international standards
- Need to improve animal movement control, border control and illegal entry
- Lack of biosecurity measures in animal markets and information from slaughterhouses in crisis areas

Support needed

- Support with diagnostic material, lab equipment
- Include Syria in twinning project with international labs
- Continue to be invited in training
- Establishment of a GIS
- Development of a national epidemio network
- Enhance capacity to conduct epidemiological studies and risk analysis

Tajikistan



PCP-FMD Stage

2016 **1**

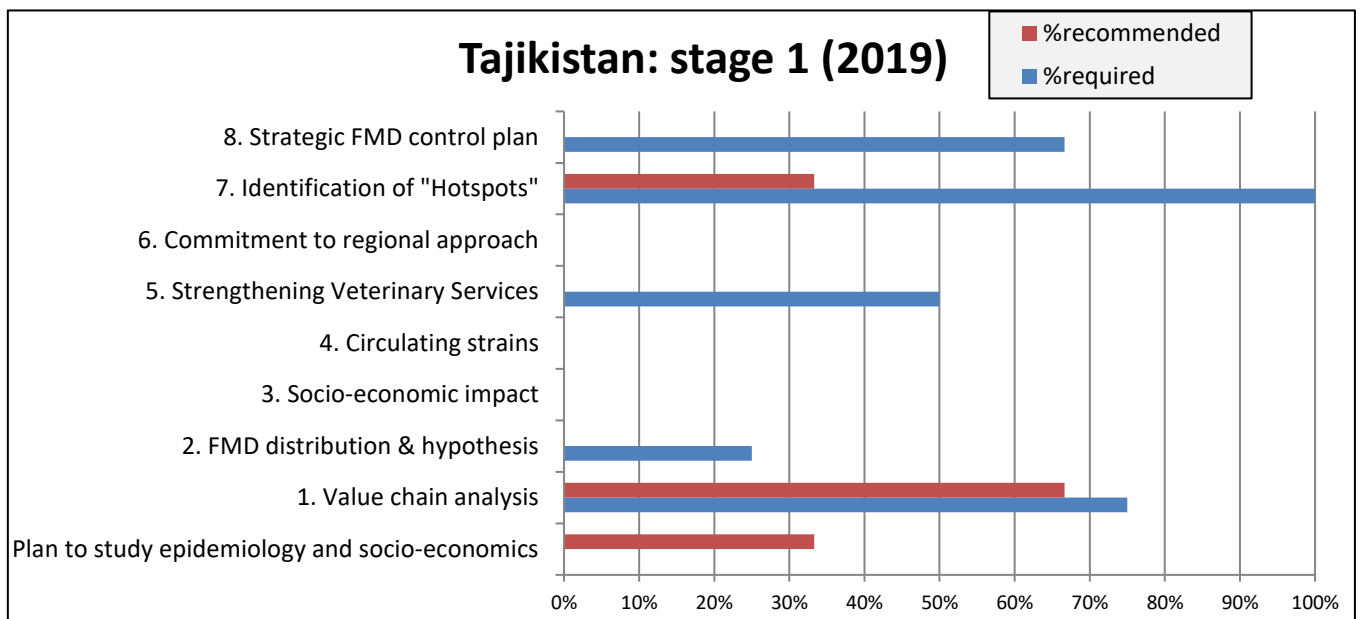
2019 **1**

OIE PVS evaluation **2017**

Provisional Roadmap 2019

	Validated Stages											Provisional Stages (not validated)						
	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Tajikistan	0	1	1	1	1	1	1	1	1	1	1	1	1	2	2	2	2	2

Achievement of required and recommended outcomes for the PCP Stage 1 (self-assessment):



FMD outbreaks & surveillance

- No clinical form registered since the last clinical case in November 2011
- 2001-2012: A, O and Asia-1
- From national study, serotype circulating: O

Other notes and priorities for the future

- Strengthening of sanitary measures
- Last PVS mission in November 2017

National shortcomings

- Funding to implement the vaccination campaign
- Adequate laboratories, communication and technical equipment
- Manuals, instructions

Support needed

- Training for laboratory and fields veterinarians
- Re-qualification of virologists
- Diagnostic reagents and tests

FMD Control Measures

- 17 BIPs
- Vaccines purchased in Russia and India
- Trivalent and bivalent vaccines (A, O, Asia-1)
- #37.5% coverage vaccination
- Vaccination near borders of Afghanistan, and Kyrgyzstan, 1/y (82% within the risk zone)

Turkey (Anatolia)

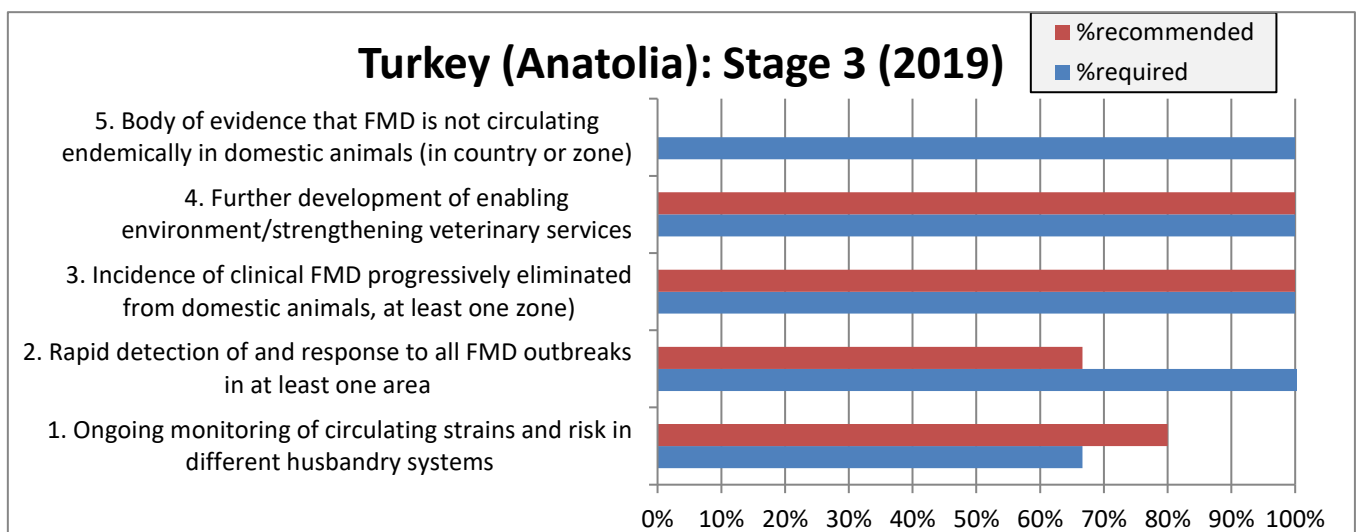


PCP-FMD Stage	
2016	2
2019	2
OIE PVS evaluation	2007

Provisional Roadmap 2019

Turkey	Validated Stages											Provisional Stages (not validated)						
	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Anatolia Marmara-Aegean			FwV	FwV	FwV	FwV	FwV	FwV	FwV	FwV	FwV	FwV	FwV	FwV	FwV	FwV	FwV	FwV
Remaining Anatolia									2	2	2	2	3	4	4	FwV	FwV	FwV

Achievement of required and recommended outcomes for the PCP Stage 2 (self-assessment):



FMD outbreaks & surveillance

- Thrace FMD Free since May 2010
- FMD endemic in Anatolia
- Asia-1 not detected since July 2015
- 2019: only 5 outbreaks of serotype O (until January 2018, serotype A)
- Decrease in the number of outbreaks, number of affected farms and incidence within the population
- Ring vaccination around outbreaks

FMD Control Measures

- Targeted vaccination in hotspots
- Vaccination SR where risk identified
- Vaccine matching carried out based on genetical data (phylogenetic tree)
- Vaccine from SAP institute, > 6PD50
- Preventive vaccination campaign
 - Anatolia: 2/y LR // Sr upon request of owner
 - Thrace: 2/Y LR // 1/y SR
- Post-vaccination sero-surveillance
- Sero-survey study in 2018 (NSP to estimate prevalence of FMD in LR and SR), SP in Anatolia and Thrace to evaluate vaccination performance and immunity level in LR
- SP sera testing will be finished end of March
- Latest SP survey: >90 % overall Ab level
- Sharply decline of NSP prevalence compared to previous years (youngest have the lowest prevalence = virus circulation is low these last 6 months)
- Active and passive surveillance (clinical surveillance in provinces along the borderline)
- Stamping-out in Anatolia

Other notes and priorities for the future

- Animal movement control and markets control
- Training of field vets and development of awareness activities for stakeholders
- New clinical surveillance programme and outbreaks investigation
- National contingency plan developed in 2010
- FMD simex 5/y
- Synergy with other TADs (integrated sero-survey with ISD, S&G pox and PPR)

National shortcomings

- Early detection system
- Possible genetical change of numerous circulating viruses in the region: need to ensure vaccine quality

Support needed

Turkmenistan



PCP-FMD Stage

2016 1

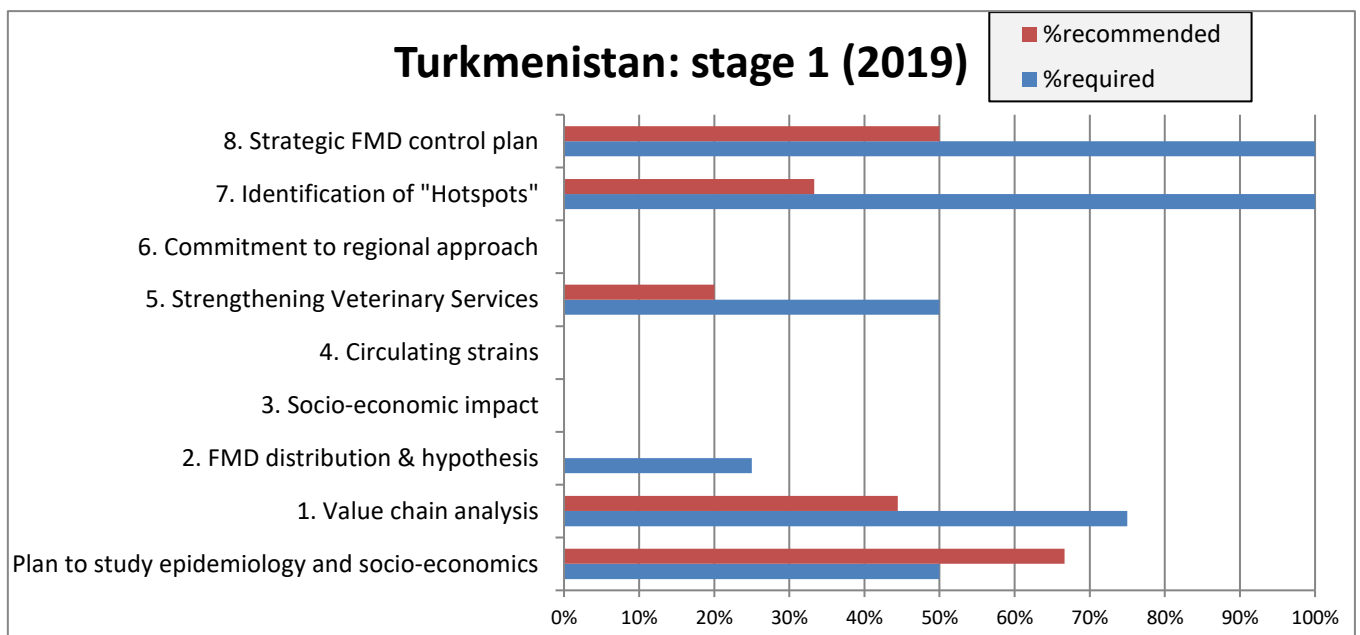
2019 1

OIE PVS evaluation 2017

Provisional Roadmap 2019

	Validated Stages											Provisional Stages (not validated)						
	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Turkmenistan	0	0	0	0	1	1	1	1	1	1	1	1	1	2	2	3	3	4

Achievement of required and recommended outcomes for the PCP Stage 2 (self-assessment):



FMD outbreaks & surveillance

- Last cases in 1994 (cattle, type A-22) and 1999 (cattle, type O-194)
- No clinical case registered since 2000
- Systematic surveillance and vaccination in localities where outbreaks have been registered in 1994 and 1999

FMD Control Measures

- Passive monitoring: clinical surveillance but no lab tests
- Vaccines from Russia (Biocombinat)
- Free vaccines but vaccination paid by the farmer
- Vaccination of susceptible animals (cattle, small ruminants) 2/year along borders and threatened areas and in old outbreaks
- Additional vaccination in some private farms upon request
- The vaccine is made of inactivated virus of production strains of one or several types A, O, C, Asia-1, SAT-1, SAT-2, SAT-3
- Vaccination plans for 2019 17% cattle, 6% SR
- No NSP

Other notes and priorities for the future

- No existing strategic plan to control FMD
- Numerous imports of cattle from South America and Europe
- No analysis of the socio-economic impact of FMD, due to the absence of FMD since 2000
- Creation of rapid response local authorities
- High level national extraordinary epizootic commission : coordination government measures to prevent occurrence and spread of infectious diseases
- Programme to control other TADs (2008-2011)
- Monitoring of animal movement control (borders and within the country)

National shortcomings

- Diagnostic reagent => no lab test carried
- Qualified lab specialists

Support needed

- Practical training for laboratory staff for diagnostic of infectious diseases
- Training for sample shipment
- Lab equipment and reagent purchase (ELISA, PCR) for the 5 regional labs of the country
- Disinfection equipment
- Transport means to enable local services to go to the field
- Development of a strategic plan to control FMD

Uzbekistan



PCP-FMD Stage

2016

Not assessed

2019

1

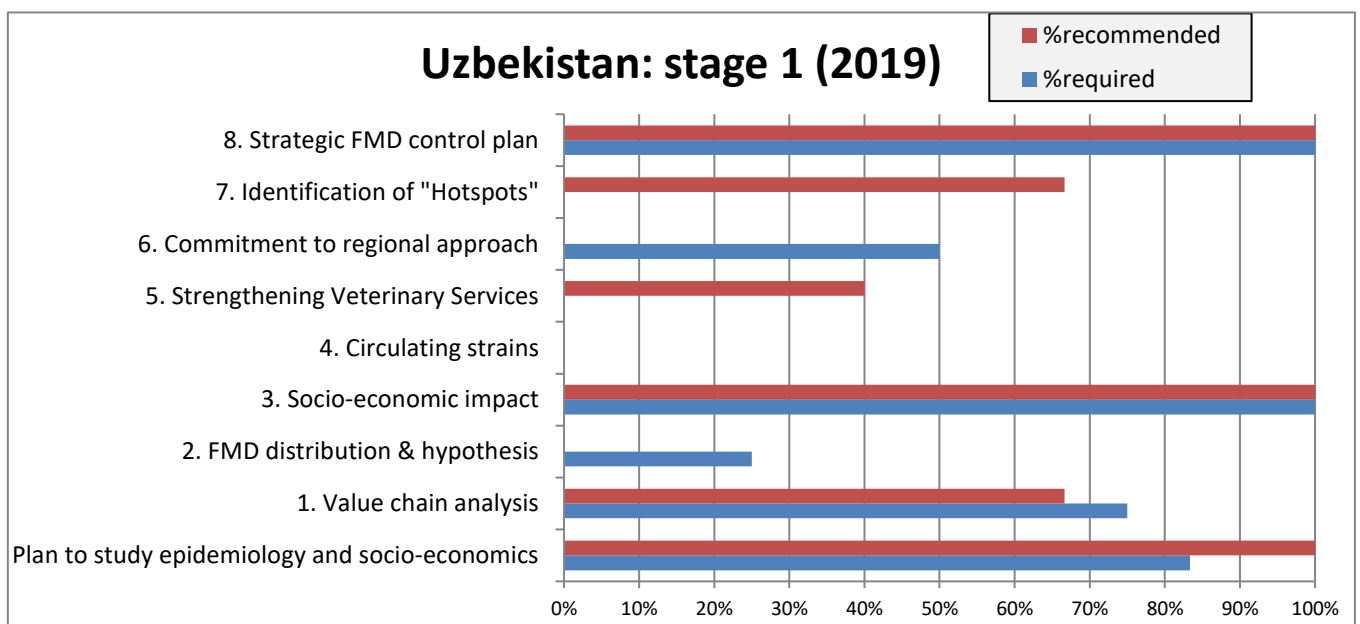
OIE PVS evaluation

2017

Provisional Roadmap 2019

	Validated Stages											Provisional Stages (not validated)						
	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Uzbekistan	0	1	1	1	1	1	1	1	1	1	1	1	2	2	3	3	3	4

Achievement of required and recommended outcomes for the PCP Stage 1 (self-assessment):



FMD outbreaks & surveillance

- No case of FMD for few years

FMD Control Measures

- Existing measures to prevent and control risks associated to FMD
- Vaccine mono and polyvalent sorbed inactivated (types A, O, Asia-1) but no identification of circulating strains for the last decades
- Inter-regional RDL laboratories with modern equipment for antibody titers: Ab titer in vaccinated animals around 83-85% for types A, O, Asia-1
- Susceptible animals annually vaccinated in all sectors, in border regions
- Existing animal and animal-based products movement control in the country and at borders (transhumance, nomadism)
- Serological surveys for immune status of vaccinated and non-vaccinated animals, to specific FMD type

Other notes and priorities for the future

- Share of farm animals: TJK 35%, TKM 26%, KGZ 26% KAZ 13%, AFG 2%
- Epidemiology of FMD well described and understood and stakeholders well informed about FMD epidemiology, spread and risks (threat from neighboring countries)
- Regular information of authorities on the socio-economic impact of FMD and eradication costs in case of outbreak
- Training of specialists on field and lab activities, with a focus on risk assessment and monitoring
- Events for rural communities, workshops for professionals, companies and organizations, animal owners, according to the phased-out control of FMD
- Central and regional level vet services have sufficient resources to carry out their duties
- OIE notification and participation in regional training activities
- State budget allocated for preventive measures, cold chain
- FMD risk monitored in various livestock sectors: control measures applied according to the Strategic Plan, taking risks into account
- Seek for zones FMD-free status (phased control of FMD, based on "zoning": such as Fergana Valley successful regular monitoring of vaccination programs and population immunity)
- Emergency action plans developed and ready to be fully implemented

National shortcomings

- Identified priority in the control of TADs and on joint actions

Support needed

Annex 5 - Detailed FMD-PCP stages evaluation - West Eurasia

Country	RAG Proposal		Comments
	2016	2019	
Armenia	2	2	<ul style="list-style-type: none"> Monitoring and evaluation of the RBSP implemented through: assessment of vaccination coverage, sero-surveillance (planned for 2019 and conducted in previous years in high and low risk areas with prevalence of 2.6%) Attention has been provided for the selection of vaccine with specific requirements included in the tender Implementation of immunogenicity studies has been approved but postponed to this year (difficulty to identify unvaccinated animals) Candidate zone to progress to PCP stage 3 has been identified in the border with Iran <p><u>Shortcomings and support needed</u></p> <ul style="list-style-type: none"> ✓ Gaps in animal identification system ✓ Compensation system and carcass destruction system to develop ✓ Insufficient number of vaccines for small ruminant, and of diagnostic tests ✓ Need for improvement of early warning system for transboundary diseases <p><u>Recommendations</u></p> <ul style="list-style-type: none"> → The candidate zone can be an example and test on how to protect borders and adopt additional control measures in the countries → Maintain PCP-FMD Stage 2

Country	RAG Proposal		Comments
	2016	2019	
Azerbaijan	2	2	<ul style="list-style-type: none"> • Stable epizootic situation, without outbreak in 2016-2018 • Vaccination campaign for LR (2/y with tetravalent vaccine A,O, Asia-1) and SR (1/y, with bivalent vaccine A,O) • Monitoring and evaluation of vaccination campaign (vaccine coverage, SP level) • NSP 2017: # 3% NSP (LR and SR) • Passive surveillance • Strengthening of vet-sanitary measures for slaughtering • Evaluation of cold chain during vaccination campaign • Twinning project in process between CVL and OIE Reference Laboratory (Teramo, Italy) • Development of national FMD control strategy • Changes in structure of labs and vet services • <u>Shortcomings and support needed</u> <ul style="list-style-type: none"> ✓ Animal identification => Identification for cattle planned in pilot rayons, including Absheron, then the whole country ✓ Early warning system to develop ✓ Animal movement control <p><u>Recommendations</u></p> <ul style="list-style-type: none"> → Work on the gaps identified → Prepare Official control programme to prepare progression in stage 3 → Maintain PCP-FMD Stage 2

Country	RAG Proposal		Comments
	2016	2019	
Georgia	2	*	<ul style="list-style-type: none"> • 10 suspicion reported in 2018, no outbreak detected • NSP-SP sero-survey in 2018 (high risk and low risk areas outside candidate zone, along animal migration routes, villages in candidate area) • Vaccination A-Iran 05; A G - VII, O-PanAsia2; Asia1-Shamir (<i>sholkovo</i>) • Migration control measures (vet surveillance points along the migration routes) • Large stakeholders support (FMD training, leaflets, RBSP) • RBSP implemented • Updating of contingency plan under development • PVS Self-assessment done (last PVS in 2009) • FMD control contributes to other major TADs (similar approach for RBSP on Rabies // Candidate zone: also Brucellosis, PPR, TB // cold chain // guidelines, training) • Zone selected as candidate to apply for FMD free recognition, based on geographical situation and existing controls, without animal market and no animal introduction • RBSP updated to become Official control programme, sent for information to the FMD-WG • For the moment, Georgia seeks for a PCP stage 3 on a zonal basis • <u>Shortcomings and support needed</u> <ul style="list-style-type: none"> ✓ Weaknesses in animal identification and traceability <p>Recommendations</p> <p>→ The FMD-WG will review the draft Official control programme and work with Georgia if a zonal stage 3 can be validated</p> <p>* The plan has been received and reviewed by the WG for further update of the PCP stage after the review will be finalised</p>

Country	RAG Proposal		Comments
	2016	2019	
Iran	2	2	<ul style="list-style-type: none"> • Recording of outbreaks is well structured • Good definition and description of the vaccination strategy with process in place to evaluate its effectiveness (PVM guidelines translated into Farsi) • Optimization of resources for vaccination and reduced risk of spread of FMD through vaccinators • More strict rules entered recently into force to regulate animal movements through villages with markets • Farmers scheme in place to support introduction of animals from free countries and reduce the importation from countries considered at risk • Mitigation of risk of importation from neighbouring countries through a system of slaughterhouses located at the border <p><u>Shortcomings and support needed</u></p> <ul style="list-style-type: none"> ✓ Epidemiological data analysis to be improved ✓ Identification of strains needed in the vaccine ✓ Vaccine assessment (field and laboratory) <p><u>Recommendations</u></p> <ul style="list-style-type: none"> → Importance to assess the quality of the vaccines used (3 local and 4 imported) → Submission of the RBSP revised with the new vaccination strategy to the FMD WS → Maintain PCP-FMD Stage 2

Country	RAG Proposal		Comments
	2016	2019	
Kazakhstan			<ul style="list-style-type: none"> • Last FMD outbreak in 2013 • Zoning with official recognition of FMD free zones (Northern without vaccination, Southern with vaccination) • Vaccination campaign in the southern zone, with purified trivalent vaccine (A, O, Asia-1) (5 subtitles), > 6PD50, from Vladimir laboratory • Control of imported vaccines • Surveillance targeted to susceptible animals • Animal identification • Emergency veterinary response plan • Simulation exercises in 2016 and 2018 • Kazakhstan is working on changes in the FMD free zones: <ul style="list-style-type: none"> ✓ reduction of the southern zone, to limit it to a 50 km large belt along the southern border of the country ✓ extension of the northern zone, free without vaccination

Country	RAG Proposal		Comments
	2016	2019	
Kyrgyzstan	2*	*	<ul style="list-style-type: none"> • Serosurveillance regularly conducted. Importance to analyse results considering the absence of false positivity results • Huge investment in staff, capacity building, veterinary infrastructure, budget • Good early warning system in place with suspicions detected in past year (not confirmed by the laboratory) • Regular vaccination of cattle population which is fully identified • Stakeholders involved in the design and implementation of the strategy • The country seeks for an FMD free status without vaccination, starting with PCP stage 3 in the North-East and, by 2022, PCP stage 4 in the whole country • <u>Shortcomings and support needed</u> <ul style="list-style-type: none"> ✓ Epidemiology ✓ Sampling and laboratory testing ✓ Biological security <p>Recommendations</p> <ul style="list-style-type: none"> → Acceptance of PCP stage 2 (upon confirmation by FMD WG) → Possibility to progress to PCP stage 3 for a zone according to the control programme presented to the FMD WG) <p>* The plan has been received and reviewed by the WG for further update of the PCP stage after the review will be finalised</p>

Country	RAG Proposal		Comments
	2016	2019	
Pakistan	2	2	<ul style="list-style-type: none"> • Huge animal population (84 ml cattle and 104ml SR) • Main risk hotspot identifies in: breeding areas (now covered by vaccination), markets, animal movements • Animal with clinical signs not allowed to enter into markets • Vets and paravets assigned to each districts • Vaccination implemented in outbreaks, buffer zones (when possible) and breeding area (south of country) • Cold chain is a relevant issue and refrigerators were provided to each districts • Limited outbreaks detected in the south part of the country and proposal as a candidate area to progress to stage 3 and freedom status afterword • <u>Shortcomings and support needed</u> <ul style="list-style-type: none"> ✓ Animal identification system, starting with the proposed FMD free zone ✓ Local production of good quality vaccine ✓ Update of legal framework ✓ Preparation of FMD control and contingency plans for FMD-PCP Stage 3 <p><u>Recommendations</u></p> <p>→ Importance to provide evidence of implementation of the RBSP</p> <p>→ Maintain PCP-FMD Stage 2</p>

Country	RAG Proposal		Comments
	2016	2019	
Tajikistan	1	1	<ul style="list-style-type: none"> • Last PVS mission in November 2017 • No clinical form registered since the last clinical case in November 2011 • Based on a national study, the current serotype circulating is O • Vaccination campaigns are implemented near borders of Afghanistan, and Kyrgyzstan, once a year, with trivalent and bivalent vaccines (A, O, Asia-1), purchased in Russia and India • <u>Shortcomings and support needed</u> <ul style="list-style-type: none"> ✓ Fundings to implement vaccination campaign ✓ Communication and technical equipments ✓ Training (laboratories and field veterinarians) ✓ Diagnostic reagents and tests <p>Recommendations</p> <ul style="list-style-type: none"> → Work on the development of a risk based strategic plan, with the support of a PSO → Improve the laboratory surveillance capacity, with the support of reference laboratories and supporting organisations → Maintain PCP-FMD Stage 1

Country	RAG Proposal		Comments
	2016	2019	
Turkey (Anatolia)	2	2	<ul style="list-style-type: none"> • Detailed protocol for active clinical surveillance has been defined and approved at national level. Currently being implemented in buffer zone of the East border • Outbreak investigation protocol defined and being implemented • Capacity to prioritise vaccine strains to use in the buffer zone as prophylactic measure for incursion of new strains • Vaccination strategy developed with prioritization of resources towards protection of large ruminants • Cooperation agreement in progress with neighboring countries to share risk information and safe trade • Turkey implements its control strategy and provided its plan to the FMD-WG just after the meeting in Shiraz, requesting a deadline for re-assessment by RAG before the next roadmap meeting, in order to be assessed as stage 3 • <u>Shortcomings and support needed</u> <ul style="list-style-type: none"> ✓ Early detection system ✓ Possible genetical change of numerous circulating viruses in the region <p>Recommendations</p> <ul style="list-style-type: none"> → Opportunity to include other diseases in the clinical surveillance in place for cost benefit purpose → Importance to submit the complete NCP for review by the FMD WG and possible progression to PCP stage 3 with the assessment of measures defined and implemented, according to identified risks and expected achievements → Maintain PCP-FMD Stage 2

Country	RAG Proposal		Comments
	2016	2019	
Turkmenistan	1	1	<ul style="list-style-type: none"> • Last cases in 1994 and 1999 • Vaccination campaign with vaccines from Russia (Biocombinat Sholkovo), 2/y for LR and SR, in buffer zones (5 km corridor) along the borders with Iran and Afghanistan (additional vaccinations upon request in some private farms) • Vaccine free (vaccination paid), using 7 strains used in the vaccines proposed in vaccination campaigns • Vaccination targeted in buffer zones near borders from Iran and Afghanistan • No NSP survey conducted • No strategic plan to control FMD • Numerous imports of cattle from South America and Europe • No socio-economic analysis of the impact of FMD • Passive monitoring: clinical surveillance, without lab tests • Monitoring of animal movement control (borders and within the country) • Existing programme to control other TADs (2008-2011) • <u>Shortcomings and support needed</u> <ul style="list-style-type: none"> ✓ Diagnostic reagent => no lab test carried ✓ Qualified lab specialists => training for diagnostic of infectious diseases and sample shipment ✓ Lab equipment and reagent purchase (ELISA, PCR) ✓ Disinfection equipment ✓ Transport means ✓ Development of a strategic plan to control FMD <p><u>Recommendations</u></p> <p>→ Work on the development of a risk based strategic plan, with the support of a PSO</p> <p>→ Maintain PCP-FMD Stage 1</p>

Country	RAG Proposal		Comments
	2016	2019	
Uzbekistan	1	1	<ul style="list-style-type: none"> • No FMD case for last few years • Vaccination campaigns of susceptible animals in all sectors, in border regions with mono and polyvalent sorbed inactivated (types A, O, Asia-1) from Vladimir laboratory • No identification of circulating strains for the last decades • Animal and animal-based products movement control in the country and at borders (transhumance, nomadism) • Serological surveys for immune status of vaccinated and non-vaccinated animals • Risk based strategic plans existing at regional level but never shared with the GF-TADs FMD WG • Stakeholders well informed about FMD epidemiology, spread and risks • Training of specialists on field and lab activities, with a focus on risk assessment and monitoring • FMD risk monitored in various livestock sectors • Recent changes in the structure of the Veterinary Services and staff in 2017 • <u>Shortcomings and support needed</u> <ul style="list-style-type: none"> ✓ Identified priority in the control of TADs and on joint actions <p>Recommendations</p> <p>→ Work on the development of a risk based strategic plan, with the support of a PSO</p> <p>→ Maintain PCP-FMD Stage 1</p>

Country	Proposition CGR SADC	Commentaires
Countries interviewed but not evaluated (evaluation by RAG Middle-East in 2017)		
Iraq	2*	<ul style="list-style-type: none"> • Risk hotspots have been identified in: animal movements (cross border and internal), animal markets, wildlife • Importance of improve capacity to enforce animal movement regulation • Necessity to improve outbreak notification in order to detect the occurrence of the disease and assess the effectiveness of control measures • PVM regularly implemented in combination with serosurveillance (every six months) • Enough resources available for implementing the programme • <u>Shortcomings and support needed</u> <ul style="list-style-type: none"> ✓ Need for PVS evaluation ✓ Need to implement control strategy all over the country ✓ Lack of awareness of farmers and participation of private sector to implement the control strategy ✓ Disability to send samples to reference laboratories ✓ Instable security situation (Northern and Western parts of the country) ✓ Lack of policies to control animal movements • <u>Recommendations</u> <ul style="list-style-type: none"> → Importance to submit samples to the WRL → opportunity to make the best use of the PCP support officer assigned to the country for backstopping assistance for the development of the RBSP → PCP stage assessed by Middle-East RAG in 2017

Country	Proposition CGR SADC	Commentaires
Syria	2*	<ul style="list-style-type: none"> • Vaccination of cattle (2/y) and SR (1/y) free of charge with vaccines selected according to OIE, FAO, WRL recommendations • Suspected cases in cattle (not confirmed) • Difficulties in carrying out regular surveillance (lack of ELISA kits) and participation to PTS • Several trainings attended by the staff despite the difficulties in attending training abroad • Stakeholders involved in the definition of the strategy • Lot of laboratories became out of service and shortfall in technical staff and especially the owners of expertise • Difficulties in implementing biosecurity measures in the markets and controlling animal movements • PPR national strategic plan has been prepared • <u>Shortcomings and support needed</u> <ul style="list-style-type: none"> ✓ Difficulty in providing NSP ELISA kits ✓ Results of titration tests to detect Ab levels should be complied with international standards ✓ <u>Crisis areas</u>: problems with diagnostic material, kits, lab equipment, technical staff, training and vet activities (surveillance, early detection, vet support to breeders) ✓ Lack of biosecurity measures in animal markets and information from slaughterhouses in crisis areas ✓ Need to improve animal movement control, border control and illegal entry • <u>Recommendations</u> <ul style="list-style-type: none"> → Maintain the good efforts implemented for the situation analysis and for implementation of control measures → Importance to well define risks and mitigation measures → PCP stage assessed by Middle-East RAG in 2017

Annex 6 - Questionnaire assessment report

Thirteen countries among the 14 receiving the questionnaire responded to the survey. Of these, 4 notified FMD outbreaks in 2018-2019: Turkey (318 cases), Iran (1,832 cases), Pakistan (619 cases), Iraq (28 cases), mainly in February, June and November. All of these countries detected serotypes O, A and Asia1. Most of the countries use national laboratory capacity and only some of them refer to the international laboratory capacity in case of need.

Animals in the countries

(11 answers)

Countries	Cattle	Small ruminants	Horses	Camels	Bufallos
Armenia	584,737	646,285			
Azerbaijan	2,585,962	7,950,109			
Georgia	815,292	743,728			
Iran	4,500,000	55,000,000	69,000	150,000	
Iraq	2,000,000	8,000,000			
Kazakhstan	7,830,668	29,815,628			
Pakistan	46,100,000	104,600,000			38,800,000
Syria	1,100,000	18,000,000			7,000
Tajikistan	2,276,926	5,498,322			
Turkey	16,700,000	44,000,000			
Turkmenistan	2,392,500	17,984,400		128,200	

Reported circulating strains

Serotype O	Serotype A	Serotype Asia1
O PanAsia2	A Iran05	Asia1/Sindh08
	A TUR 2014	Asia1/Shamir
	A SAU -2015/GVII	Asia1/Tur 2015
	A 22 Iraq	Asia1/Pak/08
	A Tur/06/20	

Vaccination policies

- Vaccination program against FMD planned for 2019-20 for all countries is the almost same as it was in previous years
- Local private veterinarians perform the vaccination in 5 countries, local state veterinarians in 8 countries and national state veterinarians in 4 countries.
- FMD vaccinations are paid by the government in 6 countries and costs are shared in 5 countries

- The most popular period for the spring vaccination campaigns are March and April, October and November for the autumn vaccination campaigns
- Vaccination campaigns are targeted to high risk populations in Azerbaijan, Pakistan, Syria, Turkmenistan, Turkey and Tajikistan (7 countries have a different vaccination policy in different parts of the country)
- 5 out of the 13 answering countries report that they consider their neighbours' vaccination schedule when they set their own
- Vaccination coverage in young and adult animals:

Countries	Young animals		Adults	
	LR %	SR %	LR %	SR %
Armenia	100.0	N/A	100.0	50.0
Azerbaijan	8.6	N/A	83.5	30.4
Georgia	50.0	31.0	82.9	95.5
Iran	90.0	N/A	40.0	40.0
Kazakhstan	100.0	100.0	100.0	100.0
Pakistan	100.0	N/A	15.0	0.02
Syria	N/A	N/A	90.0	80.0
Turkmenistan	30.0	19.0	22.0	7.0
Turkey	65.0	N/A	97.0	N/A
Iraq	N/A	N/A	95.0	98.0
Tajikistan	82.4	67.2	17.9	26.1

- 9 countries have a method in place to determine vaccination programme effectiveness

Vaccines

- Eight different vaccine producers were reported to supply vaccine for the region
- 5 out of 13 countries report having vaccine matching results from circulating field strains, performed by SAP Institute, WRL Pirbright and ARRIAH
- 10 countries use high potency vaccine (5 use 6PD₅₀, 5 countries use >6PD₅₀), when 1 country has no knowledge on the vaccine potency.
- Only 5 countries test their vaccine effectiveness, most of them (67%) in their national laboratory, some (33%) in a laboratory outside of the country