EuFMD P II: European Neighbourhood

Report on Significant FAST disease events and information

April–June 2020

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

Acronyms and abbreviations ........................................................................................................... 2

Introduction ....................................................................................................................................... 3

Significant events and information ................................................................................................. 4

  Foot-and-mouth disease .................................................................................................................. 4
    Middle East .................................................................................................................................. 4
    North Africa ................................................................................................................................. 4
    South East European Neighbourhood ............................................................................................. 5

  Peste des petits ruminants .............................................................................................................. 7
    North Africa .................................................................................................................................. 7
    South East European Neighbourhood ............................................................................................. 7

  Rift Valley fever ............................................................................................................................. 9
    North Africa .................................................................................................................................. 9
    Middle East .................................................................................................................................. 9

  Lumpy skin disease ........................................................................................................................ 10
    Middle East .................................................................................................................................. 10
    South East European Neighbourhood ............................................................................................. 10

  Sheep and goat pox ........................................................................................................................ 11
    North Africa .................................................................................................................................. 11
    South East European Neighbourhood ............................................................................................. 11

  Bovine ephemeral fever .................................................................................................................. 12
    South East European Neighbourhood ............................................................................................. 12

Conclusions ........................................................................................................................................ 13

Tables

  TABLE 1. Summary of significant events (second quarter 2020) ................................................. 14

Figures

  FIGURE 1. Countries included in the activities of the EuFMD Pillar II .......................................... 3
  FIGURE 2. Outbreaks of PPR reported in Morocco between January and February 2020 .......... 7
<table>
<thead>
<tr>
<th>Acronyms and abbreviations</th>
</tr>
</thead>
<tbody>
<tr>
<td>ADNS</td>
</tr>
<tr>
<td>ELISA</td>
</tr>
<tr>
<td>FAST diseases</td>
</tr>
<tr>
<td>FMD</td>
</tr>
<tr>
<td>LSD</td>
</tr>
<tr>
<td>NCAH</td>
</tr>
<tr>
<td>NSP</td>
</tr>
<tr>
<td>OIE</td>
</tr>
<tr>
<td>PCP</td>
</tr>
<tr>
<td>PCR</td>
</tr>
<tr>
<td>PPR</td>
</tr>
<tr>
<td>RVF</td>
</tr>
<tr>
<td>SGP</td>
</tr>
<tr>
<td>SP</td>
</tr>
<tr>
<td>WAHIS</td>
</tr>
</tbody>
</table>
Introduction

The EuFMD risk reduction programme in the European neighbouring regions of North Africa, Middle East and South East European Neighbourhood is delivered within the Hold-FAST strategy which continues the focus upon FMD risk reduction but extends the scope of the preparedness and risk reduction activities to similar TADs which pose an immediate threat to the EuFMD member countries. The programme focuses on the control of FAST diseases in the neighboring regions through the improvement of prevention, surveillance and control actions. In this context, the FAST quarterly report of significant events provides relevant and regular risk information to risk managers operating in EuFMD Member Nations and neighboring countries.

The constant monitoring of the epidemiological situation as well as the information obtained from control and surveillance strategies in the European neighbourhood can contribute to increase awareness on major animal disease threats for Europe and the regions of North Africa, Middle East and South East European Neighbourhood.

The European neighborhood

The neighborhood of the current 39 EuFMD Member Nations is defined as the neighboring countries which are not EuFMD Members and that either have land borders with EuFMD Members or are members of the Mediterranean animal health network (REMESA), or whose animal health status provides an early warning for FAST disease spread to the neighborhood of Europe. The activity of Pillar II includes EuFMD Member Nations in the European neighboring region (Turkey, Georgia).

FIGURE 1
Countries included in the activities of the EuFMD Pillar II

EuFMD Member Nations in European neighbouring region: Turkey, Georgia.
Having land-borders with EuFMD Member Nations: Armenia, Azerbaijan, the Islamic Republic of Iran, Iraq, the Syrian Arab Republic, Lebanon, Palestine, Jordan, and Egypt.
Non-EU Members of REMESA: Jordan, Lebanon, Egypt, Libya, Tunisia, Algeria, Morocco, and Mauritania.
Countries significant for epidemic spread of FAST diseases to the above countries: Sudan, Mali, Afghanistan and Pakistan.

Source: Adapted from United Nations World map, May 2019.
Significant events and information

The data reported to the World Organisation for Animal Health (OIE) and mentioned in this publication have been sourced from the World Animal Health Information System (WAHIS) and are referred to the period between 1 April and 30 June 2020. The data reported to the European Commission and sourced from the Animal Disease Notification System (ADNS) are referred to the period between 1 April and 28 June 2020. Other information have been obtained through the EuFMD activities and networks in the European neighbourhood. Information referring to the period before 1 April is reported when relevant.

Foot-and-mouth disease

Middle East

Egypt

About 1.36 million large and small ruminants have been vaccinated against FMD within the context of a massive campaign launched on 1 June 2020 by the Egyptian veterinary services. No clinical outbreaks have been reported since the beginning of the year.

North Africa

Libya

Five outbreaks of foot-and-mouth disease (FMD) were notified to the OIE between March and April 2020: all of the events occurred in sheep farms close to Tripoli, in the northwestern region of the country, between 20 February and 30 March. A total of 1 100 cases among sheep and 185 deaths in lambs were recorded. Serum samples were analyzed to confirm the serotype and identify the strain: the samples tested with ELISA for structural proteins (SP) and non-structural proteins (NSP) indicated the presence of FMDV serotype A (20 serum samples were tested in March with an outcome of nine NSP positives, while 52 serum samples were tested in April with 15 positives). None was positive for serotype O. The virus strain has not yet been identified. Link to OIE Immediate notification and Follow-up reports.

The source of the infection is unclear, but animal movements from southern Libya represent a risk factor. Furthermore, the flocks are being concentrated in shared pastures in the northern part of the country because of the war and related security issues. Considering the animal movements in the region and given the absence of vaccination campaigns against FMD in Libya since 2016 due to lack of resources, a risk of FMD spread is reported for Tunisia and Algeria, where a consistent small ruminant population is not regularly vaccinated against serotype A.
South East European Neighbourhood

Turkey

The occurrence of 37 new outbreaks in Anatolia between 1 April and 28 June 2020 was, bringing the total to 89 outbreaks since the beginning of 2020. The last outbreak was recorded on 8 June 2020. FMD is endemic in Anatolia: currently, only Serotype O (O PanAsiaII/Qom15) is circulating. Serotypes A and Asia1 were not detected since January 2018 and July 2015, respectively. Surveillance has shown a sharp decline of NSP prevalence in 2020 (average 5%). Thrace region has been free with vaccination since May 2010 and NSP risk-based serological surveillance is currently in place in the region. Link to the ADNS report.

Due to the COVID-19 situation, the stamping out policy for FMD control in Anatolia has been postponed to the second half of 2020, whereas the vaccination of ruminants prior to movements to summer pastures was not hampered. All live animal markets were closed.

Turkey has implemented more activities aimed at enhancing FMD control including improved diagnostic capacity, outbreak investigation and management, functionalities of official database and its use for official certifications and reporting, training and awareness programmes. Further strategy improvements are planned as: improvement of collaborations with neighbouring countries; establishment of an effective early detection system and an improved control of illegal cross-border movements of live animals.

The main goal of the control strategy for Anatolia is to move to the progressive control pathway (PCP) stage 3 in 2021, to obtain the endorsement of the Official Control Programme by the World Organization for Animal Health (OIE) in 2022 and to gain the free status with vaccination by 2024.

The veterinary services of Turkey, Iraq, the Islamic Republic of Iran and Pakistan are in the process to establish a protocol for the submission of FMD samples for molecular diagnosis and vaccine matching to the Sap Institute, located in Turkey. The protocol is discussed under the framework of the Statement of Intention for improved cooperation against FAST diseases between Transcaucasia and neighboring countries. Overcoming the difficulties for the shipment of samples to international reference laboratories will allow a more immediate identification of strains circulating in the region and availability of vaccine matching results, thus enabling a more rapid and effective response to future disease events in the region.

Iran (Islamic Republic of)

The Islamic Republic of Iran reported 589 outbreaks of FMD since the beginning of 2020 (reported in official meeting with EuFMD on 24 June 2020).

Live animal trade with Turkey and Pakistan is currently banned. Only slaughtered animals and meat are being further permitted into the Islamic Republic of Iran. The Islamic Republic of Iran, Pakistan and Turkey have stated that one of their main priorities is to extend their mutual collaboration: this will
also enable to tackle illegal animal movements from Pakistan to the Islamic Republic of Iran. In the Sistan and Baluchistan provinces, 11 modern slaughterhouses have been constructed and quarantine measures are in place at the border.

**Iraq**

Iraq reported 210 FMD cases occurred between 1 May and 30 June (meeting with EuFMD on 2 July 2020).

A serosurvey conducted in large ruminants between May and June 2019 detected an 18.7% NSP prevalence (in line with a previous evaluation) and an 81.2% SP prevalence. A second serosurvey in large and small ruminants was planned for November and December 2019 but was not carried out due to the lack of diagnostic material.

A mass vaccination campaign targeting cattle and buffaloes will be carried out between June and July 2020. It will be followed by post vaccination monitoring between July and September 2020 to assess the level of acquired immune response.

**Pakistan**

The country reported 1501 outbreaks in 2019 and 316 in 2020 (at the time of a meeting with EuFMD on 22 April).

Mass vaccination of cattle and buffalo within the FMD control zone (Bahawalpur Division) is carried out twice every year. Serosurveys are carried out after each round of vaccination. The results are used to adjust the FMD control strategy. The NSP titers showed decreasing trends.

Pakistan is at Stage 2 of the PCP for FMD and has planned to achieve stage 3 by 2021. A development project called “Risk-based FMD control in Pakistan” has been approved with a total budget of Rs 763 million for six years.
**Peste des petits ruminants**

**North Africa**

**Morocco**

Peste des petits ruminants (PPR) reoccurred in northern Morocco (Tanger-Assilah and Quezzane Provinces) between the end of January and the beginning of February 2020, with two outbreaks counting 102 affected goats and 73 deaths. A new affected goat was found in a farm located in the Béni Mellal Province and reported to OIE on 12 May 2020 (date of start of the outbreak: 25 April 2020; status: continuing). Laboratory confirmation was obtained using an ELISA test for detection of antibodies and PCR. [Link to OIE Immediate notification and Follow-up reports.](#) On 17 January, the country launched a national, mass bivalent vaccination against PPR and sheep pox in parallel with the FMD mass vaccination of large ruminants. A 12 May update stated that more than 21 million small ruminants had been vaccinated against PPR.

**South East European Neighbourhood**

**Turkey**

The occurrence of five new outbreaks in Anatolia between 1 April and 28 June 2020 was reported, bringing the total to 15 outbreaks since the beginning of 2020. The most recent one occurred on 20 May 2020. No cases have been recorded in Thrace region since 2013. [Link to ADNS report.](#) Since 2016, the control policy has included vaccination of all newborn and unvaccinated adults, using ring vaccination as outbreak response; no movement of unvaccinated animal is allowed. In Thrace region, all small ruminants have been vaccinated since 2013.
Iran (Islamic Republic of)

During a meeting with EuFMD on 24 June 2020, the Islamic Republic of Iran reported 42 outbreaks of PPR since the beginning of 2020.

Iraq

During a meeting with EuFMD on 2 July 2020, Iraq reported 149 cases of PPR occurred between May and June 2020.

A mass vaccination campaign targeting small ruminants will be carried out between October and November 2020. It will be followed by post vaccination monitoring between October and December 2020 to assess the level of acquired immune response.

Pakistan

A development project called “Phase I-Risk Based PPR control in Sheep and Goats of Pakistan” has been approved with a total budget of Rs 1800 million for six years. Activities are expected to start in August 2020.
Rift Valley fever

North Africa

Libya

The first cases of Rift Valley fever (RVF) in Libya occurred in 2020, with 7 outbreaks detected between January and February in Al Kufra Province (South East) and Awbari and Ash Shati' Provinces (South West) (red arrows in Error. L’origine riferimento non è stata trovata.).

On 9 May 2020, a new outbreak with seven cases and two deaths in sheep was described in a farm located in Bint Bey District, Awbari Province (South) (date of start of the outbreak: 17 April 2019; status: continuing). This brings the total to eight outbreaks, thirty-six cases and six deaths in sheep and goats since the beginning of the year. In some cases, the following symptoms were observed: abortion at all stages of gestation and death of newborns with respiratory symptoms, as well as respiratory manifestations and diarrhea. A total of 419 blood samples were collected for active surveillance purposes in small ruminants within and outside the protection zones established around the infected farms.

Link to OIE Immediate notification and Follow-up reports.

Middle East

Egypt

About 1.2 million large and small ruminants have been vaccinated against RVF within the context of a massive campaign launched on 1 June 2020 by the Egyptian veterinary services.
**Lumpy skin disease**

**Middle East**

**Syrian Arab Republic**

On 30 April 2020 a new outbreak of lumpy skin disease (LSD) was reported in a dairy farm in Jabla District, Al Ladhiqiyyah Governorate (date of start of the outbreak: 2 April 2020; status: resolved on 26 April). A total of fifteen affected individuals were observed among calves, heifers and adult cows and two deaths were recorded. Cattle in the district and province were vaccinated against the disease in March 2020 and no subsequent cases were identified. [Link to OIE Immediate notification and Follow-up reports.](#)

Two previous outbreaks were reported in 2019 in Al Ghab and Al Houlah Districts (Hamah and Hims Governorates, respectively), and were declared resolved on 8 January 2020 with a final count of 185 affected cows and 18 deaths.

**South East European Neighbourhood**

**Turkey**

The occurrence of four new outbreaks in eastern Anatolia between 1 January and 28 June 2020 in 3 Northern, Western and Eastern provinces. Based on the most recent update, the last one occurred on 5 March 2020. No outbreaks were detected in Thrace. Compensations were provided for culled animals. A European Union technical assistance project for LSD control is operating with the main components on vaccination and capacity-building. [Link to ADNS report.](#)

**Iran (Islamic Republic of)**

During a meeting with EuFMD on 24 June 2020, the Islamic Republic of Iran reported 42 outbreaks of LSD since the beginning of 2020.

**Iraq**

During a meeting with EuFMD on 2 July 2020, Iraq reported 18 cases of LSD occurred between May and June 2020.

A mass vaccination campaign targeting cattle and buffaloes will be carried out between June and July 2020. If financial support will be ensured, post vaccination monitoring to assess the level of acquired immune response will be carried out between July and September 2020.
Sheep and goat pox

North Africa

Morocco

In a regional endemic context, a total of 24 sheep pox disease outbreaks (118 cases and 43 deaths) were reported between April and May 2020 in the center of Morocco (El Kelaa des Sraghna, Rhamna and Béni-Mellal provinces). Source: Office National de Sécurité Sanitaire des produits Alimentaires (http://www.onssa.gov.ma/fr/).

South East European Neighbourhood

Turkey

The occurrence of 23 new outbreaks in Anatolia between 1 April and 28 June 2020 was reported to the ADNS, bringing the total since the beginning of 2020 to 42 outbreaks. No outbreaks were reported in Thrace since 2016. Control measures include the vaccination of all small ruminants. Link to ADNS report.

Iran (Islamic Republic of)

During a meeting with EuFMD on 24 June 2020, the Islamic Republic of Iran reported 28 outbreaks since the beginning of 2020.

Iraq

During a meeting with EuFMD on 2 July 2020, Iraq reported 121 cases occurred between May and June 2020.
Bovine ephemeral fever

South East European Neighbourhood

Iraq

During a meeting with EuFMD on 2 July 2020, Iraq reported 1176 cases occurred between May and June 2020.
### Conclusions

#### Foot and mouth disease

FMD virus, serotype A, circulating in northwestern Libya represents a risk for North Africa and threatens to spread to Algeria and Tunisia and other countries in the region.

#### Peste des petits ruminants

In North Africa, PPR reoccurred in northern Morocco between the end of January and the beginning of February 2020. Mass vaccination campaign implemented in the country has apparently contained the further spread of the disease as no additional outbreaks have been detected.

#### Rift Valley fever

The disease was reported for the first time in Libya with outbreaks observed between December 2019 and May 2020, with clinical manifestations and deaths in sheep and goats. The disease threatens potentially to spill into suitable habitats for vectors in the North Africa.

#### Lumpy skin disease

The disease was reported in the Middle East region (Syrian Arab Republic) and in the South East European Neighbourhood (Iraq, Islamic Republic of Iran). The situation in Syria is of concerns considering the resources for controlling the disease and the possible further spread in neighbouring countries.

#### Bovine ephemeral fever

The disease has been recently reported in Iraq with consistent number of outbreaks and impact on the productions. The number of outbreaks reported and effects represent a warning for other countries in the region.
### TABLE 1

**Summary of significant events (second quarter 2020)**

<table>
<thead>
<tr>
<th>Disease</th>
<th>Country</th>
<th>Date</th>
<th>Outbreak</th>
<th>Epidemiological information</th>
<th>Surveillance</th>
<th>Vaccination</th>
<th>Other risk information</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>FMD</td>
<td>Libya</td>
<td>11 February 2020-continuing</td>
<td>5 outbreaks in Jafara area (south of Tripoli): 1 100 cases in sheep and 185 lambs dead</td>
<td>Serotype A detected with ELISA SP; area connected with South</td>
<td>--</td>
<td>--</td>
<td>Risk of spread to Tunisia and Algeria</td>
<td>OIE; NCAH Libya; data shared by the country</td>
</tr>
<tr>
<td></td>
<td>Egypt</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>1.36 million large and small ruminants vaccinated</td>
<td>Data shared by the country</td>
</tr>
<tr>
<td></td>
<td>Turkey (Anatolia)</td>
<td>April-June 2020</td>
<td>37 outbreaks</td>
<td>FMD serotype O endemic in Anatolia (O PanAsiaII/Qom15)</td>
<td>Decline of NSP prevalence in 2020 (average 5%). The SAP Institute, Turkey: protocol for analysis of samples from Iraq, the Islamic Republic of Iran and Pakistan</td>
<td>--</td>
<td>--</td>
<td>ADNS; data shared by the country</td>
</tr>
<tr>
<td></td>
<td>Iran (Islamic Republic of)</td>
<td>1 January 2020-24 June 2020</td>
<td>589 outbreaks</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>Data shared by the country</td>
</tr>
<tr>
<td></td>
<td>Iraq</td>
<td>May-June 2020</td>
<td>210 cases</td>
<td>--</td>
<td>--</td>
<td>Mass vaccination campaign</td>
<td>--</td>
<td>Data shared by the country</td>
</tr>
<tr>
<td></td>
<td>Pakistan</td>
<td>January-April 2020</td>
<td>316 outbreaks</td>
<td>--</td>
<td>--</td>
<td>Annual mass vaccination campaigns in cattle and buffaloes followed by SP and NSP serosurveys</td>
<td>“Risk-based FMD control in Pakistan” approved with a total budget of Rs 763 million for six years</td>
<td>Data shared by the country</td>
</tr>
</tbody>
</table>
## Significant Fast Disease Events and Information

### April-June 2020

<table>
<thead>
<tr>
<th>Disease</th>
<th>Country</th>
<th>Date</th>
<th>Outbreak</th>
<th>Epidemiological information</th>
<th>Surveillance</th>
<th>Vaccination</th>
<th>Other risk information</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>PPR</td>
<td>Morocco</td>
<td>25 April 2020</td>
<td>1 outbreak: 1 goat affected in the Béni Mellal Province</td>
<td>Laboratory confirmation obtained with ELISA test for detection of antibodies and PCR</td>
<td>--</td>
<td>More than 21 million small ruminants vaccinated against PPR by 12 May 2020</td>
<td>--</td>
<td>OIE; data shared by the country</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Turkey (Anatolia)</td>
<td>April-June 2020</td>
<td>5 outbreaks</td>
<td></td>
<td>--</td>
<td>All small ruminants are vaccinated since 2016; ring vaccination as outbreak response</td>
<td>--</td>
<td>ADNS, data shared by the country</td>
</tr>
<tr>
<td></td>
<td>Iran (Islamic Republic of)</td>
<td>1 January 2020-24 June 2020</td>
<td>42 outbreaks</td>
<td></td>
<td>--</td>
<td></td>
<td></td>
<td>Data shared by the country</td>
</tr>
<tr>
<td></td>
<td>Iraq</td>
<td>May-June 2020</td>
<td>149 cases</td>
<td></td>
<td>--</td>
<td></td>
<td></td>
<td>Data shared by the country</td>
</tr>
<tr>
<td>RVF</td>
<td>Libya</td>
<td>9 May 2020</td>
<td>1 outbreak in Bint Bey District, Awbari Province (South): 7 cases in sheep, 2 deaths</td>
<td>Active surveillance: blood sampling within and outside the protection zones</td>
<td>--</td>
<td></td>
<td></td>
<td>OIE</td>
</tr>
<tr>
<td></td>
<td>Egypt</td>
<td></td>
<td></td>
<td></td>
<td>--</td>
<td>1.2 million large and small ruminants vaccinated</td>
<td></td>
<td>Data shared by the country</td>
</tr>
</tbody>
</table>
## Significant Fast Disease Events and Information

<table>
<thead>
<tr>
<th>Disease</th>
<th>Country</th>
<th>Date</th>
<th>Outbreak</th>
<th>Epidemiological Information</th>
<th>Surveillance</th>
<th>Vaccination</th>
<th>Other Risk Information</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>LSD</td>
<td>Syrian Arab Republic</td>
<td>2 April 2020</td>
<td>1 outbreak in Jabla District, Al Ladhiqiyah Governorate: 15 affected among calves, heifers and adult cows, 2 deaths</td>
<td>--</td>
<td>--</td>
<td>Cattle in the district and province vaccinated against LSD in March 2020</td>
<td>--</td>
<td>OIE; data shared by the country</td>
</tr>
<tr>
<td>LSD</td>
<td>Iraq</td>
<td>May-June 2020</td>
<td>18 cases</td>
<td>--</td>
<td>--</td>
<td>Mass vaccination campaign</td>
<td>--</td>
<td>Data shared by the country</td>
</tr>
<tr>
<td>LSD</td>
<td>Turkey (Anatolia)</td>
<td>January-April 2020</td>
<td>4 outbreaks in Anatolia</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>European Union technical assistance project for LSD control: main components on vaccination and capacity building.</td>
<td>ADNS; data shared by the country</td>
</tr>
<tr>
<td>LSD</td>
<td>Iran (Islamic Republic of)</td>
<td>1 January 2020-24 June 2020</td>
<td>42 outbreaks</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>Data shared by the country</td>
</tr>
<tr>
<td>SGP</td>
<td>Morocco</td>
<td>April-May 2020</td>
<td>24 outbreaks in El Kelaa des Sraghna, Rhamna and Béni-Mellal provinces: 118 cases, 43 deaths</td>
<td>SGP is endemic in North Africa</td>
<td>--</td>
<td>National vaccination campaign under implementation</td>
<td>--</td>
<td>ONSSA reports (onssa.gov.ma/fr/)</td>
</tr>
<tr>
<td>SGP</td>
<td>Turkey (Anatolia)</td>
<td>January-April 2020</td>
<td>42 outbreaks</td>
<td>--</td>
<td>--</td>
<td>All small ruminants are vaccinated.</td>
<td>--</td>
<td>ADNS; data shared by the country</td>
</tr>
<tr>
<td>SGP</td>
<td>Iran (Islamic Republic of)</td>
<td>1 January 2020-24 June 2020</td>
<td>28 outbreaks</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>Data shared by the country</td>
</tr>
<tr>
<td>SGP</td>
<td>Iraq</td>
<td>May-June 2020</td>
<td>121 cases</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>Data shared by the country</td>
</tr>
</tbody>
</table>
Hold-FAST tools

EuFMD Committees
Executive Committee, Standing Technical Committee, Special Committee for Surveillance and Applied Research (SCSAR), Special Committee on Biorisk Management (SCBRM), Tripartite Groups.