Food and Agriculture Organization
of the United Nations

Food Chain Crisis
Early Warning Bulletin

Forecasting threats to the food chain affecting food security in countries and regions

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NOTE TO THE READER

The purpose of the FCC (Food Chain Crisis) Early Warning Bulletin is to inform FAO and other international organizations, countries, scientific experts, and decision makers on the forecast of threats to animal and plant health and food safety having a potential high impact on food and nutrition security for the three months ahead. These threats are transboundary animal and plant pests and diseases including forest pests and aquatic diseases, and food safety threats.

The bulletin contains official and unofficial information from various sources collected and analyzed by FAO experts.

The FCC Early Warning Bulletin is a product of collaboration between the Intelligence and Coordination Unit of the Food Chain Crisis Management Framework (FCC-ICU), the FAO Emergency Prevention System (EMPRES) for transboundary animal and plant pests and diseases and food safety threats, the FAO Global Early Warning System for transboundary animal diseases, including zoonoses (GLEWS), and the Global Information and Early Warning System (GIEWS). FCC-ICU coordinates and produces the bulletin.

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FCC FORECASTING METHODOLOGY

Transboundary animal and plant pests and diseases, including forest pests and aquatic diseases, and food safety threats are raising public awareness due to their potential high impact on food security, human health, livelihoods, and trade. These threats have highlighted the need to predict such threats in a comprehensive and integrated manner, oriented at the whole food chain. Predicting threats will allow timelier implementation of preventive and control measures, and thus will reduce their impact and limit their geographic spread.

FAO Food Chain Crisis-Intelligence and Coordination Unit (FCC-ICU) has developed an integrated forecasting approach to assess the likelihood of occurrence of threats to the food chain (FCC threat) for the upcoming three months. Based on this approach and upon availability of FAO data, a number of forecast events are presented at country level. Data are collected, analyzed, and further presented in this quarterly FCC Early Warning Bulletin (see country section, page 15).

The **Likelihood of occurrence of a FCC threat** in a country is defined according to the result of the assessment of two main epidemiological parameters:

- Parameter 1: **likelihood of introduction** of the threat from another country and its further **spread** within the country (calculated as shown in Table 1), and
- Parameter 2: **likelihood of its re-emergence (amplification)** within the country, in case a threat is already present in the country.

Based on a conservative approach, the likelihood of occurrence of the threat will be considered equal to the higher level of the two parameters.

TABLE 1: **Crossing table of likelihood of introduction and likelihood of spread (Parameter 1)**

		Level of likelihood of spread			
		0	1	2	3
Level of likelihood of introduction	0	0	0	0	0
	1	1	1	1	2
	2	1	1	2	2
	3	2	2	2	3

The likelihood of occurrence, the likelihood of introduction, the likelihood of spread, and the likelihood of re-emergence of a FCC threat can be rated as Nil, Low, Moderate, or High, as shown in Table 2.

TABLE 2: **FCC Likelihood scale**

Likelihood	Definition
Nil (0)	Very unlikely
Low (1)	Unlikely
Moderate (2)	Likely
High (3)	Highly likely

HIGHLIGHTS

Fall Armyworm (*Spodoptera frugiperda*)

FAW has continued its spread in Africa since the last forecast period of October-December 2017. New countries have confirmed its presence since October 2017, namely, Liberia, Madagascar, Seychelles, Sierra Leone, Somalia and Sudan. Nearly all Sub Saharan Africa is infected now with the pest except Djibouti, Eritrea, Lesotho, and Mauritius.

Key concerns about FAW include its impact on yields, food security, and livelihoods of smallholder farming households, as well as its potential to develop resistance to some pesticide products.

At the sub-regional level, during this forecast period (January to March 2018):

Central and Southern Africa: The main cropping season is ongoing during the forecast period; therefore, the pest is likely to continue its spread across new areas. Damage could be considerable on maize unless appropriate pest management measures are carried out.

Northern Africa: FAW being present in Sudan, puts North Africa at risk. However, since it is the off-season for maize in Sudan, FAW's spread within the country will be limited and its spread will also be limited to Egypt and Libya. Nevertheless, conditions being favourable in southern parts of Egypt and Libya, at the borders with Sudan, could favour FAW introduction into these two countries. Monitoring and surveillance systems in Egypt and Libya are necessary.

Western and Eastern Africa: FAW development and spread will slow as it will be the dry season during the forecast period thus reducing the host crop on which the pest would feed. Even if some maize remains along the riverbanks, it will not be enough to feed large FAW populations. The pest will feed on alternate hosts but its further spread is unlikely. Preliminary field observations show that this pest is actively feeding on vegetables grown during the dry season.

Avian influenza

Due to seasonal patterns of Avian influenza and particularly winter in the northern hemisphere, an increase of virus circulation in poultry and humans is expected for the period January-March 2018.

During winter migration of wild birds from Europe to Africa and Asia, introduction of Avian influenza might occur and new outbreaks might be reported in the next months in some African and Asian countries located in a migratory corridor.

FORECAST FOR THE PERIOD JANUARY-MARCH 2018: **OVERVIEW**

During the period January to March 2018, Food Chain Crisis (FCC) threats are expected to occur in the regions of Africa, Americas, Asia and Europe where they will be either persisting within a country, or possibly spreading to neighbouring countries, or will be latent and re-emerge/amplify at a certain time.

The dynamic and the likelihood of occurrence of FCC threats depend on a number of risk factors or drivers. These include agro-ecological factors (e.g. intensive farming systems, deforestation, overgrazing, etc.), climate change (e.g. droughts, flooding, heavy rains, heat waves, the El Niño-Southern Oscillation (ENSO), changes in vegetation cover, water temperature etc.), human behaviour (e.g. cultural practices, conflicts and civil insecurity, trade, etc.) and natural disasters.

In relation to food security, and according to the last "Crop prospects and food situation" report (October-December 2017), FAO estimates that globally 37 countries (29 in Africa, 7 in Asia and 1 in Americas) are in need of external assistance for food. Persisting conflicts continue to be a key driver of severe food insecurity, with weather shocks intensifying the fragile conditions in some countries. Production shortfalls due to unfavourable weather have also adversely impacted food availability and access. FCC threats might compound food insecurity in fragile countries stricken by weather shocks and conflicts.

Main threats

Twenty-eight plant and forest pests and diseases and animal and aquatic diseases were forecasted by FAO experts for the period January to March 2018. A total of 215 forecasts were conducted in 111 countries.

According to the forecasts, the following pests and diseases will be representing a high or moderate risk to the food chain for the period January to March 2018: African swine fever, Avian influenza, Foot-and-mouth disease, Lumpy skin disease, and Rift Valley fever for **Animal diseases including zoonosis**; Tilapia Lake Virus disease for **Aquatic diseases**; Bark beetles, Blue gum chalcid, Bronze bug, Dry cone syndrome, Pine processionary moth, and Red gum lerp psyllid for **Forest pests and diseases**; Desert Locust and Red Locust for **Locusts**; Banana bunchy top disease, Banana fusarium wilt disease, Cassava brown streak and mosaic diseases, Fall armyworm, and Wheat rust for **Plant pests and diseases**.

All pests and diseases forecasted in this bulletin are listed in the table hereafter.

TABLE 3: **FCC threats monitored and forecasted**

Animal diseases including zoonosis	Aquatic diseases	Forest pests and diseases	Locusts	Plant pests and diseases
African swine fever (ASF)	Tilapia lake virus (TiLV)	Bark beetles	Desert Locust	Banana bunchy top disease (BBTD)
Avian influenza (AI)		Blue gum chalcid	Italian Locust	Banana fusarium wilt disease
Foot-and-mouth disease (FMD)		Boxwood blight	Migratory Locust	Cassava brown streak disease (CBSD)
Lumpy skin disease (LSD)		Boxwood moth	Moroccan Locust	Cassava mosaic disease (CMD)
Rift Valley fever (RVF)		Bronze bug	Red Locust	Fall armyworm (FAW)
		Charcoal disease		Wheat rust
		Chestnut gall wasp		
		Dry cone syndrome		
		Pine processionary moth		
		Red gum lerp psyllid		
		Western conifer seed bug		

FORECAST FOR THE PERIOD JANUARY-MARCH 2018: **REGIONAL OVERVIEW**

AFRICA

In Africa, a total number of 119 FCC events have been forecasted comprising plant pests and diseases, locusts, animal and aquatic diseases and forest pests. The likelihood of occurrence varies from Nil to High. The following FCC events have significant regional implications:

Plant pests and diseases

- **Fall armyworm (FAW)** - *Spodoptera frugiperda*, is a pest that can cause significant damage and crop yield losses if not well managed. The insect continues to be of high concern for Africa because its impact on maize can be very detrimental. During the forecast period, January to March 2018, FAW is expected to continue its spread across new areas in Central and Southern Africa where the main cropping season is on-going, and damage will be high, because the pest mainly multiplies on maize. Countries need to adopt appropriate management measures to reduce and constrain damage as well as spread. In Western and Eastern Africa, FAW development and spread will slow as it will be the dry season in these sub-regions; FAW will not find its preferred host, maize, and will continue its development on alternate hosts. Damage may still occur because the pest has been observed actively feeding on vegetables grown during the dry season. For Northern Africa, since FAW has been detected in neighbouring Sudan, countries must strengthen surveillance.

  In **Central Africa**, all eight countries in the sub-region have maize crops infested with FAW. However, in Equatorial Guinea and Gabon, assessments are underway to confirm FAW's status of spread. FAW has spread throughout the sub-region, and the beginning of the forecast period coinciding with the main maize growing season, the pest is likely to continue its spread across new areas. Countries in this sub-region should carry out robust control operations to avoid significant yield losses. At the end of the forecast period, the major maize cropping season will end and the dry season will commence in almost all of the eight countries. This means there will be a reduction in the crops on which the pest feeds. During this period, therefore, further spread of FAW populations will be limited and the pest will feed on alternate hosts.

  In **Eastern Africa**, FAW presence is now confirmed in all countries except Djibouti and Eritrea. The forecast period mainly coincides with the off-season and the pest will have limited access to the maize crop, which is its preferred host. Thus, the likelihood of spread and damage in the sub-region will be low. Nevertheless, in some areas, FAW spread is likely because it may feed on the off-season irrigated maize crop.

  In **Northern Africa**, since FAW has been detected in neighbouring Sudan, the countries Egypt and Libya must be on alert. It is the off-season for maize in Sudan and FAW's spread within Sudan will be limited and its spread will also be limited to Egypt and Libya. Nevertheless, conditions will be favourable in the southern parts of Egypt and Libya, along the borders with Sudan, favouring the introduction of FAW. This necessitates strong surveillance and monitoring.

  In **Southern Africa**, FAW presence is now confirmed for the entire sub-region, except for Lesotho and Mauritius; it has continued to cause damage to maize and other cereal crops since it was first reported in Southern Africa in late 2016. During the forecast period coinciding with the main cropping season, FAW is expected to continue its spread across new areas and damage will be high. Farmers have observed that even in the off-season, the pest, which does not overwinter, has continued to damage irrigated maize crops. This means that there will likely be a carryover of the pest load to the 2017/2018 main production season for maize and other cereals. In the previous season (2016/2017), farmers and governments across the sub-region

FORECAST FOR THE PERIOD JANUARY-MARCH 2018: **REGIONAL OVERVIEW**

AFRICA

responded with massive pesticide application, and used types that are hazardous to human health and the environment. Seventy per cent of the southern African population rely on agriculture, with maize being the main staple in the sub-region, highlighting the need to effectively support farmers at risk to manage FAW to protect their food security and livelihoods.

In **Western Africa**, FAW is currently established in all 15 countries. However, the forecast period coincides with the dry season. Accordingly, there will not be enough maize to support large FAW populations despite the existence of maize along the riverbanks, and while the pest populations will feed on alternate hosts, their further spread is unlikely.

- In **Central and Eastern Africa**, **Cassava brown streak and mosaic disease** continue to affect many countries and might amplify in areas where weather conditions will be favourable.

  In **Central Africa**, **Banana bunchy top disease** continues to be a problem in some countries and can escalate.

Locusts

- In **Northern and Western Africa**, no significant **Desert Locust** developments are expected although spring breeding may start in March south of the Atlas Mountains (Algeria and Morocco). In Eastern Africa, small-scale Desert Locust breeding in winter breeding areas (Eritrea, Somalia and Sudan) will occur, causing locust numbers to increase slightly. In Southern Africa, hatching of the **Red Locust** followed by development of hopper bands will occur in three countries (Malawi, Mozambique and Zambia) of the four countries of the outbreak area. In Madagascar, the **Malagasy Migratory Locust** second generation of breeding of the 2017/2018 rainy season will take place.

Animal diseases

- In **Western**, **Central and Southern Africa**, **H5N1** and **H5N8 Highly pathogenic avian influenza (HPAI)** viruses can cause new outbreaks. New introductions might occur in at risk countries.

  Since its introduction to Nigeria in December 2014, H5N1 HPAI has spread in Western and Central Africa, striking Burkina Faso, Cameroon, Côte d'Ivoire, Ghana, Niger and Togo. The H5N1 virus re-emerged in June 2017 in Togo.

  H5N8 HPAI virus, which has been spreading globally since November 2016, affecting Western and Central Africa, occurred for the first time in Eastern Africa in December 2017, representing the first HPAI introduction since 2008 to this area. In December 2016, wild birds were found dead along the shores of Lake Victoria in Wakiso District in Uganda. In May 2017, H5N8 HPAI virus was detected for the first time in Zimbabwe; the latest outbreak in the Democratic Republic of the Congo was in June, and during this time South Africa experienced its first outbreak. After June 2017, additional outbreaks were reported until September 2017 in South Africa. Due to wild bird's migratory patterns, further spread of the H5N8 HPAI virus in the Democratic Republic of the Congo, South Africa, Uganda, and Zimbabwe is likely and introduction into neighbouring countries may occur (Botswana, Mozambique, Rwanda, United Republic of Tanzania and Zambia).

FORECAST FOR THE PERIOD JANUARY-MARCH 2018: **REGIONAL OVERVIEW**

AFRICA

Aquatic diseases

- **Tilapia Lake virus** (TiLV), an emerging pathogen, may have a wider distribution than initially thought and is likely to be a significant threat to the global Tilapia industry. High awareness and vigilance for this emerging threat are required in Tilapia producing countries in Northern, Eastern and Southern Africa. A surveillance plan may be necessary to determine the geographical extent of the infection and to undertake mitigation measures to limit its spread. Appropriate diagnostic testing is encouraged when unexplained mortalities of Tilapia occur; testing is particularly needed when clinical signs are similar to those reported for TiLV. Public information campaigns are recommended to advise aquaculturists on the threat posed by TiLV and on the need to report unexplained large-scale mortalities to biosecurity authorities.

  TiLV is likely to occur in countries where water temperatures range between 22 °C – 32 °C (usually between May and November). The following farmed tilapia species will be susceptible: Hybrid tilapia (*Oreochromis niloticus x O. aureus hybrids*), Nile tilapia (*O. niloticus*) and Red tilapia (*Oreochromis sp.*).

Forest pests

- **Blue gum chalcid** and **Red gum lerp psyllid** insect pests are likely to continue spreading, causing severe damage in Eucalyptus plantations. Applications of biological control agents to reduce these insect pest populations are in progress in some countries. **Bronze bug** spread is likely to occur, damaging Eucalyptus woodlots in affected countries.

FORECAST FOR THE PERIOD JANUARY-MARCH 2018: **REGIONAL OVERVIEW**

AMERICAS

In the Americas, a total number of nine FCC events have been forecasted comprising animal and aquatic diseases and forest pests. The likelihood of occurrence varies from Low to High. The following FCC events have significant regional implications:

Aquatic diseases

- **Tilapia Lake virus (TiLV)**, an emerging pathogen, may have a wider distribution than initially thought and is likely to be a significant threat to the global Tilapia industry. High awareness and vigilance should continue in Tilapia producing countries in the Americas. A surveillance plan may be necessary to determine the geographical extent of the infection and undertake mitigation measures to limit its spread. Appropriate diagnostic testing is encouraged where unexplained mortalities of Tilapia occur, particularly when clinical signs are similar to those reported for TiLV. Public information campaigns are recommended to advise aquaculturists on the threat posed by TiLV and the need to report unexplained large-scale mortalities to biosecurity authorities.

  TiLV is likely to occur in countries where water temperatures will range between 22 °C – 32 °C (usually between May and November). The following farmed tilapia species will be susceptible: Hybrid tilapia *(Oreochromis niloticus x O. aureus hybrids*), Nile tilapia (*O. niloticus*) and Red tilapia (*Oreochromis sp.*).

Forest pests

- Severe infestations of **Bark beetles,** in particular the *Dendroctonus frontalis* species, are occurring in the dry corridor of Central America and will continue in the pine forests of Guatemala, Honduras and Nicaragua. Pine species Pinus caribea, *Pinus oocarpa* and *Pinus patula* within natural forests and plantations have become more vulnerable to the beetle attacks because they are already stressed by prolonged drought and weakened due to poor forest management practices.

FORECAST FOR THE PERIOD JANUARY-MARCH 2018: **REGIONAL OVERVIEW**

ASIA

In Asia, a total number of 63 FCC events have been forecasted comprising plant pests and diseases, locusts, animal and aquatic diseases and forest pests and diseases. The likelihood of occurrence varies from Nil to Moderate. The following FCC events have significant regional implications:

Plant diseases

- **Banana fusarium wilt disease Tropical race 4** is present in **Southern and South-Eastern Asia**. It was recently reported in Viet Nam and Lao People's Democratic Republic, and it may further spread and cause damage.

Locusts

- In **Western Asia**, small-scale **Desert Locust** breeding in winter breeding areas will occur (Saudi Arabia and Yemen), causing locust numbers to increase slightly, while in Southern Asia, no significant Desert Locust developments are expected although spring breeding may start in March (southeast Iran, southwest Pakistan). In Central Asia, during winter, locusts (**Italian, Migratory and Moroccan Locusts**) are not visible as they are present only as eggs in the ground. Hatching will start after the forecast period in most of the concerned countries.

Animal diseases

- Four **H5 Highly pathogenic avian influenza (HPAI)** serotypes and several H5 clades are circulating in Eastern, Southern and South-Eastern Asia.

  H5N1 HPAI continues to be reported in China and Viet Nam and re-emerged in Lao People's Democratic Republic and Myanmar in July and in Cambodia in November 2017.

  The recent **H5N6 HPAI** expansion has particularly stricken the poultry sector of Japan, Republic of Korea, and Taiwan Province of China. In July-August 2017, the virus occurred, for the first time, in the Philippines and re-emerged in Myanmar. In November 2017, a new re-assortant strain of H5N6 HPAI virus, different from the one circulating in Asia in the past, was detected in wild birds in Japan and Taiwan Province of China, and in environmental samples and in domestic ducks in Republic of Korea. This new strain can heavily affect poultry and wild birds in neighbouring Asian countries such as Lao People's Democratic Republic, Myanmar, Philippines, Thailand and Viet Nam.

  The **H5N8 HPAI** strain, emerged in China in May 2016, and has already spread to India, Nepal and Republic of Korea and might affect additional countries. In the Middle East, **H5N8 HPAI** introductions were detected in poultry farms in the Islamic Republic of Iran and in Israel in January-February. During September 2017, H5N8 was found in a buzzard in Cyprus, and in December 2017, H5N8 virus was detected in Saudi Arabian poultry. Further spread of the disease in the already affected countries and introductions into neighbouring countries might still occur.

  Of note, is the recently concluded **H7N9 Low and Highly pathogenic avian influenza (LPAI/HPAI)** season (5th wave) that has been the most intense since the emergence of the virus in early 2013 in China. In addition, this is the first season that H7N9 avian influenza viruses presented genetic characteristics suggestive of a shift from a low pathogenic into a H7N9 highly pathogenic avian virus in poultry. In February-April 2017, the H7N9 virus spread to previously unaffected areas of China (Chongqing, Gansu and Tibet provinces). Due to seasonal patterns, an increase of virus circulation in poultry and of human cases occurrence is expected for the next months.

FORECAST FOR THE PERIOD JANUARY-MARCH 2018: **REGIONAL OVERVIEW**

ASIA

- In **Eastern Asia**, **African swine fever (ASF)** introduction might occur from the Russian Federation where the ASF virus was detected in late March 2017 in a backyard pig farm (40 pigs) in Irkutsk Oblast. This jump, which was over 3.000 km eastward, marks the first ASF detection in the eastern part of the Russian Federation, increasing the risk of ASF introduction in bordering countries, such as China and Mongolia.
- **Foot and mouth disease (FMD)** Serotype A was detected in May 2017 in Israel. The event is of concern for Israel and neighbouring countries because of poor vaccine matching for serotype A. FMD was reported in November and December 2017 in West Bank but the serotype has not been identified yet. FMD viruses will likely continue spreading in the Middle-East if mitigation measures in place are not effective.

Aquatic diseases

- **Tilapia Lake virus (TiLV)**, an emerging pathogen, may have a wider distribution than initially thought and is likely to be a significant threat to the global Tilapia industry. High awareness and vigilance need to be maintained for Tilapia producing countries in Asia. A surveillance plan may be necessary to determine the geographical extent of the infection and undertake mitigation measures to limit its spread. Appropriate diagnostic testing is encouraged, where unexplained mortalities of Tilapia occur, particularly when clinical signs are similar to those reported for TiLV. Public information campaigns are recommended to advise aquaculturists on the threat posed by TiLV and the need to report unexplained large-scale mortalities to biosecurity authorities.

  TiLV is likely to occur in countries where water temperatures will range between 22 °C – 32 °C (usually between May and November). The following farmed tilapia species will be susceptible: Hybrid tilapia (*Oreochromis niloticus x O. aureus hybrids*), Nile tilapia (*O. niloticus*) and Red tilapia (*Oreochromis sp.*).

Forest pests and diseases

- Dieback of boxwood trees (*Buxus hyrcana*), an IUCN threatened species, caused by **Boxwood blight** (pathogen *Calonectria pseudonaviculata*) will cause less damage in Georgia and in the Caspian forest of the Islamic Republic of Iran due to lower temperatures. In Lebanon, **Dry cone syndrome** and **Western conifer seed bug** are causing severe losses in pine nut harvest, and the pest damage will continue but the activities of **Western conifer seed bug** will be limited due to winter temperatures. In Turkey, **Chestnut gall wasp** is causing damage to chestnut trees and threatening livelihoods of local communities but the pest pressure will decrease due to pest control activities. Biological control is in progress to reduce pest populations.

FORECAST FOR THE PERIOD JANUARY-MARCH 2018: **REGIONAL OVERVIEW**

EUROPE

In Europe, a total number of 24 FCC events have been forecasted comprising locusts, animal diseases and forest pests. The likelihood of occurrence varies from Nil to Moderate. From these, the following FCC events have significant regional implications:

Locusts

- In **Eastern Europe**, during winter, the **Italian, Migratory and Moroccan Locusts** are not visible as they are present only as eggs in the ground. Hatching will start after the forecast period.

Animal diseases

- **African swine fever (ASF)** outbreaks and transmission are likely to continue in the affected countries (Estonia, Latvia, Lithuania, Poland, Republic of Moldova, Russian Federation and Ukraine) where the virus is endemic in wild boar populations and is sporadically transmitted to domestic pigs through feeding and other infected material. Recently, it has affected Czech Republic and Romania. This increases the possibility of introduction into neighbouring countries (e.g., Belarus and Hungary) via live animals and animal product movement along pig value chains and transmission between seasons through infected carcasses of dead wild boars.
- A moderate risk of **H5N8 Highly pathogenic avian influenza (HPAI)** spread in the already affected countries in Europe exists due to the upcoming seasonal pattern of influenza viruses. Detected for the first time in May 2016 in China's wild bird population and in June in the Russian Federation, **H5N8 HPAI** has been spreading globally, following wild bird migration routes. Since mid-October 2016, the virus has been striking Eastern Europe; the disease has been detected in deceased wild birds in Belgium, Croatia, Hungary and Poland. Additionally, HPAI introductions have been reported in 30 out of 43 European countries, particularly in Western and Eastern Europe. During summer 2017, the reported number of infections was decreasing, but, during the on-going winter season, an increase is likely.

Forest pests

- **Bark beetle** infestations will continue to damage pine plantations in Belarus and Ukraine. The movement of beetles will be limited during the winter period. However, outbreaks are likely in spring and thus it will be necessary to continue slivicultural measures to remove the weakened trees in the forests.

SHORT TAKE - INTRODUCING THE FALL ARMYWORM MONITORING AND EARLY WARNING TOOLS

WHY? The Fall Armyworm (*Spodoptera frugiperda*), or FAW, arrived in Africa in 2016 and has quickly spread throughout most of the continent south of the Sahara. This is a potentially dangerous transboundary pest that primarily affects maize but is known to feed on more than 80 other crops. The impacts of FAW on crop production and livelihoods are not well known presently because of our poor understanding of FAW behaviour in the African context and a lack of field data. FAO is addressing this gap by developing a monitoring and early warning system to be established in Africa.

WHAT? The Fall Armyworm Monitoring and Early Warning System (FAMEWS) consists of two components: a mobile app to allow farmers and community focal persons to collect and record data when scouting their fields for FAW and when checking pheromone traps, and a cloud-based global platform with a centralized database for mapping and analysing the data. The mobile app is simple and intuitive, containing information on the farmer's crops and details of FAW and any control that was undertaken. Initially, the app will be available in English and French for Android smartphones, and will shortly be extended to iPhones, other languages and SMS-based phones. The app will be rolled out in Southern and Eastern Africa, followed by the remainder of the continent. The global platform will be accessible via the Internet so that national authorities, key partners and other partners can use the data for decision-making, early warning and research. Future versions of the mobile app will include a damage diagnostic tool, a feedback mechanism to provide advice to farmers and reference material for e-training.

HOW? In collaboration with farmers, extension agents and plant protection officers in the affected countries, a technical working group led by FAO and including experts from countries, international institutes such as CABI, ICIPE, IITA, CIMMYT and universities determined the basic field data that is required to monitor FAW population levels and movements in Africa. This data is the foundation of FAMEWS. Further work was done to standardize data collection protocols for field scouting and pheromone traps in order to facilitate comparative analysis across the continent. FAO is taking advantage of its IT-services to fast track the development of the system.

WHO AND WHERE? FAMEWS is a collaborative approach with all partners and stakeholders in Africa and beyond. The system is expected to be used in up to 50 African countries. Training will be linked to existing Farmer Field Schools that cover more than half of these countries. Simple training material will be available to all countries and partners in order to encourage the broadest dissemination and use of these new monitoring tools.

FCC THREATS FORECASTING AT **COUNTRY LEVEL**

This section provides, at country level, for the upcoming three months, forecasting of FCC threats having potential high impact on food and nutrition security. It also provides, when available and appropriate, background information on other factors impacting food and nutrition security.

The country section includes countries for which information are available. This section assigns countries and areas to geographic regions on the basis of the current composition of macro geographical (continental) regions of the United Nations Statistics Division (United Nations Statistics Division- Standard Country and Area Codes Classification (M49); http://unstats.un.org/unsd/methods/m49/m49regin.htm).

The assessment of the likelihood of occurrence was performed using FAO data and information available at the time of preparation of this bulletin and might be subject to changes later.

Legend

Threats category	Likelihood of occurrence			
	High	Moderate	Low	Nil
Animal and zoonotic diseases				
Aquatic diseases				
Forest pests and diseases				
Locusts				
Plant pests and diseases				

- **High:** an event is highly likely to occur
- **Moderate**: an event is likely to occur
- **Low:** an event is unlikely to occur
- **Nil**: an event is very unlikely to occur

FCC THREATS FORECASTING AT **COUNTRY LEVEL**

AFRICA

ALGERIA

Threat category: Locusts

Threat name: Desert Locust

Likelihood of occurrence: Low

Forecast (January-March 2018): Low numbers of adults will persist in Southern and Central Sahara; no significant developments are expected.

Context: Numerous Desert Locust (*Schistocerca gregaria*) populations are a threat to agricultural production in Africa, the Middle East and Asia, and have a negative impact on food security. The livelihoods of at least one tenth of the world's population can be affected by this voracious insect. Desert locusts are potentially the most dangerous locust pests due to swarms' ability to fly quickly over long distances.

ANGOLA

Threat category: Plant pests and diseases

Threat name: Fall armyworm (FAW)

Likelihood of occurrence: High

Forecast (January-March 2018): The main maize growing season will continue and FAW is expected to further spread throughout the country, causing damage in maize and other cereals.

Context: FAW presence was first reported during the 2016/2017 season. The pest caused serious damage to maize across the country.

BENIN

Threat category: Plant pests and diseases

Threat name: Fall armyworm (FAW)

Likelihood of occurrence: Low

Forecast (January-March 2018): During the forecast period, dry season will be prevailing, therefore even with some maize remaining along the rivers, it will not be enough to feed large FAW populations. FAW is likely to continue its development on alternate hosts but no spread is expected.

Context: Benin was among the first countries affected by FAW in April 2016. Actions to monitor and manage the pest are on-going.

BOTSWANA

Threat category: Plant pests and diseases

Threat name: Fall armyworm (FAW)

Likelihood of occurrence: High

Forecast (January-March 2018): The main maize growing season will start and FAW is expected to continue to spread throughout the country, causing damage in maize and other cereals.

Context: FAW presence was first reported during the 2016/2017 season. The pest caused serious damage to maize across the country.

Threat category: Animal and zoonotic diseases

Threat name: Avian influenza (AI)

Likelihood of occurrence: Moderate

Forecast (January-March 2018): H5 Highly pathogenic avian influenza (HPAI) is likely to occur due to the introduction of the virus from neighbouring countries.

Context: In January 2017, H5N8 HPAI virus was detected in wild birds found dead along the shores of Lake Victoria in Wakiso District (in Uganda). This is the first AI introduction in this African sub-region since 2008. In April-June 2017, the virus was detected in neighbouring Zimbabwe.
HPAI is a highly contagious disease causing high mortality in poultry resulting in severe production losses with impact on food security and trade. Avian influenza viruses can affect humans.

BURKINA FASO

Threat category: Plant pests and diseases

Threat name: Fall armyworm (FAW)

Likelihood of occurrence: Low

Forecast (January-March 2018): In late November, almost all maize crops have been harvested and since the dry season has started in December, FAW is likely to continue its development on alternate hosts but no spread is expected during the forecast period.

Context: FAW presence has been officially confirmed.

Threat category: Animal and zoonotic diseases

Threat name: Avian influenza (AI)

Likelihood of occurrence: Moderate

Forecast (January-March 2018): H5N8 HPAI outbreaks are likely to occur in poultry due to possible re-emergence of H5N1 HPAI virus in the country or due to the introduction of H5N8 HPAI virus from neighbouring countries.

Context: H5N1 HPAI virus has been circulating in Central and West Africa since December 2014. The virus was detected in Burkina Faso in February 2015 and the last outbreak occurred in July 2015. H5N8 HPAI has been spreading globally since November 2016, following bird migratory routes. So far, H5N8 HPAI has been reported in West and Central Africa (in Cameroon, Democratic Republic of the Congo, Niger and Nigeria).
HPAI is a highly contagious disease causing high mortality in poultry resulting in severe production losses with impact on food security and trade. Avian influenza viruses can affect humans.

BURUNDI

Threat category: Plant pests and diseases

Threat name: Fall armyworm (FAW)

Likelihood of occurrence: Low

Forecast (January-March 2018): As the dry season will be prevailing during the forecast period, limited maize will remain to sustain large FAW populations. FAW is likely to survive on alternate hosts with limited spread to other parts of the country.

Context: FAW presence is confirmed but data on incidence and severity of damage are not available yet.

CABO VERDE

Threat category: Plant pests and diseases

Threat name: Fall armyworm (FAW)

Likelihood of occurrence: Low

Forecast (January-March 2018): During the forecast period, the spread of FAW is unlikely to occur as there will be no significant maize crops.

Context: FAW is a serious threat to the food security of the country as maize, a favoured FAW host, is the main staple food. Actions to monitor and manage the pest are on-going.

CAMEROON

Threat category: Plant pests and diseases

Threat name: Banana bunchy top disease (BBTD)

Likelihood of occurrence: Moderate

Forecast (January-March 2018): Spread from the initial outbreak areas is likely.

Context: The disease is already present in southern parts of the country.
Banana bunchy top disease affects the whole banana plant by causing stunting, bunchy appearance and by preventing fruit formation. If any fruit is produced, which is unusual, it will be deformed.

Threat category: Plant pests and diseases

Threat name: Fall armyworm (FAW)

Likelihood of occurrence: Moderate

Forecast (January-March 2018): At the beginning of the forecast period, FAW will spread to other parts of the country as conditions are favourable (on-going cropping season). Then, the major season for maize, a favoured FAW host, will be over and FAW is likely to survive on alternate hosts.

Context: The presence of the pest was confirmed in the West, Centre, Far North, Littoral and South-West Regions of the country in March 2017. Currently, six out of the 10 regions of the country are affected: Centre (Ngoumou and Bokito), South (Mbalmayo), West (Foumbot and Dschang), Littoral (Melong, Manengolé and Douala), South-West (Debuncha) and the Extreme North (Guider, Maroua). The Government has prepared a strategic control plan to control the spread of this pest.

Threat category: Animal and zoonotic diseases

Threat name: Avian influenza (AI)

Likelihood of occurrence: Moderate

Forecast (January-March 2018): H5N1 and H5N8 HPAI outbreaks are likely to occur in poultry due to further spread of the viruses within the country as per seasonal pattern.

Context: H5N1 HPAI has been detected in Cameroon in late May 2016 and as of March 2017, outbreaks in poultry were reported in five regions. H5N8 HPAI has been spreading globally since November 2016, following bird migratory routes. So far, H5N8 HPAI has been reported in West and Central Africa (in Cameroon, Democratic Republic of the Congo, Niger and Nigeria). In January 2017, H5N8 HPAI has been detected in an Exotic peacock farm in the Extreme-North region.
HPAI is a highly contagious disease causing high mortality in poultry resulting in severe production losses with impact on food security and trade. Avian influenza viruses can affect humans.

CENTRAL AFRICAN REPUBLIC

Threat category: Plant pests and diseases

Threat name: Fall armyworm (FAW)

Likelihood of occurrence: Moderate

Forecast (January-March 2018): At the beginning of the forecast period, FAW will spread to other parts of the country as conditions are favourable (on-going cropping season). Then, the major season for maize, FAW favoured host, will be over and FAW is likely to survive on alternate hosts.

Context: In July 2017, FAW presence was confirmed within a 50-km radius of the Capital, Bangui. FAW mapping in the country is underway to reveal the current situation of the pest.

CHAD

Threat category: Plant pests and diseases

Threat name: Fall armyworm (FAW)

Likelihood of occurrence: Moderate

Forecast (January-March 2018): At the beginning of the forecast period, FAW will spread throughout the country as conditions are favourable (on-going cropping season). Then, the major season for maize (which is its favoured host) will be over and FAW is likely to survive on alternate hosts.

Context: In December 2016, FAW presence was first reported.

Threat category: Locusts

Threat name: Desert Locust

Likelihood of occurrence: Nil

Forecast (January-March 2018): Significant activity is unlikely to occur.

Context: Numerous Desert Locust (*Schistocerca gregaria*) populations are a threat to agricultural production in Africa, the Middle East and Asia, and have a negative impact on food security. The livelihoods of at least one tenth of the world's population can be affected by this voracious insect. Desert locusts are potentially the most dangerous locust pests due to swarms' ability to fly quickly over long distances.

CONGO

Threat category: Plant pests and diseases

Threat name: Fall armyworm (FAW)

Likelihood of occurrence: Moderate

Forecast (January-March 2018): At the beginning of the forecast period, FAW will spread to other parts of the country as conditions are favourable (on-going cropping season). Then, the major season for maize, FAW favoured host, will be over and FAW is likely to survive on alternate hosts.

Context: In July 2017, FAW has been reported in the country. The pest has been identified in four maize production areas in the northern, central and southern parts of the country. However, the Government does not have the entire mapping of pest infestations yet and statistics on production losses are not yet available. Smallholder farmers, experimental farms in agricultural centres and large private farms have been affected.

CÔTE D'IVOIRE

Threat category: Plant pests and diseases

Threat name: Fall armyworm (FAW)

Likelihood of occurrence: Low

Forecast (January-March 2018): Almost all maize crops have been harvested and since the dry season has started, FAW populations are likely to remain low (continue its development on alternate hosts) and no spread is expected.

Context: FAW presence has been officially confirmed. A two-years action plan is being developed.

Threat category: Animal and zoonotic diseases

Threat name: Avian influenza (AI)

Likelihood of occurrence: Moderate

Forecast (January-March 2018): H5 Highly pathogenic avian influenza (HPAI) outbreaks are likely to occur in poultry due to possible re-emergence of H5N1 HPAI virus in the country or due to the introduction of H5N8 HPAI virus from neighbouring countries and as per seasonal pattern.

Context: After its introduction in Nigeria in December 2014, H5N1 HPAI was reported in Côte d'Ivoire in April 2015. Last outbreak occurred in August 2016. H5N8 HPAI has been spreading globally since November 2016, following bird migratory routes. So far, H5N8 HPAI has been reported in West and Central Africa (in Cameroon, Democratic Republic of the Congo, Niger and Nigeria).
HPAI is a highly contagious disease causing high mortality in poultry resulting in severe production losses with impact on food security and trade. Avian influenza viruses can affect humans.

DEMOCRATIC REPUBLIC OF THE CONGO

Threat category: Plant pests and diseases

Threat name: Fall armyworm (FAW)

Likelihood of occurrence: Moderate

Forecast (January-March 2018): At the beginning of the forecast period, FAW will spread throughout the country as conditions are favourable (on-going cropping season). Then, the major season for maize, FAW favoured host, will be over and FAW is likely to survive on alternate hosts.

Context: FAW was reported for the first time in the country in December 2016. Actions are on-going to manage the pest.

Threat category: Animal and zoonotic diseases

Threat name: Avian influenza (AI)

Likelihood of occurrence: Moderate

Forecast (January-March 2018): H5N8 Highly pathogenic avian influenza (HPAI) outbreaks are likely to occur as per seasonal pattern.

Context: H5N8 HPAI outbreaks were reported in April 2017 in the area of Ituri, near Lake Albert shore, in Djugu Territory (approximately 250 km from the site, near Lake Victoria in Uganda, where a H5N8 HPAI outbreak occurred in January 2017). Last observed outbreak occurred in June 2017. *HPAI is a highly contagious disease causing high mortality in poultry resulting in severe production losses with impact on food security and trade. Avian influenza viruses can affect humans.*

DJIBOUTI

Threat category: Plant pests and diseases

Threat name: Fall armyworm (FAW)

Likelihood of occurrence: Low

Forecast (January-March 2018): FAW has not been reported in the country, however, it is likely to be introduced from neighbouring Ethiopia. Its introduction is likely but its spread will be limited due to arid conditions and limited availability of maize, the preferred host of FAW.

Context: FAW has not been reported in Djibouti yet.

Threat category: Locusts

Threat name: Desert Locust

Likelihood of occurrence: Nil

Forecast (January-March 2018): Significant activity is unlikely to occur.

Context: Numerous Desert Locust (*Schistocerca gregaria*) populations are a threat to agricultural production in Africa, the Middle East and Asia, and have a negative impact on food security. The livelihoods of at least one tenth of the world's population can be affected by this voracious insect. Desert locusts are potentially the most dangerous locust pests due to swarms' ability to fly quickly over long distances.

EGYPT

Threat category: Plant pests and diseases

Threat name: Fall armyworm (FAW)

Likelihood of occurrence: Moderate

Forecast (January-March 2018): FAW has not been reported in the country, however, its introduction and further spread are likely to occur during the forecast period as the conditions will be favourable (growing season).

Context: FAW has not been reported in the country. It is present in neighbouring Sudan.

Threat category: Locusts

Threat name: Desert Locust

Likelihood of occurrence: Low

Forecast (January-March 2018): Small-scale breeding may occur on the Red Sea coast in the Southeast if rains fall; no significant developments expected.

Context: Numerous Desert Locust (*Schistocerca gregaria*) populations are a threat to agricultural production in Africa, the Middle East and Asia, and have a negative impact on food security. The livelihoods of at least one tenth of the world's population can be affected by this voracious insect. Desert locusts are potentially the most dangerous locust pests due to swarms' ability to fly quickly over long distances.

Threat category: Animal and zoonotic diseases

Threat name: Avian influenza (AI)

Likelihood of occurrence: Moderate

Forecast (January-March 2018): H5N1 and H5N8 HPAI outbreaks are likely to occur in poultry due to further spread of the viruses within the country as per seasonal pattern.

Context: H5N1 HPAI is endemic in Egypt. Outbreaks in poultry are reported every month with a marked seasonal winter pattern. Since late November 2016, H5N8 HPAI has spread to 17 out of 27 governorates within the country. Other influenza viruses circulating in poultry in the country are H5 and H9N2 LPAI. *HPAI is a highly contagious disease causing high mortality in poultry resulting in severe production losses with impact on food security and trade. Avian influenza viruses can affect humans.*

Threat category: Aquatic diseases

Threat name: Tilapia lake virus (TiLV)

Likelihood of occurrence: Low

Forecast (January-March 2018): TiLV occurrence is unlikely.

Context: TiLV has been reported in the scientific literature. TiLV occurs when the water temperature is between 22 °C – 32 °C, and it has been observed in farms with large sized fish and high stocking density.

EQUATORIAL GUINEA

Threat category: Plant pests and diseases

Threat name: Fall armyworm (FAW)

Likelihood of occurrence: Moderate

Forecast (January-March 2018): At the beginning of the forecast period, FAW presence and spread are likely given that the surrounding countries are all affected, that conditions are favourable (on-going cropping season), and due to FAW ability to fly long-distance (up to 140 km/night) and to colonize new areas. Then, the major season for maize, FAW favoured host will be over and FAW is likely to survive on alternate hosts.

Context: FAW has been observed on maize in the insular region (Malabo). It has not been yet formally identified in the continental region. Studies are on-going to confirm the status of the country.

ERITREA

Threat category: Plant pests and diseases

Threat name: Fall armyworm (FAW)

Likelihood of occurrence: Low

Forecast (January-March 2018): FAW is not reported in the country yet, but as FAW is present in all surrounding countries, FAW introduction is likely but as it is the dry season, its spread will be limited.

Context: FAW has not been reported in the country yet.

Threat category: Locusts

Threat name: Desert Locust

Likelihood of occurrence: Moderate

Forecast (January-March 2018): Small-scale breeding will occur on Red Sea coast, causing locust numbers to increase slightly.

Context: Numerous Desert Locust (*Schistocerca gregaria*) populations are a threat to agricultural production in Africa, the Middle East and Asia, and have a negative impact on food security. The livelihoods of at least one tenth of the world's population can be affected by this voracious insect. Desert locusts are potentially the most dangerous locust pests due to swarms' ability to fly quickly over long distances.

ETHIOPIA

Threat category: Plant pests and diseases

Threat name: Fall armyworm (FAW)

Likelihood of occurrence: Moderate

Forecast (January-March 2018): The forecast period mainly coincides with the off-season period and the pest will have limited access to maize crop, its preferred host. Nevertheless, in some regions, FAW spread is likely as it may feed on the off-season irrigated maize crop.

Context: FAW has spread to most parts of the country where maize is an important staple crop. It has now covered 411 out of the 800 districts, i.e. 51 percent of the territory. The total maize covered area has reached 2.7 million hectare since the beginning of November 2016. Out of this, 660.000 ha (25%) have been infested by FAW. Actions to manage the pest are on-going.

Threat category: Locusts

Threat name: Desert Locust

Likelihood of occurrence: Low

Forecast (January-March 2018): Significant activity is unlikely to occur.

Context: Numerous Desert Locust (*Schistocerca gregaria*) populations are a threat to agricultural production in Africa, the Middle East and Asia, and have a negative impact on food security. The livelihoods of at least one tenth of the world's population can be affected by this voracious insect. Desert locusts are potentially the most dangerous locust pests due to swarms' ability to fly quickly over long distances.

GABON

Threat category: Plant pests and diseases

Threat name: Banana bunchy top disease (BBTD)

Likelihood of occurrence: Moderate

Forecast (January-March 2018): Spread from the initial outbreak areas is likely.

Context: The disease is already present in various parts of the country.
Banana bunchy top disease affects the whole banana plant by causing stunting, bunchy appearance and by preventing fruit formation. If any fruit is produced, which is unusual, it will be deformed.

Threat category: Plant pests and diseases

Threat name: Fall armyworm (FAW)

Likelihood of occurrence: Moderate

Forecast (January-March 2018): At the beginning of the forecast period, FAW presence and spread are likely given that the surrounding countries are all affected, conditions are favourable (on-going cropping season), and due to FAW ability to fly long-distance (up to 140 km/night) and to colonize new areas. Then, the major season for maize, FAW favoured host, will be over and FAW is likely to survive on alternate hosts.

Context: In late July 2017, FAW infestations were reported in the Estuaire and Haut Ogooué provinces. No control measures were undertaken by the government so far and studies are on-going to confirm the status of the country.

GAMBIA

Threat category: Plant pests and diseases

Threat name: Fall armyworm (FAW)

Likelihood of occurrence: Low

Forecast (January-March 2018): During the forecast period, FAW populations will be at a low level as there will be no significant maize crops.

Context: Actions are on-going to strengthen the country's capacities in FAW management.

GHANA

Threat category: Plant pests and diseases

Threat name: Fall armyworm (FAW)

Likelihood of occurrence: Low

Forecast (January-March 2018): The forecast period is the driest season in the country. The populations of FAW will be very limited during that period.

Context: By March 2017, FAW was reported in all 10 regions.An estimate of about 110.000 ha was affected during the major maize season. According to CABI assessment, yield losses could amount up to 50 percent. Ghana is currently implementing actions to strengthen its capacity to respond to FAW.

Threat category: Animal and zoonotic diseases

Threat name: Avian influenza (AI)

Likelihood of occurrence: Moderate

Forecast (January-March 2018): H5 Highly pathogenic avian influenza (HPAI) outbreaks are likely to occur in poultry due to possible re-emergence of H5N1 HPAI virus in the country or due to the introduction of H5N8 HPAI virus from neighbouring countries and as per seasonal pattern.

Context: After its introduction in Nigeria in December 2014, H5N1 HPAI was reported in Ghana in April 2015. Last outbreak occurred in October 2016. H5N8 HPAI has been spreading globally since November 2016, following bird migratory routes. So far, H5N8 HPAI has been reported in West and Central Africa (in Cameroon, Democratic Republic of the Congo, Niger and Nigeria). *HPAI is a highly contagious disease causing high mortality in poultry resulting in severe production losses with impact on food security and trade. Avian influenza viruses can affect humans.*

Threat category: Aquatic diseases

Threat name: Tilapia lake virus (TiLV)

Likelihood of occurrence: Low

Forecast (January-March 2018): Low likelihood of TiLV occurrence.

Context: TiLV has not been reported but may be introduced and spread through live movement of infected host. TiLV occurs when water temperature is between 22 °C – 32 °C, and observed in farms with larger sized fish and high stocking density. Where unexplained mortalities of Tilapia occur, particularly when clinical signs are similar to those reported for TiLV in addition to permissive temperature, appropriate diagnostic tests should be done.

GUINEA

Threat category: Plant pests and diseases

Threat name: Fall armyworm (FAW)

Likelihood of occurrence: Low

Forecast (January-March 2018): FAW spread will be limited as the dry season has started. The pest is likely to continue its development on alternate hosts.

Context: FAW has been reported (detected in late August). Actions are on-going to strengthen the country's capacities in FAW management.

GUINEA-BISSAU

Threat category: Plant pests and diseases

Threat name: Fall armyworm (FAW)

Likelihood of occurrence: Low

Forecast (January-March 2018): The forecast period corresponds to the dry season in the country, with little maize. The pest will continue its development on alternate hosts but no spread is expected. Since the detection of FAW in the country, there has never been a favourable season for it and population numbers did not increase.

Context: FAW presence has been officially confirmed. Actions for FAW management are on-going.

KENYA

Threat category: Plant pests and diseases

Threat name: Cassava brown streak disease (CBSD)

Likelihood of occurrence: Moderate

Forecast (January-March 2018): Spread of Cassava brown streak disease is likely to occur.

Context: The disease is present in the northern part of the country at a limited scale.
This disease can cause brownish rots in tubers rendering them inedible, which leads to a severe loss of economic value. Farmers may be unaware of their infected cassava crops, until they are harvested and see the tuber lesions, as leaves might appear asymptomatic in some cases.

Threat category: Plant pests and diseases

Threat name: Cassava mosaic disease (CMD)

Likelihood of occurrence: Moderate

Forecast (January-March 2018): Spread of Cassava mosaic disease is likely to occur.

Context: The disease is present in the northern part of the country at a limited scale.
CMD is considered one of the most damaging diseases of cassava in Africa. It is caused by a virus, which causes chlorosis and distortions of the leaves that reduce yields. It is transmitted by infected cuttings and white flies.

Threat category: Plant pests and diseases

Threat name: Fall armyworm (FAW)

Likelihood of occurrence: Low

Forecast (January-March 2018): As it will be the off-season, there will be limited maize to sustain large FAW populations. FAW is likely to survive on alternate hosts with limited spread to other parts of the country.

Context: FAW has been reported in 40 out of the 47 counties (85%) in the country. Actions to manage the pest are on-going.

Threat category: Animal and zoonotic diseases

Threat name: Rift Valley fever (RVF)

Likelihood of occurrence: Moderate

Forecast (January-March 2018): Rift Valley fever (RVF) outbreaks are likely to occur due to the introduction of the virus from a neighbouring country.

Context: In late November 2017, two human cases were confirmed in Kiboga and Mityana districts, in neighbouring Uganda. RVF infections occurred in the cattle corridor between Kenya and Uganda in areas of low suitability for vector amplification, but in medium/high suitability areas for RVF spread (based on climate and expert opinion models).
Rift Valley fever (RVF) is a viral zoonosis that primarily affects animals but also has the capacity to infect humans causing severe diseases in both animals and humans. The disease also results in significant economic losses due to death and abortion among RVF-infected livestock.

Threat category: Aquatic diseases

Threat name: Tilapia lake virus (TiLV)

Likelihood of occurrence: Low

Forecast (January-March 2018): Low likelihood of TiLV occurrence.

Context: TiLV has not been reported but may be introduced and spread through live movement of infected host. TiLV occurs when water temperature is between 22 °C – 32 °C and observed in farms with larger sized fish and high stocking density. Where unexplained mortalities of Tilapia occur, particularly when clinical signs are similar to those reported for TiLV in addition to permissive temperature, appropriate diagnostic tests should be done.

LESOTHO

Threat category: Plant pests and diseases

Threat name: Fall armyworm (FAW)

Likelihood of occurrence: Moderate

Forecast (January-March 2018): As FAW is present in surrounding South Africa, introduction of this pest and its further spread are likely as it is the main maize growing season.

Context: FAW has not been reported in the country yet.

LIBERIA

Threat category: Plant pests and diseases

Threat name: Fall armyworm (FAW)

Likelihood of occurrence: Low

Forecast (January-March 2018): FAW has been found in the country recently and is causing damage on maize crop. However, the forecast period is the dry season in the country hence no further spread is expected.

Context: The country has been supported for the assessment of FAW incidence in various districts of the country and its presence is now confirmed.

LIBYA

Threat category: Plant pest and diseases

Threat name: Fall armyworm (FAW)

Likelihood of occurrence: Moderate

Forecast (January-March 2018): FAW has not been reported in the country yet, however, FAW introduction and further spread are likely to occur during the forecast period as the conditions will be favourable (growing season).

Context: FAW has not been reported in the country. It is present in neighbouring Sudan.

Threat category: Locusts

Threat name: Desert Locust

Likelihood of occurrence: Nil

Forecast (January-March 2018): Significant activity is unlikely to occur.

Context: Numerous Desert Locust (*Schistocerca gregaria*) populations are a threat to agricultural production in Africa, the Middle East and Asia, and have a negative impact on food security. The livelihoods of at least one tenth of the world's population can be affected by this voracious insect. Desert locusts are potentially the most dangerous locust pests due to swarms' ability to fly quickly over long distances.

Threat category: Animal and zoonotic diseases

Threat name: Avian influenza (AI)

Likelihood of occurrence: Moderate

Forecast (January-March 2018): H5 Highly pathogenic avian influenza (HPAI) outbreaks are likely to occur in poultry due to possible re-emergence of H5N1 HPAI virus in the country or due to the introduction of H5N8 HPAI virus from neighbouring countries.

Context: Last H5N1 HPAI in the country occurred in Tobruk area in February 2015. Since November 2016, H5N8 HPAI virus is spreading globally, following bird migratory routes. Infected birds have been reported in neighbouring Egypt (last reported in June 2017).
HPAI is a highly contagious disease causing high mortality in poultry resulting in severe production losses with impact on food security and trade. Avian influenza viruses can affect humans.

MADAGASCAR

Threat category: Plant pests and diseases

Threat name: Fall armyworm (FAW)

Likelihood of occurrence: Moderate

Forecast (January-March 2018): The main maize and rice growing seasons will continue and FAW is expected to further spread throughout the country, causing damage in maize and other cereals.

Context: The pest was first reported to be causing damage on crops in November 2017 and its presence is officially confirmed.

Threat category: Locusts

Threat name: Migratory Locust

Likelihood of occurrence: Low

Forecast (January-March 2018): A second generation of breeding of the 2017/2018 rainy season will take place that will result in an increase in locust numbers.

Context: Madagascar is prone to frequent Migratory Locust crises that affect the livelihoods and food and nutrition security of the population. The last plague occurred from April 2012 to July 2016 and threatened 13 million persons. Since then and according to information received during the 2016/2017 locust campaign, the current one (2017/2018) should be calm but no information on this campaign was received so far.

MALAWI

Threat category: Plant pests and diseases

Threat name: Fall armyworm (FAW)

Likelihood of occurrence: High

Forecast (January-March 2018): The main maize growing season will continue and FAW is expected to further spread throughout the country, causing damage in maize and other cereals.

Context: FAW presence was first reported during the 2016/2017 main rainy season (November-March). The pest caused serious damage to maize across the country and to the off-season irrigated maize (April-October) and other crops like wheat. The President has declared FAW infestations in the current 2017/2018 cropping season as a disaster. Assessments are underway to determine the severity of the situation at district level.

Threat category: Locusts

Threat name: Red Locust

Likelihood of occurrence: Moderate

Forecast (January-March 2018): Hatching followed by development of hopper bands will occur.

Context: Red Locust plagues are a major threat to agriculture in Southern Africa. Failure to control locust outbreaks during the early stages of development can result in highly mobile swarms which invade the agricultural areas and can cause major crop damage.

Threat category: Forest pests and diseases

Threat name: Blue gum chalcid

Likelihood of occurrence: High

Forecast (January-March 2018): Outbreaks of the insect Blue gum chalcid are highly likely to continue occurring in Eucalyptus nurseries and plantations.

Context: Blue gum chalcid continues to cause severe damage in nurseries and young Eucalyptus plantations in Malawi.
Blue gum chalcid (Leptocybe invasa) is a major insect pest of young Eucalypt trees and seedlings.

Threat category: Forest pests and diseases

Threat name: Red gum lerp psyllid

Likelihood of occurrence: High

Forecast (January-March 2018): Red gum lerp psyllid is highly likely to spread in Eucalyptus plantations.

Context: The combination of climate change with the general decline of forest conditions and the occurrence of Red gum lerp psyllid continue to damage plantations and small wood lots in Malawi.
Red gum lerp psyllid (Glycaspis brimblecombei) nymphs and adults feed on sugar rich phloem. Excessive feeding pressure causes premature leaf drop. Extensive and repeated defoliation events, caused by psyllid, weaken trees and cause premature deaths of highly susceptible Eucalyptus species.

MALI

Threat category: Plant pest and diseases

Threat name: Fall armyworm (FAW)

Likelihood of occurrence: Low

Forecast (January-March 2018): FAW spread will be limited during the forecast period as it will be the dry season. FAW is likely to continue its development on alternate hosts.

Context: FAW presence in the country is confirmed but not officially declared so far.

Threat category: Locusts

Threat name: Desert Locust

Likelihood of occurrence: Low

Forecast (January-March 2018): Low numbers of adults will persist in parts of the north (Adrar des Iforas); no significant developments are expected.

Context: Numerous Desert Locust (*Schistocerca gregaria*) populations are a threat to agricultural production in Africa, the Middle East and Asia, and have a negative impact on food security. The livelihoods of at least one tenth of the world's population can be affected by this voracious insect. Desert locusts are potentially the most dangerous locust pests due to swarms' ability to fly quickly over long distances.

MAURITANIA

Threat category: Locusts

Threat name: Desert Locust

Likelihood of occurrence: Low

Forecast (January-March 2018): Low numbers of adults will persist in the northwest and north; no significant developments are expected.

Context: Numerous Desert Locust (*Schistocerca gregaria*) populations are a threat to agricultural production in Africa, the Middle East and Asia, and have a negative impact on food security. The livelihoods of at least one tenth of the world's population can be affected by this voracious insect. Desert locusts are potentially the most dangerous locust pests due to swarms' ability to fly quickly over long distances.

MAURITIUS

Threat category: Plant pests and diseases

Threat name: Fall armyworm (FAW)

Likelihood of occurrence: Moderate

Forecast (January-March 2018): FAW has not been reported in the country yet, however, as FAW is present in the rest of the sub-continent, its introduction in the country is likely.

Context: FAW has not yet been reported in Mauritius.

MOROCCO

Threat category: Locusts

Threat name: Desert Locust

Likelihood of occurrence: Low

Forecast (January-March 2018): Low numbers of adults will persist in parts of Western Sahara; initial breeding could commence in March along the southern side of the Atlas Mountains; no significant developments are expected.

Context: Numerous Desert Locust (*Schistocerca gregaria*) populations are a threat to agricultural production in Africa, the Middle East and Asia, and have a negative impact on food security. The livelihoods of at least one tenth of the world's population can be affected by this voracious insect. Desert locusts are potentially the most dangerous locust pests due to swarms' ability to fly quickly over long distances.

MOZAMBIQUE

Threat category: Plant pests and diseases

Threat name: Banana fusarium wilt disease

Likelihood of occurrence: Moderate

Forecast (January-March 2018): Further spread of Fusarium wilt disease on banana is likely to occur.

Context: The disease has affected two farms in Nampula province. *Banana fusarium wilt disease is a soil-borne disease caused by a fungal pathogen that cannot be eradicated once established in the soil. The disease attacks banana plants of all ages, initially appearing with a yellowing of the leaves; it causes wilting and plant death. Infected planting materials, water and movement of infested soil particles with shoes, tools and vehicles play a major role in spread. It can remain viable in soil for decades and containment and management are challenging. Thus, prevention of the spread is crucial.*

Threat category: Plant pests and diseases

Threat name: Fall armyworm (FAW)

Likelihood of occurrence: High

Forecast (January-March 2018): The main maize growing season will continue and FAW is expected to further spread throughout the country, causing damage in maize and other cereals.

Context: FAW presence was first reported during the 2016/2017 season. The pest caused serious damage to maize across the country and to the off-season irrigated crops.

Threat category: Locusts

Threat name: Red Locust

Likelihood of occurrence: Moderate

Forecast (January-March 2018): Hatching followed by development of hopper bands will occur.

Context: Red Locust plagues are a major threat to agriculture in Southern Africa. Failure to control locust outbreaks during the early stages of development can result in highly mobile swarms which invade the agricultural areas and can cause major crop damage.

Threat category: Animal and zoonotic diseases

Threat name: Avian influenza (AI)

Likelihood of occurrence: Moderate

Forecast (January-March 2018): H5N8 HPAI is likely to occur due to the introduction of the virus from neighbouring countries.

Context: In January 2017, H5N8 HPAI virus was detected from wild birds found dead along the shores of Lake Victoria in Wakiso District (in Uganda). This is the first AI introduction in this African sub-region since 2008. In April-June 2017, the virus was detected for the first time in neighbouring Zimbabwe. *HPAI is a highly contagious disease causing high mortality in poultry resulting in severe production losses with impact on food security and trade. Avian influenza viruses can affect humans.*

Threat category: Forest pests and diseases

Threat name: Red gum lerp psyllid

Likelihood of occurrence: Moderate

Forecast (January-March 2018): Red gum lerp psyllid outbreaks are likely to continue occurring in Eucalyptus plantations.

Context: Monitoring of the pest spread is in progress. *Red gum lerp psyllid (Glycaspis brimblecombei) nymphs and adults feed on sugar rich phloem. Excessive feeding pressure causes premature leaf drop. Extensive and repeated defoliation events, caused by psyllid, weaken trees and cause premature deaths of highly susceptible Eucalyptus species.*

NAMIBIA

Threat category: Plant pests and diseases

Threat name: Fall armyworm (FAW)

Likelihood of occurrence: High

Forecast (January-March 2018): The main maize growing season will continue and FAW is expected to further spread throughout the country, causing damage in maize and other cereals.

Context: FAW presence was first reported during the 2016/2017 season. The pest caused serious damage to maize across the country and on the off-season irrigated crops.

NIGER

Threat category: Plant pest and diseases

Threat name: Fall armyworm (FAW)

Likelihood of occurrence: Low

Forecast (January-March 2018): The forecast period corresponds to the dry season in the country. Therefore, FAW will continue its development on various hosts but its spread is unlikely to occur.

Context: FAW has been reported in Tahoua (border with Nigeria) and Tillabery (border with Mali) in 2017.

Threat category: Locusts

Threat name: Desert Locust

Likelihood of occurrence: Low

Forecast (January-March 2018): Low numbers of adults will persist in the parts of the north (Air Mountains); no significant developments are expected.

Context: Numerous Desert Locust (*Schistocerca gregaria*) populations are a threat to agricultural production in Africa, the Middle East and Asia, and have a negative impact on food security. The livelihoods of at least one tenth of the world's population can be affected by this voracious insect. Desert locusts are potentially the most dangerous locust pests due to swarms' ability to fly quickly over long distances.

Threat category: Animal and zoonotic diseases

Threat name: Avian influenza (AI)

Likelihood of occurrence: Moderate

Forecast (January-March 2018): H5N1 and H5N8 HPAI outbreaks in poultry are likely to occur due to further spread of the viruses within the country as per seasonal pattern.

Context: After its introduction in Nigeria in December 2014, H5N1 HPAI has been detected in the country sporadically, lastly (in January 2017) in Niamey region, in several poultry farms. The same area experienced the first introduction of H5N8 HPAI virus which is spreading globally, following bird migratory routes. *HPAI is a highly contagious disease causing high mortality in poultry resulting in severe production losses with impact on food security and trade. Avian influenza viruses can affect humans.*

NIGERIA

Threat category: Plant pest and diseases

Threat name: Fall armyworm (FAW)

Likelihood of occurrence: Low

Forecast (January-March 2018): The major maize season is over and the dry season has started. As there will be no significant maize crops, FAW populations will be at their lowest levels and their spread is unlikely to occur.

Context: FAW was reported in 2016. The information indicates a widespread infestation of FAW on maize affecting about 700.000 ha of farmlands during the last major season. Actions are being implemented to strengthen pest management capacity in the country.

Threat category: Animal and zoonotic diseases

Threat name: Avian influenza (AI)

Likelihood of occurrence: Moderate

Forecast (January-March 2018): H5N1 and H5N8 Highly pathogenic avian influenza (HPAI) outbreaks in poultry are likely to occur as per seasonal pattern.

Context: H5N1 HPAI virus has been circulating in Central and West Africa since December 2014 and Nigeria was the most affected country with over 790 outbreaks reported in poultry in 26 States. The most recent outbreak was reported at the end of May 2017. H5N8 HPAI has been spreading globally since November 2016, following bird migratory routes. In Nigeria, three outbreaks of H5N8 HPAI were reported between November 2016 and August 2017 (Kano and Ogun States). So far, H5N8 HPAI has been reported in West and Central Africa (in Cameroon, Democratic Republic of the Congo, Niger and Nigeria). *HPAI is a highly contagious disease causing high mortality in poultry resulting in severe production losses with impact on food security and trade. Avian influenza viruses can affect humans.*

Threat category: Aquatic diseases

Threat name: Tilapia lake virus (TiLV)

Likelihood of occurrence: Low

Forecast (January-March 2018): Low likelihood of TiLV occurrence.

Context: TiLV has not been reported but may be introduced and spread through live movement of infected host. TiLV occurs when water temperature is between 22 °C – 32 °C, and observed in farms with larger sized fish and high stocking density. Where unexplained mortalities of Tilapia occur, particularly when clinical signs are similar to those reported for TiLV in addition to permissive temperature, appropriate diagnostic tests should be done.

RWANDA

Threat category: Plant pests and diseases

Threat name: Cassava brown streak disease (CBSD)

Likelihood of occurrence: Moderate

Forecast (January-March 2018): Spread of Cassava brown streak disease is likely to occur.

Context: The disease is already present in the country. *This disease can cause brownish rots in tubers rendering them inedible, which leads to a severe loss of economic value. Farmers may be unaware of their infected cassava crops, until they are harvested and see the tuber lesions, as leaves might appear asymptomatic in some cases.*

Threat category: Plant pests and diseases

Threat name: Cassava mosaic disease (CMD)

Likelihood of occurrence: Moderate

Forecast (January-March 2018): Spread of Cassava mosaic disease is likely to occur.

Context: The disease is already affecting cassava production in the country. *CMD is considered one of the most damaging diseases of cassava in Africa. It is caused by a virus, which causes chlorosis and distortions of the leaves that reduce yields. It is transmitted by infected cuttings and white flies.*

Threat category: Plant pests and diseases

Threat name: Fall armyworm (FAW)

Likelihood of occurrence: Low

Forecast (January-March 2018): As it will be the off-season, there will be limited maize to sustain large FAW populations. FAW is likely to survive on alternate hosts with limited spread to other parts of the country.

Context: In Rwanda, the pest has infested all the 30 districts of the country.

Threat category: Animal and zoonotic diseases

Threat name: Avian influenza (AI)

Likelihood of occurrence: Moderate

Forecast (January-March 2018): H5N8 HPAI outbreaks are likely to occur in poultry due to introduction of the virus from neighbouring countries.

Context: H5N8 HPAI outbreaks have been reported in Eastern Africa (Uganda), and in Central Africa (Democratic Republic of the Congo) in 2017.
HPAI is a highly contagious disease causing high mortality in poultry resulting in severe production losses with impact on food security and trade. Avian influenza viruses can affect humans.

Threat category: Forest pests and diseases

Threat name: Bronze bug

Likelihood of occurrence: High

Forecast (January-March 2018): The insect pest Bronze bug is highly likely to spread in Eucalyptus plantations.

Context: Results of a survey to identify damages by the Bronze bug indicate that this insect pest poses a serious threat to Eucalyptus forestry in Rwanda.
Bronze bug (Thaumastocoris peregrinus) is a serious sap-sucking insect pest native to Australia. It is infesting Eucalyptus plantations in Europe, Southern Africa and South America. Severe infestations of this pest result in leaf senescence, leaf loss, thinning tree canopies, and branch dieback.

Threat category: Forest pests and diseases

Threat name: Red gum lerp psyllid

Likelihood of occurrence: Moderate

Forecast (January-March 2018): Red gum lerp psyllid outbreaks are likely to continue occurring in Eucalyptus plantations.

Context: This pest has continued to damage Eucalyptus plantations since 2015 in Rwanda. The survey conducted in November 2017 shows that the spread is likely to be high in 2018.
Red gum lerp psyllid (Glycaspis brimblecombei) nymphs and adults feed on sugar rich phloem. Excessive feeding pressure causes premature leaf drop. Extensive and repeated defoliation events, caused by psyllid, weaken trees and cause premature deaths of highly susceptible eucalyptus species.

SAO TOME AND PRINCIPE

Threat category: Plant pests and diseases

Threat name: Fall armyworm (FAW)

Likelihood of occurrence: Moderate

Forecast (January-March 2018): At the beginning of the forecast period, Fall Armyworm (FAW) will spread throughout the country as conditions are favourable (on-going cropping season). Then, the major season for maize, FAW favoured host, will be over and FAW is likely to survive on alternate hosts. However, early warning and control measures are in place to manage the pest resurgence.

Context: It was the first country in Central Africa to report FAW infestations in April 2016. Actions have been implemented and succeeded in managing the pest population. This brought back hope to the maize farmers.

SENEGAL

Threat category: Plant pests and diseases

Threat name: Fall armyworm (FAW)

Likelihood of occurrence: Low

Forecast (January-March 2018): FAW is unlikely to spread in Senegal as it will be the dry period, i.e. no significant maize crops.

Context: FAW has been reported in the country and actions are implemented to manage the pest.

Threat category: Locusts

Threat name: Desert Locust

Likelihood of occurrence: Nil

Forecast (January-March 2018): Significant activity is unlikely to occur.

Context: Numerous Desert Locust (*Schistocerca gregaria*) populations are a threat to agricultural production in Africa, the Middle East and Asia, and have a negative impact on food security. The livelihoods of at least one tenth of the world's population can be affected by this voracious insect. Desert locusts are potentially the most dangerous locust pests due to swarms' ability to fly quickly over long distances.

Threat category: Animal and zoonotic diseases

Threat name: Avian influenza (AI)

Likelihood of occurrence: Moderate

Forecast (January-March 2018): H5 HPAI are likely to occur due to the introduction of viruses from neighbouring countries.

H9 LPAI outbreaks are likely to occur in poultry as per seasonal pattern.

Context: Since December 2014, H5N1 HPAI is circulating in Western Africa and since October-November 2016, H5N8 HPAI virus has been reported in Cameroon, Democratic Republic of the Congo, Niger and Nigeria. In April 2017, H9 LPAI was detected in poultry in Thies region. This is the first AI introduction detected in Senegal ever.
HPAI is a highly contagious disease causing high mortality in poultry resulting in severe production losses with impact on food security and trade. Avian influenza viruses can affect humans.

SEYCHELLES

Threat category: Plant pests and diseases

Threat name: Fall armyworm (FAW)

Likelihood of occurrence: Low

Forecast (January-March 2018): FAW numbers will increase but its spread throughout the country will be limited due to the limited production of maize in the country.

Context: FAW was first reported on maize around August 2017 and after sample analyses, its presence has been officially confirmed.

SIERRA LEONE

Threat category: Plant pests and diseases

Threat name: Fall armyworm (FAW)

Likelihood of occurrence: Low

Forecast (January-March 2018): Although the presence of FAW has been recently reported in all regions of the country, but since the forecast period corresponds to the dry season, no further spread is expected.

Context: The presence of FAW in all the regions of the country has been recently reported. Management actions will be implemented.

SOMALIA

Threat category: Plant pests and diseases

Threat name: Fall armyworm (FAW)

Likelihood of occurrence: Moderate

Forecast (January-March 2018): The forecast period coincides with the off-season period and the pest will have limited access to maize and sorghum crop. Nevertheless, in the south, FAW spread is likely as it may feed on the off-season irrigated crops.

Context: Pest has been reported in Somalia but its distribution and impact still need to be assessed.

Threat category: Locusts

Threat name: Desert Locust

Likelihood of occurrence: Moderate

Forecast (January-March 2018): Small-scale breeding will cause locust numbers to increase slightly on the northwest coast if rainfall occurs.

Context: Numerous Desert Locust (*Schistocerca gregaria*) populations are a threat to agricultural production in Africa, the Middle East and Asia, and have a negative impact on food security. The livelihoods of at least one tenth of the world's population can be affected by this voracious insect. Desert locusts are potentially the most dangerous locust pests due to swarms' ability to fly quickly over long distances.

SOUTH AFRICA

Threat category: Plant pests and diseases

Threat name: Fall armyworm (FAW)

Likelihood of occurrence: Moderate

Forecast (January-March 2018): The main maize growing season will continue and FAW is expected to further spread throughout the country, causing considerable damage during this forecast period.

Context: FAW presence was first reported during the 2016/2017 season. The pest caused serious damage to maize across the country. South Africa has institutional response capacities, which are expected to moderate the impact of the pest in the short run.

Threat category: Animal and zoonotic diseases

Threat name: Avian influenza (AI)

Likelihood of occurrence: Moderate

Forecast (January-March 2018): H5N8 HPAI outbreaks are likely to occur in poultry due to further spread of the virus within the country as per seasonal pattern.

Context: In June 2017, H5N8 HPAI virus was detected for the first time in a commercial farm (in Mpumalanga region). Since then, additional outbreaks and infections continued to be observed, both in wild and domestic birds, in seven different regions of the country.
HPAI is a highly contagious disease causing high mortality in poultry resulting in severe production losses with impact on food security and trade. Avian influenza viruses can affect humans.

Threat category: Forest pests and diseases

Threat name: Blue gum chalcid

Likelihood of occurrence: Moderate

Forecast (January-March 2018): Blue gum chalcid outbreaks are likely to continue occurring in Eucalyptus nurseries and young plantations.

Context: Application of biological control agents to reduce the pest population is in progress in affected areas of South Africa. *Blue gum chalcid (Leptocybe invasa) is a major insect pest of young Eucalyptus trees and seedlings.*

SOUTH SUDAN

Threat category: Plant pests and diseases

Threat name: Fall armyworm (FAW)

Likelihood of occurrence: Low

Forecast (January-March 2018): As it will be the off-season, there will be limited maize to sustain large FAW populations. FAW is likely to survive on alternate hosts with limited spread to other parts of the country.

Context: In South Sudan, the pest has been reported in 24 locations in seven out of the 10 States.

SUDAN

Threat category: Plant pests and diseases

Threat name: Fall armyworm (FAW)

Likelihood of occurrence: Moderate

Forecast (January-March 2018): As maize and sorghum have been harvested, FAW is likely to continue its development on alternate hosts but its spread will be limited.

Context: FAW is reported in the Sudan, but the country is awaiting the result of molecular identification to officially confirm it. The pest has been detected in several states: Blue Nile, Gedaref, Karthoum, River Nile and Sinnar. The level of damages has not been confirmed yet. Surveillance emergency management actions have been provided in Sudan and 500 pheromone trap kits will be provided to help monitor the situation for the next three months.

Threat category: Locusts

Threat name: Desert Locust

Likelihood of occurrence: Moderate

Forecast (January-March 2018): Small-scale breeding along the Red Sea coast and in subcoastal areas will cause locust numbers to increase slightly.

Context: Numerous Desert Locust (*Schistocerca gregaria*) populations are a threat to agricultural production in Africa, the Middle East and Asia, and have a negative impact on food security. The livelihoods of at least one tenth of the world's population can be affected by this voracious insect. Desert locusts are potentially the most dangerous locust pests due to swarms' ability to fly quickly over long distances.

SWAZILAND

Threat category: Plant pests and diseases

Threat name: Fall armyworm (FAW)

Likelihood of occurrence: High

Forecast (January-March 2018): The main maize and sorghum growing seasons will continue and FAW is expected to further spread throughout the country, causing damage on these two main crops.

Context: FAW presence was first reported during the 2016/2017 season. The pest caused serious damage on sorghum, millet and maize across the country.

TOGO

Threat category: Plant pest and diseases

Threat name: Fall armyworm (FAW)

Likelihood of occurrence: Low

Forecast (January-March 2018): During the forecast period, dry season will be prevailing, therefore even with some maize remaining along the rivers, it will not be enough to feed large FAW populations. FAW is likely to continue its development on alternate hosts but its spread is unlikely.

Context: FAW was detected in samples from Togo in 2016 and is currently present in all maize growing regions of the country.

Threat category: Animal and zoonotic diseases

Threat name: Avian influenza (AI)

Likelihood of occurrence: Moderate

Forecast (January-March 2018): H5 Highly pathogenic avian influenza (HPAI) outbreaks are likely to occur in poultry due to possible re-emergence of H5N1 HPAI virus in the country or due to the introduction of H5N8 HPAI virus from neighbouring countries and due to seasonal pattern.

Context: Following the H5N1 HPAI virus introduction in Nigeria in 2014, the virus was detected also in Togo in August 2016. The last H5N1 HPAI outbreak was reported in June 2017 (Maritime Region). H5N8 HPAI has been spreading globally since November 2016, following bird migratory routes. So far, H5N8 HPAI has been reported in West and Central Africa (in Cameroon, Democratic Republic of the Congo, Niger and Nigeria). *HPAI is a highly contagious disease causing high mortality in poultry resulting in severe production losses with impact on food security and trade. Avian influenza viruses can affect humans.*

UGANDA

Threat category: Plant pests and diseases

Threat name: Cassava brown streak disease (CBSD)

Likelihood of occurrence: Moderate

Forecast (January-March 2018): Spread of Cassava brown streak disease is likely to occur

Context: The disease is already present in the country.
This disease can cause brownish rots in tubers rendering them inedible, which leads to a severe loss of economic value. Farmers may be unaware of their infected cassava crops, until they are harvested and see the tuber lesions, as leaves might appear asymptomatic in some cases.

Threat category: Plant pests and diseases

Threat name: Cassava mosaic disease (CMD)

Likelihood of occurrence: Moderate

Forecast (January-March 2018): Spread of Cassava mosaic disease is likely to occur.

Context: The disease is already affecting cassava production in the country.
CMD is considered one of the most damaging diseases of cassava in Africa. It is caused by a virus, which causes chlorosis and distortions of the leaves that reduce yields. It is transmitted by infected cuttings and white flies.

Threat category: Plant pests and diseases

Threat name: Fall armyworm (FAW)

Likelihood of occurrence: Low

Forecast (January-March 2018): As it will be the off-season, there will be limited maize to sustain large FAW populations. FAW is likely to survive on alternate hosts with limited spread to other parts of the country.

Context: In Uganda, the pest is confirmed in 115 districts out of the 144 districts, i.e. 80 percent of the territory.

Threat category: Animal and zoonotic diseases

Threat name: Avian influenza (AI)

Likelihood of occurrence: Moderate

Forecast (January-March 2018): H5N8 HPAI outbreaks are likely to occur in poultry due to re-emergence of the virus within the country as per seasonal pattern.

Context: In January 2017, H5N8 HPAI virus was detected from wild birds found dead (along the shores of Lake Victoria in Wakiso District). It is the first AI introduction in Uganda, and the first one in this African sub-region since 2008. The disease was last reported in the country in May 2017.
HPAI is a highly contagious disease causing high mortality in poultry resulting in severe production losses with impact on food security and trade. Avian influenza viruses can affect humans.

Threat category: Animal and zoonotic diseases

Threat name: Rift Valley fever (RVF)

Likelihood of occurrence: Moderate

Forecast (January-March 2018): Rift Valley fever (RVF) outbreaks are likely to occur.

Context: The disease is sporadically reported in the country, usually after heavy rainy period, which represent favourable conditions for the vector. In late November 2017, three human cases were confirmed in Kiruhura, Kiboga and Mityana districts. As of 20 December 2017, seropositivity was detected in livestock in the affected districts. The current RVF infections occurred within the cattle corridor between Kenya and Uganda in areas of low suitability for vector amplification, but in medium/high suitability areas for RVF spread (based on climate and expert opinion models).
Rift Valley fever (RVF) is a viral zoonosis that primarily affects animals but also has the capacity to infect humans causing severe diseases in both animals and humans. The disease also results in significant economic losses due to death and abortion among RVF-infected livestock.

Threat category: Aquatic diseases

Threat name: Tilapia lake virus (TiLV)

Likelihood of occurrence: Low

Forecast (January-March 2018): Low likelihood of TiLV occurrence.

Context: TiLV has not been reported but may be introduced and spread through live movement of infected host. TiLV occurs when water temperature is between 22 °C – 32 °C, and observed in farms with larger sized fish and high stocking density. Where unexplained mortalities of Tilapia occur, particularly when clinical signs are similar to those reported for TiLV in addition to permissive temperature, appropriate diagnostic tests should be done.

Threat category: Forest pests and diseases

Threat name: Blue gum chalcid

Likelihood of occurrence: Moderate

Forecast (January-March 2018): Blue gum chalcid is likely to spread in Eucalyptus nurseries and plantations.

Context: This pest is currently causing severe damage in Eucalyptus nurseries, woodlots and plantations. Management options of the pest are being provided to farmers.
Blue gum chalcid (Leptocybe invasa) is a major insect pest of young Eucalyptus trees and seedlings.

UNITED REPUBLIC OF TANZANIA

Threat category: Plant pests and diseases

Threat name: Cassava brown streak disease (CBSD)

Likelihood of occurrence: Moderate

Forecast (January-March 2018): Spread of Cassava brown streak disease is likely to occur.

Context: The disease is already present in the country.
This disease can cause brownish rots in tubers rendering them inedible, which leads to a severe loss of economic value. Farmers may be unaware of their infected cassava crops, until they are harvested and see the tuber lesions, as leaves might appear asymptomatic in some cases.

Threat category: Plant pests and diseases

Threat name: Cassava mosaic disease (CMD)

Likelihood of occurrence: Moderate

Forecast (January-March 2018): Spread of Cassava mosaic disease is likely to occur.

Context: The disease is already affecting cassava production in the country.
CMD is considered one of the most damaging diseases of cassava in Africa. It is caused by a virus, which causes chlorosis and distortions of the leaves that reduce yields. It is transmitted by infected cuttings and white flies.

Threat category: Plant pests and diseases

Threat name: Fall armyworm (FAW)

Likelihood of occurrence: High

Forecast (January-March 2018): The main maize growing season will continue and FAW is expected to further spread throughout the country, causing damage in maize and other cereals.

Context: FAW presence was first reported during the 2016/2017 season. The pest caused serious damage to maize across the country.

Threat category: Locusts

Threat name: Red Locust

Likelihood of occurrence: Low

Forecast (January-March 2018): Hatching followed by development of hopper bands will occur.

Context: Red Locust plagues are a major threat to agriculture in Southern Africa. Failure to control locust outbreaks during the early stages of development can result in highly mobile swarms which invade the agricultural areas and can cause major crop damage.

Threat category: Animal and zoonotic diseases

Threat name: Avian influenza (AI)

Likelihood of occurrence: Moderate

Forecast (January-March 2018): H5N8 HPAI outbreaks are likely to occur in poultry due to introduction of the virus from neighbouring countries.

Context: H5N8 HPAI outbreaks have been reported in Eastern Africa (Uganda), and in Central Africa (Democratic Republic of the Congo) in 2017.
HPAI is a highly contagious disease causing high mortality in poultry resulting in severe production losses with impact on food security and trade. Avian influenza viruses can affect humans.

Threat category: Forest pests and diseases

Threat name: Blue gum chalcid

Likelihood of occurrence: Moderate

Forecast (January-March 2018): Blue gum chalcid is likely to spread in Eucalyptus nurseries and plantations.

Context: Damage continues in Eucalyptus nurseries, woodlots and plantations due to this pest.
Blue gum chalcid (Leptocybe invasa) is a major insect pest of young Eucalyptus trees and seedlings.

ZAMBIA

Threat category: Plant pests and diseases

Threat name: Fall armyworm (FAW)

Likelihood of occurrence: High

Forecast (January-March 2018): The main maize growing season will continue and FAW is expected to further spread throughout the country, causing damage in maize and other cereals.

Context: FAW presence was first reported during the 2016/2017 season. The pest caused serious damage to maize across the country and on the off-season irrigated crops.

Threat category: Locusts

Threat name: Red Locust

Likelihood of occurrence: Moderate

Forecast (January-March 2018): Hatching followed by development of hopper bands will occur.

Context: Red Locust plagues are a major threat to agriculture in Southern Africa. Failure to control locust outbreaks during the early stages of development can result in highly mobile swarms which invade the agricultural areas and can cause major crop damage.

Threat category: Animal and zoonotic diseases

Threat name: Avian influenza (AI)

Likelihood of occurrence: Moderate

Forecast (January-March 2018): H5N8 HPAI is likely to occur due to the introduction of the virus from neighbouring countries.

Context: In January 2017, H5N8 HPAI virus was detected from wild birds found dead along the shores of Lake Victoria in Wakiso District (in Uganda). This is the first AI introduction in this African sub-region since 2008. In April-June 2017, the virus was detected for the first time in the neighbouring Democratic Republic of the Congo and Zimbabwe.
HPAI is a highly contagious disease causing high mortality in poultry resulting in severe production losses with impact on food security and trade. Avian influenza viruses can affect humans.

Threat category: Aquatic diseases

Threat name: Tilapia lake virus (TiLV)

Likelihood of occurrence: Low

Forecast (January-March 2018): Low likelihood of TiLV occurrence.

Context: TiLV has not been reported but may be introduced and spread through live movement of infected host.TiLV occurs when water temperature is between 22 °C – 32 °C, and observed in farms with larger sized fish and high stocking density. Where unexplained mortalities of Tilapia occur, particularly when clinical signs are similar to those reported for TiLV in addition to permissive temperature, appropriate diagnostic tests should be done.

Threat category: Forest pests and diseases

Threat name: Blue gum chalcid

Likelihood of occurrence: Moderate

Forecast (January-March 2018): Spread of the insect Blue gum chalcid is likely to continue occurring in Eucalyptus nurseries and plantations.

Context: Zambia has initiated pest management activities based on silvicultural practices, breeding programmes, and quarantine measures to reduce insect populations. Introduction of biological control agents to reduce the Blue gum chalcid population is in progress.
Blue gum chalcid (Leptocybe invasa) is a major insect pest of young Eucalyptus trees and seedlings.

Threat category: Forest pests and diseases

Threat name: Red gum lerp psyllid

Likelihood of occurrence: Moderate

Forecast (January-March 2018): Spread of Red gum lerp psyllid is likely to continue in Eucalyptus plantations.

Context: Pest management activities based on silvicultural practices are in progress.
Red gum lerp psyllid (Glycaspis brimblecombei) nymphs and adults feed on sugar rich phloem. Excessive feeding pressure causes premature leaf drop. Extensive and repeated defoliation events, caused by psyllid, weaken trees and cause premature deaths of highly susceptible eucalyptus species.

ZIMBABWE

Threat category: Plant pests and diseases

Threat name: Fall armyworm (FAW)

Likelihood of occurrence: High

Forecast (January-March 2018): The main maize growing season will continue and FAW is expected to further spread throughout the country, causing damage in maize and other cereals.

Context: FAW presence was first reported during the 2016/2017 season. The pest caused serious damage to maize across the country and on the off-season irrigated crops.

Threat category: Animal and zoonotic diseases

Threat name: Avian influenza (AI)

Likelihood of occurrence: Moderate

Forecast (January-March 2018): H5N8 HPAI outbreaks are likely to occur in poultry as per seasonal pattern.

Context: In May 2017, H5N8 HPAI virus was detected for the first time in a big commercial Lanark farm in Mashonaland region. No new outbreaks were reported after this event.
HPAI is a highly contagious disease causing high mortality in poultry resulting in severe production losses with impact on food security and trade. Avian influenza viruses can affect humans.

Threat category: Aquatic diseases

Threat name: Tilapia lake virus (TiLV)

Likelihood of occurrence: Low

Forecast (January-March 2018): Low likelihood of TiLV occurrence.

Context: TiLV has not been reported but may be introduced and spread through live movement of infected host.TiLV occurs when water temperature is between 22 °C – 32 °C, and observed in farms with larger sized fish and high stocking density. Where unexplained mortalities of Tilapia occur, particularly when clinical signs are similar to those reported for TiLV in addition to permissive temperature, appropriate diagnostic tests should be done.

Threat category: Forest pests and diseases

Threat name: Blue gum chalcid

Likelihood of occurrence: Moderate

Forecast (January-March 2018): Spread of Blue gum chalcid is likely to occur in Eucalyptus nurseries, woodlots and plantations.

Context: Pest management activities based on application of biological control agents are in progress to reduce pest populations.
Blue gum chalcid (Leptocybe invasa) is a major insect pest of young Eucalyptus trees and seedlings.

Threat category: Forest pests and diseases

Threat name: Red gum lerp psyllid

Likelihood of occurrence: Moderate

Forecast (January-March 2018): Spread of Red gum lerp psyllid is likely to occur in Eucalyptus plantations.

Context: Pest management activities based on silvicultural practices are in progress.
Red gum lerp psyllid (Glycaspis brimblecombei) nymphs and adults feed on sugar rich phloem. Excessive feeding pressure causes premature leaf drop. Extensive and repeated defoliation events, caused by psyllid, weaken trees and cause premature deaths of highly susceptible Eucalyptus species.

AMERICAS

BRAZIL

Threat category: Aquatic diseases

Threat name: Tilapia lake virus (TiLV)

Likelihood of occurrence: Low

Forecast (January-March 2018): Low likelihood of TiLV occurrence.

Context: TiLV has not been reported and there are no importations of tilapia. Where unexplained mortalities of Tilapia occur, particularly when clinical signs are similar to those reported for TiLV in addition to permissive temperature, appropriate diagnostic tests should be done.

COLOMBIA

Threat category: Animal and zoonotic diseases

Threat name: Foot-and-mouth disease (FMD)

Likelihood of occurrence: Low

Forecast (January-March 2018): FMD serotype O outbreaks are unlikely to occur.

Context: In June 2017, a FMD serotype O outbreak occurred in cattle in Cundinamarca region. This represented the first re-occurrence of the disease after 2009 when the country achieved the status of country free from FMD from OIE. After this first new outbreak, additional seven outbreaks were reported in three regions of the country until the 20th of July. For the time being, no information about the source of this infection are available and no new outbreaks were observed.
FMD is a highly contagious disease among cattle, buffalo, sheep and pigs and can cause a sharp drop in milk and meat production and mortality in young animals. It is the most restrictive animal disease for livestock trade.

Threat category: Aquatic diseases

Threat name: Tilapia lake virus (TiLV)

Likelihood of occurrence: Low

Forecast (January-March 2018): Low likelihood of TiLV occurrence.

Context: TiLV has been reported in Colombia in the scientific literature and mitigation measures in place. TiLV occurs when water temperature is between 22 °C – 32 °C and observed in farms with larger sized fish and high stocking density.

COSTA RICA

Threat category: Aquatic diseases

Threat name: Tilapia lake virus (TiLV)

Likelihood of occurrence: Low

Forecast (January-March 2018): Low likelihood of TiLV occurrence.

Context: TiLV has not been reported in Costa Rica. Where unexplained mortalities of Tilapia occur, particularly when clinical signs are similar to those reported for TiLV in addition to permissive temperature, appropriate diagnostic tests should be done.

GUATEMALA

Threat category: Forest pests and diseases

Threat name: Bark beetles

Likelihood of occurrence: Moderate

Forecast (January-March 2018): Bark beetles (mainly *Dendroctonus frontalis*) damage in pine plantations is likely to continue.

Context: Silvicultural practices to reduce pest populations are in progress. Training of foresters on prevention and management practices is underway.
The adults and larvae of Dendroctonus spp. *are bark-feeding. Flight activity of* D. frontalis *is almost continuous throughout the year in meso America. In general, it attacks stressed trees.*

HONDURAS

Threat category: Aquatic diseases

Threat name: Tilapia lake virus (TiLV)

Likelihood of occurrence: Low

Forecast (January-March 2018): Low likelihood of TiLV occurrence.

Context: TiLV has not been reported in Honduras. Where unexplained mortalities of Tilapia occur, particularly when clinical signs are similar to those reported for TiLV in addition to permissive temperature, appropriate diagnostic tests should be done.

Threat category: Forest pests and diseases

Threat name: Bark beetles

Likelihood of occurrence: Moderate

Forecast (January-March 2018): Bark beetles (mainly *Dendroctonus frontalis*) outbreaks, causing heavy losses in pine plantations, are likely to occur and will continue to be reported.

Context: Bark beetles affect about 500.000 ha of conifer forests in Honduras. Training of foresters on prevention and management practices is in progress.
The adults and larvae of Dendroctonus spp. *are bark-feeding. Flight activity of* D. frontalis *is almost continuous throughout the year in meso America. In general, it attacks stressed trees.*

MEXICO

Threat category: Aquatic_diseases

Threat name: Tilapia lake virus (TiLV)

Likelihood of occurrence: Low

Forecast (January-March 2018): Low likelihood of TiLV occurrence.

Context: TiLV has not been reported in Mexico, but may be introduced through live movement of infected host. Mexico is top tilapia producer in Latin America and the Caribbean. TiLV occurs when water temperature is between 22 °C – 32 °C (as experienced for example in Israel) and observed in farms with larger sized fish and high stocking density. Where unexplained mortalities of Tilapia occur, particularly when clinical signs are similar to those reported for TiLV in addition to permissive temperature, appropriate diagnostic tests should be done.

NICARAGUA

Threat category: Forest pests and diseases

Threat name: Bark beetles

Likelihood of occurrence: High

Forecast (January-March 2018): It is highly likely that Bark beetles (*Dendroctonus frontalis*) continue to cause damage in pine plantations.

Context: Pest management activities based on silvicultural practices are in progress.
The adults and larvae of Dendroctonus spp. *are bark-feeding. Flight activity of* D. frontalis *is almost continuous throughout the year in meso America. In general, it attacks stressed trees.*

ASIA

AFGHANISTAN

Threat category: Locusts

Threat name: Moroccan Locust

Likelihood of occurrence: Low

Forecast (January-March 2018): Hatching should start in March.

Context: Locust pests attack a wide range of cultivated plants in Caucasus and Central Asia and can cause severe damage, thus jeopardizing food security and livelihood of the rural populations. This species is one of the three locust pests in Central Asia. The Italian Locust is also present in the country but was not reported as a pest in 2017.

ARMENIA

Threat category: Locusts

Threat name: Italian Locust

Likelihood of occurrence: Nil

Forecast (January-March 2018): No developments are expected as hatching will start after the forecast period.

Context: Locust pests attack a wide range of cultivated plants in Caucasus and Central Asia and can cause severe damage, thus jeopardizing food security and livelihood of the rural populations. The Italian Locust is one of the two locust pests in Caucasus.

AZERBAIJAN

Threat category: Locusts

Threat name: Moroccan Locust

Likelihood of occurrence: Nil

Forecast (January-March 2018): No developments are expected as hatching will start after the forecast period.

Context: Locust pests attack a wide range of cultivated plants in Caucasus and Central Asia and can cause severe damage, thus jeopardizing food security and livelihood of the rural populations. The Moroccan Locust is one of the two locust pests in Caucasus. The Italian Locust is also present in the country but was not reported as a pest in 2017.

BANGLADESH

Threat category: Aquatic diseases

Threat name: Tilapia lake virus (TiLV)

Likelihood of occurrence: Low

Forecast (January-March 2018): Low likelihood of TiLV occurrence.

Context: TiLV has not been reported in Bangladesh but it may be introduced through live movement of infected host. Where unexplained mortalities of Tilapia occur, particularly when clinical signs are similar to those reported for TiLV in addition to permissive temperature, appropriate diagnostic tests should be done.

CAMBODIA

Threat category: Animal and zoonotic diseases

Threat name: Avian influenza (AI)

Likelihood of occurrence: Moderate

Forecast (January-March 2018): H5 Highly pathogenic avian influenza (HPAI) outbreaks are likely to occur as per seasonal pattern.

Context: Since 2013, H5N1 HPAI has widely circulated in the country affecting poultry and causing 57 infections in humans. In 2017, two outbreaks caused by the virus were reported, the latter occurring in Kampong Kham province in November. Since November 2017, a new re-assortant strain of H5N6 HPAI is circulating in the region (in Japan, Republic of Korea and Taiwan, Province of China).
HPAI is a highly contagious disease causing high mortality in poultry resulting in severe production losses with impact on food security and trade. Avian influenza viruses can affect humans.

CHINA

Threat category: Animal and zoonotic diseases

Threat name: Avian influenza (AI)

Likelihood of occurrence: Moderate

Forecast (January-March 2018): H5 and H7 HPAI and LPAI viruses outbreaks in poultry are likely to occur as well as sporadic avian influenza human cases due to H5 HPAI and to H7N9 LPAI viruses and as per seasonal pattern.

Context: Several serotypes of HPAI and LPAI viruses are circulating and being detected in China. The occurrence of outbreaks in poultry and of human cases usually follows a seasonal pattern, with a peak observed between January and February. This fifth wave of H7N9 was the first time in which H7N9 viruses have evolved from a low pathogenic into a highly pathogenic avian virus. Additionally, in late November 2017, Taiwan, Province of China, reported a variant H5N6 highly pathogenic avian influenza (HPAI) strain found in wild birds. In Japan and, in Republic of Korea it was found in the environment and domestic ducks only. The genetic analysis of the new circulating strain revealed it as a new re-assortant strain, which can heavily affect poultry.
HPAI is a highly contagious disease causing high mortality in poultry resulting in severe production losses with impact on food security and trade. Avian influenza viruses can affect humans.

Threat category: Aquatic diseases

Threat name: Tilapia lake virus (TiLV)

Likelihood of occurrence: Low

Forecast (January-March 2018): Low likelihood of TiLV occurrence.

Context: TiLV has not been reported in China but it may be introduced and spread through live movement of infected host. Mitigation measures are in place. TiLV occurs when water temperature is between 22 °C – 32 °C and observed in farms with larger sized fish and high stocking density. Where unexplained mortalities of Tilapia occur, particularly when clinical signs are similar to those reported for TiLV in addition to permissive temperature, appropriate diagnostic tests should be done.

CYPRUS

Threat category: Animal and zoonotic diseases

Threat name: Avian influenza (AI)

Likelihood of occurrence: Moderate

Forecast (January-March 2018): H5N8 HPAI outbreaks are likely to occur due to the re-emergence of the virus in the country as per seasonal pattern.

Context: Since November 2016, a H5N8 HPAI virus threat is spreading globally following bird migratory routes.
In September 2017, H5N8 HPAI was detected on a dead wild bird for the first time in the country. No new findings were reported after this event.
HPAI is a highly contagious disease causing high mortality in poultry resulting in severe production losses with impact on food security and trade. Avian influenza viruses can affect humans.

GAZA STRIP

Threat category: Animal and zoonotic diseases

Threat name: Foot-and-mouth disease (FMD)

Likelihood of occurrence: Moderate

Forecast (January-March 2018): Further spread of FMD serotype O is likely to occur while possible introduction of serotype A from neighbouring country is unlikely.

Context: In February 2017, a FMD serotype O introduction was reported in two farms at the border with Israel and Egypt. A total of five outbreaks were observed. Vaccination was carried out. A FMD outbreak serotype A was also detected in a cattle farm in May 2017 in Israel (Aramsha, Northern district). The episode is of concern to Gaza strip and neighbouring countries because poor vaccine matching is available so far. Last FMD outbreaks observed in the region occurred in November and December 2017 in West Bank, but serotype identification is still pending.
FMD is a highly contagious disease among cattle, buffalo, sheep and pigs and can cause a sharp drop in milk and meat production and mortality in young animals. It is the most restrictive animal disease for livestock trade.

GEORGIA

Threat category: Locusts

Threat name: Italian Locust

Likelihood of occurrence: Nil

Forecast (January-March 2018): No developments are expected as hatching will start after the forecast period.

Context: Locust pests attack a wide range of cultivated plants in Caucasus and Central Asia and can cause severe damage, thus jeopardizing food security and livelihood of the rural populations. This species is one of the two locust pests in Caucasus and in the country.

Threat category: Locusts

Threat name: Moroccan Locust

Likelihood of occurrence: Nil

Forecast (January-March 2018): No developments are expected as hatching will start after the forecast period.

Context: Locust pests attack a wide range of cultivated plants in Caucasus and Central Asia and can cause severe damage, thus jeopardizing food security and livelihood of the rural populations. This species is one of the two locust pests in Caucasus and in the country.

Threat category: Animal and zoonotic diseases

Threat name: Lumpy skin disease (LSD)

Likelihood of occurrence: Low

Forecast (January-March 2018): Lumpy skin disease (LSD) outbreaks are unlikely to occur due to unfavourable weather conditions for the vectors during the forecast period.

Context: At the beginning of November 2016, LSD was reported in Georgia for the first time, in the villages of Gioia and Ghebi (placed 17 km apart), in Oni district, Racha-Lechkhum Kvemo Svaneti Region, at the border with the Russian Federation. No new outbreaks were reported since then.
LSD is a severe disease transmitted by vectors which affects mainly cattle, causing important meat and milk production losses.

Threat category: Forest pests and diseases

Threat name: Boxwood blight

Likelihood of occurrence: Low

Forecast (January-March 2018): Boxwood blight will continue to be present but its spread will be limited due to winter temperatures and lack of rain.

Context: Monitoring of the disease spread is in progress.
Boxwood blight (also known as box blight) is a widespread fungal disease caused by the pathogen Calonectria pseudonaviculata, *affecting boxwood trees.*

Threat category: Forest pests and diseases

Threat name: Boxwood moth

Likelihood of occurrence: Low

Forecast (January-March 2018): Boxwood moth will have limited spread due to winter temperatures.

Context: As part of the Integrated Pest Management (IPM) programme, the use of biopesticide Btk (*Bacillus thuringiensis kurstaki*) and pheromone trapping are in progress to protect the native boxwood species.
Boxwood moth (Cydalima perspectalis), native to Eastern Asia, is highly destructive and defoliates boxwood trees.

INDIA

Threat category: Plant pests and diseases

Threat name: Wheat rust

Likelihood of occurrence: Moderate

Forecast (January-March 2018): Wheat yellow rust outbreaks are likely to occur as per seasonal pattern.

Context: The disease has been present in the country for years. *It particularly infects the leaves, reducing photosynthesis area, weakening the plants and reducing grain weight. Regular surveys and timely actions are essential.*

Threat category: Locusts

Threat name: Desert Locust

Likelihood of occurrence: Nil

Forecast (January-March 2018): Significant activity is unlikely to occur.

Context: Numerous Desert Locust (*Schistocerca gregaria*) populations are a threat to agricultural production in Africa, the Middle East and Asia, and have a negative impact on food security. The livelihoods of at least one tenth of the world's population can be affected by this voracious insect. Desert locusts are potentially the most dangerous locust pests due to swarms' ability to fly quickly over long distances.

INDONESIA

Threat category: Aquatic diseases

Threat name: Tilapia lake virus (TiLV)

Likelihood of occurrence: Low

Forecast (January-March 2018): TiLV occurrence is unlikely.

Context: TiLV has not been reported in Indonesia but it may be introduced and spread through live movement of infected host. Mitigation measures are in place. TiLV occurs when water temperature is between 22 °C – 32 °C and observed in farms with larger sized fish and high stocking density. Where unexplained mortalities of Tilapia occur, particularly when clinical signs are similar to those reported for TiLV in addition to permissive temperature, appropriate diagnostic tests should be done.

IRAN (ISLAMIC REPUBLIC OF)

Threat category: Plant pests and diseases

Threat name: Wheat rust

Likelihood of occurrence: Moderate

Forecast (January-March 2018): Wheat yellow rust outbreaks are likely to occur as per seasonal pattern.

Context: The disease has been present in the country for years. *It particularly infects the leaves, reducing photosynthesis area, weakening the plants and reducing grain weight. Regular surveys and timely actions are essential.*

Threat category: Locusts

Threat name: Desert Locust

Likelihood of occurrence: Low

Forecast (January-March 2018): Low numbers of adults will appear in coastal and interior areas of the southeast by March and eventually breed on a small scale in areas that receive rainfall; no significant developments expected

Context: Numerous Desert Locust (*Schistocerca gregaria*) populations are a threat to agricultural production in Africa, the Middle East and Asia, and have a negative impact on food security. The livelihoods of at least one tenth of the world's population can be affected by this voracious insect. Desert locusts are potentially the most dangerous locust pests due to swarms' ability to fly quickly over long distances.

Threat category: Animal and zoonotic diseases

Threat name: Avian influenza (AI)

Likelihood of occurrence: Moderate

Forecast (January-March 2018): H5N1 and H5N8 Highly pathogenic avian influenza outbreaks in poultry are likely to occur as per seasonal pattern.

Context: A new H5N1 HPAI outbreak was detected in January 2017 in Mazdaran region, after a previous outbreak reported in June 2016 in the country. The H5N8 HPAI that had started spreading globally since November 2016, following wild birds migratory routes, has been detected in November 2016 in Tehran governorate, affecting several large poultry farms. Since then, the virus has been detected in wild and domestic birds in eight governorates in the country. Last official detection occurred in February 2017. Additional Avian influenza events are expected due to seasonal pattern.
HPAI is a highly contagious disease causing high mortality in poultry resulting in severe production losses with impact on food security and trade. Avian influenza viruses can affect humans.

Threat category: Forest pests and diseases

Threat name: Boxwood blight

Likelihood of occurrence: Low

Forecast (January-March 2018): Boxwood blight will continue to be present but its spread will be limited due to winter temperatures and lack of rain.

Context: Boxwood blight was reported for the first time in the country in 2012. Currently, approximately 50.000 ha of boxwood forest are affected by the disease. Pest management activities in selected areas are in progress.
Boxwood blight (also known as box blight) is a widespread fungal disease caused by the pathogen Calonectria pseudonaviculata, *affecting boxwood trees.*

Threat category: Forest pests and diseases

Threat name: Boxwood moth

Likelihood of occurrence: Low

Forecast (January-March 2018): Boxwood moth will have limited activity during the forecast period due to low temperatures.

Context: The first introduction of Boxwood moth was reported in August 2016; since then, the native boxwood forests have been under new threat. Early action, such as pheromone trapping for monitoring and treatments using biopesticide Btk (*Bacillus thuringiensis kurstaki*), is required to reduce further spread. FAO organized a visit from Georgia to Iran to share experiences on Btk application and pheromone trappings.
Boxwood moth (Cydalima perspectalis), native to Eastern Asia, is highly destructive and defoliates boxwood trees.

Threat category: Forest pests and diseases

Threat name: Charcoal disease

Likelihood of occurrence: Low

Forecast (January-March 2018): Oak charcoal disease (pathogen *Biscogniauxia mediterranea*) will have limited activities during the forecast period.

Context: The decline of Oak charcoal disease has been reported since 2012 in the Zagros region. It has a negative impact on the livelihoods of nomadic people and watershed management. Operations to minimize the impact of the charcoal disease and abiotic stresses are in progress.

ISRAEL

Threat category: Animal and zoonotic diseases

Threat name: Foot-and-mouth disease (FMD)

Likelihood of occurrence: Moderate

Forecast (January-March 2018): FMD serotype O outbreaks are unlikely to occur thanks to the ongoing vaccination campaign but outbreaks of FMD serotype A are likely.

Context: In February 2017, a FMD serotype O outbreak occurred in Southern district, as it used to occur sporadically in the country. In May in Aramsha, Northern district, a FMD outbreak serotype A was detected in a cattle farm. In November and December 2017, the latest FMD outbreaks observed in the region occurred in West Bank, but serotype identification is still pending. The episode is of concern for Israel and neighbouring countries because poor vaccine matching is available so far.
FMD is a highly contagious disease among cattle, buffalo, sheep and pigs and can cause a sharp drop in milk and meat production and mortality in young animals. It is the most restrictive animal disease for livestock trade.

Threat category: Aquatic diseases

Threat name: Tilapia lake virus (TiLV)

Likelihood of occurrence: Low

Forecast (January-March 2018): TiLV occurrence is unlikely.

Context: TiLV occurs during the hot season (July to October) and the current conditions during this forecast period are unfavorable for the disease. TiLV was first observed in August 2011 in Israel and has not been observed during the last few years.

JAPAN

Threat category: Animal and zoonotic diseases

Threat name: Avian influenza (AI)

Likelihood of occurrence: Moderate

Forecast (January-March 2018): H5N6 HPAI outbreaks are likely to occur due to seasonal pattern.

Context: Japan experienced its first introduction of H5N6 HPAI on November 2016. Since then, the virus spread in 27 prefectures of the country. Since November 2017, a new re-assortant strain of H5N6 HPAI is circulating in the region (in Japan, Republic of Korea and Taiwan, Province of China).
HPAI is a highly contagious disease causing high mortality in poultry resulting in severe production losses with impact on food security and trade. Avian influenza viruses can affect humans.

JORDAN

Threat category: Animal and zoonotic diseases

Threat name: Foot-and-mouth disease (FMD)

Likelihood of occurrence: Moderate

Forecast (January-March 2018): Further spread of FMD serotype O is likely to occur while possible introduction of serotype A from neighbouring country is unlikely.

Context: In February-March 2017, four FMD outbreaks, serotype O, were detected in cattle in three different regions of the country. A FMD outbreak serotype A was detected in a cattle farm in May 2017 in Israel (Aramsha, Northern district). The episode is of concern for Jordan and neighbouring countries because poor vaccine matching is available so far. Last FMD outbreaks in Western Asian countries were observed in November and December 2017 in West Bank, but serotype identification is still pending.
FMD is a highly contagious disease among cattle, buffalo, sheep and pigs and can cause a sharp drop in milk and meat production and mortality in young animals. It is the most restrictive animal disease for livestock trade.

KAZAKHSTAN

Threat category: Locusts

Threat name: Italian Locust

Likelihood of occurrence: Nil

Forecast (January-March 2018): No developments are expected as hatching will start after the forecast period.

Context: Locust pests attack a wide range of cultivated plants in Caucasus and Central Asia and can cause severe damage, thus jeopardizing food security and livelihood of the rural populations. This species is one of the three locust pests present in Central Asia and in the country.

Threat category: Locusts

Threat name: Migratory Locust

Likelihood of occurrence: Nil

Forecast (January-March 2018): No developments are expected as hatching will start after the forecast period.

Context: Locust pests attack a wide range of cultivated plants in Caucasus and Central Asia and can cause severe damage, thus jeopardizing food security and livelihood of the rural populations. This species is one of the three locust pests present in Central Asia and in the country.

Threat category: Locusts

Threat name: Moroccan Locust

Likelihood of occurrence: Nil

Forecast (January-March 2018): No developments are expected as hatching will start after the forecast period.

Context: Locust pests attack a wide range of cultivated plants in Caucasus and Central Asia and can cause severe damage, thus jeopardizing food security and livelihood of the rural populations. This species is one of the three locust pests present in Central Asia and in the country.

Threat category: Animal and zoonotic diseases

Threat name: Lumpy skin disease (LSD)

Likelihood of occurrence: Low

Forecast (January-March 2018): LSD outbreaks are unlikely to occur due to unfavourable weather conditions for the vectors during the forecast period.

Context: In July 2016, LSD was for the first and unique time reported in Kazakhstan, in a village of West Kazakhstan region. Rumors of additional outbreaks were reported in August 2017, but they were all denied, so far. The disease continues to be reported in neighbouring Russian Federation. LSD mitigation measures (i.e. vaccination) can be undertaken.
LSD is a severe disease transmitted by vectors which affects mainly cattle, causing important meat and milk production losses.

KIRGYZSTAN

Threat category: Locusts

Threat name: Italian Locust

Likelihood of occurrence: Nil

Forecast (January-March 2018): No developments are expected as hatching will start after the forecast period.

Context: Locust pests attack a wide range of cultivated plants in Caucasus and Central Asia and can cause severe damage, thus jeopardizing food security and livelihood of the rural populations. This species is one of the three locust pests present in Central Asia.

Threat category: Locusts

Threat name: Moroccan Locust

Likelihood of occurrence: Nil

Forecast (January-March 2018): No developments are expected as hatching will start after the forecast period.

Context: Locust pests attack a wide range of cultivated plants in Caucasus and Central Asia and can cause severe damage, thus jeopardizing food security and livelihood of the rural populations. This species is one of the three locust pests present in Central Asia.

LAO PEOPLE'S DEMOCRATIC REPUBLIC

Threat category: Plant pests and diseases

Threat name: Banana fusarium wilt disease

Likelihood of occurrence: Moderate

Forecast (January-March 2018): Spread of Fusarium wilt disease on banana is likely to occur.

Context: The disease was recently reported in the country, so prevention is crucial.
Banana fusarium wilt disease is a soil-borne disease caused by a fungal pathogen that cannot be eradicated once established in the soil. The disease attacks banana plants of all ages, initially appearing with a yellowing of the leaves; it causes wilting and plant death. Infected planting materials, water and movement of infested soil particles with shoes, tools and vehicles play a major role in spread. It can remain viable in soil for decades and containment and management are challenging. Thus, prevention of the spread is crucial.

Threat category: Animal and zoonotic diseases

Threat name: Avian influenza (AI)

Likelihood of occurrence: Moderate

Forecast (January-March 2018): Further spread of H5N1 Highly pathogenic avian influenza (HPAI) outbreaks and re-emergence of H5N6 Highly pathogenic avian influenza (HPAI) due to movement of poultry or poultry products from neighbouring affecting countries and as per seasonal pattern are likely to occur.

Context: H5N1 HPAI re-emerged in July 2017, after a first detection of this virus in October 2016. H5N6 HPAI virus was last reported in October 2015. A new re-assortant strain of H5N6 HPAI is circulating in the region (in Japan, Republic of Korea and Taiwan, Province of China) since November 2017.
HPAI is a highly contagious disease causing high mortality in poultry resulting in severe production losses with impact on food security and trade. Avian influenza viruses can affect humans.

LEBANON

Threat category: Forest pests and diseases

Threat name: Dry cone syndrome

Likelihood of occurrence: Moderate

Forecast (January-March 2018): It is likely that Dry cone syndrome will continue to cause damage to pine plantations (*Pinus pinea*).

Context: Heavy yield losses continue to impact rural livelihoods. Yield reduction of pine nuts is reported throughout the country. Silvicultural practises to strengthen the trees are in progress.

Threat category: Forest pests and diseases

Threat name: Western conifer seed bug

Likelihood of occurrence: Low

Forecast (January-March 2018): It is likely that Western conifer seed bug will have limited activities due to lower temperatures.

Context: Monitoring of the pest population using traps is in progress.
Western conifer seed bug (Leptoglossus occidentalis) is an invasive insect pest that feeds on conifer seeds.

MALAYSIA

Threat category: Aquatic diseases

Threat name: Tilapia lake virus (TiLV)

Likelihood of occurrence: Low

Forecast (January-March 2018): TiLV occurrence is unlikely.

Context: TiLV is already present in the country. It was first observed in June 2017 and since July 2017, no new mortalities were observed.

MYANMAR

Threat category: Animal and zoonotic diseases

Threat name: Avian influenza (AI)

Likelihood of occurrence: Moderate

Forecast (January-March 2018): H5 Highly pathogenic avian influenza (HPAI) outbreaks are likely to occur as per seasonal pattern.

Context: Both H5N1 and H5N6 HPAI re-emerged in Myanmar in poultry in July 2017, after the last detections of these viruses in the country in March-April 2016. A new re-assortant strain of H5N6 HPAI is circulating in the region (in Japan, Republic of Korea and Taiwan, Province of China) since November 2017.
HPAI is a highly contagious disease causing high mortality in poultry resulting in severe production losses with impact on food security and trade. Avian influenza viruses can affect humans.

NEPAL

Threat category: Animal and zoonotic diseases

Threat name: Avian influenza (AI)

Likelihood of occurrence: Moderate

Forecast (January-March 2018): H5 HPAI (H5N1 and H5N8) outbreaks are likely to occur as per seasonal pattern.

Context: In February 2017, H5N1 HPAI was reported for the first time since February 2014 in Nepal, in the Western Region. In March 2017, H5N8 HPAI was reported for the first time in the country, in captive birds in a zoo in Eastern Region.
HPAI is a highly contagious disease causing high mortality in poultry resulting in severe production losses with impact on food security and trade. Avian influenza viruses can affect humans.

OMAN

Threat category: Locusts

Threat name: Desert Locust

Likelihood of occurrence: Low

Forecast (January-March 2018): Low numbers of adults are likely to persist in parts of the northern coast and interior where breeding could commence in March in areas that receive rainfall; no significant developments are expected.

Context: Numerous Desert Locust (*Schistocerca gregaria*) populations are a threat to agricultural production in Africa, the Middle East and Asia, and have a negative impact on food security. The livelihoods of at least one tenth of the world's population can be affected by this voracious insect. Desert locusts are potentially the most dangerous locust pests due to swarms' ability to fly quickly over long distances.

PAKISTAN

Threat category: Plant pests and diseases

Threat name: Banana fusarium wilt disease

Likelihood of occurrence: Moderate

Forecast (January-March 2018): Spread of Fusarium wilt disease on banana is likely to occur.

Context: The disease has been reported in one location in the country and prevention is crucial.
Banana fusarium wilt disease is a soil-borne disease caused by a fungal pathogen that cannot be eradicated once established in the soil. The disease attacks banana plants of all ages, initially appearing with a yellowing of the leaves; it causes wilting and plant death. Infected planting materials, water and movement of infested soil particles with shoes, tools and vehicles play a major role in spread. It can remain viable in soil for decades and containment and management are challenging. Thus, prevention of the spread is crucial.

Threat category: Plant pests and diseases

Threat name: Wheat rust

Likelihood of occurrence: Moderate

Forecast (January-March 2018): Wheat yellow rust outbreaks are likely to occur as per seasonal pattern.

Context: The disease has been present in the country for years. *It particularly infects the leaves, reducing photosynthesis area, weakening the plants and reducing grain weight. Regular surveys and timely actions are essential.*

Threat category: Locusts

Threat name: Desert Locust

Likelihood of occurrence: Low

Forecast (January-March 2018): Low numbers of adults will appear in coastal areas of the southwest by March and eventually breed on a small-scale in areas that receive rainfall; no significant developments are expected.

Context: Numerous Desert Locust (*Schistocerca gregaria*) populations are a threat to agricultural production in Africa, the Middle East and Asia, and have a negative impact on food security. The livelihoods of at least one tenth of the world's population can be affected by this voracious insect. Desert locusts are potentially the most dangerous locust pests due to swarms' ability to fly quickly over long distances.

PHILIPPINES

Threat category: Animal and zoonotic diseases

Threat name: Avian influenza (AI)

Likelihood of occurrence: Moderate

Forecast (January-March 2018): H5N6 HPAI outbreaks in poultry due to further spread of the virus within the country are likely to occur as per seasonal pattern.

Context: In December 2017, a new H5N6 HPAI outbreak was reported in the country (Luzon region). A new re-assortant strain of H5N6 HPAI is circulating in the region (in Japan, Republic of Korea and Taiwan, Province of China) since November 2017. *HPAI is a highly contagious disease causing high mortality in poultry resulting in severe production losses with impact on food security and trade. Avian influenza viruses can affect humans.*

Threat category: Aquatic diseases

Threat name: Tilapia lake virus (TiLV)

Likelihood of occurrence: Moderate

Forecast (January-March 2018): TiLV occurrence is likely.

Context: Tilapia is cultured all year round in the country. TiLV is already present in the country. TiLV occurs when water temperature is between 22 °C – 32 °C and observed in farms with larger sized fish and high stocking density. Mitigation measures in place.

REPUBLIC OF KOREA

Threat category: Animal and zoonotic diseases

Threat name: Avian influenza (AI)

Likelihood of occurrence: Moderate

Forecast (January-March 2018): H5N6 and H5N8 HPAI outbreaks are likely to occur as per seasonal pattern.

Context: Since October 2016 when the same strain of H5N8 HPAI virus circulating in Asia and Europe was first detected in the country, more than 400 events were reported, affecting wild and domestic birds. Last outbreaks were reported in poultry in July 2017. H5N6 HPAI virus was first detected in the country in October 2016, with the last reported outbreaks in April 2017 and since November 2017, a new re-assortant strain of H5N6 HPAI is circulating in the region (in Japan, Republic of Korea and Taiwan, Province of China).
HPAI is a highly contagious disease causing high mortality in poultry resulting in severe production losses with impact on food security and trade. Avian influenza viruses can affect humans.

Threat category: Animal and zoonotic diseases

Threat name: Foot-and-mouth disease (FMD)

Likelihood of occurrence: Low

Forecast (January-March 2018): Further spread of FMD (serotypes A and O) are unlikely to occur in the country.

Context: In February 2017, the country experienced a new Foot-and-mouth disease introduction. Serotypes involved are the A and the O. Infections have affected cattle farms in three regions. Last outbreak occurred in February. Since 2014, FMD introduction occurred every year, with heavy consequences in particular for the swine sectors.
FMD is a highly contagious disease among cattle, buffalo, sheep and pigs and can cause a sharp drop in milk and meat production and mortality in young animals. It is the most restrictive animal disease for livestock trade.

SAUDI ARABIA

Threat category: Locusts

Threat name: Desert Locust

Likelihood of occurrence: Moderate

Forecast (January-March 2018): Small-scale breeding will occur on Red Sea coast, causing locust numbers to increase slightly. By March, low numbers of adults may appear in the interior.

Context: Numerous Desert Locust (*Schistocerca gregaria*) populations are a threat to agricultural production in Africa, the Middle East and Asia, and have a negative impact on food security. The livelihoods of at least one tenth of the world's population can be affected by this voracious insect. Desert locusts are potentially the most dangerous locust pests due to swarms' ability to fly quickly over long distances.

Threat category: Animal and zoonotic diseases

Threat name: Avian influenza (AI)

Likelihood of occurrence: Moderate

Forecast (January-March 2018): H5N8 HPAI outbreaks are likely to occur due to the spread of the virus in the country.

Context: Since November 2016, a H5N8 HPAI virus threat is spreading globally following bird migratory routes. In December 2017, the virus was first detected in the country in Riyadh province. Since then, additional outbreaks were officially reported in four provinces of the country.
HPAI is a highly contagious disease causing high mortality in poultry resulting in severe production losses with impact on food security and trade. Avian influenza viruses can affect humans.

TAJIKISTAN

Threat category: Locusts

Threat name: Italian Locust

Likelihood of occurrence: Nil

Forecast (January-March 2018): No developments are expected as hatching will start after the forecast period.

Context: Locust pests attack a wide range of cultivated plants in Caucasus and Central Asia and can cause severe damage, thus jeopardizing food security and livelihood of the rural populations. This species is one of the three locust pests present in Central Asia.

Threat category: Locusts

Threat name: Moroccan Locust

Likelihood of occurrence: Nil

Forecast (January-March 2018): No developments are expected as hatching will start after the forecast period.

Context: Locust pests attack a wide range of cultivated plants in Caucasus and Central Asia and can cause severe damage, thus jeopardizing food security and livelihood of the rural populations. This species is one of the three locust pests present in Central Asia.

THAILAND

Threat category: Aquatic diseases

Threat name: Tilapia lake virus (TiLV)

Likelihood of occurrence: Low

Forecast (January-March 2018): TiLV occurrence is unlikely.

Context: TiLV is already present in the country and mitigation measures are in place. The first TiLV outbreak was in October 2015. TiLV occurs when water temperature is between 22 °C – 32 °C and observed in farms with larger sized fish and high stocking density. Mitigation measures in place.

TURKEY

Threat category: Forest pests and diseases

Threat name: Chestnut gall wasp

Likelihood of occurrence: Low

Forecast (January-March 2018): The chesnut gall wasp population will have fewer activities in Chestnut trees due to pest control activity.

Context: Pest management activities based on application of biological control agents are in progress to reduce the populations of the insect pest.
*Chestnut gall wasp (*Dryocosmus kuriphilus*) is a species of gall wasp native to China. It attacks many species of chestnut, including most cultivated varieties. The galls caused by the wasp can be very damaging to the tree. They occur on the new growth of the tree, disrupting the fruiting process, and can reduce a tree's yield up to 70 percent.*

TURKMENISTAN

Threat category: Locusts

Threat name: Moroccan Locust

Likelihood of occurrence: Low

Forecast (January-March 2018): Hatching should start in March.

Context: Locust pests attack a wide range of cultivated plants in Caucasus and Central Asia and can cause severe damage, thus jeopardizing food security and livelihood of the rural populations. This species is one of the three locust pests in Central Asia. The Italian Locust is also present in the country but was not reported as a pest in 2017.

UZBEKISTAN

Threat category: Locusts

Threat name: Italian Locust

Likelihood of occurrence: Nil

Forecast (January-March 2018): No developments are expected as hatching will start after the forecast period.

Context: Locust pests attack a wide range of cultivated plants in Caucasus and Central Asia and can cause severe damage, thus jeopardizing food security and livelihood of the rural populations. This species is one of the three locust pests present in Central Asia and in the country.

Threat category: Locusts

Threat name: Migratory Locust

Likelihood of occurrence: Nil

Forecast (January-March 2018): No developments are expected as hatching will start after the forecast period.

Context: Locust pests attack a wide range of cultivated plants in Caucasus and Central Asia and can cause severe damage, thus jeopardizing food security and livelihood of the rural populations. This species is one of the three locust pests present in Central Asia and in the country.

Threat category: Locusts

Threat name: Moroccan Locust

Likelihood of occurrence: Nil

Forecast (January-March 2018): No developments are expected as hatching will start after the forecast period.

Context: Locust pests attack a wide range of cultivated plants in Caucasus and Central Asia and can cause severe damage, thus jeopardizing food security and livelihood of the rural populations. This species is one of the three locust pests present in Central Asia and in the country.

VIET NAM

Threat category: Plant pests and diseases

Threat name: Banana fusarium wilt disease

Likelihood of occurrence: Moderate

Forecast (January-March 2018): Spread of Fusarium wilt disease on banana is likely to occur.

Context: The disease has been recently reported in the country, so prevention is crucial.
Banana fusarium wilt disease is a soil-borne disease caused by a fungal pathogen that cannot be eradicated once established in the soil. The disease attacks banana plants of all ages, initially appearing with a yellowing of the leaves; it causes wilting and plant death. Infected planting materials, water and movement of infested soil particles with shoes, tools and vehicles play a major role in spread. It can remain viable in soil for decades and containment and management are challenging. Thus, prevention of the spread is crucial.

Threat category: Animal and zoonotic diseases

Threat name: Avian influenza (AI)

Likelihood of occurrence: Moderate

Forecast (January-March 2018): H5 Highly pathogenic avian influenza (H5N1 and H5N6) outbreaks are likely to occur as per seasonal pattern.

Context: H5N1 and H5N6 HPAI outbreaks were reported in the country in 2017. A new re-assortant strain of H5N6 HPAI is circulating in the region (in Japan, Republic of Korea and Taiwan, Province of China) since November 2017.
HPAI is a highly contagious disease causing high mortality in poultry resulting in severe production losses with impact on food security and trade. Avian influenza viruses can affect humans.

Threat category: Aquatic diseases

Threat name: Tilapia lake virus (TiLV)

Likelihood of occurrence: Low

Forecast (January-March 2018): Low likelihood of TiLV occurrence.

Context: TiLV has not been reported in Viet Nam but it may be introduced and spread through live movement of infected host. Where unexplained mortalities of Tilapia occur, particularly when clinical signs are similar to those reported for TiLV in addition to permissive temperature, appropriate diagnostic tests should be done.

WEST BANK

Threat category: Animal and zoonotic diseases

Threat name: Foot-and-mouth disease (FMD)

Likelihood of occurrence: Moderate

Forecast (January-March 2018): Further spread of FMD serotype O is likely to occur while possible introduction of serotype A from neighbouring country is unlikely.

Context: Last FMD outbreaks were observed in November and December 2017 in West Bank, but serotype identification is still pending.
FMD is a highly contagious disease among cattle, buffalo, sheep and pigs and can cause a sharp drop in milk and meat production and mortality in young animals. It is the most restrictive animal disease for livestock trade.

YEMEN

Threat category: Locusts

Threat name: Desert Locust

Likelihood of occurrence: Moderate

Forecast (January-March 2018): Small-scale breeding will occur on Red Sea and Gulf of Aden coasts, causing locust numbers to increase slightly.

Context: Numerous Desert Locust (*Schistocerca gregaria*) populations are a threat to agricultural production in Africa, the Middle East and Asia, and have a negative impact on food security. The livelihoods of at least one tenth of the world's population can be affected by this voracious insect. Desert locusts are potentially the most dangerous locust pests due to swarms' ability to fly quickly over long distances.

EUROPE

ALBANIA

Threat category: Animal and zoonotic diseases

Threat name: Lumpy skin disease (LSD)

Likelihood of occurrence: Moderate

Forecast (January-March 2018): LSD outbreaks are likely to continue to occur.

Context: Detected for the first time in June 2016, LSD caused almost 850 outbreaks affecting 32 counties. During the all summer of 2017, outbreaks continued to be detected but not officially reported. An emergency vaccination campaign has started to be implemented.
LSD is a severe disease transmitted by vectors which affects mainly cattle, causing important meat and milk production losses.

Threat category: Forest pests and diseases

Threat name: Pine processionary moth

Likelihood of occurrence: Moderate

Forecast (January-March 2018): It is likely that the larval stage will be active throughout the colder periods causing defoliation of needles.

Context: Mechanical removal of nests is in progress to manage pest populations.

BELARUS

Threat category: Animal and zoonotic diseases

Threat name: African swine fever (ASF)

Likelihood of occurrence: Moderate

Forecast (January-March 2018): ASF outbreaks are likely to occur due to possible introduction from neighbouring countries.

Context: ASF virus presence has not been reported yet in Belarus. Informal and uncontrolled animal movement and poor biosecurity conditions in pig farms at borders are risk factors for ASF introduction in unaffected areas.
ASF is a highly contagious viral disease of swine, both domestic and wild, which can cause high mortality. So far no vaccines are available.

Threat category: Forest pests and diseases

Threat name: Bark beetles

Likelihood of occurrence: Low

Forecast (January-March 2018): Bark beetles (mainly *Ips spp.*) movements will be limited due to low winter temperatures. Adults emerge from overwintering sites in February and resume activities when subcortical temperatures are about 7-10°C. The insects fly individually or in small groups, during the warmth of the day in spring at temperatures 20°C or above.

Context: They are causing severe damage in pine plantations in Belarus. Sanitary felling and other silvicultural practises are in progress to reduce the insect populations.
The adults and larvae of Ips spp. *are bark-feeding, mainly attacking declining or dead trees and freshly cut wood. Outbreaks can cause heavy tree losses and significant economic impact in plantations.*

BULGARIA

Threat category: Animal and zoonotic diseases

Threat name: Lumpy skin disease (LSD)

Likelihood of occurrence: Low

Forecast (January-March 2018): LSD outbreaks are unlikely to occur due to unfavourable weather conditions for the vectors during the forecast period and the mitigation measures in place in the country (i.e. vaccination).

Context: First detected in Haskovo province in April 2016, LSD has spread throughout the country, causing more than 200 outbreaks in 19 provinces. Last detection occurred in July 2016. A massive emergency vaccination campaign has been implemented.
LSD is a severe disease transmitted by vectors which affects mainly cattle, causing important meat and milk production losses.

CZECH REPUBLIC

Threat category: Animal and zoonotic diseases

Threat name: African swine fever (ASF)

Likelihood of occurrence: Moderate

Forecast (January-March 2018): ASF outbreaks are likely to continue to occur.

Context: In July 2017, in Zlin region, a dead wild boar was found positive for ASF This represented the first introduction of the disease in the country. Since then and until 15 December 2017, a total of 169 wild boars were found infected, all in the same region of the country.
ASF is a highly contagious viral disease of swine, both domestic and wild, which can cause high mortality. So far no vaccines are available.

ESTONIA

Threat category: Animal and zoonotic diseases

Threat name: African swine fever (ASF)

Likelihood of occurrence: Moderate

Forecast (January-March 2018): ASF outbreaks are likely to continue to occur.

Context: Since the ASF introduction in the country in September 2014, the presence of the virus continues to be reported in wild boars mainly. A huge outbreak occurred in domestic pigs in July 2017, in a farm with 3.200 animals in Saaremaa county. No new outbreaks were observed after these events.
ASF is a highly contagious viral disease of swine, both domestic and wild, which can cause high mortality. So far no vaccines are available.

GREECE

Threat category: Animal and zoonotic diseases

Threat name: Lumpy skin disease (LSD)

Likelihood of occurrence: Low

Forecast (January-March 2018): LSD outbreaks are unlikely to occur due to unfavourable weather conditions for the vectors during the forecast period and the mitigation measures in place in the country (i.e. vaccination).

Context: Last observed outbreak of LSD in Greece related to a second wave of infection occurred in late November 2016, then two new outbreaks occurred in regions never affected by the disease before: in February 2017, in Kerkyra, an Ionian island, and in August, in Thessalia region. No new outbreaks were observed after these events.
LSD is a severe disease transmitted by vectors which affects mainly cattle, causing important meat and milk production losses.

HUNGARY

Threat category: Animal and zoonotic diseases

Threat name: African swine fever (ASF)

Likelihood of occurrence: Moderate

Forecast (January-March 2018): ASF outbreaks are likely to occur due to a possible introduction from neighbouring countries.

Context: Since its introduction in Europe in early 2014, ASF has become endemic in some countries bordering Hungary, like Ukraine and Romania (July 2017). Informal and uncontrolled animal movement and poor biosecurity conditions in pig farms at borders pose a risk to disease introduction. No ASF outbreak have been observed in the country, so far.
ASF is a highly contagious viral disease of swine, both domestic and wild, which can cause high mortality. So far no vaccines are available.

LATVIA

Threat category: Animal and zoonotic diseases

Threat name: African swine fever (ASF)

Likelihood of occurrence: Moderate

Forecast (January-March 2018): ASF outbreaks are likely to continue to occur.

Context: The virus presence continues to be reported both in wild boars and domestic pigs, and, during October-December 2017, a total of seven events were observed, mainly in wild boars.
ASF is a highly contagious viral disease of swine, both domestic and wild, which can cause high mortality. So far no vaccines are available.

LITHUANIA

Threat category: Animal and zoonotic diseases

Threat name: African swine fever (ASF)

Likelihood of occurrence: Moderate

Forecast (January-March 2018): ASF outbreaks are likely to continue to occur.

Context: Since the ASF introduction in the country in early 2014, the presence of the virus continue to be reported in wild boars mainly, even though, in August and September outbreaks occurred in domestic pigs. In November 2017, wild boars were found dead in districts where the disease was never previously reported.
ASF is a highly contagious viral disease of swine, both domestic and wild, which can cause high mortality. So far no vaccines are available.

MONTENEGRO

Threat category: Animal and zoonotic diseases

Threat name: Lumpy skin disease (LSD)

Likelihood of occurrence: Low

Forecast (January-March 2018): LSD outbreaks are unlikely to occur due to unfavourable weather conditions for the vectors during the forecast period and the mitigation measures in place in the country (i.e. vaccination).

Context: The disease was first detected in April 2016. Since then, LSD spread in the country causing at least 60 outbreaks in seven municipalities. Last observed outbreak occurred in August 2016. An emergency vaccination campaign has been implemented.
LSD is a severe disease transmitted by vectors which affects mainly cattle, causing important meat and milk production losses.

POLAND

Threat category: Animal and zoonotic diseases

Threat name: African swine fever (ASF)

Likelihood of occurrence: Moderate

Forecast (January-March 2018): ASF outbreaks are likely to continue to occur.

Context: Since the ASF introduction in the country in early 2014, the virus presence continues to be reported in three regions of the country, both in wild and domestic pigs. In particular, some new districts in Mazowieckie regions were involved in latest months of 2017.
ASF is a highly contagious viral disease of swine, both domestic and wild, which can cause high mortality. So far no vaccines are available.

REPUBLIC OF MOLDOVA

Threat category: Animal and zoonotic diseases

Threat name: African swine fever (ASF)

Likelihood of occurrence: Moderate

Forecast (January-March 2018): ASF outbreaks are likely to continue to occur.

Context: After its introduction in Europe in early 2014, the presence of the virus was first detected in Moldova (Rep. of) in November 2016. Since then, infections were detected both in domestic and wild swine in seven districts of the country.
ASF is a highly contagious viral disease of swine, both domestic and wild, which can cause high mortality. So far no vaccines are available.

ROMANIA

Threat category: Animal and zoonotic diseases

Threat name: African swine fever (ASF)

Likelihood of occurrence: Moderate

Forecast (January-March 2018): Further ASF outbreaks and possible introduction from neighbouring countries are likely to occur.

Context: ASF was detected for the first time in July 2017 in two domestic pig farms in Satu Mare region close to the border with Hungary. No new cases were reported since then.
ASF is a highly contagious viral disease of swine, both domestic and wild, which can cause high mortality. So far no vaccines are available.

RUSSIAN FEDERATION

Threat category: Locusts

Threat name: Italian Locust

Likelihood of occurrence: Nil

Forecast (January-March 2018): No developments are expected as hatching will start after the forecast period.

Context: Locust pests attack a wide range of cultivated plants in Caucasus and Central Asia and can cause severe damage, thus jeopardizing food security and livelihood of the rural populations. This species is one of the three locust pests present in Central Asia and in the country.

Threat category: Locusts

Threat name: Migratory Locust

Likelihood of occurrence: Nil

Forecast (January-March 2018): No developments are expected as hatching will start after the forecast period.

Context: Locust pests attack a wide range of cultivated plants in Caucasus and Central Asia and can cause severe damage, thus jeopardizing food security and livelihood of the rural populations. This species is one of the three locust pests present in Central Asia and in the country.

Threat category: Locusts

Threat name: Moroccan Locust

Likelihood of occurrence: Nil

Forecast (January-March 2018): No developments are expected as hatching will start after the forecast period.

Context: Locust pests attack a wide range of cultivated plants in Caucasus and Central Asia and can cause severe damage, thus jeopardizing food security and livelihood of the rural populations. This species is one of the three locust pests present in Central Asia and in the country.

Threat category: Animal and zoonotic diseases

Threat name: African swine fever (ASF)

Likelihood of occurrence: Moderate

Forecast (January-March 2018): ASF outbreaks are likely to continue to occur.

Context: The presence of the virus continues to be reported both in wild boars and domestic pigs. During the period September – December 2017, 57 new sites of infestation were observed, affecting new areas in Kaliningrad oblast and north-eastern part of the country.
ASF is a highly contagious viral disease of swine, both domestic and wild, which can cause high mortality. So far no vaccines are available.

Threat category: Animal and zoonotic diseases

Threat name: Lumpy skin disease (LSD)

Likelihood of occurrence: Low

Forecast (January-March 2018): LSD outbreaks are unlikely to occur due to unfavourable weather conditions for the vectors during the forecast period.

Context: After its re-emergence in May 2016 in Dagestan, Lumpy skin disease has spread north, east and westwards, affecting 20 administrative subjects and causing almost 300 outbreaks. From June to September 2017, additional 31 outbreaks were reported in the country. No new outbreaks were reported from October to December 2017, due to the unfavourable conditions for vectors.
LSD is a severe disease transmitted by vectors which affects mainly cattle, causing important meat and milk production losses.

SERBIA

Threat category: Animal and zoonotic diseases

Threat name: Lumpy skin disease (LSD)

Likelihood of occurrence: Low

Forecast (January-March 2018): LSD outbreaks are unlikely to occur due to unfavourable weather conditions for the vectors during the forecast period and the mitigation measures in place in the country (i.e. vaccination).

Context: In June 2016, LSD was first observed in a backyard farm in Pcinja district. Since then, 223 outbreaks were officially reported in 12 districts. Last observed outbreak occurred in October 2016 and since then, no new outbreaks. An emergency vaccination campaign has been implemented.
LSD is a severe disease transmitted by vectors which affects mainly cattle, causing important meat and milk production losses.

THE FORMER YUGOSLAV REPUBLIC OF MACEDONIA

Threat category: Animal and zoonotic diseases

Threat name: Lumpy skin disease (LSD)

Likelihood of occurrence: Low

Forecast (January-March 2018): LSD outbreaks are unlikely to occur due to unfavourable weather conditions for the vectors during the forecast period and the mitigation measures in place in the country (i.e. vaccination).

Context: Detected for the first time in July 2016, LSD caused almost 170 outbreaks, affecting 21 municipalities. After the outbreak in September 2016, two outbreaks were observed in northern municipalities of the country in February and April 2017. No new outbreaks were observed after those events.
LSD is a severe disease transmitted by vectors which affects mainly cattle, causing important meat and milk production losses.

UKRAINE

Threat category: Animal and zoonotic diseases

Threat name: African swine fever (ASF)

Likelihood of occurrence: Moderate

Forecast (January-March 2018): ASF outbreaks are likely to continue to occur.

Context: Since the ASF introduction in the country in early 2014, the presence of the virus continues to be reported in domestic pigs, with new areas being affected in latest months of 2017.
ASF is a highly contagious viral disease of swine, both domestic and wild, which can cause high mortality. So far no vaccines are available.

Threat category: Forest pests and diseases

Threat name: Bark beetles

Likelihood of occurrence: Moderate

Forecast (January-March 2018): Bark beetles movements will be limited due to low winter temperatures. Adults emerge from overwintering sites in February and resume activities when subcortical temperatures are about 7-10°C. The insects fly individually or in small groups, during the warmth of the day in spring at temperatures 20°C or above.

Context: They are causing severe damage in pine plantations. Sanitary felling and other silvicultural practises are in progress to reduce the insect populations.
The adults and larvae of Ips spp. *are bark-feeding, mainly attacking declining or dead trees and freshly cut wood. Outbreaks can cause heavy tree losses and significant economic impact in plantations.*

GLOSSARY

FCC threat	Food chain crisis (FCC) threats are transboundary animal and plant pests and diseases, including forest pests and aquatic diseases, and food safety threats, that can affect any step of the food chain with a potential high impact on food and nutrition security. FCC threats may reach epidemic proportions by spreading within a country and to a number of countries necessitating control/management cooperation between several countries
Forecasting	Ability to predict future condition or occurrence of an FCC threat for the upcoming three months.
Likelihood of introduction	Chances of introduction of a FCC threat into a country, across border or to a specific area for the upcoming three months.
Likelihood of occurrence	Chances of a FCC threat to happen for the upcoming three months.
Likelihood of spread	Chances of geographical spread of a FCC threat within a country beyond its original introduction for the upcoming three months.
Likelihood of re-emergence/amplification	Chances of re-emergence/amplification (e.g. increase, breeding, etc.) of a threat already existing within a country for the upcoming three months.
Biosecurity	All the cumulative measures that can or should be taken to keep disease (viruses, bacteria, fungi, protozoa, parasites) from a farm and to prevent the transmission of disease (by humans, insects, rodents and wild birds/animals) within an infected farm to neighbouring farm (FAOTERM).
Incursion	An isolated population of a pest recently detected in an area, not known to be established, but expected to survive for the immediate future (FAOTERM).
Outbreak	A recently detected pest population, including an incursion, or a sudden significant increase of an established pest population in an area (FAOTERM).
Zoonosis	Any disease or infection which is naturally transmissible from animals to humans (FAOTERM).

INFORMATION SOURCES

Transboundary Animal and Aquatic Diseases

- ECDC - Communicable disease threats report (CDTR) available at https://ecdc.europa.eu/en/threats-and-outbreaks
- FMD Situation Reports available at http://www.fao.org/ag/againfo/commissions/eufmd/commissions/eufmd-home/fmd-surveillance/situation-reports/en/
- Global Animal Disease Information System (EMPRES-i) available at http://empres-i.fao.org/eipws3g/
- Global Early Warning System (GLEWS) at FAO
- OIE World Animal Health Information Database (WAHID) Interface available at http://www.oie.int/wahis_2/public/wahid.php/Wahidhome/Home
- Tilapia Lake Virus (TiLV) disease card available at http://www.oie.int/fileadmin/Home/eng/Internationa_Standard_Setting/docs/pdf/A_TiLV_disease_card.pdf

Desert Locust

- FAO Desert Locust Information Service (DLIS) available at www.fao.org/ag/locusts

Locusts (three species) in Caucasus and Central Asia

- Regional monthly bulletins on locust situations in CCA available at http://www.fao.org/ag/locusts-CCA/en/1014/index.html
- Reports of the annual Technical Workshop on Locusts in CCA available at http://www.fao.org/ag/locusts-CCA/en/index.html

Wheat rust disease

- Global wheat rust monitoring system

Threats to Food Security

- FAO Crop Prospects and Food Situation, No. 4, December 2017 available at http://www.fao.org/3/a-i8278e.pdf

Glossary

- **FAO Term portal:** http://www.fao.org/faoterm/en/
- **IPPC Glossary:** https://www.ippc.int/en/publications/glossary-phytosanitary-terms/
- **FAO Food Safety and Quality website – A-z index:** http://www.fao.org/food/food-safety-quality/a-z-index/biosecurity/en/
- **ACAPS:** https://www.acaps.org/

Food-Chain-Crisis@fao.org
Website: www.fao.org/food-chain-crisis

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