

# **Targeted Risk-based Avian Influenza Surveillance Plan**

**Egypt**  
***(2024)***

## Introduction

Avian influenza in Egypt is considered one of the main challenges facing poultry production sector. Egypt's poultry industry has been plagued by endemic infections with highly pathogenic avian influenza (HPAI) virus, subtype H5N1, clade 2.2.1 in 2006. Then the subtype H9N2, in 2011. H5N8 (clade 2.3.4.4b) introduced in 2016 followed by H6N2 subtype detected in migrating birds at 2017. At 2019 A novel re-assortment highly pathogenic avian influenza A (H5N2) virus in 3 poultry farms in Egypt. This virus carries the hemagglutinin (HA) gene of HPAI clade 2.3.4.4b H5N8 virus and seven genome segments derived from Egyptian H9N2 viruses. Because of circulation of these subtypes, crucial and continuous monitoring of the situation has to be done for detection of new incursions or emergences. Since the incursion of H5N8 in Egypt at late 2016, it became the most dominant isolated HPAI subtype. Late 2021, the surveillance plan was updated with refocusing on newly high risk areas based on the risk mapping and spatial analysis. Resulting in 2022, through the ongoing active surveillance plan in live bird market, it was first detection of H5N1 /2021 clade 2.3.4.4 in Gharbia governorate. By partial sequence of HA gene and partial sequence of NA gene as H5N1 following clade 2.3.4.4b resembling newly circulated strains in 2021 and 2022 in different south Asian , European and African countries.

The genetic analysis reveals that:

- H5N8 viruses isolated in 2023 had HA amino acid and nucleotide identities of 96.1-98.3 and 95.9%-98.1 to H5N8 viruses reported in Egypt from 2016 to 2021, respectively. It appears to have 80% similarity to Egyptian H5N1 (clade 2.2.1.1) and 97.6% similarity to new H5N1 clade (2.3.4.4b).
- All sequenced H5N1 virus strains were 88.1–91.3% identical to the Egyptian H5N1 clade 2.2.1.1 , and show 97.2-98.3% identity to Egyptian H5N8. All Egyptian H5N1 strains were also related to each other with identity % ranging from 98.4 to 99.3% for newly circulated H5N1 clade 2.3.4.4b grouped in 2022, 2023. The Phylogenetic features of the Egyptian HPAI H5N1 strains isolated in 2023 were closely related to the H5N1 strains circulating in Bangladesh, Nigeria, and Europe (The Czech Republic and the Netherlands) of clade 2.3.4.4b during 2021–2022.
- Phylogenetic analysis of H9N2 showed that HA gene of all studied AIV H9N2 grouped in the G1 sub-lineage of the Eurasian lineage. These findings indicate that the EGY-2 (pigeon-like) genotype has been the most prevalent LPAI H9N2 genotype in Egypt since 2016.

Therefore the genetic analyses are warranted to understand if specific mutations provided better adaptation of the H5N8 HPAI and H5N1 HPAI viruses to human hosts.

Regarding to the current situation and continues reported outbreaks of wild and domestic birds worldwide linked to migratory season of wild birds and its pathways, the possibility of wide spread of the disease along its paths and due to our findings revealed that LBMs in Egypt represent a high risk location of potential AIVs transmission to commercial poultry and householders and thus are incriminated in the continuous dissemination of AIVs, continuous surveillance is crucial. So the present plan AI surveillance activities focused to address all circulating AI subtypes (H5N1, H5N8 and H9N2) at risk-based approach meanwhile maintaining the early warning for incursion of any other emerging subtypes that being reported in other countries, covering any gap may have encountered through the passive surveillance and notification system. This is particularly important since poultry rearing on top of residential buildings/roofs is common in Egypt, which poses additional risk for possible spillover and spread of other zoonotic pathogens including AI within the communities. In addition, the risk of incursion of newly emerged subtypes from other countries (H5N5, H5N6, H7N9, etc.) cannot be neglected and requires a robust risk-based surveillance system to enable early detection in order to trigger rapid response.

## General objectives

- Assess the situation of avian influenza in high-risk governorates.
- Early detection of incursion of newly emerging AI subtypes into Egypt as an early warning measure.
- Collecting proper samples for molecular surveillance for monitoring possible virus mutations and genetic characterization.
- Assess the effect of the different production and distribution sectors (LBM, farms and household) in the spread of AI through different regions and understand the virus distribution per sectors.

### **Specific objectives**

- Understand and define the prevalence of Avian Influenza sub-types being circulating in Egypt by sector, species and season.
- Figure out the virus epidemiology and seasonal pattern through comparing the situation with the same period from the previous years.
- To contribute the update and assessment the efficacy of the national AI control program.
- Define the critical control points and proposed solution for reducing the viral load .Enhance viral isolation of H5N1, H5N8 HPAI and H9N2 LPAI virus isolates from different production sectors.

### **Components**

- 1) Targeted risk-based AI surveillance in LBMs.
- 2) Targeted surveillance at domestic-wild/migratory bird interface.
- 3) Targeted surveillance in villages around the positive foci.
- 4) Targeted surveillance of nursery farms in villages of high poultry population.

### **Target area**

High-risk governorates which matching the specific criteria (high-risk districts of the selected high-risk governorates).

### **Time frame**

One year four seasons

### **Criteria of selection based on: -**

Risk scoring for live bird market is conducted where each district has given a score as follow; nil (0), low (2), medium (5) or high (10) for each of the following parameters.

- ✓ HPAI risk mapping study.
- ✓ Reporting high number of H5 cases during previous years.
- ✓ Household poultry density
- ✓ Farm density.
- ✓ Nursery farm density
- ✓ Located at the pathway of migratory birds

The overall score is summed up, and then 19 governorates with high scores were selected.

## **1) Targeted risk-based AI surveillance in LBMs**

### **Background**

AI surveillance in LBMs with an objective of monitoring disease prevalence has been implemented since 2014, the process proved to be a reliable alarm before disease upsurge especially when under-reporting is prevalent in commercial and household sectors. LBMs (street vendors and poultry shops) receive birds from different commercial sectors and destinations, therefore provide good reflection for the epidemiological situation of AI in the country, and considered also an important sampling site to monitor disease prevalence, virus mutations and probable incursion of new AI subtypes.

## Objective

- Assess the role of LBMs/poultry shops in the spread of AI in Egypt in different seasons.
- Risk assessment for the probability of AI spread through LBM by different bird species in different production sectors.
- Monitor HPAI prevalence by comparing the disease frequency (in LBMs) with the records from previous years, and maintain longitudinal database for AI distribution frequencies in LBMs in Egypt.
- Understand the distribution AI virus and provide considerable number of HPAI isolates from different poultry sector for gene sequencing and virus characterization.

## Target area

- 33 largest LBMs in 19 governorates have been selected according to the selective criteria mentioned above, 9 governorates from Upper Egypt (Giza, Fayoum, Beni-suef, Minya, Asyut, Sohag, Qena, Luxor and Aswan) and 10 governorates from Lower Egypt (Qalubia, Monofiya, Sharkia Gharbia,, Dakahlia, Behera, Alexandria, Ismailia, Portsaid , and Suez ), **Annex (1) the selected markets in different governorates**
- The number of markets selected in each governorate is shown in **table (1)**:

| Table (1): The number of markets in the selected governorate |             |                   |              |                          |                     |
|--------------------------------------------------------------|-------------|-------------------|--------------|--------------------------|---------------------|
| S                                                            | Governorate | Number of markets | S            | Governorate              | Number of markets   |
| 1                                                            | Qalubia     | 2                 | 11           | Giza                     | 3                   |
| 2                                                            | Monofiya    | 2                 | 12           | Fayoum                   | 2                   |
| 3                                                            | Sharkia     | 2                 | 13           | Benisuef                 | 1                   |
| 4                                                            | Gharbia     | 2                 | 14           | Minya                    | 2                   |
| 5                                                            | Dakahlia    | 2                 | 15           | Asyut                    | 2                   |
| 6                                                            | Behera      | 1                 | 16           | Sohag                    | 2                   |
| 7                                                            | Alexandria  | 1                 | 17           | Qena                     | 2                   |
| 8                                                            | Ismailia    | 2                 | 18           | Luxor                    | 1                   |
| 9                                                            | Suez        | 1                 | 19           | Aswan                    | 2                   |
| 10                                                           | Portsaid    | 1                 | <b>Total</b> | <b>(19) governorates</b> | <b>(33) markets</b> |

## Sampling and time frame

- Selected LBMs should be visited once per month for one year.
- Selected LBMs shouldn't be replaced by another one (unless coordinated with GOVS focal point).
- 70 samples to be collected (20 chicken, 20 duck, 20 turkey, 5 others and 5 environment) where 10 samples representing each sector (farm and household) has to be collected per each species, as follow:
  - 1) 20 tracheal samples from chicken (10 represent household sector and 10 represent commercial sector) (one pool chickens)
  - 2) 20 Cloacal samples from ducks (10 represent household sector and 10 represent commercial sector) (one pool ducks)
  - 3) 20 tracheal samples from turkey (10 represent household sector and 10 represent commercial sector) (one pool turkey)
  - 4) 5 samples from other Species (quail (tracheal) , geese (cloacal) and migratory sold birds (tracheal) if found) (one pool other)
  - 5) 5 environmental samples (fecal matter, cages, any material has close contact with the bird and its excretions, etc.) (one pool environmental sample)
- Priority should be given to sick birds.
- Maximum 20 samples will represent one pool.
- In each LBM visit, a maximum of 2 birds to be samples from each seller.
- In poultry shops, samples to be collected from different breeds/sectors whenever possible.
- Samples labeling should be clear and include all required information (species, sector, LBM name/code)
- Species labeling: Chicken (C), Duck (D), and Turkey (T)
- Sector labeling: Household (H) and farms (F).
- Time frame in the selected markets as shown in **table (2)**:-

| <b>Table (2)</b>                   | <b>Months</b> |     |     |     |     |     |     |     |      |     |     |     | <b>Total</b> |
|------------------------------------|---------------|-----|-----|-----|-----|-----|-----|-----|------|-----|-----|-----|--------------|
|                                    | Jan           | Feb | Ma  | Apr | Mar | Jun | Jul | Aug | Sept | Oct | Nov | Dec | 12 months    |
| No. of selected LBMs               | 33            | 33  | 33  | 33  | 33  | 33  | 33  | 33  | 33   | 33  | 33  | 33  | <b>33</b>    |
| No. LBM visits<br>(1 visit /month) | 33            | 33  | 33  | 33  | 33  | 33  | 33  | 33  | 33   | 33  | 33  | 33  | <b>396</b>   |
| Total no. of pooled<br>samples     | 165           | 165 | 165 | 165 | 165 | 165 | 165 | 165 | 165  | 165 | 165 | 165 | <b>1980</b>  |
| No of PCR                          | 215           | 215 | 215 | 215 | 215 | 215 | 215 | 215 | 215  | 215 | 215 | 215 | <b>2580</b>  |

### Laboratory test

- The samples will be tested as five pools according to species (chicken- duck -turkey - Other birds - environment) for common influenza antigen.
- Positive pooled samples have to be tested in two sub-groups (household and farm) for AI sub-typing.
- Positive cases are to be subjected for isolation and gene analysis
- For each LBM visit, the Laboratory results have to be provided per species and production sector.
- Results should be obtained with subtyping of N gene.
- Number of PCR tests required is approximately 2580

### Data collection

- Special LBM sampling sheet ( **See Annex 2** )
- Questionnaire information to be gathered from key informants in the market to identify any variability of data based on season or bias from data collector.
- The following field codes (**FAO/S/Governorate code**) should be written on the sampling sheet to differentiate the surveillance in LBMS from the other types of surveillance.
- Special code for each governorate ( **See Annex 3** ).

### Expected outputs

- Prevalence of AI for different routes of bird distribution from and to the market compared against the records of 2023.
- Prevalence of AI by species and sector source.
- Risk assessment study for the role of the market and risk management recommended.
- The effectiveness of the disease control measures is assessed.

## **2) Targeted surveillance at domestic-wild/migratory bird interface**

### Background

Egypt lies on migratory bird flyway; therefore, the risk of incursion of new AI subtypes is likely moderate to high as per previously indicated during Joint Risk assessment 2020 , so AI surveillance at domestic-wild bird interfaces would be necessary as an early warning measure.

### Objective

Early warning by detection of new incursions on time before wide scale dissemination among poultry production sectors in Egypt, therefore enable the poultry industry to react early and rapidly against the new disease threats.

### Target area

- **34 Sites in 17 governorates** at the migratory pathway namely, Sharkia, Ismailia, Suez, Port Said, Damietta, Dakahlia, Kafr-Elshiekh, Behera, Alexandria, Fayoum, Qena, Luxor, Aswan, Red Sea, Matrouh, North Sanai and South Sinai were defined by MOE ( see **Annex 4**).

### Sampling and time frame

- Susceptible household poultry populations in villages located close to the sites at migratory pathways should be visited once per month during migration season : spring migratory season (March-April-May) and Autumn Migratory season(October-November-December).
- Selected village shouldn't be replaced by another one (unless coordinated with GOVS focal point).
- **25 samples** to be collected from different bird species and breeds in the village houses: chicken and quails (tracheal), ducks and geese (cloacal ).
- Priority should be given to sick birds.
- In each village, a maximum of 2 birds to be collected from each house.
- Samples should be collected from different directions inside the village.
- Samples labeling should be clear and include all required information (species, village name/code)
- Species labeling: Chicken (C), Duck (D), Turkey (T) and Quail (Q).
- Time frame in the selected villages as shown in **table (4)**:

| Table (4)<br>Amount of samples                            | Mar | Apr | May | Oct | Nov | Dec | Total<br>( 6 months) |
|-----------------------------------------------------------|-----|-----|-----|-----|-----|-----|----------------------|
| No. of selected sites                                     | 34  | 34  | 34  | 34  | 34  | 34  | 34                   |
| No. villages visits (1 village<br>around the site /month) | 34  | 34  | 34  | 34  | 34  | 34  | 204                  |
| Total no. of pooled samples                               | 34  | 34  | 34  | 34  | 34  | 34  | 204                  |

### Data collection

- Special Household sampling report ( **See Annex 4** )
- Questionnaire information to be gathered from each house.
- The following field codes (FAO/M/Governorate code) on the sheet should be written to differentiate the surveillance in migratory pathway from the other types of surveillance.
- Special code for each governorate ( **See Annex 3** ).

### Laboratory test

- Samples from the same species will be pooled in one sample (from 10-20 samples per pool).
- Each pooled sample from domestic birds will be tested by RT-PCR for common matrix gene.
- Positive samples will further be tested for H5, H7 and H9 subtypes.
- Any positive sample for H5 will be tested for N1, N2, N8 and N9 subtypes.
- In case the sample (in point 4) is negative, will be tested for all N subtypes.
- Number of PCR tests required is approximately 204.

## **3) Targeted surveillance in villages around the positive foci**

### Objective

- Early detection of AI positive cases in household sector.
- Update disease case definition.

### Target area

High risk villages around confirmed positive villages and villages represent the source of positive birds in live bird markets and poultry shops ( to be defined by central Central Epidemiology Department at GOVS.

### Sampling and time frame

- Susceptible household poultry populations in each village.
- **25** samples to be collected from different bird species and breeds in the village houses: chicken and quails ( tracheal ) , ducks and geese ( cloacal ).
- Priority should be given to sick birds.
- In each village, a maximum of 2 birds to be collected from each house.
- Samples should be collected from different directions inside the village.
- Samples labeling should be clear and include all required information (species, village name/code)
- Species labeling: Chicken (C), Duck (D), Turkey (T) and Quail (Q).

### Data collection

- Special Household sampling sheet ( **See Annex 5** )
- Questionnaire information to be gathered from each house.
- The following field codes (FAO/R/Governorate code) on the sheet should be written to differentiate the surveillance in High-risk household from the other types of surveillance.
- Special code for each governorate ( **See Annex 3** ).

### Laboratory test

- Samples from the same species will be pooled in one sample (from 10-20 samples per pool).
- Each pooled sample from domestic birds will be tested by RT-PCR for common matrix gene.
- Positive samples will further be tested for H5, H7 and H9 subtypes.
- Any positive sample for H5 will be tested for N1, N2, N8 and N9 subtypes.
- In case the sample (in point 4) is negative, will be tested for all N subtypes.

## **4) Targeted surveillance of nursery farms in villages of high poultry population.**

### Objective

- Early detection of AI positive cases in Nursery farm sector.

### Target area

- Nursery farms at high risk governorates with previously recorded positive outbreaks and those with high poultry populations are targeted especially duck nursery farms.
- Five nursery farms to be visited in each district once per season.

### Sampling and time frame

- **10** samples from less than 10.000 birds to be collected from sick or apparently healthy birds in each farm per visit : chicken, turkey and quails ( tracheal ) , ducks ( cloacal ).
- Priority should be given to sick birds.
- Samples labeling should be clear and include all required information (species, farm name/code)
- Species labeling: Chicken (C), Duck (D), Turkey (T) and Quail (Q).

### Data collection

- Special farm sampling sheet ( **See Annex 6** )
- Questionnaire information to be gathered from each farm.

- The following field codes (FAO/F/Governorate code) on the sheet should be written to differentiate the surveillance in High-risk household from the other types of surveillance.
- Special code for each governorate ( **See Annex 3** ).

### **Laboratory test**

- Samples from the same species will be pooled in one sample (from 10 samples per pool).
- Each pooled sample from domestic birds will be tested by RT-PCR for common matrix gene.
- Positive samples will further be tested for H5, H7 and H9 subtypes.
- Any positive sample for H5 will be tested for N1, N2, N8 and N9 subtypes.
- In case the sample (in point 4) is negative, will be tested for all N subtypes.

### **General Considerations**

#### **1-Sampling**

- The collected samples with (PBS) will kept in cold insulated box after coding according to the laboratory requirements (serial, governorate, species, sample type, date) and then delivered to NLQP within a maximum of 48 hours after collection.
- The unfit samples that not meet the lab requirement will be refused, and another visit for re-sampling have to be conducted.
- During implementation, if the same site will be visited, one mission could be used for sampling both LBM and household.

#### **2- Data management**

- Gathering of data related to epidemiological questionnaire and fulfil of sampling sheets will be the responsibility of epidemiology unit members at the governorates for data entry and will be sent directly to the central epidemiology department in GOVS for analysis afterward.
- Data collection and entry is the responsibility of epidemiologists at district level.
- A special excel sheet will be developed for data entry of both sampling sheet and questionnaire information.
- A follow up progress report will be developed after each month and to be shared between GOVS and FAO.
- A final analytical report will be provided at the end of the surveillance by central epidemiology unit.

#### **3-Responsibility**

- Local veterinary directorates are responsible for sample and data collection.
- GOVS-Poultry departments responsible for mobilization of resources and overall field monitoring of the activities.
- NLQP is responsible for laboratory testing.
- **Annex (1) The selected markets in different governorates**

**مرفق رقم (٢)**  
**بيان بأسواق الطيور الحية التي سيتم العمل بها خلال عام ٢٠٢٤**

| م  | المحافظة    | المركز                           | اسم السوق                      |
|----|-------------|----------------------------------|--------------------------------|
| 1  | القليوبية   | شبين القناطر                     | شبين القناطر                   |
| 2  | القليوبية   | بنها                             | بنها                           |
| 3  | المنوفية    | اشمون                            | اشمون                          |
| 4  | المنوفية    | قويسنا                           | قويسنا                         |
| 5  | الشرقية     | الزقازيق                         | ونس                            |
| 6  | الشرقية     | ابو حماد                         | ابو حماد                       |
| 7  | الغربية     | طنطا                             | برما                           |
| 8  | الغربية     | كفر الزيات                       | كفر الزيات                     |
| 9  | البحيرة     | دمنهوور                          | دمنهوور                        |
| 10 | الدقهلية    | ميت غمر                          | ميت غمر                        |
| 11 | الدقهلية    | بلقاس                            | بلقاس                          |
| 12 | الاسكندرية  | العامرية                         | العامرية                       |
| 13 | بورسعيد     | حي الضواحي - بورفؤاد - حي الزهور | السلام - بورفؤاد - سوق ال 5000 |
| 14 | الاسماعيلية | ابو صوير                         | ابو صوير                       |
| 15 | الاسماعيلية | القنطرة غرب                      | النصر                          |
| 16 | السويس      | الجنائين                         | الالبان - الاحد                |
| 17 | الجيزة      | البدرشين                         | البدرشين                       |
| 18 | الجيزة      | اوسيم                            | اوسيم                          |
| 19 | الجيزة      | كرداسة                           | كرداسة                         |
| 20 | بني سويف    | اهناسيا                          | اهناسيا                        |
| 21 | الفيوم      | طامية                            | طامية                          |
| 22 | الفيوم      | بندر الفيوم                      | الصوفي                         |
| 23 | المنيا      | المنيا                           | الحبيشي                        |
| 24 | المنيا      | سمالوط                           | سمالوط                         |
| 25 | اسيوط       | اسيوط                            | اسيوط                          |
| 26 | اسيوط       | ديروط                            | ديروط                          |
| 27 | سوهاج       | سوهاج                            | اولاد نصير                     |
| 28 | سوهاج       | أخميم                            | أخميم                          |
| 29 | قنا         | قنط                              | الظافرية                       |
| 30 | قنا         | قنا                              | الفوقاني                       |
| 31 | الاقصر      | اسنا                             | اسنا                           |
| 32 | اسوان       | ادفو                             | ادفو                           |
| 33 | اسوان       | كوم امبو                         | كوم امبو                       |

مفتي  
Dr

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د. محمد رشيد

**Annex (2): Special live bird market sampling report**

### تقرير سحب عينات طيور من الأسواق

[illegible]

| المرحلة | رقم | الكلود | نوع الطيور | السلالة | المرحلة المعرفية                                                                                                      |                                          | تتويان مصفر الطيور<br>(اسم القرية - اسم المركز - اسم المحافظة) |
|---------|-----|--------|------------|---------|-----------------------------------------------------------------------------------------------------------------------|------------------------------------------|----------------------------------------------------------------|
|         |     |        |            |         | (1) نفوق (2) زرقة وبقع زرقية<br>(3) أعراض تنفسية<br>(4) أعراض تنفسية (5) عتس<br>(6) أعراض أخرى تحدد<br>(7) بدون أعراض | (إسم القرية - إسم المركز - إسم المحافظة) |                                                                |
| أ       | 1   | CF1    | أ          | أ       |                                                                                                                       |                                          |                                                                |
|         | 2   | CF2    |            |         |                                                                                                                       |                                          |                                                                |
|         | 3   | CF3    |            |         |                                                                                                                       |                                          |                                                                |
|         | 4   | CF4    |            |         |                                                                                                                       |                                          |                                                                |
|         | 5   | CF5    |            |         |                                                                                                                       |                                          |                                                                |
|         | 6   | CF6    |            |         |                                                                                                                       |                                          |                                                                |
|         | 7   | CF7    |            |         |                                                                                                                       |                                          |                                                                |
|         | 8   | CF8    |            |         |                                                                                                                       |                                          |                                                                |
|         | 9   | CF9    |            |         |                                                                                                                       |                                          |                                                                |
|         | 10  | CF10   |            |         |                                                                                                                       |                                          |                                                                |
| ب       | 1   | DF1    | ب          | ب       |                                                                                                                       |                                          |                                                                |
|         | 2   | DF2    |            |         |                                                                                                                       |                                          |                                                                |
|         | 3   | DF3    |            |         |                                                                                                                       |                                          |                                                                |
|         | 4   | DF4    |            |         |                                                                                                                       |                                          |                                                                |
|         | 5   | DF5    |            |         |                                                                                                                       |                                          |                                                                |
|         | 6   | DF6    |            |         |                                                                                                                       |                                          |                                                                |
|         | 7   | DF7    |            |         |                                                                                                                       |                                          |                                                                |
|         | 8   | DF8    |            |         |                                                                                                                       |                                          |                                                                |
|         | 9   | DF9    |            |         |                                                                                                                       |                                          |                                                                |
|         | 10  | DF10   |            |         |                                                                                                                       |                                          |                                                                |
| ج       | 1   | TF1    | ج          | ج       |                                                                                                                       |                                          |                                                                |
|         | 2   | TF2    |            |         |                                                                                                                       |                                          |                                                                |
|         | 3   | TF3    |            |         |                                                                                                                       |                                          |                                                                |
|         | 4   | TF4    |            |         |                                                                                                                       |                                          |                                                                |
|         | 5   | TF5    |            |         |                                                                                                                       |                                          |                                                                |
|         | 6   | TF6    |            |         |                                                                                                                       |                                          |                                                                |
|         | 7   | TF7    |            |         |                                                                                                                       |                                          |                                                                |
|         | 8   | TF8    |            |         |                                                                                                                       |                                          |                                                                |
|         | 9   | TF9    |            |         |                                                                                                                       |                                          |                                                                |
|         | 10  | TF10   |            |         |                                                                                                                       |                                          |                                                                |
| د       | 1   | E1     | د          | د       | تتويان مصفر الطيور<br>(اسم القرية - اسم المركز - اسم المحافظة)                                                        |                                          |                                                                |
|         | 2   | E2     |            |         |                                                                                                                       |                                          |                                                                |
|         | 3   | E3     |            |         |                                                                                                                       |                                          |                                                                |
|         | 4   | E4     |            |         |                                                                                                                       |                                          |                                                                |
|         | 5   | E5     |            |         |                                                                                                                       |                                          |                                                                |

..... اسم العامل/ المعاون ..... اسم سائق المديرية

لَعَلَّكُمْ

اسم سائق الهيئة

| s | Governorate | Code | s | Governorate | Code |
|---|-------------|------|---|-------------|------|
|---|-------------|------|---|-------------|------|

|    |              |     |    |             |     |
|----|--------------|-----|----|-------------|-----|
| 1  | Cairo        | CA  | 15 | Matrouh     | MTR |
| 2  | Qalubia      | QLB | 16 | Giza        | GZ  |
| 3  | Monofiya     | MNF | 17 | Fayoum      | FY  |
| 4  | Sharkia      | SH  | 18 | Benisuef    | BS  |
| 5  | Gharbia      | GH  | 19 | Minya       | MNY |
| 6  | Dakahlia     | DK  | 20 | Asyut       | AST |
| 7  | Behera       | BH  | 21 | Sohag       | SO  |
| 8  | Alexandria   | AL  | 22 | Qena        | QN  |
| 9  | Kafrelshaikh | kSH | 23 | Luxor       | LX  |
| 10 | Ismailia     | IS  | 24 | Aswan       | ASW |
| 11 | Suez         | SZ  | 25 | North Sinai | NSN |
| 12 | Portsaid     | PS  | 26 | South Sinai | SSN |
| 13 | Damietta     | DM  | 27 | New Valley  | NV  |
| 14 | Red Sea      | RS  |    |             |     |

#### Annex (4): Sampling sites at domestic-migratory bird interface

##### مرفق رقم (٣)

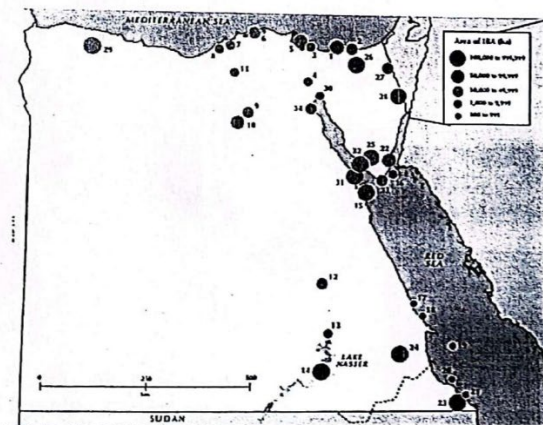
بيان وزارة البيئة الوارد للهيئة العامة للخدمات البيطرية بتاريخ ٢٠٢٣/١١/١ بأهم (٣٤) موقع لمسارات الطيور المهاجرة

##### وحدة الحياة البرية

المساحة الإجمالية التي تغطيها مناطق الطيور الهامة (IBAs- Important Bird Areas) في مصر حوالي ٣٥,٠٠٠ كيلومتر مربع، أي حوالي ٣,٥% من مساحة مصر. وتقع غالبية مناطق الطيور الهامة في الجزء الشرقي من البلاد، بشكل كبير شرق النيل، مما يشير بوضوح إلى فقر الصحراء الغربية في المواقع الحيوية للطيور.

وعلى الرغم من أن سيناء تمثل فقط ٦% من مساحة مصر، إلا أنها تحتوي على عدد كبير نسبياً من مناطق الطيور الهامة (٢١% من مناطق الطيور الهامة في مصر)، وذلك بمكن تلوح ببقائها وموقعها البيوجغرافي الفريد للمنطقة.

وغيما يلي قائمة بـ ٣٤ منطقة من مناطق الطيور الهامة في مصر، مع إدارتها الإقليمية: (خريطة ٢)



١. بحيرة البردويل - شمال سيناء
٢. منطقة الزرائيق المحمية - شمال سيناء
٣. الملاحية - بورسعيد
٤. البحيرات المرة - الإسماعيلية
٥. بحيرة المنزلة - بورسعيد، دمنيات الدقهلية، الشرقية، الإسماعيلية
٦. منطقة بحيرة البرلس المحمية - كفر الشيخ
٧. بحيرة إدكو - البحيرة
٨. بحيرة مريوط - الإسكندرية
٩. منطقة بحيرة قارون المحمية - الفيوم
١٠. منطقة وادي الريان المحمية - الفيوم
١١. وادي النطرون - البحيرة
١٢. النيل المتوا - قنا، الأقصر، أسوان
١٣. خزان أسوان - أسوان
١٤. بحيرة ناصر - أسوان
١٥. أرخبيل الفرقة - البحر الأحمر
١٦. جزيرة تيران - جنوب سيناء
١٧. جزيرة وادي الجبال - البحر الأحمر
١٨. جزر قاتن - البحر الأحمر
١٩. جزيرة زيارج - البحر الأحمر
٢٠. جزر سيال - البحر الأحمر
٢١. جزر روابيل - البحر الأحمر
٢٢. منطقة نقي المحمية - جنوب سيناء
٢٣. جبل طبة المحمية - البحر الأحمر
٢٤. منطقة الأبرق - البحر الأحمر
٢٥. محمية سانت كاترين - جنوب سيناء
٢٦. جبل مغارة - شمال سيناء
٢٧. قسيمة - شمال سيناء
٢٨. وادي جرجي - شمال سيناء
٢٩. صحراء القصر - مطروح
٣٠. محافظة السويس
٣١. جبل الزيت - البحر الأحمر
٣٢. سهل القام - جنوب سيناء
٣٣. محمية رأس محمد - جنوب سيناء
٣٤. مدينة العين السخنة

Handwritten signature and stamp.

#### Annex (5): Special household Sampling sheet

الهيئة العامة للخدمات البيطرية  
الإدارة المركزية للطب الوقائي

تقرير سحب عينات طيور من القرى

التاريخ ..... / ..... / ..... المحافظة ..... المركز ..... القرية .....  
الكود الحقل ..... عدد المنازل التي تم سحب عينات منها ..... رقم الزيارة خلال الموسم .....

| م. | الكود  | اللقب | اسم المالك | السلالة | الاعراض<br>1- ( يوجد<br>2- لا يوجد ) | مصدر شراء الطيور<br>1 مزارع / 2 تربية منزلية / 3 أسواق / 4 حضانات / 5 مفرخات / 6 بائع متجول | المرحلة العمرية<br>(شامي : من 14 -<br>21 اسبوع)<br>(بالغ : من 21<br>اسبوع ) | عنوان مصدر الطيور<br>( اسم القرية - اسم<br>المركز - اسم المحافظة ) |
|----|--------|-------|------------|---------|--------------------------------------|---------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------|--------------------------------------------------------------------|
| 1  | DH1    | ط     |            |         |                                      |                                                                                             |                                                                             |                                                                    |
| 2  | DH2    |       |            |         |                                      |                                                                                             |                                                                             |                                                                    |
| 3  | DH3    |       |            |         |                                      |                                                                                             |                                                                             |                                                                    |
| 4  | DH4    |       |            |         |                                      |                                                                                             |                                                                             |                                                                    |
| 5  | DH5    |       |            |         |                                      |                                                                                             |                                                                             |                                                                    |
| 6  | DH6    |       |            |         |                                      |                                                                                             |                                                                             |                                                                    |
| 7  | DH7    |       |            |         |                                      |                                                                                             |                                                                             |                                                                    |
| 8  | DH8    |       |            |         |                                      |                                                                                             |                                                                             |                                                                    |
| 9  | DH9    |       |            |         |                                      |                                                                                             |                                                                             |                                                                    |
| 10 | DH10   |       |            |         |                                      |                                                                                             |                                                                             |                                                                    |
| 11 | DH11   |       |            |         |                                      |                                                                                             |                                                                             |                                                                    |
| 12 | DH12   |       |            |         |                                      |                                                                                             |                                                                             |                                                                    |
| 13 | DH13   |       |            |         |                                      |                                                                                             |                                                                             |                                                                    |
| 14 | DH14   |       |            |         |                                      |                                                                                             |                                                                             |                                                                    |
| 15 | DH15   |       |            |         |                                      |                                                                                             |                                                                             |                                                                    |
| 1  | CH1    | دجاج  |            |         |                                      |                                                                                             |                                                                             |                                                                    |
| 2  | CH2    |       |            |         |                                      |                                                                                             |                                                                             |                                                                    |
| 3  | CH3    |       |            |         |                                      |                                                                                             |                                                                             |                                                                    |
| 4  | CH4    |       |            |         |                                      |                                                                                             |                                                                             |                                                                    |
| 5  | CH5    |       |            |         |                                      |                                                                                             |                                                                             |                                                                    |
| 1  | TH1    | رومي  |            |         |                                      |                                                                                             |                                                                             |                                                                    |
| 2  | TH2    |       |            |         |                                      |                                                                                             |                                                                             |                                                                    |
| 3  | TH3    |       |            |         |                                      |                                                                                             |                                                                             |                                                                    |
| 4  | TH4    |       |            |         |                                      |                                                                                             |                                                                             |                                                                    |
| 5  | TH5    |       |            |         |                                      |                                                                                             |                                                                             |                                                                    |
| 6  | TH6    |       |            |         |                                      |                                                                                             |                                                                             |                                                                    |
| 7  | TH7    |       |            |         |                                      |                                                                                             |                                                                             |                                                                    |
| 8  | TH8    |       |            |         |                                      |                                                                                             |                                                                             |                                                                    |
| 9  | TH9    |       |            |         |                                      |                                                                                             |                                                                             |                                                                    |
| 10 | TH10   |       |            |         |                                      |                                                                                             |                                                                             |                                                                    |
| 1  | GH1    | اوز   |            |         |                                      |                                                                                             |                                                                             |                                                                    |
| 2  | GH2    |       |            |         |                                      |                                                                                             |                                                                             |                                                                    |
| 3  | GH3    |       |            |         |                                      |                                                                                             |                                                                             |                                                                    |
| 4  | GH4    |       |            |         |                                      |                                                                                             |                                                                             |                                                                    |
| 5  | GH5    |       |            |         |                                      |                                                                                             |                                                                             |                                                                    |
| 1  | Q....1 | سمان  |            |         |                                      |                                                                                             |                                                                             |                                                                    |
| 2  | Q....2 |       |            |         |                                      |                                                                                             |                                                                             |                                                                    |
| 3  | Q....3 |       |            |         |                                      |                                                                                             |                                                                             |                                                                    |
| 4  | Q....4 |       |            |         |                                      |                                                                                             |                                                                             |                                                                    |
| 5  | Q....5 |       |            |         |                                      |                                                                                             |                                                                             |                                                                    |

أعضاء اللجنة 1- د/ ..... هاتف .....

2- د/ ..... هاتف .....

3- د/ ..... هاتف .....

اسم العامل/ المعاون ..... اسم سائق المديرية .....

لجنة الهيئة 1- د/ ..... 2- د/ .....

اسم سائق الهيئة .....

يعتمد

## Annex (6): Special farm Sampling sheet

وزارة الزراعة وإستصلاح الأراضي  
الهيئة العامة للخدمات البيطرية

### تقرير سحب العينات لحالات الفحص بمرض انفلونزا الطيور بالتربية المنزلية والمزارع

|                                               |                |                                                                                                                                                                                                                                                                                         |              |              |
|-----------------------------------------------|----------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|--------------|
| المحافظة : .....                              | المركز : ..... | الوحدة البيطرية .....                                                                                                                                                                                                                                                                   | القرية:..... | الكود: ..... |
| تاريخ سحب العينات: ..... / ..... / .....      |                | <input type="checkbox"/> بلاغ بإشتباه فى الطيور <input type="checkbox"/> بلاغ بإشتباه بشرى <input type="checkbox"/> بلاغ بإصابة بشرية مؤكدة<br><input type="checkbox"/> تقصى نشط <input type="checkbox"/> تقصى عرضى/مستهدف <input type="checkbox"/> كاهو (CAHO)                         |              |              |
| اسم صاحب الحالة (أو اسم المزرعة/المالك) ..... |                | اسم المستأجر (بالنسبة للمزرعة) .....                                                                                                                                                                                                                                                    |              |              |
| الإحداثيات للمكان                             |                | E: .....    N: .....                                                                                                                                                                                                                                                                    |              |              |
| نشاط المزرعة                                  |                | <input type="checkbox"/> جدود <input type="checkbox"/> أمهات تسمين ( <input type="checkbox"/> تربية - إنتاج )<br><input type="checkbox"/> بياض <input type="checkbox"/> تسمين<br>العدد الإجمالي عند التسمين (عمر يوم واحد) ..... تاريخ التسمين ..... / ..... / ..... العمر باليوم ..... |              |              |
| الغرض من التريبة المنزلية                     |                | <input type="checkbox"/> استهلاك <input type="checkbox"/> إبحار<br>عدد العنابر بالمزرعة: ..... السعة الكلية للمزرعة: .....<br>تاريخ أول ظهور للأعراض: ..... / ..... / .....                                                                                                             |              |              |

| نوع الطيور | * الفئة العمرية | عدد العنابر (بالمزارع) | السلالة | العدد قبل بداية ظهور الأعراض | عدد التالف منذ بداية ظهور الأعراض | عدد المصاب فى يوم المعالجة | عدد المخالط فى يوم المعالجة | نوع التحصين H?N? | تاريخ آخر تحصين       | (١) نفوق<br>(٣) أعراض عصبية<br>(٥) عمى | الأعراض الظاهرية<br>(٢) زرقة وبقع نزفية<br>(٤) أعراض تنفسية<br>(٧) بدون أعراض | عدد العينات التي تم أخذها<br>مجمع زور دم أخرى (تحدد) |
|------------|-----------------|------------------------|---------|------------------------------|-----------------------------------|----------------------------|-----------------------------|------------------|-----------------------|----------------------------------------|-------------------------------------------------------------------------------|------------------------------------------------------|
| □ دجاج     | ككتوت           |                        |         |                              |                                   |                            |                             |                  | ..... / ..... / ..... |                                        |                                                                               |                                                      |
|            | نامى            |                        |         |                              |                                   |                            |                             |                  | ..... / ..... / ..... |                                        |                                                                               |                                                      |
|            | بالغ            |                        |         |                              |                                   |                            |                             |                  | ..... / ..... / ..... |                                        |                                                                               |                                                      |
| □ بط       | ككتوت           |                        |         |                              |                                   |                            |                             |                  | ..... / ..... / ..... |                                        |                                                                               |                                                      |
|            | نامى            |                        |         |                              |                                   |                            |                             |                  | ..... / ..... / ..... |                                        |                                                                               |                                                      |
|            | بالغ            |                        |         |                              |                                   |                            |                             |                  | ..... / ..... / ..... |                                        |                                                                               |                                                      |
| □ أوز      | ككتوت           |                        |         |                              |                                   |                            |                             |                  | ..... / ..... / ..... |                                        |                                                                               |                                                      |
|            | نامى            |                        |         |                              |                                   |                            |                             |                  | ..... / ..... / ..... |                                        |                                                                               |                                                      |
|            | بالغ            |                        |         |                              |                                   |                            |                             |                  | ..... / ..... / ..... |                                        |                                                                               |                                                      |
| □ رومي     | ككتوت           |                        |         |                              |                                   |                            |                             |                  | ..... / ..... / ..... |                                        |                                                                               |                                                      |
|            | نامى            |                        |         |                              |                                   |                            |                             |                  | ..... / ..... / ..... |                                        |                                                                               |                                                      |
|            | بالغ            |                        |         |                              |                                   |                            |                             |                  | ..... / ..... / ..... |                                        |                                                                               |                                                      |
| أخرى ..... |                 |                        |         |                              |                                   |                            |                             |                  | ..... / ..... / ..... |                                        |                                                                               |                                                      |

\* الفئة العمرية: ككتوت : من يوم إلى ٣ أسابيع ، نامى: من ٣ أسابيع إلى ٢٠ أسبوع ، بالغ : أكبر من ٢٠ أسبوع  
ملاحظات:

مدير المديرية

مدير الإدارة البيطرية

اللجنة