

# **CARIBBEAN POULTRY ASSOCIATION**

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## **Item iii.a**

### **DRAFT CARICOM DIRECTIVE FOR THE DECLARATION OF DISEASE FREE AREAS FOR POULTRY DISEASES**

**FOR THE CONSIDERATION OF THE CARICOM  
CHIEF VET OFFICERS/ CHIEF VET PUBLIC HEALTH OFFICERS**  
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**DRAFT**  
**CARICOM DIRECTIVE FOR THE DECLARATION OF**  
**DISEASE FREE AREAS FOR POULTRY DISEASES**

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## **I. INTRODUCTION**

The introduction to the document should address the following points:

1. It is necessary to present, in a clear and concise manner, the sanitary basis that vouches for the request of, or the intention to gain, free status recognition. Need to mention the type of goods that intend to market and, where necessary, generalities of the processes that these have been submitted to reduce any risk that could exist.

2. Geographical description of the country or zone for which the recognition of free status is requested for Newcastle Disease (NCD) and Avian Influenza (IA)

- Geographical location
- Surface area
- Geographical limits.
- Natural and/or artificial barriers
- Number and name of the political units of administration in the zone or country: district, parish, county, etc.
- Map with the political units of administration

## **II. CHARACTERIZATION OF POULTRY PRODUCTION**

### **2.1 Poultry Production.**

2.1.1 Importance of poultry production (contribution to GDP, employment, family income).

2.1.2 Poultry meat in tons produced during the past three years, including the current year; quantities exported to other national administrative units and other countries (give names and quantities); slaughterhouses of origin of the products.

2.1.3 Number of live poultry exported to other national administrative units or countries during the past three years, including the current year.

2.1.4 Percentage of poultry production with respect to the production in the administrative unit of greater hierarchy (district, parish, county) in the past three years, including the current year.

2.1.5 Percentage of the poultry production with respect to the national production in the past three years.

## **2.2 Database on Centers of Poultry Production.**

2.2.1 Number and percentage of commercial and backyard farms, total number of birds and percentage by category.

2.2.2 Listing of commercial farms: name, location inside the administrative units, coordinates, population by categories (broilers, layers, breeders). Need to include tables showing the distribution.

2.2.3 Listing of backyard farms by smallest administrative unit: coordinates, and population by categories.

2.2.4 Elaboration of tables that show the distribution of poultry by administrative units for commercial and backyard farms. .

2.2.5 Preparation of maps that show, separately, the distribution of the populations of backyard and commercial farms.

**2.3 Listing of associations of poultry producers** in the country, including a list of its members and proportion of the poultry population that they represent.

## **2.4 Slaughter**

2.4.1 Slaughterhouses for export: List of all slaughterhouses, name, owner, location, coordinates, percentage of the total population of birds slaughtered per year.

2.4.2 Private Slaughterhouses. List of all slaughterhouses, name, owner, location, coordinates, percentage of the population slaughtered per year.

2.4.3 Home slaughter: List of all home slaughterhouses, name, location, percentage of the population slaughtered per year.

## **2.5 Poultry for industrial use.**

2.5.1 Slaughterhouses for export. Percentage of the annual production.

2.5.2 Private Slaughterhouses. Percentage bound for industrial use.

2.5.3 Home slaughter: Percentage of birds for consumption or for the craft industry.

## **2.6 Commercialization**

2.6.1 Identification of middlemen and drivers of the vehicles transporting poultry:  
Elaboration of listings, addresses and volume of annual trade. Conditions and

sanitary measures applied by the competent authority for the movement of poultry.

2.6.2 Identification of markets (auctions, holding areas): Listing of markets and persons that attend these markets for trade purposes. Sanitary measures and movement controls applied by the competent authority.

2.6.3 Listing of the flow of trade:  
-Internal, inside the zone.  
-External to the zone and international.

2.6.5 Imports of poultry, poultry products and by-products: provide statistics showing imported product and its origin with supporting documents for importations realized in the last three years.

### **III ANIMAL HEALTH INFRASTRUCTURE**

#### **3.1 Structure of the Animal Health Department in the Country and Zone.**

3.1.1 Organogram of the structure

3.1.2 List of each existing post, type of professional that occupy it (veterinarian, livestock officer, agriculturist, agricultural technician or other), and responsibilities of the post..

#### **3.2 List of Accredited Veterinarians and Area of Accreditation.**

#### **3.3 List of Private Veterinarians.**

#### **3.4 List of Veterinarians that Work in Laboratories, Universities, Agricultural Schools.**

**3.5 List of Veterinarians that Work in Slaughterhouses as Inspectors** (slaughterhouses for export, municipal slaughterhouses and private slaughterhouses).

#### **3.6 List of Veterinarians and Technicians that Work in Food Inspection.**

#### **3.7 List of Veterinarians and Technicians that offer Professional Services to Farms.**

3.8 List of veterinarians and technicians that work as inspectors at movement control checkpoints and in international ports of entry.

3.9 List of agricultural schools and number and type of professionals that work in them.

3.10 Detail of the means of communication (telephone, radio, fax, e-mail, means of communication by air, land and sea) and their distribution in country and zone. List of

type of communication with remote places in the area.

3.11 List of means of communication, indicating the points of control:

- Highways and roads
- Railroad
- National and international airports
- River ports, lake ports, maritime ports national and international.

3.12 List of official and private laboratories that carry out veterinary diagnostics.

3.13 List of accredited laboratories.

3.14 List of International ports of entry.

3.15 List of internal animal movement control points.

3.16 List and location of other official centers that provide veterinary services.

#### **IV. ACTIVITIES OF THE ERRADICATION AND CONTROL PROGRAMME.**

##### **4.1 Chronology of the programme in the country and zone.**

4.1.1 Last outbreak of Newcastle Disease and Avian Influenza.

4.1.2 Date of the last vaccination activity.

4.1.3 Starting date of the eradication phase.

4.1.4 Official declaration date of free status.

##### **4.2 Epidemiological Sampling**

4.2.1 Methodology used to determine the sample size of the poultry farms.

4.2.1.1 Mechanism to select the farms sampled.

4.2.1.2 Number and percentage of commercial farms sampled.

4.2.1.3 Number of birds sampled by farm and type.

4.2.1.4 Number of samples collected from commercial farms by area.

4.2.2 Methodology used to determine the sample size for backyard poultry

4.2.2.1 Mechanism to select the farms sampled.

4.2.2.2 Number and percentage of backyard farms sampled.

4.2.2.3 Number of birds sampled per farm.

4.2.2.4 Number of samples collected by area.

4.2.3 Name of Laboratory that processed the samples collected to declare the country or zone disease free.

4.2.4 Tests used for laboratory diagnosis.

4.2.5 Results of the epidemiological surveys.

#### **4.3 Prevention and Control Measures.**

4.3.1 State the mechanisms of bio-security audits in commercial farms.

4.3.2 List of farms audited per year and results of audits.

4.3.3 In case of not using bio-security audits, describe the measures that are applied to prevent diseases entering the farms.

**4.4 Description of the Coordination Activities** and interrelation between the producers, producers' organizations, civil authorities, Ministry of Agriculture.

#### **4.5 Finance of the Programme.**

4.5.1 National budget assigned to the animal health department in the past three years.

4.5.2 Budget assigned for the control and eradication programmes in avian diseases. Distribution by administrative units and percentage of the budget with relation to that assigned to the animal health department.

4.5.3 Financial contributions from industry, producers, local government and national government in the last three years.

4.5.4 Budget execution of the last three years of all the contributions financing the programme.

4.5.5 Contingency fund. Actual amount of the fund. History of its formation.

4.5.6 If no contingency fund exists, state how the compensation will be paid to the producers in case of slaughter of birds to control an outbreak of disease. Identify the

source of funds to confront an emergency due to the appearance of Newcastle Disease or Avian Influenza.

## **V. EPIDEMIOLOGICAL SURVEILLANCE.**

**5.1 Description of the Type of Farm Registry** in the country or zone..

**5.2 Description of the Epidemiological Surveillance of Commercial Farms.**

5.2.1 Definition of selection of farms.

5.2.2 Sampling frequency

5.2.3 Type of samples

5.2.4 Number of samples

5.2.5 Laboratory that performs the tests.

5.2.6 Result of the tests of the last three years, including current year.

5.2.7 Date of last sampling.

5.2.8 Date programmed for next sampling.

**5.3 Description of the Epidemiological Surveillance of Backyard Farms**

5.3.1 Definition of farms.

5.3.2 Sampling frequency

5.3.3 Type of samples

5.3.4 Number of samples

5.3.5 Laboratory that performs the tests.

5.3.6 Result of the tests of the last three years, including current year.

5.3.7 Date of last sampling

5.3.8 Date programmed for next sampling

**5.4 Surveillance of slaughterhouses.** Presentation of the information by type of slaughterhouse: export, private, home/community slaughter.

- 5.4.1 Number of birds slaughtered per day.
- 5.4.2 Veterinarian responsible (official, accredited, private).
- 5.4.3 Type and quantity of samples collected.
- 5.4.4 Sampling frequency.
- 5.4.5 Laboratory that performs the tests.
- 5.4.6 Result of the tests of the last three years, including current year.

**5.5 Registry of Accredited Laboratories** in the country and zone:

- 5.5.1 Name and location.
- 5.5.2 Areas accredited.
- 5.5.3 Geographic area services are offered.
- 5.5.4 Diagnostic tests that are done.
- 5.5.5 Number of tests and results of the last three years.
- 5.5.6 Number of suspect notifications or confirmation of notifiable diseases, including results of the last three years.

**5.6 Register of Non-Accredited Laboratories** in the country and zone.

- 5.6.1 Name and location.
- 5.6.2 Areas accredited..
- 5.6.3 Geographic area where services are offered.
- 5.6.4 Diagnostic tests that are done.
- 5.6.5 Number of tests and results of the last three years.
- 5.6.6 Number of suspect notifications or confirmation of notifiable diseases, including results of the last three years.

**5.7 Register of Laboratories Located Outside the Programme Area** but which give services to poultry producers in the control and eradication area.

5.7.1 Name and location.

5.7.2 Areas accredited.

5.7.3 Geographic area where service is offered.

5.7.4 Diagnostic tests that are done.

5.7.5 Number of tests and results of the last three years.

5.7.6 Number of suspect notifications or confirmation of notifiable diseases, including results of the last three years

**5.8 Veterinary Biologics that are Distributed and Used** in the control and eradication programme area.

5.8.1 List of biologics used

5.8.2 Mechanism of supervision of sale and use of biologics

5.8.3 Control measures to prevent the use of unauthorized biologics in the programme area.

**5.9 Laboratories and Distributors Authorized for the Production and Distribution of Biologics** of avian diseases.

5.9.1 List of authorized laboratories for the production of biologics and type of biologics produced.

5.9.2 List of distributors of the authorized biologics in the area of the project.

**5.10 Register of Diagnostics of Newcastle Disease and Avian Influenza** of all the official laboratories during the last three years, identifying the place of origin and the laboratory results.

**5.11 Functional and Operational Demonstration of the Epidemiological Surveillance System.**

5.11.1 List of people responsible for notification in commercial farms.

5.11.2 List of people responsible for notification of events in backyard operations (collaborators)

5.11.3 List of people responsible for notification in private and export slaughterhouses.

5.11.4 List of disease notification forms submitted by the private laboratories, accredited or non-accredited, and official laboratories.

5.11.5 Presentation of files containing notification forms and investigation of suspect avian diseases during the last three years

5.11.6 Demonstration of time taken from notification to investigation, and time taken from receipt of samples to communication of the diagnosis.

5.11.7 Presentation of files with information on follow-up on suspect and confirmed cases (interdictions, lifting of quarantine)

## **VI. MOVEMENT CONTROL.**

**6.1 Description of movement control** in the country and zone.

**6.2 Map indicating ports of entry** (quarantine) and internal animal movement control points.

**6.3 Information on international quarantine entry points** and the internal animal movement control points.

6.3.1 Name of points.

6.3.2 Classification of points (internal, international).

6.3.3 Location

6.3.4 Existing means of communication

6.3.5 Personnel, including profession and post.

6.3.6 Type of activity that is done: inspection of animals, documents; treatments; other.

6.3.7 Statistical information of the activities for the last three years.

6.3.7.1 Means of transportation

6.3.7.1.1 Quantity and origin of vehicles inspected, vehicles originating from risk areas (vehicles = vehicles, aircrafts, boats, trains, etc)

6.3.7.1.2 Quantity and origin of vehicles inspected, vehicles originating from areas of lesser risk.

6.3.7.1.3 Quantity of vehicles that passed the quarantine points without restrictions.

6.3.7.1.4 Quantity of vehicles returned to origin/procedence, specifying the reasons.

6.3.7.1.5 Quantity of vehicles that underwent treatment: specify treatment.

6.3.7.2 Live Animals.

6.3.7.2.1 Animals inspected: quantity, species and origin.

6.3.7.2.2 Quantity and species of animals that are allowed movement through the control points.

6.3.7.2.3 Quantity and species of animals that were not allowed movement through the control points. Reason why not allowed passage.

6.3.7.2.4 Animals confiscated : Quantity, species, origin and reason for confiscation.

6.3.7.2.5 Destination of confiscated animals.

6.3.7.3 Products of animal origin.

6.3.7.3.1 Quantity, species and origin of products inspected.

6.3.7.3.2 Quantity, species and origin of products allowed to move through the control points..

6.3.7.3.3 Quantity, species and origin of products rejected at the control points. Reason for rejection.

6.3.7.3.4 Quantity, species and origin of products confiscated. Reason for confiscation.

6.3.7.3.5 Destination of products confiscated.

**6.4 Details of the prevention and control measures** applied by control point (quarantine, treatment, laboratory tests, other).

**6.5 Measures for disposal of rubbish** (garbage), food scraps (waste) and other materials from vehicles inspected at the control points.

## **VII. MECHANISM OF EMERGENCY RESPONSE**

**7.1 Integration Date of the Emergency Task Force;** number of members, name of members and their qualifications and addresses.

**7.2 Activities Done by the Emergency Task Force** since its integration.

## **VIII. LEGISLATION**

**8.1 Presentation of the laws, regulations, standards and other legal dispositions** which demonstrate the legal base supporting the disease control and eradication activities, movement control and emergency response by the competent authority.

**8.2 Document the infractions or intent of infractions** of the last two years and how the existing legislation was applied.

## **IX. RISK ANALYSIS**

Elaboration of periodical risk analysis studies that determine the probability of disease occurrence taking into consideration the experience gained in the last three years and other information that show risk of disease introduction.

END

## **Acknowledgements**

This paper is a translation and adaptation of an OIRSA document entitled: “Directriz regional para declaración de áreas libres de enfermedades aviares”. Appropriate consultations were done prior to translation and adaptation of the document and subsequent use of the new document.

**Appendix 1**  
**Caribbean Poultry Association**  
**Surveillance for Poultry Diseases**

**DRAT SAMPLING PROTOCOL TO CONFIRM**  
**EXOTIC POULTRY DISEASE FREE STATUS**

**A. Introduction**

This protocol was developed by Dr. Meg Thorburn of the Ontario Veterinary College, University of Guelph, Ontario, Canada, during a CanEd consultancy for the Belize Agricultural Health Authority (BAHA) in Belize. The original document was entitled “Suggested sampling protocol to confirm Classical Swine Fever free status of Belize”; in this document the author states that the protocol can be used as an example to first time surveys for other diseases of concern. I have taken the liberty to adapt the protocol for poultry diseases and have used Belize as an example to make it easier for other CARICOM member states to understand the protocol. Dr. Thorburn has kindly reviewed the protocol and her comments are incorporated in this protocol.

**B. Summary**

It is recommended that 24 birds be randomly selected in each of 135 randomly selected communities. The sample should be stratified by district and the proportion of communities selected in each district should be proportional to the (estimated) total number of birds in that district.

**C. Definition of terms**

**1. Variables**

$n$  = the number of birds to be sampled within a commercial farm./community.

$n_1$  = the number of birds to be sampled within a commercial farm

$n_2$  = the number of birds to be sampled within a community.

$N_1$  = the total number of birds in a commercial farm.

$N_2$  = the total number of birds in a community.

$m$  = the number of commercial farms/communities to be sampled

$m_1$  = the number of commercial farms to be sampled

$m_2$  = the number of communities to be sampled

$M_1$  = the total number of commercial farms in Belize

$M_2$  = the total number of communities in Belize

**2. Belize-sensitivity:**

The probability that if an exotic poultry disease is present in poultry in Belize at the within-farm/community and among-farm community prevalences stated below, that at least one of the  $n*m$  birds sampled will test positive.

### **3. Belize-specificity**

The probability that if Belize is free of exotic poultry disease, that none of the  $n*m$  birds sampled will test positive.

### **4. Farm/Community-sensitivity:**

The probability that if an exotic poultry disease is present in poultry in a given farm/community of Belize at the within-farm/community prevalence stated below, that at least one of the  $n$  birds sampled will test positive.

### **5. Farm/Community-specificity**

The probability that if a given farm/community of Belize is free of exotic poultry disease, that none of the  $n$  birds sampled will test positive.

## **D. Assumptions**

1. The desired confidence for declaring Belize free of exotic poultry disease is 95%, based on a maximum acceptable prevalence (MAP) of 2% of groups (farms and communities) having infected birds and 10% of birds being infected in those groups, which gives an average MAP at the bird-level of 0.2%.
2. The AGID test has a sensitivity of 90%; the sequence of diagnostic tests has a 100% specificity.
3. There are 355 commercial farms with an average of 4,500 birds each and 272 communities with an average of 500 birds each.
4. The prevalence of infection, if present, would be 10% on commercial farms *and 7.5% in communities.*

The desired Belize-sensitivity and Belize-specificity are both set at 95%. In other words, if no birds in the sample of  $n*m$  birds test positive, then there should be at most a 5% chance that Belize is actually infected, and if one or more birds in the sample test positive, there should be at most a 5% chance that Belize is actually free of exotic poultry disease.

M 1. = 355 commercial farms      M 2. = 275 communities

N 1. = (maximum) 4,500 birds      N 2. = 500 birds

## **E. Approach used for sample size calculations**

The software programme, FreeCalc, was used. FreeCalc uses a trial-and-error searching algorithm to calculate sample size. At each trial, the sample size used, the cutpoint number of reactors and the probability of detecting this number of reactors or fewer under the null hypothesis (that disease is present) are all displayed.

Recommended sampling protocol: commercial farms

Number of samples	Farm Sensitivity	Farm Specificity	Belize Sensitivity	Belize Specificity
$n_1 = 27$ birds/farm $m_1 = 130$ farms Total samples, $m_1 * n_1 = 3,510$	95.05%	100%	95.13%	100

Recommended sampling protocol: communities

Number of samples	Community Sensitivity	Community Specificity	Belize Sensitivity	Belize Specificity
$n_1 = 39$ birds/community $m_2 = 129$ communities Total samples, $m_2 * n_1 = 5,031$	95.2%	100%	95.13%	100%

The above protocol meets the requirement of achieving at least 95% sensitivity and specificity at the level of Belize. *It has a 4.9% chance of falsely declaring Belize exotic poultry disease negative and a 2.7% chance of falsely declaring Belize exotic poultry disease positive.*

To make decisions about individual groups (communities or flocks), it is important to consider the predictive values at the group-level. The group-level positive predictive value (GPPV) is the probability that a group that tested positive actually is positive and the group-level negative predictive value (GNPV) is the probability that a group that tested negative (that is, that no animals from in the sample from that group tested positive) actually is negative. The software programme HerdTest was used to calculate group-level predictive values. All predictive values were very high, as shown in the table below for two possible levels of community-level prevalence – 2% of communities have infected birds (as assumed above) or 20% of communities have infected birds.

**F. Predictive values**

Community-level prevalence = 2%		Community-level prevalence = 20%	
GPPV	GNPV	GPPV	GNPV
98.7%	99.8%	99.9%	97.5%

## **G. Conclusion**

The 130 commercial farms should be selected from all communities with commercial flocks (ie. Stratification by community). The approximate proportion of all birds in commercial flocks that are in each community with commercial flocks should be estimated, and those proportions should be multiplied by 130 to determine the number of commercial flocks to randomly sample in each community.

The 129 communities should be selected from all districts (ie. Stratification by district). The approximate proportion of all birds in Belize that are in each district should be estimated, and those proportions should be multiplied by 129 to determine the number of communities to randomly sample in each district.