



# Fighting cocks industry in the Caribbean: awareness and role of the Veterinary Services

M. Laurent<sup>1</sup>, L. Bournez<sup>1</sup>, A. Delgado<sup>2</sup>, M. Mondésir<sup>3</sup>, CaribVET Avian Diseases WG<sup>4</sup>, J. Shaw<sup>5</sup>, T. Lefrancois<sup>1</sup>, J. Pradel<sup>1</sup>, M. Trotman<sup>4</sup>

<sup>1</sup>-CIRAD UMR CMAEE, Petit Bourg, Guadeloupe; <sup>2</sup>-IICA, San Jose, Costa Rica; <sup>3</sup>-ANTARES, Sainte Luce, Martinique; <sup>4</sup>-Members of the Avian Diseases Working Group of CaribVET; <sup>5</sup>-USDA/APHIS/IS, Santo Domingo, Dominican Republic

Corresponding author: [laure.bournez@cirad.fr](mailto:laure.bournez@cirad.fr)

## BACKGROUND

### Cockfighting, a tradition inherited from Early Spanish settlers, widespread in the Caribbean

- Roosters ownership/cockfighting: illegal, legal or tolerated according to the countries/territories. Traditional leisure, gambling activity, highly lucrative business in some islands.
- Cocks: prized possessions, selected for their aggressiveness, physically trained for fights & transported over islands (trade, competition, board, etc.). Cockfights organized in arenas/in informal venues with specific rules.

### Fighting cock (FC), a puzzling animal industry for official Veterinary Services

- Perceived as/associated with underground activities → Communication on bio-security measures, surveillance & control by VS: complicated, even impossible where FC is illegal.

### FC, a risk for animal & human health, & poultry production

- FC are handled & looked after as pets and bred in farms possibly with other poultry or in backyards with contacts with roaming chickens → potential sources of pathogens for poultry & humans.
- Caribbean poultry industry: the most rapidly-growing subsector in agribusiness which is developing

in several smaller island states. From backyard (most countries) to industrial production, some self sustaining countries in meat production.

- Highly pathogenic AI\* is exotic for the Caribbean. FC are often cited as potential Risk Factor for HPAI (for poultry infection in Asia) but no evidence. Prevention, communication & surveillance: essential to prevent risks, and should target poultry owners/farmers & FC stakeholders!

### A regional study on FC, preliminary step to tailored surveillance & communication

- Pilot study in Martinique (Vet. Service/Ministry of Culture 2008 - 2010): qualitative risk analysis of ND\*/HPAI\* introduction in Poultry sector by FC & communication campaign to FC stakeholders to promote tradition & improve sanitary conditions by raising awareness on diseases risk, bio-security practices, identification & vaccination.
- Regional study (USDA, IICA, CaribVET, 2011 – 2013): to better describe the FC industry regionally, understand the role of VS in the FC industry in their countries/territories and to raise awareness to FC stakeholders: sellers, buyers, owners, trainers, etc. The latter is not addressed in this poster.

## OBJECTIVES - 1/ Better comprehend knowledge of Official Veterinary Services from the Caribbean on the FC industry in their countries/territories 2/ Provide a description of the fighting cock industry in the region

## MATERIALS & METHODS

### 1/ Data collection from Veterinary Services: Questionnaire

- Designed by the Avian Diseases WG\* of CaribVET (mid 2010): 46 questions on
  - Cockfighting activities
  - Cockfighting venues
  - FC breeding
  - Movements of FC
  - Sanitary actions of VS
 = General & Specific knowledge on the FC industry in the country
- To be filled by the person “most likely able to provide valuable information on cockfighting practices & FC breeding in the country”.
- Pre-tested with 1 CVO & circulated by E-mail to CVOs members of CaribVET (Jan. 2011). Deadline for answer: April 2012.

### 2/ Data collection from the FC stakeholders: Ethnographic Study

- Conducted by a ethnologist, expert on FC, in a sample of countries, chosen according to:
  - Questionnaire completion
  - Ethnologist's network & visits programmed for her own research
  - Agreement from Partner CVO
- Information collected: general & specific knowledge. On FC
- Ethnographic methodology based on participant observation. Experience of ethnologist on FC & her network ensured mutual trust, facilitated her integration & results reliability.

### 3/ Other data collected

- Poultry production: FAO Statistics Division 2012, Caribbean Poultry Association
- Administrative limits of countries (Shapefiles)

### 4/ Data preparation

- Data (questionnaires, ethnographic results) entered into a database & processed (encoded, homogenized and were transformed if necessary ...
- Absence of answers was encoded as “Missing Data”, “Not Applicable” or “Doesn't know”, according to the information provided in other questions. Also, certainty with which the person answered, was considered.

### 5/ Descriptive analysis

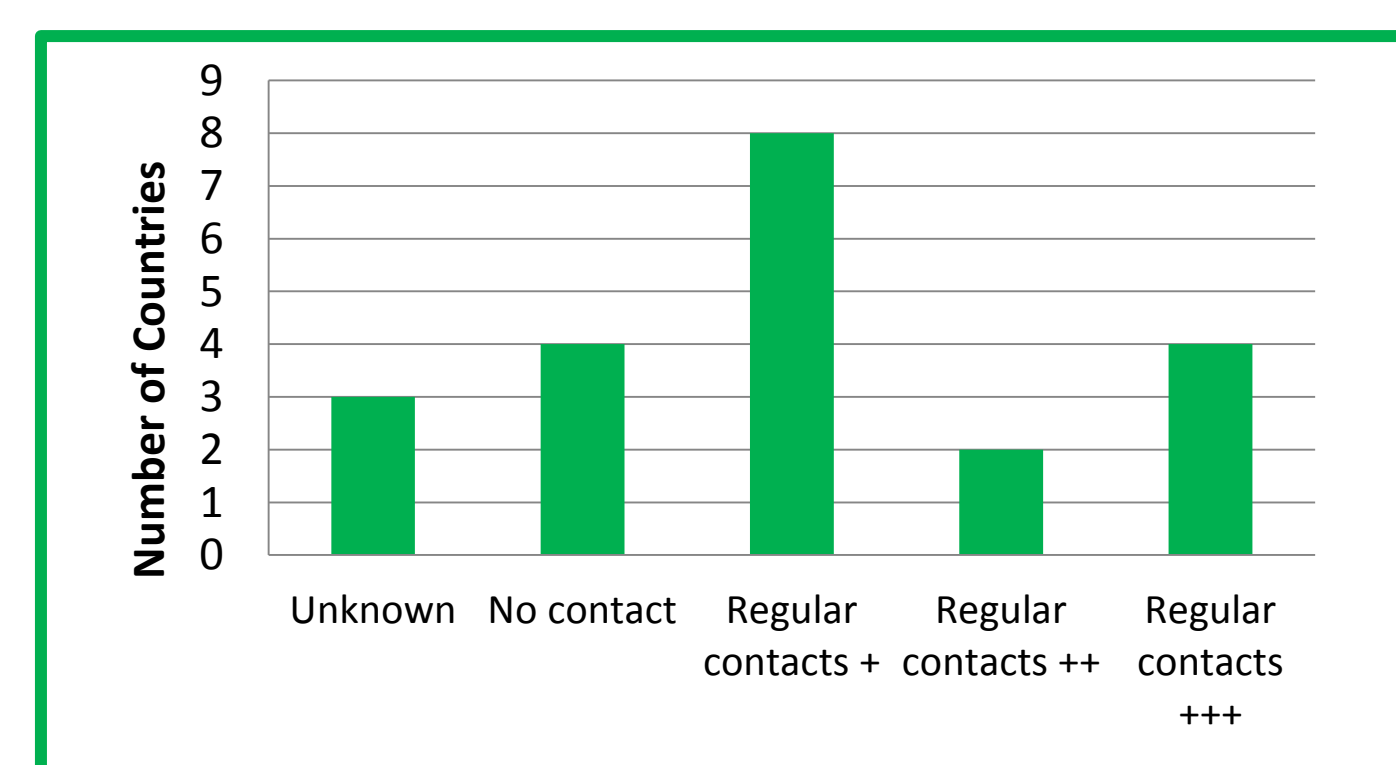
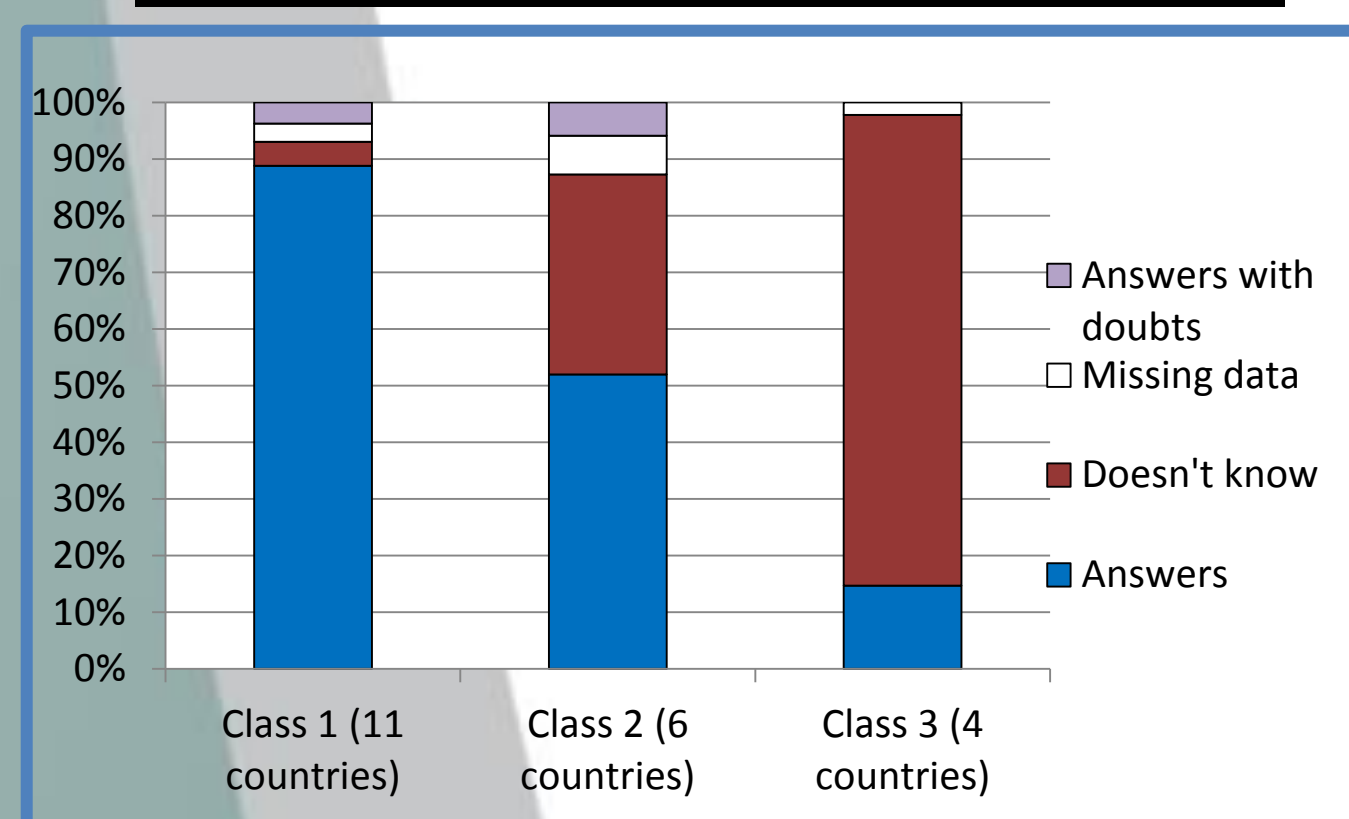
- An awareness indicator (Aw.I.) was developed to assess level of knowledge & interaction with FCs, based on:
  - The frequency of “Answers provided”, “Doesn't Know” and “Missing Data” (General & Specific info on FC)
  - The contact between VS and FC owners: regulation enforced or not, sanitary programs, meetings, ...
  - The self-perception of the CVOs on the FC culture
- Ethnographic results used to describe FC industry including movements in the Caribbean. The Ethnologist reviewed the information provided by VS on Importance of FC breeding & activity in countries that she already visited
- All sources of information were used to provide general description of the FC industry in the Caribbean => Data processed to obtain variables on the importance of FC activity & breeding (Aw.I. used to assess whether use of data from CVO questionnaire or ethnological study needed)

## RESULTS

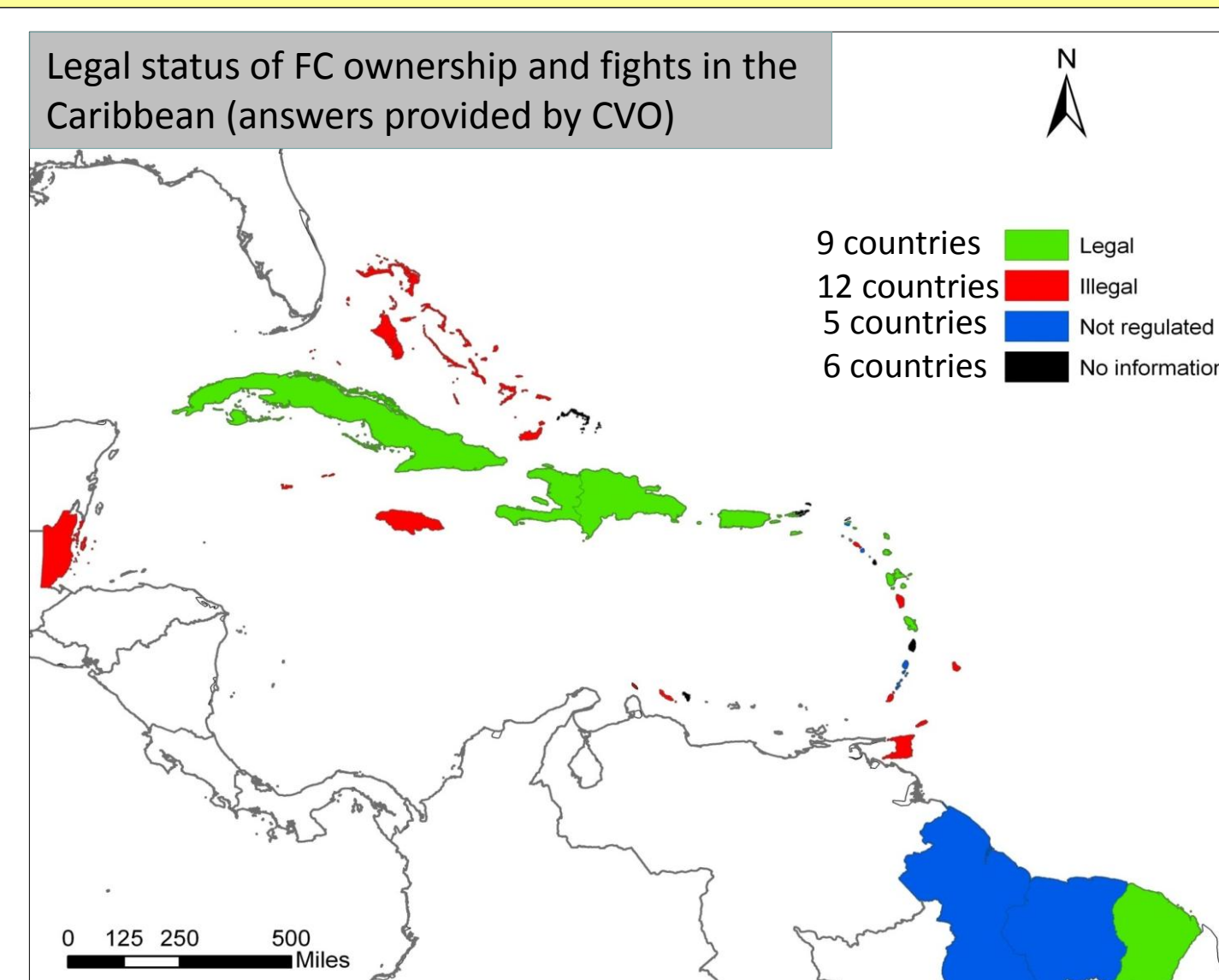
### SURVEY RESPONSE

- VS of 26 countries filled and sent the questionnaire
- 21 countries reported cockfighting activity, 5 reported no activity

#### Awareness Indicator



No contact = illegal status enforced or not enforced but no contact  
Regular contacts = legal or not regulated or illegal not enforced (+ = limited contacts (e.g: importation of FC), ++ = awareness meetings planned, basic registers, etc, +++ = sanitary programs, registers, etc)



### GENERAL DESCRIPTION OF FC INDUSTRY

### ETHNOLOGICAL STUDY

- Small & strong network of FC actors in the Caribbean: good circulation of information between owners, breeders
- 4 countries visited: contrasts with the CVOs questionnaires (incomprehension between VS & FC industry actors)

Country	(1) Poultry production (meat & eggs)	(2) FC breeding	(2) FC activity	No. countries FC imported from	No. countries FC exported to	Regional competition (Origin countries)
A	++++	++	++	prohibited	no	doesn't know
B	++++	+	++	prohibited	no	NI
C	+++	+	++	0(6)	no	NI
D	+++	+	+	prohibited	no	0
E	+++	+	++	2	no	0
F*	+	++	++	4	4	doesn't know
G*	+	++	+	4	2	F, U
H	+	+	+	prohibited	no	0
I	+	+	+	prohibited	3	0
J	++++	+++	++++	1(1)	2	America
K	++++	+++	++++	2(1)	6	NI
L	++++	+	++	no	4	0
M	+++	++	+++	3(1)	4	K
N	++	++	++	5(3)	3	O, U
O	++	++	+++	8	4	N
P	++	+	+	5	2	K, M, N, O, S, T
Q	+	+	++	1	3	NI
R	+	+	++	no	no	doesn't know
S	++++	+	+	doesn't know	doesn't know	0
T	+++	+	+	doesn't know	doesn't know	doesn't know
U	++	++	++	2(2)	2	F, G, K, N, O, Q, R
V	+++	++	++	4	NI	O

Overview of the FC industry in the countries & Aw.I. associated  
(1) Poultry production: + = [0 – 500] ; ++ = [500 – 1500] ; +++ = [1500 – 20000] ; ++++ = [20000 – 315000]  
Unit: tons produced per year.  
(2) FC activity and breeding: + = existing but negligible, ++++ : very significant  
No. countries FC are imported from (Vs. exported to): includes official & suspected movements (in brackets); NI: No information ; \*: imports as ornamental cocks

- FC trade involved many Caribbean islands including illegal and also farther countries in America mainland & Europe
- Countries where status of FC is legal also have important FC industry

## Discussion / Perspectives

### DISCUSSION

- Study evidenced need to improve authorities' awareness on this industry for improved surveillance & control and to develop tailored communication means on biosecurity & diseases risk.
- Results of VS questionnaires were completed by invaluable information provided by the ethnographic study, where the expert on FC could correct the information provided at national levels & enabled us to have a fairly good description of the FC industry in the Caribbean.
- Further investigation would be needed in some islands where information is lacking from both VS and ethnographic side.
- The ethnographic study evidenced that Caribbean FC stakeholders are closely connected together through an informal Network, being studied by the Ethnologist as part as her research study.

### PERSPECTIVES

- Improve Communication within CaribVET on FC to contribute to raise Caribbean VS awareness
  - This study was conducted along with the development of communication materials tailored for 4-6 countries (diverse set of languages, as well as risk situations concerning FC) on basic bird health & management: to be shared for adoption in the countries and implemented, where FC is legal by VS.
- ### CONCLUSION
- Results may be used as a basis for further studies on FC, in the region or in countries sharing similar characteristics (risk assessment, contacts between FC and commercial poultry...)
- ### ACKNOWLEDGEMENTS
- We thank all the CVOs of CaribVET who participated in the study. This work was supported by USDA-APHIS-IS, IICA and CaribVET.