



# Pro-poor HPAI Reduction Strategies Project

## Ethiopia Risk assessment Multi-Stakeholder Workshop

### **Background information: Poultry sectors and disease status**

**Hassen Chaka & Serge Nzietchueng**

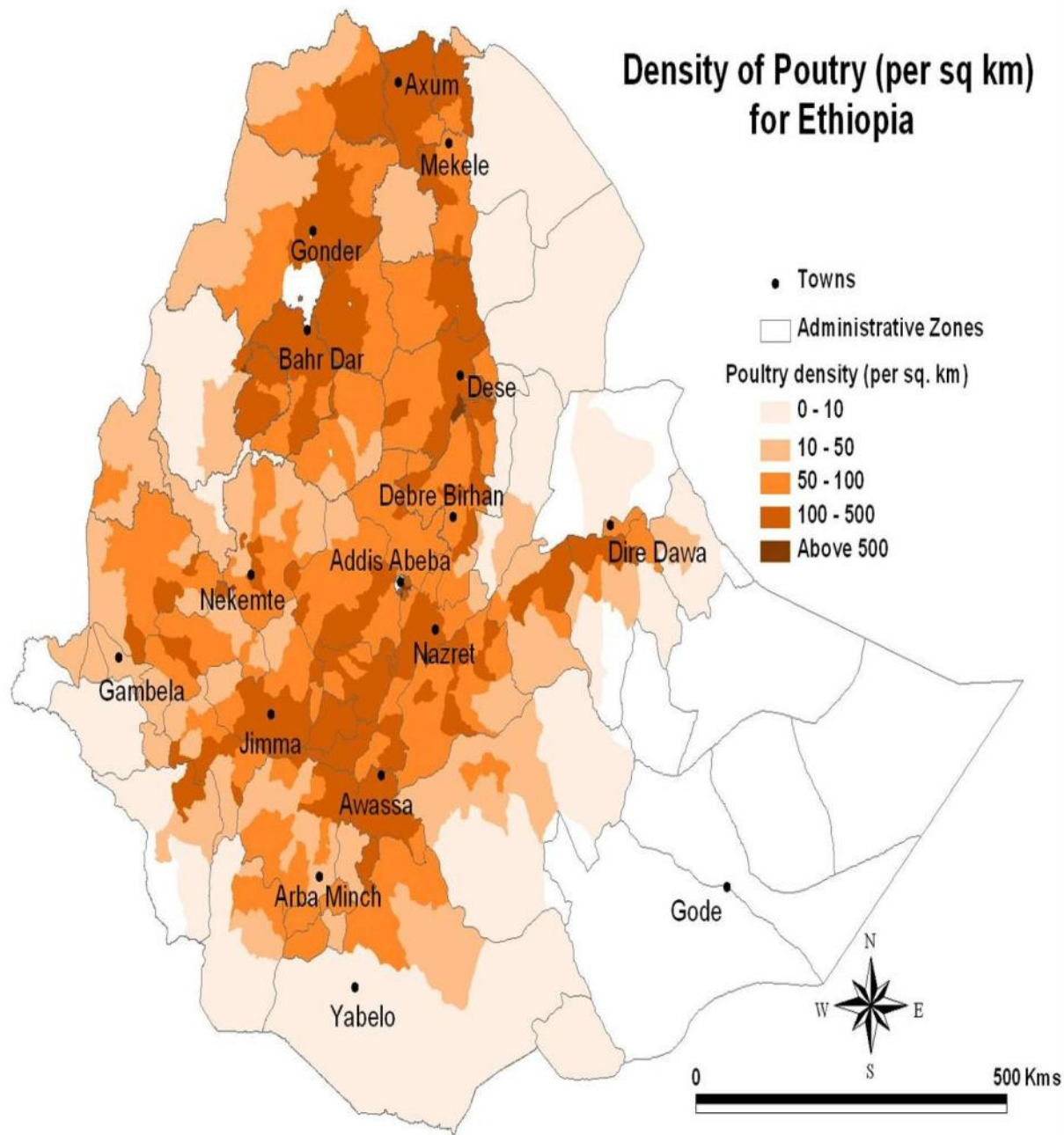
September 25th -26th, 2008, ILRI, Addis Ababa

# Poultry production system

## Livestock sector



- About 18.8% of national GDP and 40% of the agriculture GDP (FAO,2004)
- Poultry (Chicken) population: estimated at 34.2 million (CSA, 2007)
- 94.44% native breed, 3.92% hybrid breed,0.64% exotic breed (CSA, 2007)

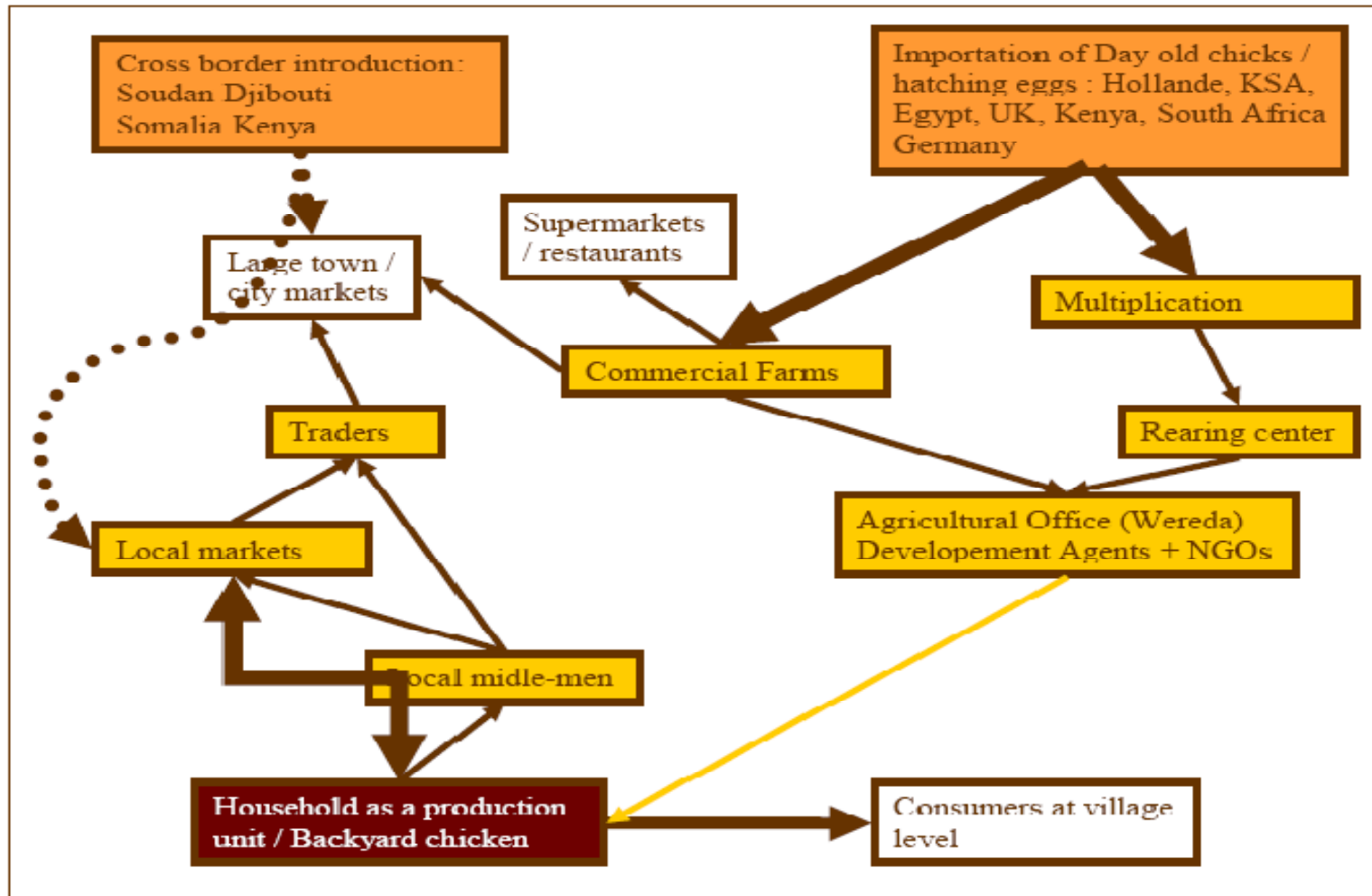


Tigray, Amhara,  
Oromia and  
SNNPR regions  
present the higher  
poultry densities

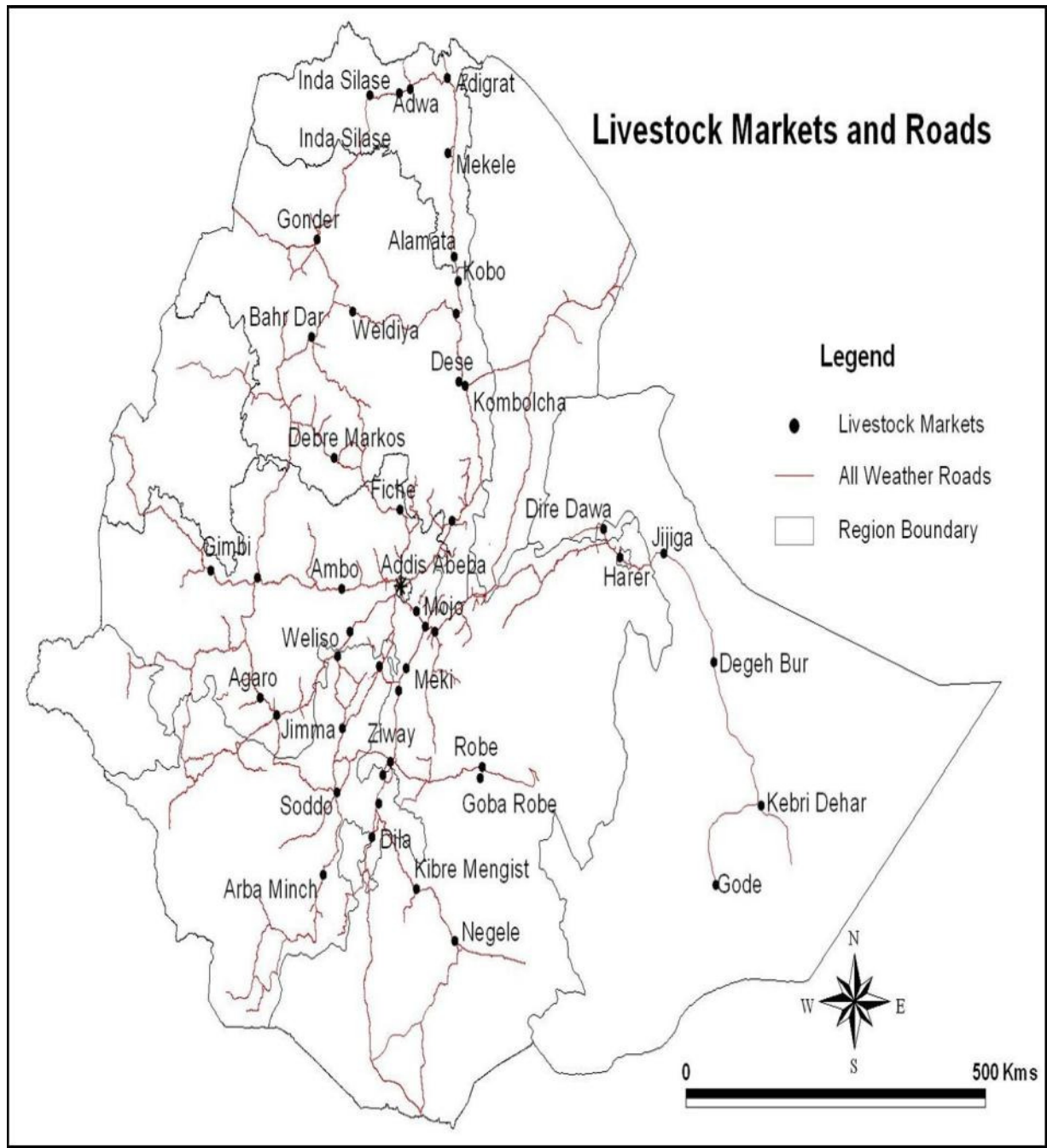
# Three poultry production systems

	Bio-security	Localization
Backyard	Minimal	All the country
Small commercial farm	Minimal to low	Debre Zeit town (Oromia region) and Addis Ababa
Large commercial farm	Medium to high	Debre Zeit Oromia region

# Trade flow of poultry and poultry products in Ethiopia



Source: Goutard & Magalhaes, 2006



No specific routes  
for chicken trade

Source: Serge Nzietchueng, 2007

*Disease status*



## Backyard

- Parasitism (gastrointestinal helminths), prevalence:91.01% (Eshetu *et al.*,2001)
- Marek's disease,prevalence: 72.9% (Duguma *et al.*, 2005)
- Newcastle disease,prevalence: 32.22% (Tadesse *et al.*, 2005)
- Coccidiosis,prevalence: 25.8% (Ashenafi *et al.*, 2004)

## Small commercial farm

- Coccidiosis

## Commercial farm

- Marek's disease
- Gumboro disease
- Coccidiosis

**Risk for introduction of HPAI H5N1 virus into Ethiopia exist**

*Ways for introduction of HPAI H5N1 virus into  
Ethiopia*

## Legal trade

- Importation: DOC, HE, ...
- Poultry equipments (Incubator, Feeding, Watering, Cage)
- Poultry products (Egg, meat, ...)
- At the border (Sudan, Djibouti, Eritrea).

## Illegal trade

- Small traders at the border with Sudan, Djibouti, Eritrea.

## Wild migratory wild bird

## Travellers from infected countries

# *Risk questions*

*What is the risk of introduction of  
HPAI H5N1 virus into Ethiopia by...*

## Legal trade

- Importation: DOC, HE, ... Q1
- Poultry equipments (Incubator, Feeding, Watering, Cage, ...) Q2
- Poultry products (Egg, meat, ...). Q3
- At the border (Sudan, Djibouti, Eritrea) Q4.

## Illegal trade

- Smalls trader at the border with Sudan, Djibouti, Eritrea. Q5

## Wild migratory wild bird Q6

## Travellers from infected countries Q7

What has been already done

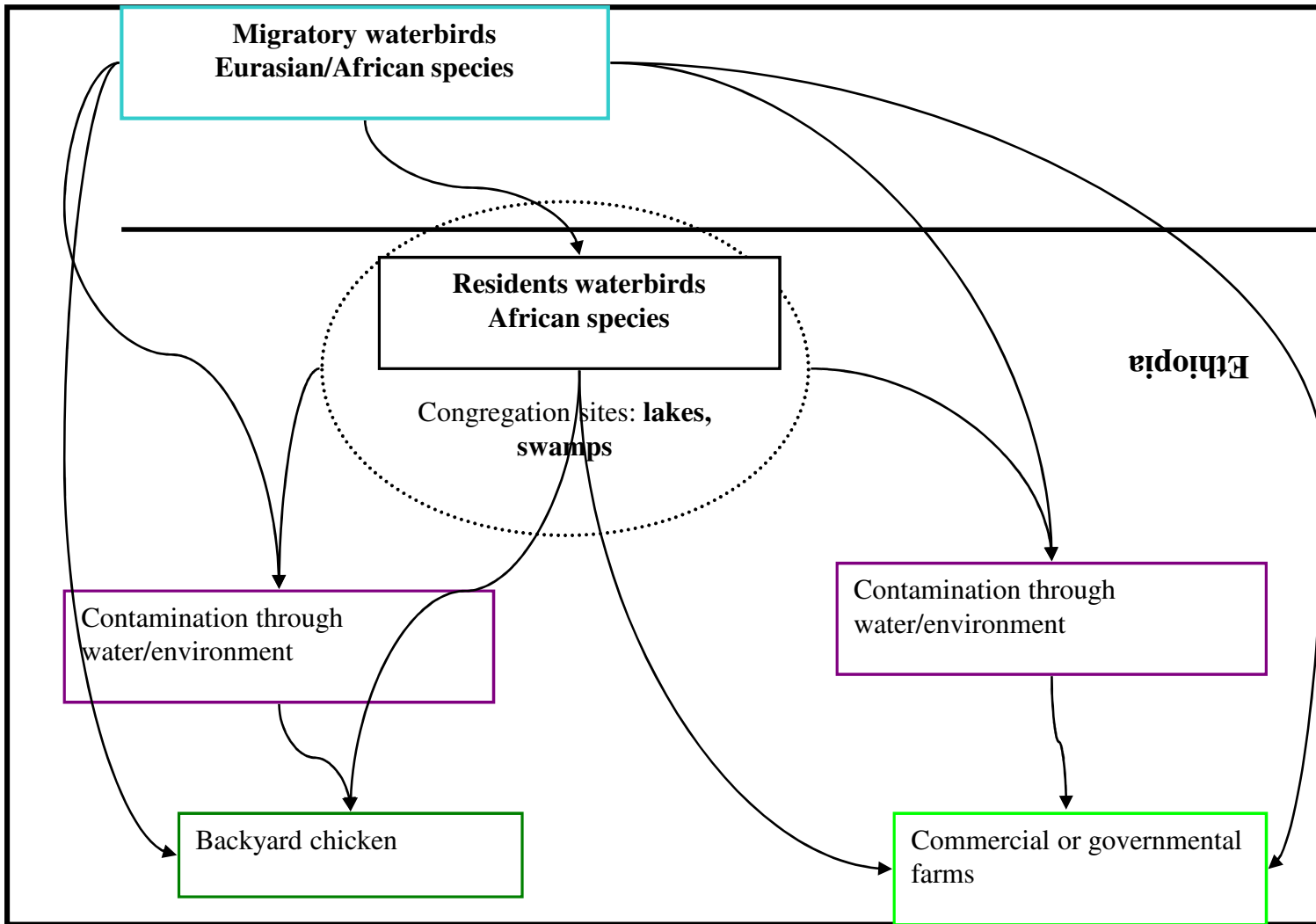
# Qualitative risk assessment of introduction and dissemination of HPAI H5N1 virus into Ethiopia by the migratory wild birds

(Goutard and al,2007)

**Risk question**: What is the risk of introduction and dissemination of HPAI H5N1 virus into Ethiopia by the migratory wild birds

**Time frame**: European winter (December-February)

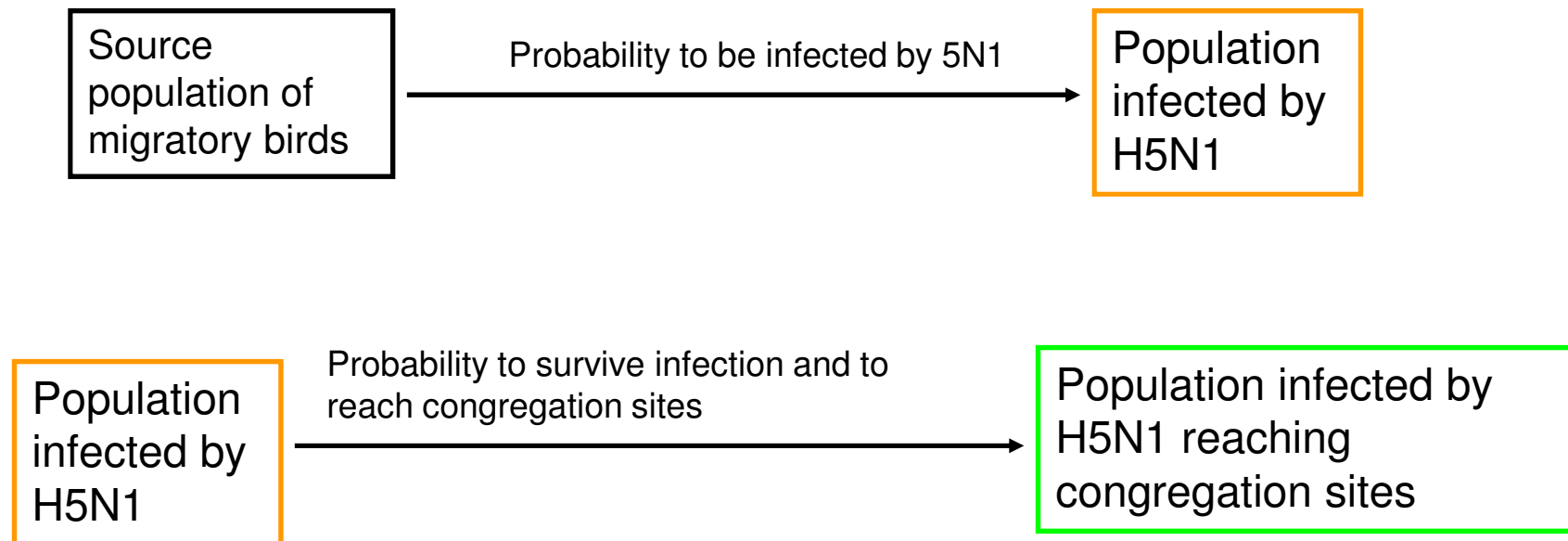
**Pathways**





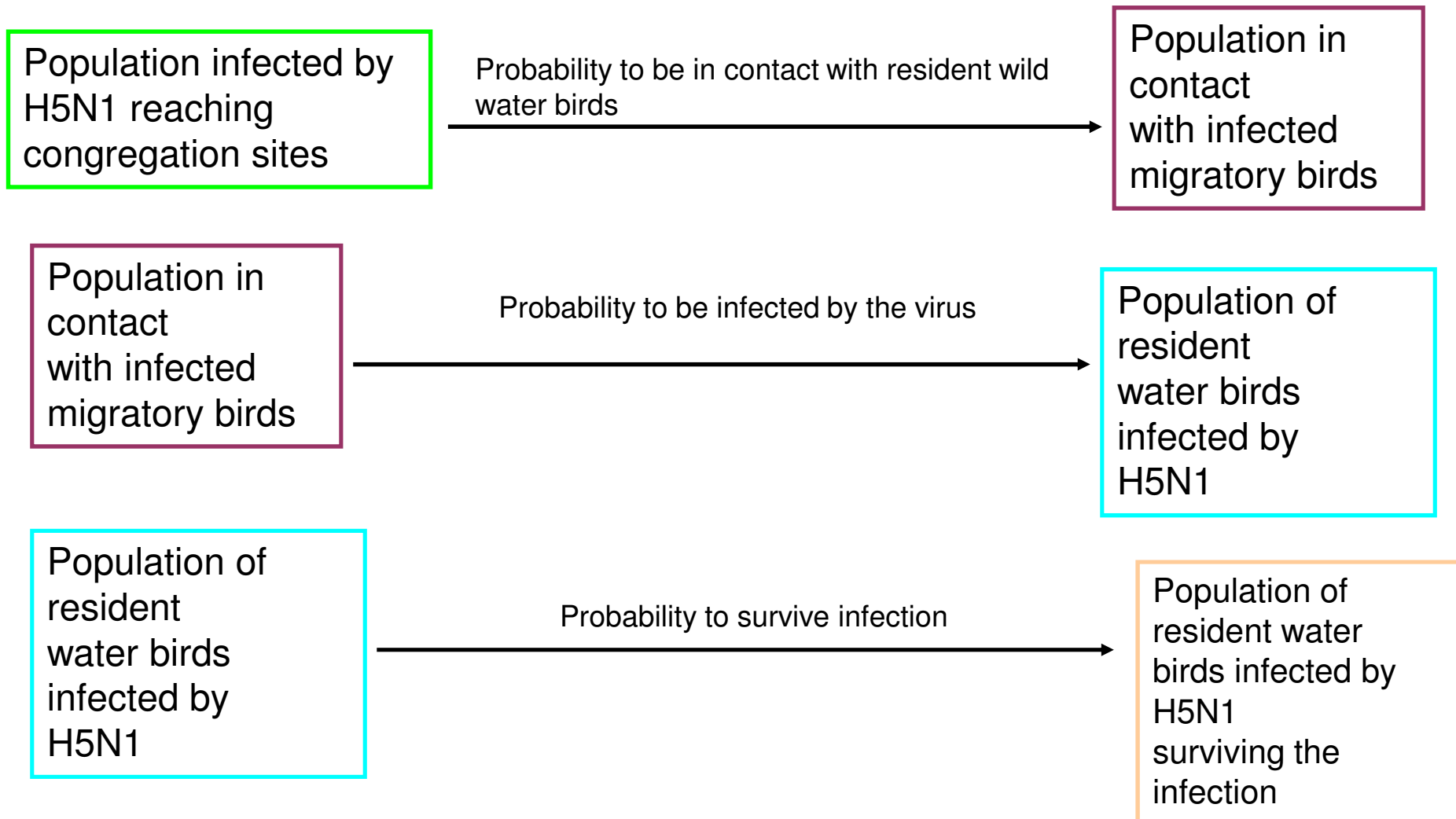
# Release assessment

## Probability that infected wild water migratory birds enter an Ethiopian congregation site



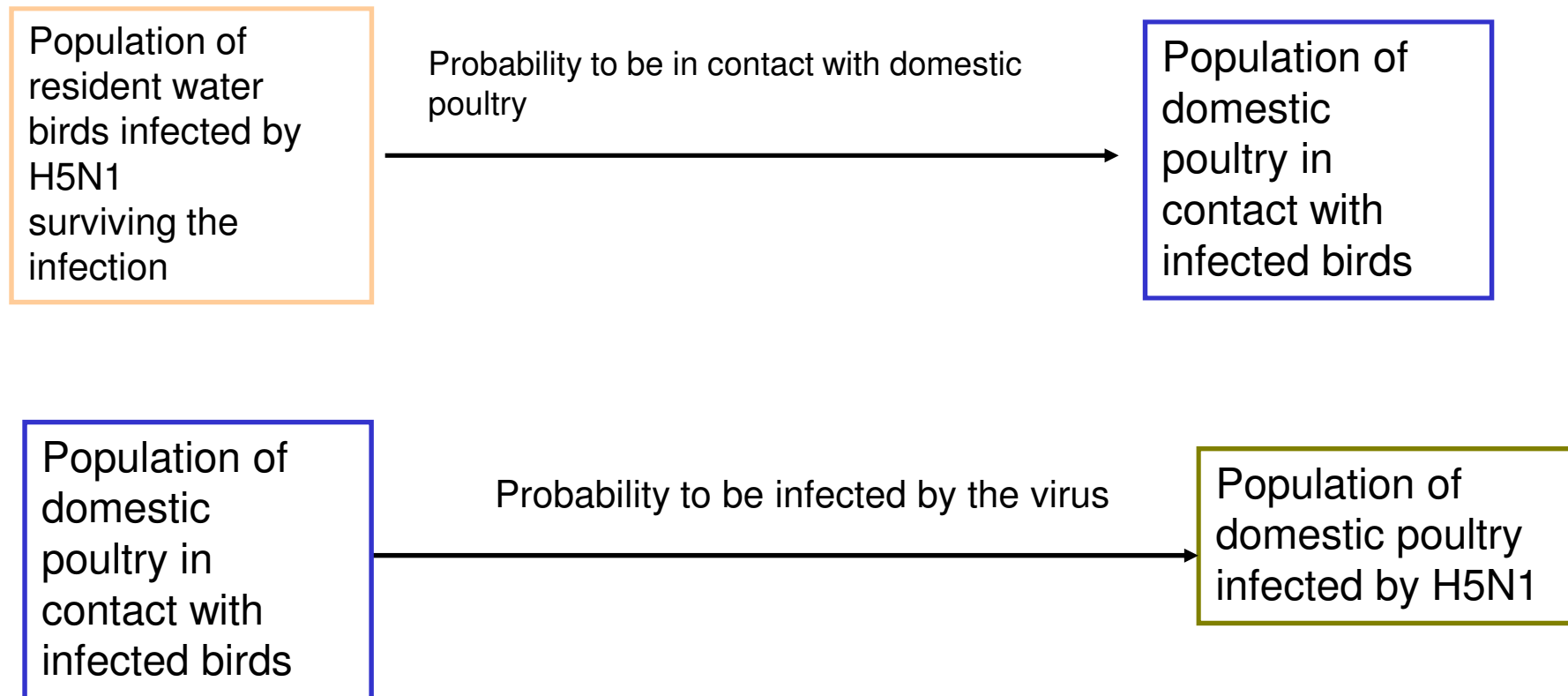
# Exposure and consequences assessment

## Probability that the infection become endemic in resident wild water birds in Ethiopia



# Exposure and consequences assessment

## **Probability that domestic poultry in Ethiopia become infected by H5N1 HPAI after wild bird infection**



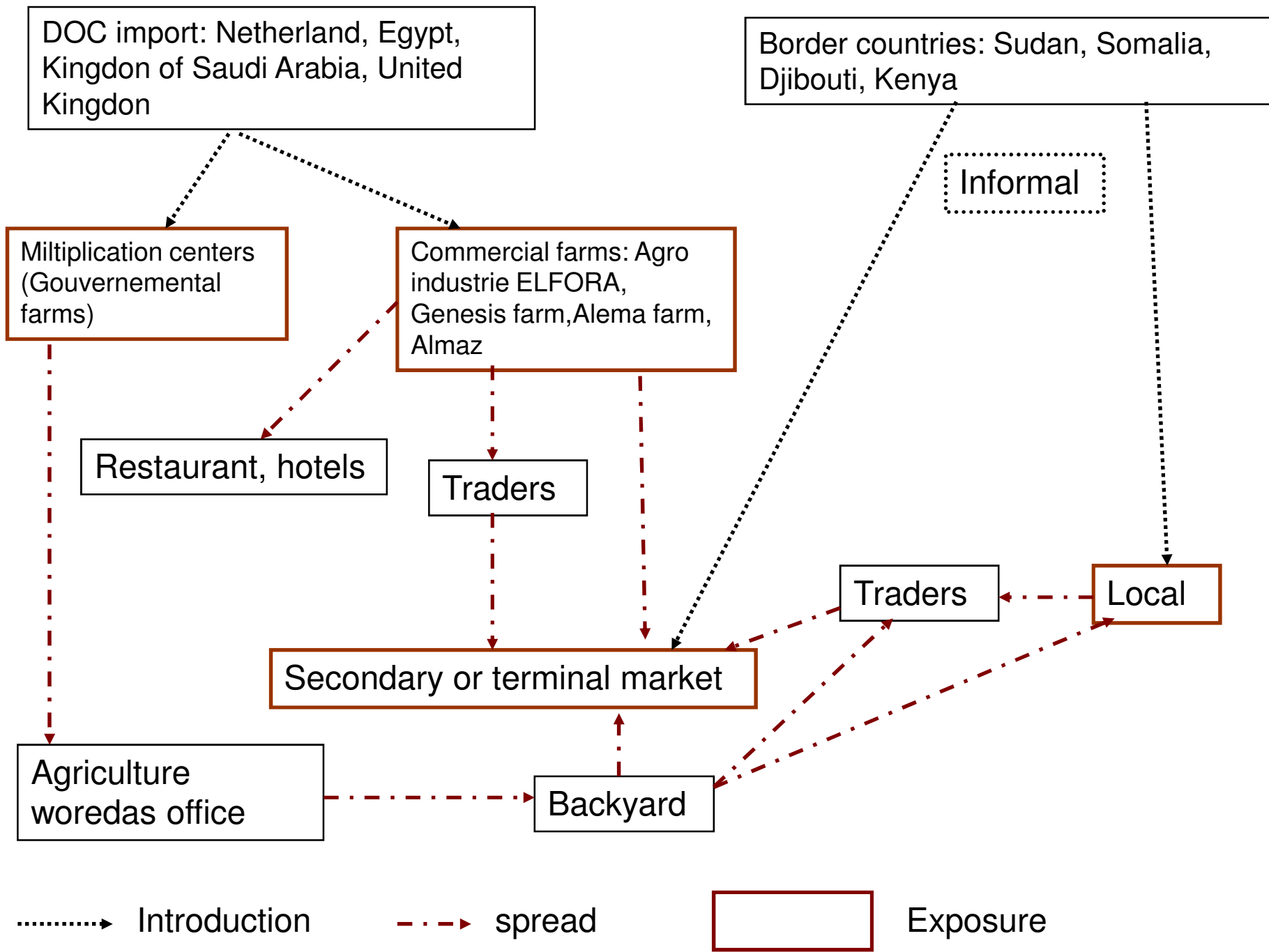
# Qualitative risk assessment of the introduction of the HPAI H5N1 virus into Ethiopia via formal and informal importation of poultry

(Olive and al,2007)

**Risk question**: What is the risk of introduction of HPAI H5N1 virus into Ethiopia via formal and informal importation of poultry

**Time frame**: January-May 2006.

**Pathways**



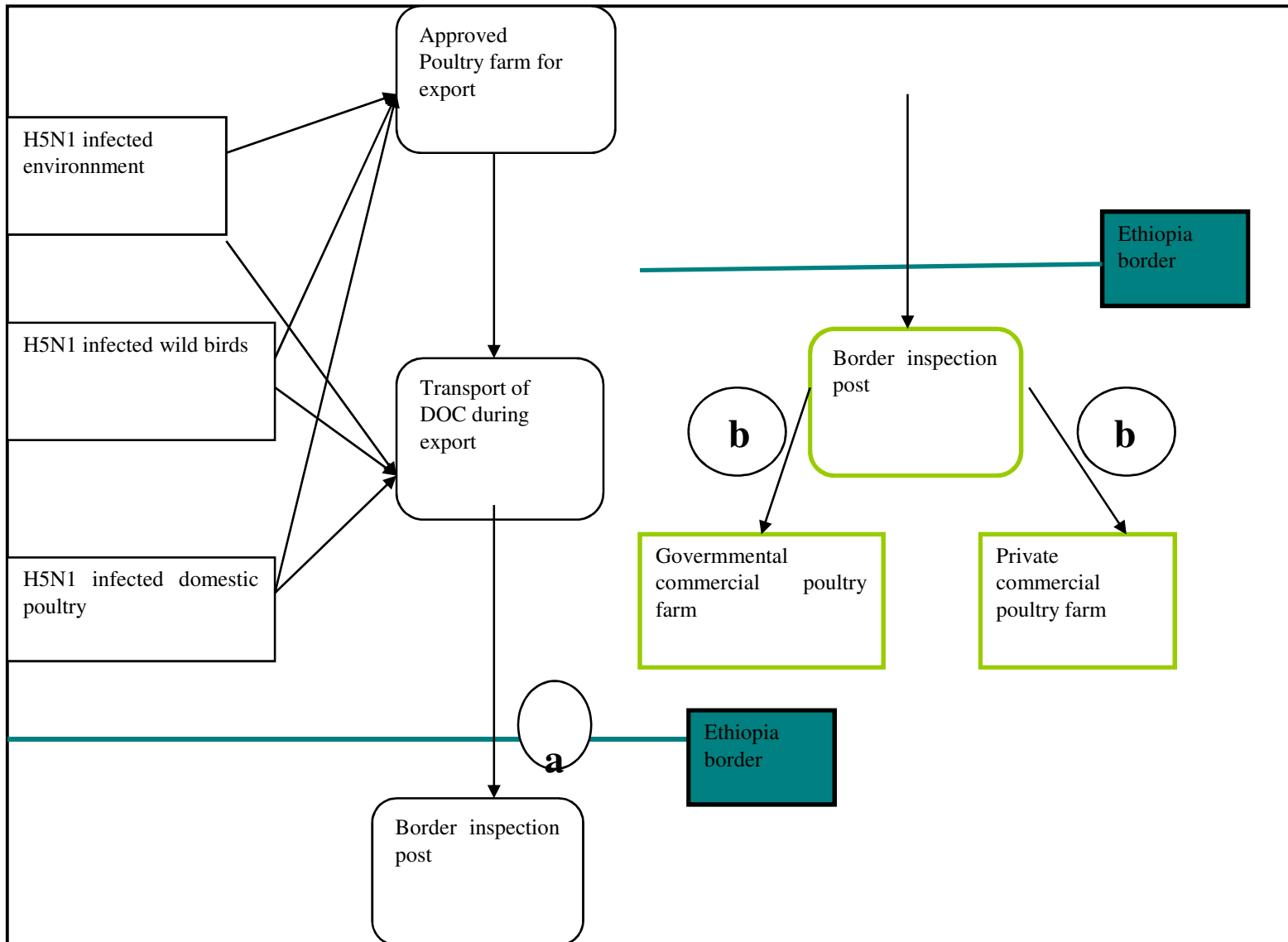
# Quantitative assessment of the risk for introduction of HPAI H5N1 virus into Ethiopia via the legal trade of Day-old-chicks

(Soares and al,2007)

**Risk question:** What is the risk of introduction of HPAI H5N1 virus into Ethiopia commercial farm via the legal import of day-old-chicks

**Time frame:** January-December

**Pathways**



a) Pathways involved in the release

b) Pathways involved in the exposure

Do we need to update these  
Risk assessments?



Thank you

Q&R