

Overview and background paper on Ethiopia's poultry sector: Relevance for HPAI research in Ethiopia

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Objectives

- To synthesize what is know in the country related to HPAI in terms of both research and development
- To identify research and development gaps in the area

Content of the presentation

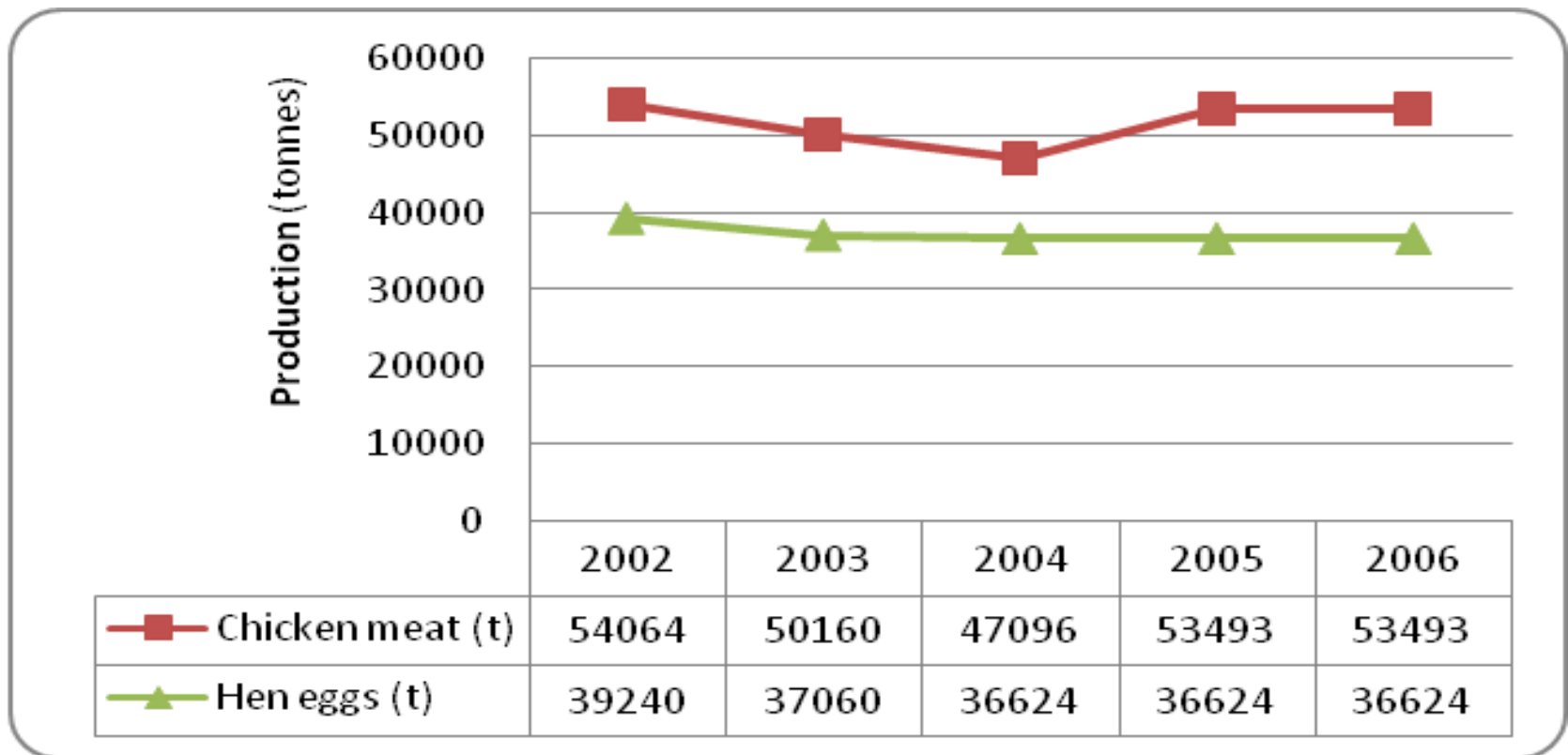
- **An overview of the economics and structure of the poultry sector**
 - *Economic contributions of the poultry sector: macro perspective*
 - *Structure of the Ethiopian poultry sector*
 - *Poultry consumption, marketing and trade*
- **The poultry sector and bio-security**
 - *The Avian Influenza Prevention and Control Policy for Ethiopia*
 - *Summary Evidence on Poultry Bio-security in Ethiopia*
- **Poultry and rural livelihoods**
 - *Gender and backyard poultry production*
 - Importance of poultry in household economy: income, nutrition and food security
 - The Socio-Cultural Role of poultry
- **Previous HPAI research and findings**
 - *Threats and incidences of HPAI and institutional response capacity*
 - *Measures taken*
- **Risk factors/risk assessment**
 - *Risk and Consequence assessment of HPAI introduction in Ethiopia*
 - *The Threat of Avian Flu Predicted Impacts on Rural Livelihoods in SNNP*
- **Research & Development gaps**

An overview of the economics and structure of the poultry sector

- ***Economic contributions of the poultry sector: macro perspective***
 - The livestock sector accounts for about 18.8% of the national GDP and 40% of the agricultural GDP (FAO, 2004)
 - It is a major source of foreign exchange earnings next to coffee
 - The total poultry population in Ethiopia is estimated at 38 million
 - 97.8% of the total poultry population comprises indigenous birds while 2.2% are exotic breeds
 - the performance of the poultry sector has been poor over the past decades.
 - During the period 1985-1994 An ILRI (2000) estimate showed that
 - poultry meat production in Ethiopia grew, on an average, only by 0.34% per annum
 - annual hen egg production declined by 0.39% per annum
 - In 2006, the total poultry meat and egg production were estimated at 53,493 and 36,624 tonnes

An overview (cont..)

- *Economic contributions of the poultry sector: macro perspective*
 - Annual chicken meat and eggs production in Ethiopia, 2002-2006



Source: FAOSTAT, 2008

An overview (cont..)

- ***Structure of the Ethiopian poultry sector***

- The poultry sector in Ethiopia can be characterized into three major production systems based on some selected parameters such as breed, flock size, housing, feed, health, technology, and bio-security:

- 1) Village or backyard poultry production system
- 2) Small scale poultry production system
- 3) Commercial poultry production system

An overview (cont..)

- ***Structure of the Ethiopian poultry sector***

- 1) Village or backyard poultry production system

- Backyard poultry is the predominant system in Ethiopia and accounts for nearly 99% of the poultry population

- » local chicken breeds

- » individual farm household management

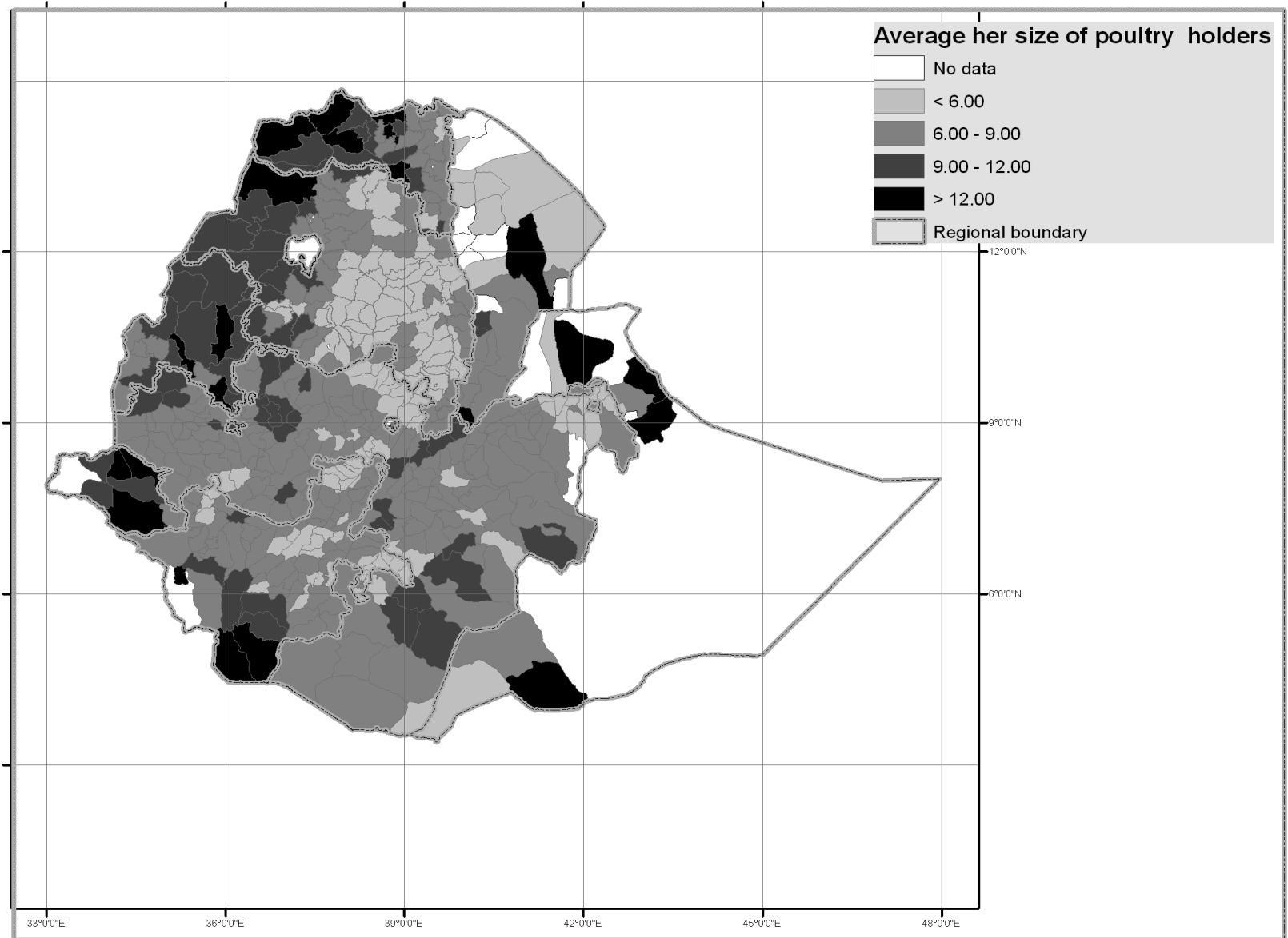
- » minimum labor inputs where birds are kept under a scavenging system

- » little or no inputs for housing, feeding or health care

- » not business oriented rather destined for satisfying the various needs of farm households

Production distribution

Distribution of poultry production by woreda (average herd size/household)



An overview (cont..)

- ***Structure of the Ethiopian poultry sector***

- 2) Small scale poultry production system

- Modest flock sizes usually ranging from 50 to 500 exotic breeds kept for operating on a more commercial basis
 - Common in the urban and peri-urban areas of Addis Ababa
 - Birds are kept both indoor and outdoor with a low bio-security level

An overview (cont..)

- ***Structure of the Ethiopian poultry sector***

- 3) Commercial poultry production system

- highly intensive production system
 - greater or equal to 10,000 birds
 - indoor conditions with a medium to high bio-security level
 - imported exotic breeds that require intensive inputs such as feed, housing, health, and modern management system.
 - nearly 2% of the national poultry population
 - a few companies that are situated mostly in Debre Zeit areas (ELFORA, Alema, and Genesis farms)
 - 7 public poultry multiplication and distribution centers (PMDC) located in different regions operating with the major objective of distributing improved exotic breeds to smallholder farmers

Poultry consumption, marketing and trade

- Poultry consumption
 - poultry products is more common in urban than in rural areas
 - commonly high during holiday periods
 - The national poultry meat and eggs consumption is estimated, on an average to be 77,000 and 69,000 tonnes per annum respectively (ILRI, 2000)
 - In the mid 1990s, the per capita egg and poultry meat consumption in Ethiopia was estimated at **57 eggs** and about **2.85 kg**, respectively (Alemu and Tadele, 1997)

Poultry consumption, marketing and trade

- Poultry Marketing

- two major poultry marketing channels (Keneal et. al. 2003):

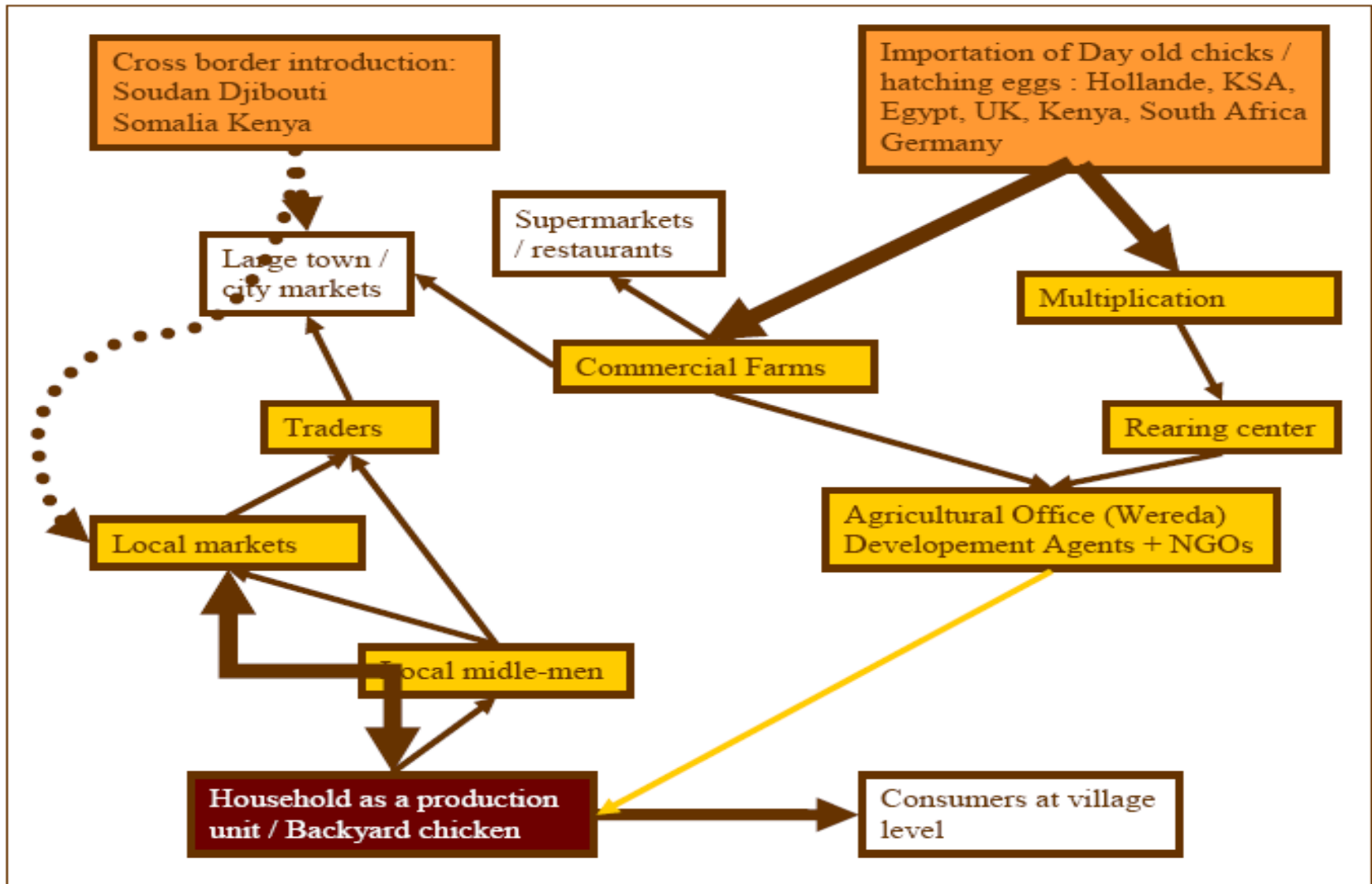
- farmers directly sell to consumers (42% of all transactions)
 - Farmers directly to small retail traders who take the chicken to large urban markets (39.4% of the transactions)

- Based on Goutard and Magalhaes (2006):

- average trader handles between 40 to 100 chickens per week
 - A middle man manages 2000 eggs per month.
 - Estimated average number of birds that are sold at local markets ranges from 30 to 400 per day.

Poultry consumption, marketing and trade

- Goutard & Magalhaes (2006) document a more detail trade flow:



Poultry consumption, marketing and trade

- Poultry International Trade
 - Ethiopian trade in poultry and poultry products is limited to the import of live birds
 - The private and public large scale intensive poultry farms are mainly dependent on the import of day old chicks from abroad
 - In 2005, a total of 736,000 day old chicks had been imported from the Netherlands, Saudi Arabia, Egypt, UK, Germany, and Kenya
 - Even though, there is not recorded cross border trade with poultry, there is considerable cross border trade in other livestock

The poultry sector and bio-security

- Limited biosecurity except for the commercial production system, which has relatively better biosecurity
- Based on the CSA data, higher herd size per household is found mostly in border woredas of the country, where there is very limited biosecurity

Bio-security (cont...)

- ***The Avian Influenza Prevention and Control Policy for Ethiopia***
 - The Avian Influenza Prevention and Control Policy for Ethiopia was designed by the Ministry of Agriculture and Rural Development with the assistance of FAO
 - This policy is an integral part of the three-year national strategic preparedness and response plan for Avian Human influenza pandemic threat
 - Components:
 - bio-security,
 - movement control and market restriction,
 - surveillance and diagnosis,
 - stamping out,
 - disposal carcasses and potentially infective materials,
 - vaccination and
 - compensation

Bio-security (cont...)

- ***Summary Evidence on Poultry Bio-security in Ethiopia (based on Abebe Wossene, 2006)***
 - **Large-scale Commercial Poultry farms:**
 - a circular that forbids importation of live birds and poultry products from infected countries such as Egypt, UK and Germany in connection with HPAI
 - Recently a second circular was issued that allows the importation of poultry products from any country irrespective of their HPAI status so long as they meet the OIE recommendation
 - In the absence of effective veterinary service and mechanisms verifications, such provisions could pose potential treat to Ethiopian poultry production

Bio-security (cont...)

- ***Summary Evidence on Poultry Bio-security in Ethiopia (based on Abebe Wossene, 2006)***
 - **Small scale commercial poultry farms in Addis Ababa:**
 - Some farms use the service of community sanitation service providers to dispose poultry excreta and waste
 - Some of the farms are not even known/ registered by the Wereda Agricultural offices or any other body
 - The birds were kept in crowded condition with no ventilation
 - There are no disinfections and/or sanitation facilities (foot bath, washing facility etc) and workers are not provided with boots or protective clothes

Bio-security (cont...)

- ***Summary Evidence on Poultry Bio-security in Ethiopia (based on Abebe Wossene, 2006)***
 - **Backyard village poultry farms:**
 - Based on the results from the visit of small-scale farmers in SNNPR and in Benshangul Gumuz Regional state
 - The bird feed by scavenging and thus mix with people and other livestock
 - Farmers (settlers) in Benshangul Gumuz Regional State are well aware of Avian Influenza and its threat to human being
 - Relatively accept the information of threat from poultry disease including HPAI

Conclusion on Bio-security (cont...)

- the backyard poultry in Ethiopia that represents nearly 98% of the chicken population presents a situation where bio-security practices are difficult to implement
- bio-security practices are practically absent and difficult to apply due to the extensive nature of the management
- So far importation of poultry and poultry products in Ethiopia is made based on OIE recommendations for importation of poultry and poultry products
- The bio-security policy states the quarantine of day old chicks and other poultry for at least 7 days and the SOP suggest keeping birds for three weeks in separate house.
- However, there is no quarantine post for poultry and poultry products at entrance point.

Conclusion on Bio-security (cont...)

- The various policies including the Bio-security policy lack enforcement mechanisms and the penalties that could be applied in cases of offences.
- There are several unregistered poultry farms in big cities amid residential areas with no bio-security practice
- The attention given to bio-security practices in both private commercial farms and government owned PMDCs is very low.
- There is a big gap of awareness regarding bio-security and its importance to poultry farming.
- The potential role of the various PMDC in dissemination of AI and other communicable diseases to the vast majority of backyard poultry and to the rural population should not be under estimated

Poultry and rural livelihoods

- **Gender and backyard poultry production**
 - Tadelle et al (2003) and Kitalyi (1998) have addressed the gender dimension of poultry
 - Government rural improvement programs use poultry as intervention component to target women
 - about 80% of poor women managed to earn an annual income of more than Birr 100 from village chicken production

Poultry and rural livelihoods (Cont...)

- **Importance of poultry in household economy: income, nutrition and food security**
 - Poultry provides an important source of income for the poor households.
 - Poultry products also offer affordable quality animal protein sources for the smallholder farm households
 - rural households consume a very limited quantity of poultry products since they rank cash income as the primary purpose of village chicken production
 - Chickens are consumed mostly during holidays
 - In general, poultry consumption accounts for less than 1% of the total annual food needs of farm households

Poultry and rural livelihoods (Cont...)

- **The Socio-Cultural Role of poultry**

- Poultry has not only economic functions in terms of income or food but also important socio-cultural advantages in the society
- Chickens have special values during holidays for the preparation of the famous Ethiopian traditional dish, i.e. *doro wot*.
- chickens comprise the welcome feast for visitors;
- chickens are a source of food for women post-birth; chickens are payment to villagers for local health services;
- chickens are gifts to newly married couples; and
- chickens strengthen social networks between women
- the spiritual benefit of sacrifice of indigenous chicken types has also an important place in the cultural, social and religious functions of the Ethiopian society

Previous HPAI research and findings

- Two important research activities were undertaken previously in relation to HPAI:
 - Flavie Goutard and Ricardo Soares Magalhaes (2006) and
 - Jennifer Bush (2006)
- These activities have focused on risk assessment

Risk factors/risk assessment

- There was suspicion of a threat of AI in Ethiopia in Gurage state poultry multiplication center in 2006.
- The base for the suspicion was the death of hundreds of chickens at a state breeding and multiplication centre in Gurage
- A false positive result emerged from the initial screening in Ethiopia,
- Subsequent analysis at a lab in Italy showed negative result for the presence of the H5N1 virus.
- However, this situation led to massive consumer panic about chickens, depressed demand, and price falls

Risk factors/risk assessment

- There are two major reasons for the risk of AI in Ethiopia:
 - 1) Introduction and dissemination of the HPAI H5N1 virus by Migratory Wild Birds
 - Many millions of birds that possibly carry the virus migrate from affected areas of Europe and Asia to East Africa and believed to reach lakes and wetland found in the rift valley of Ethiopia
 - The global risk estimation of backyard poultry production system being infected by H5N1 in Ethiopia as a consequence of migratory wild water birds infected by H5N1 can be considered as null to low (Goutard and Magalhaes, 2006)

Risk factors/risk assessment

- 2) Introduction and dissemination of the HPAI H5N1 via the Legal Import of DOC
 - current conditions the average risk of introducing virus through the legal trade of DOC is low but is likely to occur. The important risk factors are:
 - 1) The number of parent stock testing positive at the countries of origin of the DOC is suggested to have the highest effect on both risk estimates
 - 2) The duration and transport from approved countries and Ethiopia
 - 3) The probability of low compliance of veterinary checks at the border inspection posts (BIP)

Avian Flu Predicted Impacts on Rural Livelihoods in SNNP

- Under the worst scenario of the emergence and spread of the H5N1 virus in its most virulent form (Bush, 2006):
 - local economies as a whole will stumble as large numbers of households become impoverished from illness
 - Economic consequences at the household level includes
 - the loss of productive labor that lead to a
 - fall in crop production and
 - drop in food access from own-crops

Research & Development gaps

- **Overall policy**

- the country has developed a three year AHIP Strategic Preparedness Plan in 2006

- After two years of implementation the experience learned need to be documented for betterment of the future intervention
 - The implementation was also through a National Technical Task Force. The institutionalization of the implementation also needs attention
 - the issue whether all relevant organizations involved in the poultry sector are working together with clear share of responsibility and accountability, needs to be addressed

Research & Development gaps (Cont...)

- **Bio-security**

- The dominant production system is backyard poultry farming all over the country with limited bio-security measures.
- Among AI risk reduction measures it is mandatory to put in place bio-security measures under such condition
- However, there is not any recommendation as to what type of biosecurity is economically and socially feasible under the Ethiopian small-scale backyard poultry farming system

Research & Development gaps (Cont...)

- **Bio-security**

- Research has shown that the bio-security practices in both private commercial farms and government owned PMDCs is also very low
- There is a big gap of awareness regarding bio-security and its importance to poultry farming.
- The reason why this is not practiced and why there is limited awareness has to be investigated for targeted intervention.

Research & Development gaps (Cont...)

- **AI threats in Ethiopia**

- in general, the study conducted so far document that there are two potential sources/threats of getting HPAI into the country i.e. from migratory wild birds and the legal poultry imports.
- Here, it is important to ask whether these are the only potential sources.
- The existence of illegal cross border trade with almost all neighboring countries needs due attention

Research & Development gaps (Cont...)

- **Surveillance and diagnostic capacity and responsiveness**
 - The threat of AI in the country is not away.
 - It is therefore important to document the country's surveillance and diagnostic capacity and responsiveness and
 - design how the capacity and its responsiveness can be improved

Research & Development gaps (Cont...)

- **Communication strategy**

- As a measure of creating public awareness in 2006, the information disseminated has created panic resulting in reduced demand and subsequent collapse of prices
- Even though, not documented, this has affected income of poultry farmers
- In order to avoid such impacts, there is a need to design a communication strategy that will give the required information to all stakeholders with limited effect on the markets

Thank you