



Conférence Internationale 2011

Dynamique et gestion des grippes aviaires :
à l'interface virus, oiseaux et Hommes

22-24 novembre 2011

Cirad Amphithéâtre J. Alliot - Montpellier France

**Summary report
and
Conclusions and perspectives**

The conference was announced and invitations sent out in September 2011



Le Cirad a le plaisir de vous annoncer la

Conférence internationale de clôture du projet GRIPAVI

Dynamique et gestion des gripes aviaires : à l'interface virus, oiseaux et Homme

Cirad, Amphithéâtre J. Alliot, Montpellier
du 22 au 24 novembre 2011

Trois ans après la conférence "Regards croisés sur la Grippe aviaire" (Montpellier 2008), le projet Gripavi (2007-2011), financé par le Ministère français des affaires étrangères (MAE), présentera à une large audience scientifique ses résultats sur l'écologie et l'épidémiologie de la grippe aviaire et de la maladie de Newcastle en Afrique et en Asie.

Les débats permettront d'aborder les questions et perspectives clés actuelles pour la compréhension et la gestion des gripes aviaires en région tropicale.

*Programme préliminaire : http://gripavi.cirad.fr/conference_internationale_2011
Cette conférence est ouverte à tous, inscription gratuite mais obligatoire auprès de : catherine.richard@cirad.fr*



Conference objectives

Three years after the conference, “*Regards croisés sur la Grippe aviaire*” (“Diverse Perspectives on Avian Influenza”, held in Montpellier, December 2008), the closing conference of the GRIPAVI project aimed to present the project's overall results to an audience of scientists and institutions beyond the immediate framework of the project. Taking advantage of this audience and the presence of a majority of partners, the conference also identified and debated key questions and perspectives concerning the understanding and management of avian influenzas in the tropics.

Place and dates

Montpellier, CIRAD (Alliot ampitheater)

22 – 24 November 2011.

Programme

Following the introduction, in which the context, objectives, and results in figures of the GRIPAVI project were presented and an update of the situation of avian pests in Asia and Africa , 5 thematic working sessions were organised .

The first two focussed on the distribution of avian influenza (AI) and Newcastle disease (ND) viruses and the determinants of their circulation among wild and domestic birds at the populations and molecular scales. The third session presented research on the mechanisms by which viruses are introduced and disseminated among wildlife and in domestic sectors. Session 4 focussed on stakeholders and tools addressing risks and emerging diseases, while the fifth session provided an opportunity to debate current challenges and perspectives.

Each session began with a keynote speech given by a guest from outside the project that was followed by presentations of researchers from the North and South regarding their results. In order to broaden the debates, each session ended with an hour-long roundtable discussion. Led by one or two research scientists from the project and based on 3 or 4 questions posed to guests and the audience, each of the 4 roundtables focussed on a specific theme (AI and NDV at the molecular scale; distribution and drivers of avian pests; stakeholders and tools; research, training and development perspectives).

Participants

In total, 90 people enrolled in the conference and 81 actually attended.¹

All of the research scientists involved in the project were present, as well as representatives of all of the partner institutions in Vietnam, Madagascar, Zimbabwe, South Africa, Ethiopia, Mali, Mauritania and France. Experts from relevant international organizations (FAO, OIE, AU-IBAR, AIEA) and one NGO (AVSF) also attended, in addition to scientists from foreign (RVC - London, ULB – Brussels, IZS – Venice, ISRA – Dakar, Princeton University –USA) and French (CNRS, IRD, INRA, ANSES) research institutions.

¹ *Last minute visa problems, ill health and unavoidable professional obligations were the reasons for the 9 absences.*

Summary of the main results of the project

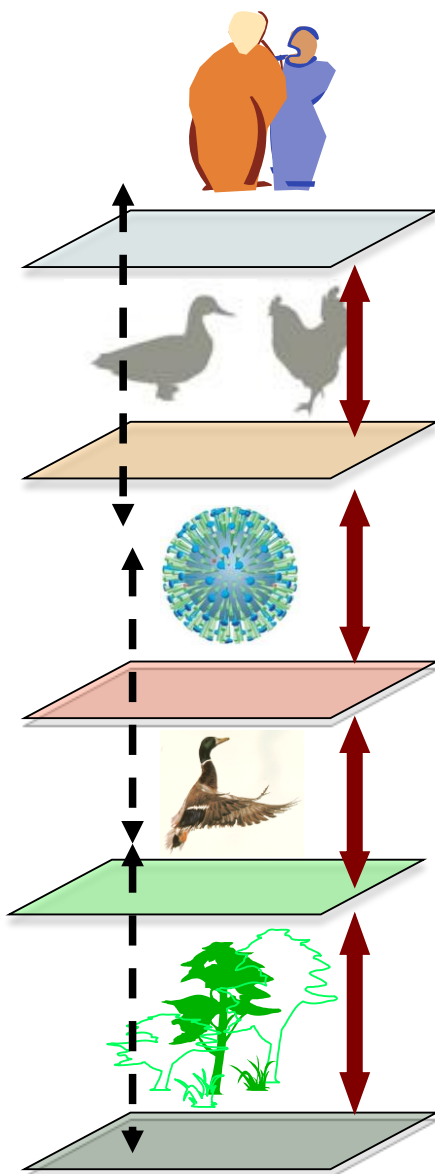
The project chose an integrated approach in which several disciplines explored the same eco-socio-epidemiological system depicted in the diagram below.

Detailed presentations of all of the results are available on the GRIPAVI project website (<http://gripavi.cirad.fr/>).

1. Pattern and distribution: Each component of the system was analysed to characterize:

- the distribution of AI or NDV viruses in wild and domestic animals.
- the ecological, sociological, zootechnical and commercial factors that could be involved in the circulation of the virus.

A brief picture of the results:



- Differentiate traditional family farms from commercial farms that are more or less intensive
- Identify the most highly connected nodes in commercial networks using the SNA method
- No or very little AI virus except in Asia but sometimes a strong prevalence of NDV especially in Africa
- Importance of the size and composition (% of ducks) of domestic poultry populations
- New NDV strains identified in Africa
- Sharing of virus strains between wild and/or domestic bird populations
- Seasonal circulation
- No HPAI virus found but a generalized circulation of LPAI and NDV
- Characterization of the abundance and the composition of communities in wetlands and their spatial-temporal variations
- Distribution and variation of water bodies
- Land use maps

2. Risk factors and determinants

Characteristics specific to each component could be correlated to virus presence or to risk of introduction and dissemination.

A brief picture of the results:

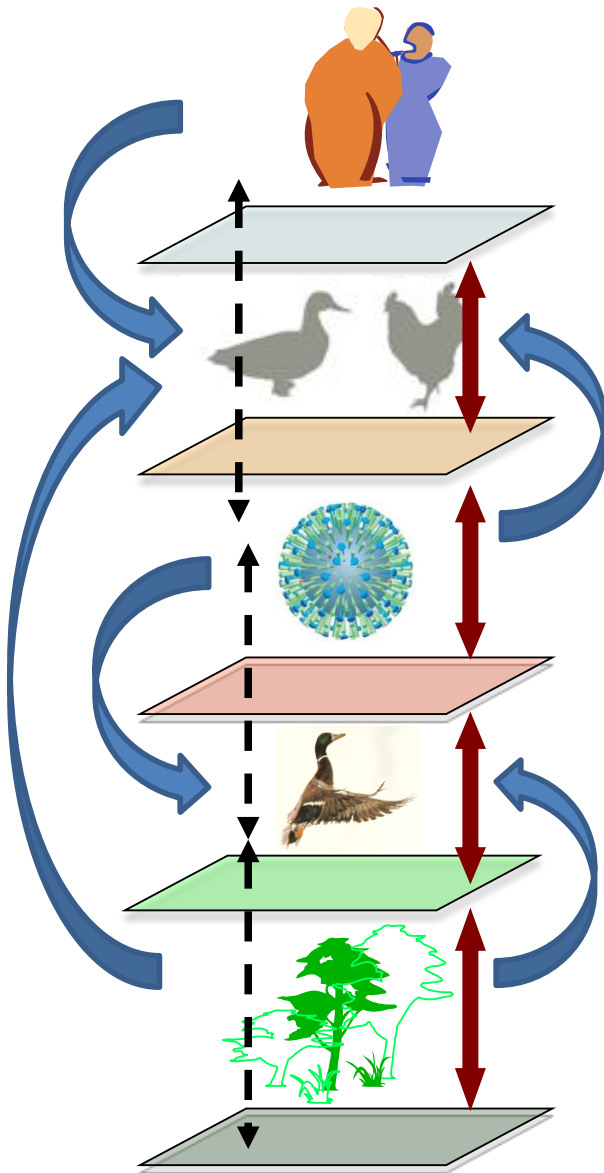
- ✓ Trade networks density between farms
- ✓ Level of biosecurity measures

- ✓ Abundance and percentage of ducks
- ✓ Age and sex of individuals

- ✓ Circulation, exchanges and mutations

- ✓ Density of populations, proportion of ducks
- ✓ Migration: duration and length of stages

- ✓ Seasons
- ✓ Distance to borders and roads
- ✓ Distance to water

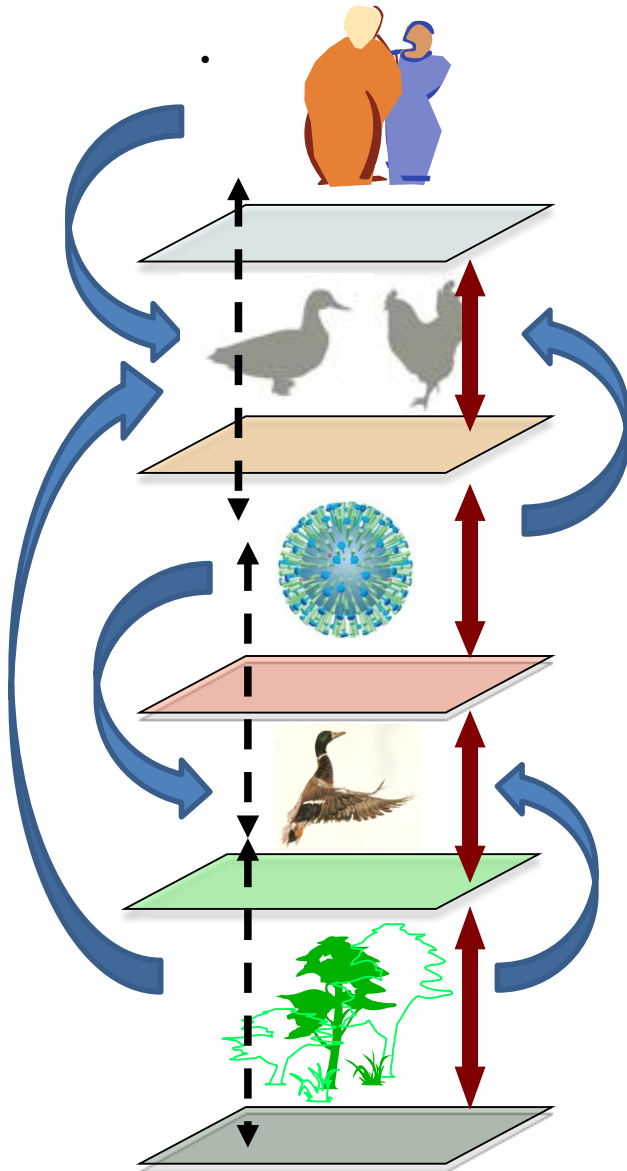


⇒ *Highlighting a system of interfaces and of risk factors*

3. Stakeholders and tools in response to risks

Surveillance systems were assessed and tested at the national, local, and individual level, as were the effectiveness of vaccination campaigns.

A brief picture of the results:



- Daily strategy of short-term risk management for the majority of farmers, contrasting with the recommended long-term prevention measures

- Individual and localized notion of the surveillance territory for the majority of farmers and weak perception of national and global stakes

- Limited effectiveness of national surveillance systems

- The effectiveness of vaccination often is limited by a lack of surveillance of circulating strains and a lack of accompanying prevention measures

- A targeted surveillance of areas and periods at risk of virus circulation and wild bird-domestic poultry contacts

- A targeted surveillance of the most highly connected trade network nodes

⇒ *Know more about the multi-stakeholder and multi-scale system to optimize risk management*

Summary of observations and overall recommendations of the conference

The presentations and the 4 roundtables generated rich debates that would be difficult to capture in complete detail in this summary report. Nonetheless, a range of observations and overall recommendations emerged that were proposed to participants at the close of the conference.

Without pretending to be exhaustive, a synthesis of these different points is presented below.

1. Human behaviour: factors of risk and sources of solutions

"This effectively is the component in the system where there is the greatest scope to act"

- ⇒ Surveillance and risk management:
- ⇒ When a form of local or individual surveillance exists, the means should be sought to integrate this level into national and international surveillance strategies.
- ⇒ There is a strongly growing trend towards surveillance and control strategies based on risk assessment.
- ⇒ To improve the applicability of national health policies, a top-down system of messages and recommendations should be replaced with a health policy that is negotiated with stakeholders. Likewise, health risk management should be based less on fear than on confidence shared between different levels of stakeholders.
- ⇒ Rather than restricting itself to anticipating emergencies, health policy should promote overall health.

2. Vaccination, a tool to control emerging diseases

- ⇒ Complementary research is required regarding the identification and distribution of sero and genotypes, particularly with regard to Newcastle disease and the impact of the current vaccines on these viruses. To do so, a reinforcement of regional (sharing data notably in Africa) and international cooperation is crucial. The use of tools such as FAO's Empress-i or existing in regional institutions must be considered.
- ⇒ Current vaccination against Newcastle disease and the H5N1 influenza virus is fairly effective but to maintain this result over the long term, vaccination must not be implemented on a massive scale without associated surveillance and the reinforcement of other prevention measures (biosecurity).

3. Poultry production

- ⇒ Governments and in particular veterinary services must pay more attention to poultry production because the weight of this sector is increasing and contributes fairly directly to poverty reduction. A lack of attention is why Newcastle disease often continues to be poorly controlled and its impact neglected.
- ⇒ The trend towards heavy intensification in this sector in some regions of the world raises questions that move well beyond purely health issues.

4. The role of wild birds

- ⇒ Confirmed cases of the introduction of the highly pathogenic avian influenza virus by wild birds are sporadic and rare and the role of wild birds in this domain is much less important than that of commercial trade.
- ⇒ The study of the circulation of low pathogenic AI and ND viruses remains important notably when there is a risk of contact with domestic birds. Highly pathogenic strains in effect derive from low pathogenic strains circulating notably in wild avifauna.
- ⇒ Future research must focus on the processes behind the circulation of viruses at the level of individuals (life history CMR approach) and of host and pathogen communities (and in certain cases, vectors), including the interactions between these communities.
- ⇒ Regional cooperation and ornithological skills must be reinforced to improve knowledge of Afrotropical avifauna, notably their migrations and movements.

5. Science and decision making

- ⇒ Scientific results are not the only decision criteria for policy makers, particularly when there is a crisis or emergency. On the one hand, other viewpoints and perceptions need to be taken into account to improve the applicability of decisions and, on the other, research results take a long time to be produced and include a margin of uncertainty that is not always easy to cope.
- ⇒ The need to translate research results into policymaking terms remains a necessity for the management of influenzas as well as other health crises.

6. Conclusions

- ⇒ The H5N1 avian influenza crisis was an opportunity to acquire knowledge, experience and tools that can be used for other diseases and in other regions of the world.
- ⇒ The results of current research have had a large scientific and operational impact and are raising new research and development questions.
- ⇒ It is crucial to maintain and reinforce the cooperative relationships that were forged on that occasion, not only at the level of research teams, but also of health management bodies. They have learned to work together outside the boundaries of the disciplines and specific competencies of each institution (ex veterinary vs fauna and conservation).

GRIPAVI

<http://gripavi.cirad.fr/>



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