



Federal Ministry of
Food, Agriculture
and Consumer Protection

Policies against Hunger V

Food Security and Poultry Production – How to Cope with Avian Influenza



International Workshop:
19-20 October 2006, Berlin, Germany

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Foreword

Parliamentary State Secretary

Dr. Gerd Müller



Dear Madam, dear Sir,

At our international conference "Policies against Hunger V" we asked about the lessons to be learnt from Highly Pathogenic Avian Influenza (HPAI) for food security and poultry production. The participants in the Berlin Workshop held in-depth discussions and worked out concrete recommendations for the international fight against HPAI that take aspects of food security, the conservation of animal genetic resources as well as the poultry production systems of the future equally into account.

The Conference thus pointed the way to future strategies to control and prevent HPAI.

I am very pleased that this has also been taken up at the international donors' conference held in Bamako in December 2006. There, the EU repeatedly indicated the potential problems for food security and biodiversity that are to be expected in case of a further spread of HPAI. The

closing declaration of Bamako also expressly emphasized the importance of food security as well as the protection of the rural population and small-scale farmers against the impact of the disease.

Avian influenza poses a threat to human and animal health. However, it also constitutes, in addition, a serious risk to the food situation in the affected areas. We therefore face a huge challenge when planning and implementing the global measures to control and fight avian influenza. We want to beat the disease.

What also matters, however, is to take the situation of the rural population and smallholders into account whilst ensuring the conservation of valuable animal genetic resources.

The Federal Ministry of Food, Agriculture and Consumer Protection has therefore promoted FAO pilot projects in Laos and Cambodia since the end of 2005 that pursue precisely this aim. Related activities are currently being expanded to the African continent.

I am confident that the international community can face up to the global challenge of transboundary animal diseases by joining forces and count on our common responsibility.

Yours sincerely,

A handwritten signature in black ink, appearing to read "Gerd Müller". The signature is written in a cursive style.

Alexander Müller

Foreword to the report on the Conference
“Policies against Hunger V”

Animal diseases, and poultry diseases in particular, continue to threaten the food security of many poor rural families in the world. In addition to this, Highly Pathogenic Avian Influenza H5N1 continues to affect human health and still has the potential to develop into a pandemic. Therefore, our fight against Avian Influenza has to meet different requirements:

1. We have to be effective in fighting the disease at its source in the animals; we have to stop the spread of HPAI in poultry. This constitutes a major contribution to preventing a possible development of a human pandemic.
2. In case of an outbreak and virus circulation, we have to protect the people who are in contact with poultry and who eat poultry meat. Various measures need to be taken (risk communication, improved basic hygiene and better biosecurity,...).
3. And our measures to reduce the risk have to be appropriate. We have to take into account the special situation of small-scale farmers and the impact of HPAI on their livelihoods.

The International Conference “Policies against Hunger V”, held in Berlin in October 2006 and hosted by the German Federal Ministry of Food, Agriculture and Consumer Protection, represented an important opportunity to raise awareness of and interest in the implications of HPAI H5N1 and other transboundary diseases for the food security and livelihoods of poor rural families as well as for the genetic biodiversity of poultry. The Conference recalled that fighting the disease in the backyard systems might require specific approaches to ensure that control measures enhance but do not hamper the food security of poor farmers.

Within MDG1, it is FAO’s mandate to enhance food security and to reduce poverty. Regarding animal diseases, FAO has the mandate to help countries to mitigate the economic impact of animal diseases through prevention and control. The outcome of the Conference supports this mandate, and FAO has developed a number of related activities. These activities include, for example, analyzing the value chains in the poultry production sectors as well as the role of poultry for poor rural families, seeking to establish enhanced biosecurity measures at farm level and developing appropriate communication strategies.

The FAO project “Promoting strategies for prevention and control of HPAI that focus on smallholder livelihoods and biodiversity”, funded by the German Government, gives centre stage to the development of adequate policies to be implemented at the different levels (national, regional and global) and includes the genetic biodiversity of poultry. The project will be implemented in three different countries: Cambodia, Egypt and Uganda. The experience to be gained in this project will provide a good overall picture of how to implement animal disease control measures in backyard systems, taking into account the specific interests of poor rural families and helping to develop these systems in a way that will allow these families to improve their livelihoods. It is our hope that, at the same time, the role of local poultry breeds for livelihoods and socio-cultural life will be better known so that governments will have an increased incentive to secure these breeds.

Food security, poultry production and avian influenza

Since the first outbreaks in South-East Asia in 2003, highly pathogenic avian influenza (HPAI) has spread at a great speed in over 50 countries in Asia, Europe and Africa. Wherever the disease newly occurs, it kills most of the infected birds. Especially chicken die quickly, frequently without showing any clear signs of a disease beforehand. Humans, too, have been infected with the disease agent, an influenza virus of the subtype H5N1 and more than half of the 256 victims reported until October 2006 succumbed to the disease. However, the virus does not easily cross from birds to humans. The victims were people in abject poverty that closely live together with their poultry to protect it from theft or other mishaps. This suggests a link between high-risk behaviour with food-insecurity.

When the disease first broke out, the control and precautionary measures were designed to prevent the disease from becoming endemic. All birds within a three kilometre radius around the infected flocks were culled, a ban was imposed on animal transports and poultry markets were closed. Over 200 million head of poultry were thus destroyed in Asia alone, either by the disease itself or by the applied control measures.

This course of action requires appropriate structures in the veterinary services and adequate financial resources. However, these conditions do not exist in many regions of the world. Despite the control efforts, the disease has now become endemic in China, Indonesia and possibly other countries of Asia and Africa, upsetting the goal of virus eradication. Many of the poultry killed belonged to backyard and small-scale farmers who mostly keep local breeds. These hardy birds are not only crucial to rural livelihoods and food security, but also

present valuable genetic resources for the rest of the world.

Because of their low biosecurity, backyard and small-scale systems were initially regarded as the main problem in the emergence and spread of HPAI. However, it has now been understood that many different factors promote the formation and spread of HPAI. Yet, the precise interaction between them has not been entirely grasped until now. Factors being discussed as causes are the migration routes of wild birds, the legal and illegal trade in live poultry, in eggs and poultry products, the application of faeces to fields, the large number and density of livestock in factory poultry farming as well as the genetic uniformity of chicken within a flock.

It is therefore necessary to rethink the previous control and preventive strategies on the basis of the experience gained over the past few years. New strategies must be developed to improve the situation of rural farming communities and small-scale farmers especially as well as to ensure the conservation of poultry genetic resources.

To provide a discussion forum for these issues, the Federal Ministry of Food, Agriculture and Consumer Protection in cooperation with the Federal Foreign Office and the Federal Ministry for Economic Cooperation and Development hosted the international Workshop on "Food Security and Poultry Production – How to Cope with Avian Influenza" as part of the series of conferences on "Policies against Hunger" in Berlin on 19-20 October 2006. The workshop was chaired by FAO Assistant Director-General Alexander Müller.

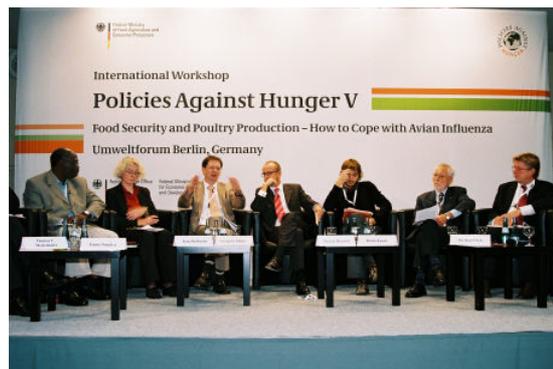
Around 150 national and international experts and policy-makers from science and research, the business community, development cooperation and governments from different continents were brought together to discuss their experiences with

the impacts of HPAI and possibilities of control, focussing on food security, poultry production systems and poultry genetic resources. As the issue of food security affects backyard and small-scale poultry producers most harshly, the discussions focussed especially on these producer groups¹ and their poultry production, addressing only the animal health problem rather than the disease in humans as the former was still assumed first priority in the international fight against HPAI.

The recommendations formulated by the workshop participants shall assist the international community in developing sustainable strategies that can address the hazards posed by HPAI. There also was the common notion that at the same time the needs of backyard and small-scale farms needed support. Given that other new types of diseases spreading on an epidemic scale had already occurred before the HPAI outbreaks, this discussion of HPAI is exemplary of other diseases as well. Due to the fear of a human pandemic HPAI has created more public awareness than others transboundary animal diseases.

The international community is called upon to reinforce its efforts to develop preventive strategies against future disease outbreaks and make available the US\$ 1.9 billion pledged during the International Pledging Conference on Avian and Human Influenza in Beijing in January 2006. The 4th International Conference on Avian Influenza in Bamako, Mali on December 6-8, 2006 offers an opportunity to revise the global strategy and address the concerns and needs of small-scale poultry farmers and the challenge of securing the food supply notably of the poorer population.

¹ Corresponding to sector 3 and 4 of the FAO classification of poultry producers: Industrial integrated (sector 1), Medium sized commercial (sector 2), Small-scale commercial (sector 3), Village or Backyard (sector 4).



Workshop highlights

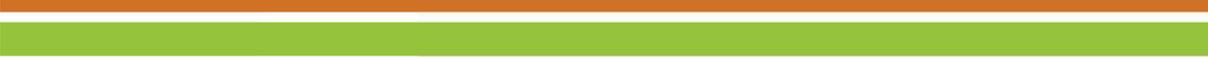
The impact of HPAI on food security

In many places, poultry farming plays a decisive role for the food security and income of millions of people. Most smallholders produce for their own consumption in the household as well as for local markets. Poultry meat is generally accepted and supplies one third of the protein consumed in the average rural household. It is especially women farmers in developing countries and countries with economies in transition who secure their livelihoods by engaging in poultry husbandry. They use the income from this not only to buy food, but also to pay the school education and preventive health care of their children.

While for sector 1 and 2 producers stamping-out is still considered the most feasible measure if an outbreak occurs, for backyard and small-scale producers the massive and indiscriminate culling can have catastrophic effects, especially because compensatory payments have frequently not reached these groups. The poorer sections of society are particularly at risk as the families frequently cannot compensate for the loss of poultry meat. Measures that restrict chicken farming in rural areas could therefore have an enormous economic and social impact.

The impact of HPAI on poultry genetic resources

The preventive culling destroyed many poultry flocks on small-scale farms that



displayed a high degree of genetic diversity. Indigenous chicken breeds are generally more robust than high-yielding breeds and constitute a precious resource that could become important for new breedings in the future. However, according to FAO data, 32% of poultry breeds/populations are classified as either extinct, endangered, or critical and the risk status for an additional 42% is not known. There are no data on the impact of HPAI and its control but it can be presumed to be significant. Measures are urgently needed to prevent further losses and preserve genetic resources.

Stakeholder needs and HPAI control

For backyard and small-scale poultry producers the control measures to contain AI may despite the possibility of human casualties represent a bigger threat for their livelihoods than the disease itself because avian influenza is just one problem among many affecting their existences. If simple improvements that are very low risk and low cost to rural people such as effective and easy to handle vaccination were available, this could quickly increase village poultry keeping. If production improves and if the surplus production can be sold, producers might also become interested in boosting their poultry output and investing in biosecurity.

Industrialised poultry production systems, on the other hand, are vulnerable to avian influenza due to its rapid spread and enormous mortality as well as the economic damages through slackening demand and loss of export opportunities. Primary breeders need to protect the health of their base lines against infection and to protect the interests of their customers, the franchise hatcheries, by supplying parent stock free of communicable diseases. This requires world-wide regulations to prevent keeping of other poultry within a defined radius of primary poultry breeding facilities, strict observance of national and regional plans for monitoring

communicable disease, the frequent update of knowledge on global disease situation and availability of efficacious vaccines to optimize the level of protection,

This in turn requires adequate veterinary services including ability for early detection (diagnostic capacities; surveillance and monitoring) and control, the continuation of monitoring of infection in wild birds and poultry, improved biosecurity especially of sector 2 and 3 poultry holdings and strict control of movement of animals and animal products.

Poultry owners can play a crucial role in effective surveillance and reporting of avian influenza. An effective system of incentives, such as genuine veterinary support and appropriate compensation for culled birds, will need to be created. Approaches such as Community-Based Animal Health care (CBAH) and Participatory Disease Surveillance and Response are therefore of great relevance in this context and available experiences should be analysed with respect to their applicability for HPAI control.

Vaccination can reduce the amount of circulating virus but does not achieve eradication of infection. If properly performed, it can help backyard and smallholder production systems. New vaccines with high potency need to be developed based also on genetic engineering methods; they need to be easy to apply and allow the differentiation of infected from vaccinated birds to avoid virus spread under vaccine cover. However, under rural conditions in developing countries, reaching the coverage necessary to prevent new HPAI outbreaks can be a challenge.

A thorough characterization of existing poultry genetic resources, and knowledge where and in what numbers they exist, is the precondition for conservation programmes and contingency planning for disease outbreaks and other disasters. Observations made in the villages and

some other indications suggest that some indigenous breeds are more resistant to HPAI than others. However, integrating specific genes into commercial strains is difficult, so the development of new vaccines may be a more promising approach. It may also be feasible to raise general disease resistance – although this often compromises production performance and is therefore not attractive to sector 1 and 2 production systems.

Towards an integrated approach to disease control

The realisation that

- Backyard and small-scale poultry production is essential for poverty reduction and food security,
- Avian influenza and its control can negatively affect the food security of many poor households and
- The cooperation of smallholder poultry farmers is essential for achieving successful containment of the disease

urges a paradigm change in the approaches to combating HPAI. To create a win-win situation for both the international community and the local communities, disease control needs to be integrated with safeguarding food security and livelihoods in rural areas and the conservation of poultry genetic diversity. The following sections summarize the recommendations formulated by the working groups of the Policies Against Hunger V workshop (for details see *Recommendations of the Working Groups* below).

Safeguarding food security

Avoiding negative impacts of AI and its control measures on local smallholder poultry production and trading is imperative, also because such production is often an important driver of local development. The strategy must be to reach out to local communities and involve them in the development of approaches for

controlling AI in traditional systems. Knowledge gaps need to be addressed based on studies on the socio-economic impacts of AI and its control in rural communities.

The immediate and fair compensation in cases of culling and the provision of information and training to poultry keepers in communities can contribute to improved disease control and surveillance. Integrating control activities with other poultry and hygiene interventions and the control of Newcastle and other killer diseases of poultry has the additional benefit of supporting rural livelihoods.

The development of fencing and biosecurity concepts appropriate to backyard and small-scale producers is essential, for smallholders will only cooperate if they perceive benefits for themselves. It is also important to prevent the dumping of poultry products after AI outbreaks and negotiate at the World Trade Organization for regulations that minimize market distortions hurting small-scale and backyard producers.

Conserving poultry genetic diversity

Further losses of poultry genetic diversity in the context of AI control measures should be prevented through a combination of short- and long-term measures such as the storage of frozen genetic materials (cryo-preservation) and support to farmers that conserve indigenous breeds. In addition, it is important to investigate possible genetic differences in resistance against AI among chicken genetic resources. To achieve this, culling should be connected with breed recording and genetic sampling and the local knowledge about the breeds / strains and their resistance be documented. It is essential to clarify the intellectual property rights of collected materials and knowledge.

Optimizing disease control

The concept of Participatory Disease Surveillance can be extremely helpful in

the context of avian influenza, but beyond this farmers need to be empowered to prevent the disease on their own. They must be supported to identify and adopt simple appropriate practices to reduce the risk of infection and transmission. In this respect, NGOs are likely to play an important role, since extension services tend to be weak.

Furthermore, avian influenza could become a trigger for rethinking models for animal health care delivery and lead to a renewed commitment for strengthening veterinary infrastructures. Strong veterinary services and commitments to invest in veterinary public health and the control of transboundary diseases and a trustful relationship between vets and farmers are key to successful disease control, as are transparent disease reporting and the understanding of origin and cause of the outbreaks.

Donor coordination and cooperation is of essence and much remains to be done here.

There also needs to be a better understanding of the functioning of the poultry industry. Poultry trade patterns and its connections with other sectors must become more transparent.

What type of strategy is needed?

The foregoing tasks can only be achieved with a global strategy that has the following characteristics:

- Holistic and integrated
- Adapted in each country to the different conditions of the four production sectors
- Sustainable (on national and/or international level)
- Based on contingency plans whereby all stakeholders need to agree to provisions (including culling and compensation schemes)
- Based on evidence and the assessment of risk for introduction and spread

- Feasible, credible, understandable and acceptable (a trustful vet-farmer-relationship)
- Beneficial and appropriate to backyard and small-scale producers
- Gender-sensitive, addressing the special role of women for livelihoods
- Inclusive – taking a participatory approach
- Transparent

Making it happen

Successful avian influenza control requires the inclusion and active participation of all stakeholders. Recognizing the importance of smallholder poultry keeping and poultry genetic diversity for food security is an important precondition for the development and implementation of an integrated approach. Only if we involve back-yard and small-scale farmers actively in disease control and address the needs of the population at risk, will we be able to reduce the likelihood of future epidemics and realize the chance that AI offers for entering a new level of cooperation between the North and the South. Assigning a substantial part of the support pledged by the international community for HPAI control to measures addressing these areas, education and communication can make it happen.

Recommendations of the Working Groups

Approaches to control and prevent avian influenza present us with a dilemma between supporting the food security and incomes of rural poor on one hand and making low-cost poultry products available to the urban masses on the other. Avian influenza control should create a win-win situation for both the international community and the local communities through developing a global strategy that integrates:

- Safeguarding food security and livelihoods in rural areas and

- Conserving poultry genetic diversity and
- Optimizing disease control

Working Group 1: Food security

To safeguard food security in rural areas, interventions especially in less developed countries should address the needs and interests of backyard and small-scale producers:

- Do not cull without fair compensation
- Address knowledge gaps (across all stakeholders) through research
- Study socio-economic impact of HPAI control at the household level
- Implement trainings on household level
- Make better use of existing know-how (success stories and failures)
- Consider the whole chain (production – marketing – consumption) and involve all stakeholders
- Integrate control activities with other poultry and hygiene interventions and poverty alleviation measures
- Control existing endemic killer diseases of poultry (e.g. Newcastle disease, fowl cholera, duck plague) as this can facilitate the early detection of HPAI
- Learn from those who have experience in sectors 3 & 4, including male and female farmers from these sectors
- Strengthen the surveillance and diagnostic systems from village to laboratory
- Minimize market distortions that hurt sectors 3 and 4 by providing constructive advice (prevent dumping of poultry products following AI outbreaks)
- Emphasize and facilitate transparent reporting across all sectors

Some participants suggested that a substantial part of the support pledged by the international community for AI control should be assigned to measures addressing food security, conservation of poultry genetic resources, education and communication.

Working Group 2: Animal genetic resources

To prevent further losses of poultry genetic diversity, the strategy should combine inventory with *ex-situ* and *in-vivo* conservation. All three of which provide the basis for successful restocking after outbreaks.

Inventory

- Investigate impact of HPAI and other diseases on poultry diversity
- Investigate/identify possible genetic differences in resistance against HPAI
- Avoid culling whenever possible!
- Connect culling with breed recording and breed sampling
- Conduct DNA analysis of (blood) samples: group them based on micro-satellite markers to obtain information about genetic relationship of birds that have died or been culled
- Document local knowledge about the breeds / strains and their resistance
- Expose selected populations experimentally to disease to compare their resistance

Cryo-conservation through storing deep-frozen genetic materials

- Store semen samples (this conserves only the males)
- Characterize the birds
- Collect semen or blood samples to characterize the genetics
- **Clarify intellectual property rights of collected materials!**

- Decide what samples need to be held at which level (national vs. international centres)

In-vivo conservation and development

- Support / reward farmer for conservation
- Prioritize breeds for conservation
- Develop breeding programmes for sustainable use
- Promote pure breeding (including indigenous breeds)
- Promote breeding and management of in-vivo populations
- Develop a protocol how to protect in-vivo populations

There was strong support at the conference for the idea that donors and the private sector establish a fund for maintaining poultry diversity. The fund would be used to support activities on *ex-situ* and *in-situ* conservation and strengthen the involvement of backyard and small-scale poultry keepers and breeders in breeding and decision-making.

Working Group 3: Disease control

The successful control of avian influenza and other transboundary diseases requires:

- Strong veterinary services
- Commitment to invest in veterinary public health
- Political commitment to control transboundary animal diseases including:
 - financial engagement to ensure surveillance and diagnosis (lab capacity)
 - transparency of epidemiological analysis to determine origin and cause of outbreaks
 - reporting to central and international level (e.g. OIE)
 - compensation plan and rapid payment to farmer

- consideration of all sectors, including a specific commitment to the backyard sector

When defining the control strategy at local or regional level, it has to be sure that the different stakeholders are involved: Government, farmers from all sectors, donors.

The political commitment is laid down in

- **the veterinary legislation**, assuring the legal basis for
 - Animal disease control
 - Animal movement control
 - Notification
 - Vaccination strategy
 - Compensation
 - Animal husbandry
- **the contingency plan**, including standard operation procedures for:
 - Diagnosis
 - Culling and carcass disposal
 - Vaccination and post vaccination monitoring
 - Compensation

To be successful in the small-scale farming systems (sectors 3 and 4) a **participatory disease surveillance and response** system containing the following elements is strongly recommended:

- Disease detection based on knowledge of farmers
- Rapid tests allowing to differentiate between HPAI and Newcastle Disease
- Response in cooperation with farmers
- Development of sustainable surveillance and response networks

The **PACE**² laboratory network should be secured for the future and used for the diagnosis of HPAI in Sub-Saharan Africa.

² Pan African Programme for Control of Epizootic Diseases.