Workshop 5

Economics of avian influenza control

Chairman: Ruud Huirne

Prior to discussion, the main topics are listed as follows:

1. Direct versus indirect losses and who bears the losses, (government, sector?). Importance of prevention
2. Farm contacts must be reduced
3. Contacts between community and free-range poultry must be minimized
4. Targeted vaccination can assist in disease containment but can it retain trade possibilities?

Ruud Huirne: Maybe there are some people who want to add to the list what they feel as a big issue in economics of outbreaks but is not covered in this list. Who feels there is a gap?

Ilaria Capua: It seems The Netherlands is very interested in this targeted vaccination and I understand why because we had to do the same. I don't think that here we can find a general consensus, because there are people who haven't had AI. The way we did it was to identify the problem, write down the vaccination programme, then go with the little programme to Alberto Laddomada and the European Commission and then the OIE and negotiate. In Italy we were able to market the meat from our vaccinated birds because we showed them the system is in place and gave them additional guarantee that the virus is not circulating and so on. Very often I got questions: what about the layers? In The Netherlands you have a big problem exporting layer eggs. We did not ask to market the eggs from layers because Italy has a very small number of eggs that are exported so we weren't interested in that commodity. Since countries have different structural organizations in the poultry industry, they are interested in different commodities to trade. If you think vaccinating layers for example is reasonable, what you should do is to ask: "we want to use vaccination just in this area as a preventive measure; we will test them once a week; we will leave sentinels; and so on, can we export the eggs?" This is negotiable. You need to put forward a plan and negotiate it. But you have the Italian experience to make you stronger.

Ruud Huirne: My point here is that even though legally you can export, it doesn't mean the shops or retail chains want to sell it. It could be a problem. Although it's completely legal and completely safe to consume, it's still the retail rule there that can be dominant because in the end, they decide whether they are going to sell it or not. Do you have experience at this point?

Ilaria Capua: Yes we do, with the cross-market meat. That's a risk-communication problem. Since you export 70% of your product, the first thing you have to do is to make sure if you can maintain those exports. All the rest can be fixed. You have to address one point at a time.

Remco Schrijver: I think it's a very good point you made here. Concerning vaccination, the situation in The Netherlands was that there was not so much confidence at that time firstly if it will really help technically and secondly if it is feasible at all. In terms of crisis, it will be very difficult to study because we have to study scenarios and it takes a long time. We have to study the scenarios on how to use vaccination in The Netherlands, taking into consideration both industry and the government.

Dennis Alexander: My question is for Ilaria Capua, do you think you would have clearance in trade if you have HPAI instead of LPAI?

Ilaria Capua: If you take for example the Dutch situation, they had two major outbreaks, which were quite distant from each other. If they had preventively vaccinated the second part in Limburg and these birds were shown to be not infected, why can't you market them? I am not talking about those birds in the buffer zone. I am saying you could use it in a different way.

Dennis Alexander: But you are talking about compartmentalization, which didn't exist at this moment.

Alberto Laddomada: Regarding compartmentalization, practically speaking, even if we don't call it like that, we use compartmentalization. We are flexible enough to do that in the sense that if a certain company demonstrated the virus is not circulating in this company, we allow certain trade, maybe only fresh meat instead of live birds. The problem with live birds is the following: Italy was in an emergency situation and they developed a new strategy, which is largely unknown. Since they were not interested in trading live birds, of course they will not put pressure on anybody to have this kind of authorization. Of course we were extremely cautious in Brussels and in other member states because we are going into a new scenario. For the future, I don't know what decision will be taken, certainly to trade in live birds or hatching eggs poses more risk than trade in meat and table eggs. I think in principle this is something that can be stated. The big problem arises when we are speaking not any more about emergency vaccination but of a prophylactic vaccination because that's being considered in The Netherlands, like the famous problem of the free-ranging hens. I see a lot of uncertainty. I cannot give you any opinion on what can be the scenario from a regulatory point of view, at least not at this moment. But certainly you must understand that this raises the level of problems if you use prophylactic instead of emergency vaccination. For an emergency vaccination we can envisage something we don't like, which is national marketing. At the commission we are supposed to strongly defend the internal market so access to the EU market can be given. But this is just for an emergency, not on a regular basis. So I can see certain basic problem to this approach. Again we see more problems in live birds and layers than in meat and table eggs, like the American approach. We have some different approaches to the American approach like washing eggs. Basically we do not authorize washing of eggs, but under emergency, we might consider it. The scenario is complex so I cannot

give you all replies. But certainly I see much more difficulties in accepting a generalized prophylactic approach than an emergency vaccination approach. I understand this may not be so easy to accept for those who are thinking that they have more risk factors and political pressure to keep the layer hens outside and therefore think about vaccination. I think you may think of additional surveillance to these farms or give emergency vaccination in case something is found. That's another scenario to think about.

Ruud Huirne: What I would like to discuss at this point regarding prevention is that there is a trade-off between vaccination and biosecurity measures. That can be a disadvantage to vaccination in the sense that psychologically, if vaccination is applied, farmers might have less incentive on biosecurity measures. Is vaccination reliable enough to count on when it's necessary? Suppose we have a different strain?

Dennis Senne: Our experience in the US is that biosecurity has to be a fundamental component of a control programme. In our case, vaccination will probably only be used only in emergency situation. As for prophylactic vaccination, it's very doubtful if it will be used because of trade restrictions.

David Swayne: Just to add something to Dennis Senne. There is only one scenario in which we will use prophylactic vaccination for AI, which is H1N1 H1N2 for turkey breeders and which is not for meat production but for the protection of egg production. That's the only prophylactic usage of vaccine. It's the economic issue for the industry that prefers not to use vaccine where there is no disease, only in the face of an outbreak.

Goosen van den Bosch: The poultry people have to deal with the issue of biosecurity and vaccination. It's true not only with AI. When you have only vaccination and no biosecurity, you will be too late. The vaccines are attenuated and milder and the field virus is always stronger, the poultry industry knows it. They know they won't survive without biosecurity. So there is no reason to believe that if you give them vaccination, they will forget biosecurity.

Ruud Huirne: But the public debate gives sometimes a different impression from what you said. You get the impression that vaccination is a golden key that will overrule everything else.

Goosen van den Bosch: You need absolutely to start from biosecurity. Vaccination is an additional tool. That's also true for other poultry diseases, like *Salmonella*. Sometimes you can use all kinds of vaccines but still lose the game.

Ilaria Capua: I just want to respond to Alberto Laddomada about the prophylactic vaccination. I think the control policies of AI haven't undergone substantial changes in the last 3 years. There are some scenarios in which it is impossible to stop the spread of AI. As we heard yesterday, the long-term solution for some countries is to move the chickens or turkeys out of the area. But that's not something that can occur within the next two years. It's a long process because you have to put a standstill, you have to convince the farmers to move, close down and sell their houses and so on. But what are these people supposed to do in the mean time? We bring down the population density to a level on which it's possible to control the disease. What are

these people supposed to do? In an evolving control strategy, the same way we left our minds open to emergency vaccination, we have to leave our minds open to small prophylactic vaccination in areas where this is fundamental or is the basic condition for the survival of the poultry industry.

Charles Beard: On the issue of vaccination versus biosecurity, vaccination carries with it an inherent biosecurity risk if the crew vaccinates an unknowingly infected and shedding flock and then goes in to vaccinate the next flock. This, if not properly managed, can be disastrous. So the vaccination crew should have the utmost biosecurity practice in place and be managed and supervised to the point that you know they have it in place, not just hoping they have it in place.

Alberto Laddomada: In reply to Ilaria Capua. You are envisaging a scenario where you have a certain area of the community where there is regular vaccination. I do not exclude that. But in this case we will have different status between areas with and without vaccinations. And regarding live birds, I can certainly see a lot of restrictions. It's a price to pay and something to be discussed and agreed at community level. I would like to see good technical grounds and to know who pays for vaccination. And in this case, the reply can be just one and you can imagine.

Ruud Huirne: To avoid confusion, can you clarify whom you had in mind?

Alberto Laddomada: The producer must pay for that kind of vaccination, there cannot be any other way.

Ilaria Capua: So the Commission won't pay. It might think remotely of paying the emergency vaccination, but definitely not a prophylactic vaccination. I think that's sensible.

Alberto Laddomada: So far we have never put a Euro in vaccination. But if tomorrow there is an agreement that certain types of vaccination can help to eradicate the disease earlier with less cost at the end of the day in compensation or so on, why shouldn't we pay for that? But conversely if the issue is that you want to keep the area of high density of turkeys, and disease control would be impossible, therefore you want to vaccinate, this is not acceptable for us to pay. Sorry, this is the risk you are going to take yourself.

Tjep de Vries: I have a question about the difference between vaccinated and non-vaccinated areas. What would be in principle different from Newcastle disease? Apparently it seems nobody is bothering about the vaccination of Newcastle disease.

Alberto Laddomada: In principle we certainly could think about something similar. But vaccination for Newcastle disease is carried out in the vast majority but in this case it would be the reverse.

Peter Cargill: I would like to come back to the issue of vaccination and biosecurity. I think there is a potential problem of some farmers dropping biosecurity because of vaccination and also, as Charles Beard pointed out, of vaccination crew increasing the risk. But I think this is a rather simple problem to resolve. Everybody who is involved in emergency vaccination should be required to maintain certain standards of

biosecurity, and if they did not, they shouldn't have any compensation payment. I think it's a simple procedure thing that needs to be put in place.

Ruud Huirne: It's hard to check that. Our experience is that some people have the facility but don't use it.

Peter Cargill: I agree it's hard but in principle that's the only way you motivate people to maintain biosecurity.

Dennis Alexander: I was going to pick up Newcastle disease again but given the time limit I will drop it. But if you're talking about prophylactic vaccination and trade, you are talking about doing surveillance on vaccinated birds to show that they are not infected by LPAI or HPAI. But from the discussion I got the impression that people were not very keen on massive surveillance study there.

Ruud Huirne: Is that true?

Alberto Laddomada: Of course the surveillance should also be paid by producers.

Dennis Alexander: I would agree with that.

Guus Koch: First of all, I want to make it clear that we didn't want to have a prophylactic vaccination in The Netherlands. The question whether to vaccinate was raised the first day of the outbreak, but we didn't have a contingency plan and we didn't know the trade implications. It took so long that when I went to Brussels, the epidemic was already over and it became a prophylactic vaccination. The second point is that I don't agree with Ilaria Capua. Why shouldn't we vaccinate in face of an outbreak? Hong Kong is doing that and I think that would be an additional advantage of vaccination to try to control the disease within for instance the protection and surveillance zone. What we have learned now is that we would have to get rid of the animals anyhow. If we would have started vaccinating on the first day, we could have reduced the outbreak to the Gelderse Vallei. That's something the epidemiologists with their mathematical models should come up with. They should try to see what efficacy the results of vaccination should have in a certain area and make scenarios to show when to apply vaccination and when not to. About trade implication: since we could not trade from the Gelderse Vallei and even from all over The Netherlands, we do not need surveillance. Surveillance should only come afterwards while the decision on what to do with the animals that survived has been taken. These are are vaccinated and thus could be a problem to be discussed during a longer period.

Ilaria Capua: I don't think I explained myself appropriately. I would have vaccinated in your epidemic because I think instead of killing 30 million birds, you could have killed 15 million. In my view, what you do with the vaccinated birds afterwards should not be based on mathematical models but on answering the phone everyday. Vaccination would have helped you. I think we are discussing about two different things. In Hong Kong, the birds are vaccinated in face of epidemic and some of the birds might be infected because they are vaccinated during infection. For how we are dealing with those birds, we would have killed those birds anyway. So it depends on what you are trying to achieve. You can use vaccination to reduce the spread and then kill the birds if they are infected. What we were trying to do at that moment was to

use vaccination as a tool for eradication. In our previous experience we depopulated first, then vaccinated and we had one small outbreak. Then we vaccinated for a year without any other introduction. Probably some farms got some contact with small amount of virus but it was not enough to achieve productive infection. The second time we vaccinated in active presence of virus circulating, which means a lot of flocks would get infected, not a few, therefore you are dealing with a complex situation as you will have to kill not just 2 or 3 flocks. So it really depends on what you want to achieve and what the situations that you are going through at that moment are requiring you to do.

Ruud Huirne: I would suggest now we have the last question.

Trevor Ellis: Just a point of clarification. The situation in Hong Kong is very different because we are not an exporting market. We didn't vaccinate in the face of outbreak as such. There were 3 farms vaccinated in the face of the outbreak. There was an increased vaccination programme at the time of increased risk. Eventually 4 or 5 farms were infected and 3 of them were vaccinated for other reasons. In that sense it wasn't truly a vaccination program.

Ruud Huirne: Thank you for this comment. With your permission, I would like to conclude this discussion. Thank you for your contribution and I hope the points are clear to be recorded in our report.