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## ***Human, Animal, and Ecosystem Health***

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***Edited Transcript – Gladys Kalema-Zikusoka***

Good afternoon everybody. Steve Osofsky has given a very great introduction about all of these issues -- diseases issues of the human-wildlife-livestock interface -- and my presentation's going to focus much more on what we're doing with the great apes in Uganda. I'm here too with someone else from our organization, Conservation Through Public Health, Lawrence Zikusoka, who's founding director of ICT for development, and more importantly my husband. And in this outline, I'm going to briefly talk about where is [unintelligible] to focus directly on these particular issues, how it fits in with the AHED program that Steve has just been talking about, an overview of three integrated programs, some of the challenges we're facing, and some of our future plans.

We started CTPH because we realized that in order to manage protected areas it was very important to also look at the disease issues. Some of the poorest people live in and around protected areas, and they have very little healthcare and information on diseases that can spread between themselves and the wildlife. One of the main reasons we started CTPH is because we had a scabies skin disease outbreak in gorillas, which was traced to people living around this national park. Now, scabies is normally a disease which wouldn't necessarily kill somebody, but it resulted in the death of an infant. The rest of the group got very, very sick, especially the young ones, we had to treat them with ivermectin antiparasitic for them to get better. I'm actually there with Dr. Richard Cochran, who was heading the [unintelligible] service at the time, and he had seen this very same disease in cheetahs in Masemara [spelled phonetically]. But I think they felt that in cheetahs it was due to a lot of tourists coming close to the cheetahs.

Now this actually resulted in the death of the infant, and we began to think, "Well, by the time a gorilla dies of scabies, it must come from a closely related host." And we did also find out that people around that area have a lot of scabies. It's a common disease in low-income groups of people in Africa. And this typical situation around Bwindi is that people basically live very, very far from health centers. Imagine when someone falls sick and you have to carry them on a stretcher up a steep hill all the way to the health center. You only



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take them if they have a disease that's about to kill them. And so very often by the time they get to the health centers, it's too late for the doctors to do anything. So something like scabies, that's not something you go to the doctor for; it's not worth hiking up this steep hill.

And here's a gorilla group. We tracked this group here; we came out of the forest into someone's banana plantation. And this is a very typical situation in Bwindi. I think when Heather went to Bwindi, she saw the gorillas eating bananas in someone's garden. They'd actually tracked them there. So she realized that we were telling the truth. So it's a pretty common situation, and these people don't really benefit; they just see the human-gorilla conflict. Also when the gorillas come into the gardens they destroy their crops, and it affects their livelihoods. Sometimes they may not be able to pay school fees for their children to go to school, just because gorillas are destroying the crops. And yet gorillas are more likely to come out of the pack, because they're now [unintelligible] and they're used to people. So all these issues lead the gorillas to be more and more affected by disease from people.

So during that time when we investigated this disease, I was the [unintelligible] officer for Uganda Wildlife Authority, and everybody asked me to set up these education workshops, which were focusing on health issues between people and gorillas. Another time that we went out, the community would think that we cared more about animals than people. And it was a very interesting time because it was a few months after tourists had been killed when army rebels came into Uganda in 1999, and when we went out there had been a big slump in tourism. So we went to eight villages and we spoke to all the people there, and we asked them, you know, "Do you think gorillas are important?" They said yes. And we asked them, "Why do you think gorillas are important?" And they said, "Because they bring tourists, who give us money." I said, "Do you love gorillas?" "Yes." And they really felt it, because now they weren't getting tourists coming in, and they were not getting as much income. But another thing that we found is that those who benefited from tourism are very willing to listen to what we had to say, and those that didn't even lied that they had never seen gorillas, because we went all the way to Congo where this particular group of gorillas had been. And we spoke to them about these disease issues in the local language, because most of these people can't read or write in the local language -- we talked about TB, scabies, measles, polio, ebola, and interstitial parasites. We didn't tell them that diseases can only come from people to gorillas. We said it can also be the other way around, especially regarding ebola. And the diseases on the right are ones that have been proven or suspected to have spread between people and wildlife, whereas the ones on the left were very common in the community -- quite common, but had not really been known to spread between people and





gorillas, and was very simple graphic information. If you need to defecate in the forest, dig a hole 30 cm deep. The gorillas can have access to it, even in your own garden, because many of these people don't have proper pit latrines if at all, and so their children just shit in the garden, and they don't dispose of their rubbish properly. They don't wash their clothes regularly, and we believe they got scabies because many of them only bathe once a week, when they're going to church on Sunday. They don't have access to safe water, and they don't wash their clothes regularly; they wash their clothes maybe once a month. So we came up with all these issues in the brochure, and they came up with these recommendations to bring health and diagnostic services closer, which was the responsibility of ministers of health to strengthen the human-gorilla team, which is a group of community volunteers trained by Uganda Wildlife Authority to chase gorillas back to the park. We strongly felt that it should be the community to do it so that they're empowered. And it brings a greater understanding of the relationship between the community and the park. They also ask for compensation for crop damage, but the Uganda law doesn't allow it, so we couldn't do much about it at the time. And personal hygiene; they wanted to have proper pit latrines, cover their rubbish heaps, and more health education, and we felt that it was their responsibility.

Gorilla tourism has transformed the community of Bwindi. Before gorilla tourism came along, their only livelihood option, other than digging, was the tea factory. So a school like this one -- the Bwindi Orphan School -- was built because of tourism dollars. Tourists pay, like \$25 for kids to go to school every term, and it's really made a difference to their lives. Gorilla tourism has also brought gorillas much closer to people. This is a gorilla group that's always close to the park, and this is [unintelligible] back in the group, and these are two rangers who were in the [unintelligible] waiting for tourists to come. This is a gravity water skein that was built with funding from international gorilla conservation program, to improve on the issue of having access to water in the park. IGCP's coalition, funded by AWF, WWF, and FFI, but the gorillas even like to range near here. And they also come close to the army, because ever since the tourists were killed we now have army right in the park to protect the tourists. So they leave rubbish lying around, and the gorillas like to range here. So the disease risks are not only high when they're high up in the mountains, but also right at the park headquarters.

So some of the lessons that we learned was not only were they happy because of the gorilla tourism and they're willing to listen to what we had to say, but we went as a multidisciplinary team. And we also went there with the sub-county health assistance, who are the people who also talk to them about health and hygiene, and that made a big





differences. However, some people whose crops were destroyed during this time were not so happy about the gorillas. We also conducted some TB research with a grant from AWF, and [unintelligible] at NC State and working at the zoo. And we found 25 percent of [unintelligible] had TB, and 5 percent of park staff were positive. Two people died during the research because they didn't complete treatment, and that really affected me. And the reason why was there wasn't a program of community-based direct observation of treatment in Bwindi, but was available in Queen Elizabeth, where your next door neighbor watches you taking medicine everyday for eight months to make sure that you finish it. And these are all the situations that led us to starting CTPH. And these are some of the GPS readings we took during the research. And CTPN is a nonprofit. We set it up here because started it when I was completing my residence in NC State. My supervisors allowed me to spend time, and I got to do a certificate in nonprofit management from Duke University, and we got NGO status in Uganda. I'm glad to see that our resident is here, Ted [unintelligible] NC State resident. The Queen of Uganda is our patron, and we have staff, board of directors, and volunteers from many places.

And what we feel that around unprotected areas, conservation and public health is interdependent, and if we work on it together, we're more likely to be cost-effective in controlling disease, which also affects agriculture and culture. And because of this, we became a head collaborator in the Great Apes Working Group. In 2003, we were part of a conference in Durban for IUCN, and I think this is really when the whole AHED program was launched. And our mission is to promote conservation and public health by improving primary healthcare to people and animals in and around protected areas in Africa, with a vision of preventing and controlling disease transmission where people, wildlife, and their animals meet, while cultivating a winning attitude to conservation and public health in local communities. We have three integrated programs: wildlife health monitoring, human public health, and information education and communication.

When I was here two weeks ago, I focused more on the human public health, and this time around I'll speak more about the three programs. With wildlife health, we've partnered with Uganda Wildlife Authority, and their park staff collect fecal samples every week from the habituated gorilla groups, which we then there with the two hospitals that work closely with us. And if you get to the park, those of you who've been there, Bwindi's tourist site, you see this sign as you drive toward the park. And over here we have the food clinic for gorillas and other animals, and we also have a telecenter, which Lawrence had helped to set up. And you have Internet in the bush [laughs]. And in the wildlife health monitoring, not only the park





staff collect weekly fecal samples, but we have the human gorilla conflict team collecting samples whenever gorillas are outside the park, which is a very important time to collect samples from them, because that's when they're most likely to pick up diseases from community members. Also, we were fortunate that we're able to collect samples during the recent gorilla census in 2006, because then we're able to look at samples from gorillas that are not visited by people, and more able to get some comparisons.

We were first funded by WCS [unintelligible] program to carry out the range of training, and then later on US Fish and Wildlife Service, and then later on MacArthur Foundation. With this, we've been able to train 170 park staff and 90 community members in gorilla health monitoring. We've also had vets from [unintelligible] gorilla vet project joining us in this training, which is good, Dr. Mike Cranford and his group. And during this training, we basically trained them to collect samples from night nests, and then also how to identify gorillas so that they can be able to monitor their health. We analyzed the samples at the lab, we've had help from Cornell, which have given us some equipment, and this is one of the wardens, he's heading monitoring and research. He also comes and gets involved in the analysis. He's very interested. And some of the things that we're finding are that the gorillas at risk from diseases like dysentery, which is very prevalent in the communities, and obviously because it's a disease also of poor hygiene, it's not surprising. Gorillas are also at risk from diseased goats, which are grazing at the park periphery. This one time we went to track the gorillas and there was goat dung next to gorilla dung. We took a sample of the goat dung and it was full of parasites. So of course the animals are not de-wormed at all. And Coringo [spelled phonetically] Gorilla Group we also found that gorillas that spent most time outside the park in people's gardens showed trends of having a higher parasite burden and a range of parasites. The Coringo Group spends over 50 percent of their time outside the park, and they're in the other site that's being developed for tourism. Tourism has just started there.

We were very fortunate to have US Ambassador to Uganda Steve Browning and his wife Susan visit the gorilla clinic in 2006, and this is because we received some funding from USAID through the primates program in Uganda, and he also got to look under the microscope and he got to see some worms, so he was very excited. We got him to do some work in the park. Then in the human public health program, we mainly carry out grassroots community education campaigns focusing more on good hygiene and how it links to gorilla health, ecotourism, and sustainable livelihoods. We are also strengthening community-based healthcare in villages around Bwindi. And we find that community-based healthcare is the





way to go in rural areas, because as you see, people live so far away from health centers, and if you can get the community to now take ownership over health, it's more sustainable. The ministry of health, especially the head of the national TB and leprosy program, when I went to his office and said, "We want to start this program," was very excited, because he said, "You know we've thrown so much money, you know, there's been so much health money thrown to solve health issues in Uganda, but the health issues are still there." And he believes it's because the communities are not owning the programs; they just think it's a government program. And if other NGOs had a very strong role in getting communities to own the program, the government couldn't do it, but NGOs could, and so he was very excited. And in the community-education campaigns, we've used various methods -- drama workshops, brochures, we've started radio programs, and IGCP helped to fund this at the beginning. And we're also coordinating a public health and conservation technical support unit, which is made up of the local governments where the wildlife is found, and the Uganda Wildlife Authority are supporting NGOs. We also got funding from Irish government to continue this, and later on USAID.

In the drama workshops we don't go out and act ourselves, but we get local drama groups and given them those brochures that I showed you earlier, and they include a very good message, which is very educative. We've managed to reach over 7,000 people through these drama groups, including children, which is great. And we've also set up some health information signposts around the park, both in English and the local language. And in community-based healthcare, of course we've had to set up an MOU with Konungu [spelled phonetically] to give us permission to do this work, and what our staff do is that they go and follow up on these patients once every two weeks to see how they're taking their medicine, and we take samples to the government health center and patients to the missionary hospital. The missionary hospital doesn't want to get samples, and the health center doesn't want to see patients, so it works out really well. And we are able to follow up on these patients every two weeks through nurse [unintelligible] on them. We also work with the traditional healers, who are very important healthcare provider in this community, and actually their homes are now recognized as health center ones, because most people go there before they go to the modern health center, because they're much more accessible and they have more time for you. So we've teamed up with traditional and modern health practitioners together against HIV, who link the traditional healers with the modern healers in order to treat the symptomatic infections of HIV, and any other diseases. And engaging in these discussions, we can get them to admit that they cannot treat TB and HIV, and once they refer TB suspect patients, they can become their community volunteer. It's also a very good chance for them





to be able to link up with the community conservation rangers and the health assistants, because we always have the workshops together with them, and they often say that they want to collect medicine or plants in the forest, and they're not able to collect them because the government doesn't allow them to go into the forest, and wildlife authority then has to explain that there are only sections of the park where you can go into the park and collect medicine or plants, because some of it is for tourism, some of it is for research. So it's a chance for them to also get to talk to them about these issues.

We've so far had 52 people enrolled in the program [unintelligible] aid, very dedicated; he's from the community interviewing patients. And as we interview them, we also ask them, "How often do you see gorillas?" So over time we're collecting data on the linkages and how much interaction these people have with gorillas. We started the population health environment initiative in 2007, and we found that this program greatly strengthened the public health programs that we're doing already, because many of these people have very many children, and because of that they can't keep them healthy. And it was the first USAID initiative in Uganda, and it involved us recruiting for community reproductive health workers. They're all volunteers, and the community chooses them. It's a very transparent process, and we also got 22 peer educators, one from each village. And in the first nine months we had a very great response where we had over 1,500 homes visited, because what these volunteers do is they go and visit the homes and talk to people about TB, Scabies, HIV, and family planning. And we insisted that at least a third of the homes we visit should be homes that border the park, where people often see gorillas, cause these are the homes that don't get to benefit from the integrated conservation and development initiatives, just because when you called for a village meeting, the person's so busy far away from the village chasing animals back to the park that they can't even think of going to a meeting. And so after ten years of ICDs in Bwindi, which was considered one of the most successful areas for community conservation in the world, they did find that the people who needed to benefit the most didn't benefit, and people are thinking, "What's the point of ICDs?" But I really think ICDs are important, and if we're able to visit people through home visits, we can have better outcomes.

We've also had 140 new family planning acceptors in a community where there are many myths and misperceptions about family planning and people are not educated. And so any little thing can make them scared, like if you start to focus on the side effects they get scared and say, "I'm not going to try that." So I think these people have done very well, and these volunteers want to form a community -- a CBO (community-based organization) for





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sustainability. This success led to further funding from USAID, and this is the quarterly meeting with all the community health volunteers and Dr. Lynne Gaffikin, who got funded by Johnson International, has really helped to make it a very well-run program, and we were able to collect a lot of these for data. We've also incorporated scabies and HIV onto the TB and family planning model, and with scabies the focus is good hygiene, and with HIV the focus is to educate people to go for testing. We don't have distinct centers obviously, but there's one area that now has a testing center -- the NGO missionary hospital. And to make the situation even better, the CPEs (community peer educators), because they visit people's homes, have been able to refer over 480 people for TB testing. So all the programs are very well integrated.

But before I go into the challenges, I'm just going to present a picture that we've now developed for the community health volunteers to go out to the communities when they're carrying out education. And they're actually training them to use it this week in Bwindi. This is a family of eight people bordering the park. That's Mr. and Mrs. Mugisha, [spelled phonetically] and Mrs. Mugisha is pregnant with her ninth child, and the rest of the kids -- only half of them can go to school. As you can see, they all have torn clothing because they're -- they're very poor, and some of them have skin diseases. When they sit down to eat the meal they're all fighting over the food because it's not enough, and the father of course is having his full meal and he doesn't really care about everyone else. And then they need some food, so they're going to the forest to hunt, which is illegal -- it's actually poaching. And the -- the children also go and collect fruit in the forest, which is illegal. So Mrs. Mugisha's really fed up and she goes -- she asks her husband, "Let's start thinking about family planning," and he's not interested, because people believe that the more children you have, the wealthier you are, even if you can't look after them. And then the gorillas come into the garden; the children chased them away, and the mother's actually relieved that they haven't gone to school so that they can chase away the gorillas. And then the father goes to the bar, which is his normal routine, and he -- he comes back when he's drunk and threatens to chase his wife away from home, and of course everybody's very upset. Ten years later, two of the children have died, and there are their graves, and the eldest son has two wives who are staying at home with them, and they have children and he's left them, because he's fed up. So this is a family that is really suffering because of having too many children. And then the positive family -- when they were young, they planned: "How many children are we gonna have?" And they went ahead and had four children. Happened to be two boys and two girls. And they've -- all the four children go to school. And they sit down and they have -- inside the house to have a meal, and it's very well organized, and they help each other with



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the family chores that they have to do. When the gorillas come outside the part -- this is the main difference in their reaction -- because these people are educated, their children are educated, they understood the benefits of the park to the community, so they call out the human-gorilla conflict team as opposed to chasing away the gorillas themselves. And the conflict team, of course, is much more effective in chasing the gorillas back. And a few years later, the son has become a park ranger and the sister's graduating today, and she's going to become a nurse at the local health center. So with this, they sit down and have a discussion with the -- in the home that they visited, and there are various questions that we've designed for them to ask, and get them to understand why it's important to have fewer children.

So some of the challenges we've had in the public health program have been convincing health partners that the CTPH is actually complementing their efforts, and not duplicating efforts, because what we do is we get more people to their health centers through the community volunteer network. And we've had limited resources to continue the programs in one parish that wasn't bordering the park, because the funding from the Irish government was health money, and they didn't mind where we were, whereas the funding from USAID was biodiversity money, so that we had to be in a parish that borders the park. We also find that the [unintelligible] health centers have limited resources, and because Uganda's one of the worst -- TB worst -- countries affected by TB, among the 22 worst, we get free TB treatment, and we get free TB reagents to analyze the samples. But sometimes these resources don't get to the health centers, and it becomes a challenge to bring in samples. People are also alcoholics, as you saw in the flipchart, which prevents people from adhering to daily TB medication, but we've been able to achieve quite a great treatment success. We've started radio programs where we -- people come and, you know, give testimonies on how they got better, and it's actually resulted in many more people reporting to be tested for TB, including HUGO members, and also family planning clients come on with their husbands and say, "Now, after I've had nine children I'm on an implant, and I'm very happy." And that has attracted people to go for family planning. And then we've also -- Lawrence initiated this project of community Web sites. These are in the local language. I guess the first community to air in the local language in Uganda, and with these, both in Bwindi and Queen Elizabeth we have the program -- the youth are more involved in conservation; they're able to access information which is relevant to them.

And then this leads us to the final program, which I'll go through very quickly -- the telecenter, which is at the border of the park, enables the community to get involved in





technology and open up to the outside -- gain access to information from the outside world, as well as learn about conservation and public health issues. With this telecenter, we have several partners from the private sector who have been able to help us, including the Uganda [unintelligible] who gave us a free satellite dish. This is our son Indigo when he was -- before he was one year old. He's been very much involved in setting up CTPH. And we've had over 115 members graduating, and over 40 percent are women, and this is very important, because we are part of a gender and technology outreach program, where they encourage women to get involved in computer education, and we make sure that many of them are women. We've also had over 3,000 community members accessing it, and they're using it much more than the tourists, and they're actually paying for it. So it's, in fact, the only sustainable program that we have at the moment. And the reason why we made them pay from the very beginning is when UCC -- Uganda Communications Commission -- gave us funding which they got from World Bank, they only gave us 40 percent of what we needed. And they gave other centers 100 percent, they gave us 40 percent, and they found that the telecenters that they gave 100 percent ended after the funding ended, and the ones that they gave 40 percent or 60 percent have continued afterwards. And all they gave us was money for computers, so that from the very beginning we had to charge people. And as a result, we're able to get enough money to pay for salaries. So in the telecenter activities, on top of the computer training, we also have had a graduation. People get a certificate from [unintelligible] University. And this is one of the first graduations. The lecturers came from Kampala. We have tourists hanging out with community members as they tell people that they're safe in Uganda, and have tracked the gorillas, and are excited to be here. And we also get school kids coming to watch DSTV.

We had the queen of Buganda, the first queen to track mountain gorillas, coming to launch the center. In 2005 she came with her parents, and it was a very grand occasion. We had over 1,000 people coming to this ceremony. The telecenter has received recognition by CNN, BBC, and was the winner in the World Summit Award Ashoka fellowship, and has also received international recognition for this approach of linking Uganda's wildlife management and rural public health programs to create common resources to benefit both people and animals -- from [unintelligible] supports people who started nonprofits, and we also got an award from the Uganda government for outstanding contribution to tourism development and empowerment of women in Uganda, together with [unintelligible], another Ashoka fellow. SID [spelled phonetically] Magazine has also written about our work, and [unintelligible] foundation, which is a Ugandan-based organization, gave us some money and also San Diego Zoo also gave us an award, which Geoff just talked about. And I think one of



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our main strategies for sustaining all of our efforts is we try and work with multidisciplinary teams of grassroots practitioners to find mutually beneficial solutions. We work with the government workers and other grassroots practitioners by building their capacity, and we empower the target communities through model change agents, such as the community, volunteers that we work with to spearhead their approach in the community, and the HUGO team. And we also set up telecenter models in protected areas with linkages to community enterprises and ecotourism. Some of our future plans are to make locally relevant videos, and we want to partner with INCEF, International Conservation and Education Fund in English, French, Swahili. We want to expand the tests, and right now we've just got some PCR machines from Colgate University, so we can also look up bacteria onsite. At the moment, we're only looking at parasites and protozoa. And we want to use databases to link GPS, so we're actually going to train these community health volunteers to use GPS so that we can get more information. And we want to scale up the concept to other countries where these issues are very necessary, and affecting them, such as DRC, where you have gorillas mixing with people and livestock. For more information on CTPH, please visit our Web site at [www.ctph.org](http://www.ctph.org). Thank you.



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