

# Summary Report

## APBON 2<sup>nd</sup> Web Seminar

1. Date: 27<sup>th</sup> August, 2020

Time: 15:00-17:00 in Japanese Standard Time (UTC 06:00-08:00am)

(13:00-15:00 in Thailand, Indonesia, 14:00-16:00 in Philippines, China)

2. Location, Participants

- Webex Meeting Room
- 26 participants (21 participants and 5 from secretariat) from 7 Nationalities
- MC: Dr. Sunita Chaudhary

(International Centre for Integrated Mountain Development: ICIMOD)

3. Program:

**Opening:** Secretariat of APBON (Mr. Saito: Biodiversity Center of Japan)

- Greetings from Mr. Matsumoto (the director of Biodiversity Centre of Japan)

Mr. Matsumoto did a brief self-introduction, saying that he was newly appointed to the current position, and was honored to join the APBON Web Seminar. He also said that he was excited to hear the presentations from Dr. Alice and Dr. Kano. He thanked for everybody's contribution and hoped it will be a good place to discuss for all of members.

**Presentation1:** Dr. Alice Hughes (Xishuangbanna Tropical Botanical Garden, China)

“Preventing the next pandemic”

### Q&A Session

**Q:** Can you develop any model to describe the risk of spillover and various factors including farm density, load density or forestry so on.

**A:**

- It's a very good question. It is something we are working on it in the moment. Another thing is the data is very poor. It's how we should change it cross the year based on the number of conditions.

- But we are also trying to understand how probability of spillover varies given different circumstances and given degree of degradation environment, ultimately it's

about the human-animal interface, and trying to understand when species in the wild may contract a pathogen, what might increase their viral load, and what may increase the opportunity for them to spread it to other animals (wildlife or livestock) or directly to humans.

**Q:** In Japan, maybe also in many countries, there are many simple discussions like that this pandemic caused by forest loss. So I think there are many factors influencing to risk of pandemic, it is quite important to describe the relationship of risk and many environmental factors.

**A:** I completely agree with you. I think having much more sensitive nuanced understanding. It's very important to reduce the risk of disease and also maintaining help population in worldwide.

**Q:** Actually I was wondering even the high bat species diversities in Asia, their spillover is so limited historically, and I believe the most historical pandemics are from Europe, but we think once actually come from Asia and Africa too. So it could be due to the globalization, as well as the human and livestock population growth. While in case of Asia, we have diverse culture and biodiversity use, which also may cause these high risks of spillover or infection as pandemic. But the diversities also provide a lot of benefits to people, so I was wondering how we can prevent the risk of infection and still use the biodiversity sustainably. If you have any ideas, please share.

**A:** It is a very good question. The previous virus was a very similar virus with COVID19, but the difference was, in 2012 people were not moving everywhere. Now, as you said, we are living in much more globalized society, which means there's much higher chance where the goods or person that have been contaminated wildlife being spread. The spread of China is very low. And it was only when it got to much better connected to Europe when suddenly it became global. Because when the pandemic occurred in China, there was a much more limited spread out of China. There's much more spread from Europe. The globalization is certainly playing a role.

**Q:** I think your presentation message is COVID19 is the consequence of sustainable use of bio- resources from human, I generally agree with all of these, and my question is from the ending part of your presentation, which is historical related. Historically, people used to eat and use bats for so long time and also contacted to bats so long time, so the question is why the spillover of COVID19 this time became such a big problem right now?

**A:** It's really an interesting question. And for this question, there're two parts to the

answer. We know many former zoonoses in the past were fatal, but often did not spread a great distance because the human population isn't coming into the contact with so many humans, so it remains relatively contained; hence in the case of COVID the 2012 outbreak only killed a few people. Another issue is, if you are exposed to the low doses, you can actually develop in immunity, so when naive people come from other areas they may be susceptible, and then spread the disease when they go elsewhere. Now one of the big problems about COVID19 asymptomatic carriers can spread the disease, which means even if that people go somewhere, they may spread the others without being aware they have it.

Another issue is, with many of these things, pathogens are been spread much more between wildlife and wildlife to human. But also in some cases, because they also need intermediate hosts, in Australia, many humans are looking after orphaned baby bats. Because cyclones can cause high fatalities in mother bats and knock them to the ground, they might get tick-bite fever, or they might get injuries which all of them are threaten the baby bats' lives, so humans rescue the babies and take care of them. However humans never contracted Hendra directly from bats. However, when humans destroyed forests and bats moved into trees within horse pastures, the bats eat fruit and urinate and the horses eat things contaminated with bat saliva and urine-and the horses get Hendra, then humans contracted Hendra from the horses. So lots of time we disturb the systems we created these interaction which may blow the spread of worldwide from bats. So there're 3 paths of this question, which is why becoming more in issue now. But the big part of it is globalization.

**Q:** Bats are recognized as important pollinators and some populations are encouraged to be in close affinity to farms. Is this becoming an issue?

**A:** As long as they are healthy population, then it is not going to be an issue. In the case of like Ebola and Marburg, they have very close contact with the area contaminated species. In most bat viruses, there's relatively little evidence as you need very high exposure. If we wash the fruits and vegetables, there's no risk.

**Presentaton2:** Dr. Yuichi Kano (Kyushu University, Japan)

“Waterfalls drive parallel evolution in a freshwater goby”

### **Q&A Session**

**Q:** Thank you for your presentation with very convincing evidence. Your data showed that sp. YB is polyphyletic. Do you think it is a species?

**A:** I think this is very difficult question, maybe I think sp. YB population above each waterfall is genetically different species. But I think taxonomically it is a species. Anyway we should observe sp. YB populations above waterfall. It is very important concern for Y.B population of each waterfall.

**Q:** Can you cross the species below the waterfall and the species above the waterfall? If you can make a crossing experiment, you could get the other evidence.

**A:** I didn't do that, but in the future I am planning to do the crossing experiment which is between above the waterfall and below the waterfall. And I also want to do the experiment about populations above different waterfall.

**Q:** If there's some productive isolation that based on genetic differences, maybe you can find many new species.

**A:** Yes. Exactly

**Q:** what is the trend of Goby in Japan now, and what are key habitats of goby beside the waterfall?

**A:** The trend of Goby in Japan neither increased nor decreased. It can say there's no big change or change in the goby population. We can say the habitat of goby is very flat and also very shadowy because of the forest.

**Q:** Are there any impacts from climate change of goby?

**A:** Actually I'm not sure about the goby, but for salmon, there're some impacts to the climate change. About the goby, there's no good study about the climate change.

### **General Discussion:**

- One participant briefly introduced the field-based observation in Nepal, where one of the issues is the COVID 19 situation in Nepal.
  - This is a big issue which the similar situation occurring in many other areas such as India, Indonesia, or Brazil. And this will become the increasing issue over the next few years. Having a comprehensive point of view for both of initial impact of what happened during the lockdown, but also from the long term.
  - There's a necessity to spend more time to think about how we could move toward the next years GPS biodiversity.
- IUCN congress scheduled to be held in January 2021 is not sure right now, but I

want to bring the IUCN presentation.

- Regarding the reporting "stories" to GEO BON, some participants requested the short abstract documents of Dr. Alice and Dr. Kano's presentation.
- The next 2 coming up events, AOGEO workshop and AOGEO symposium were introduced by Dr. Muraoka. For the AOGEO online workshop, the topic will be AOGEO IPS, which there're still some technical problems such as data base, data sharing processes. So, all of the APBON members are very welcome to be participated this AOGEO workshop for furthermore progress and communication with AOGEO community.

**Closing and Announcements:** Secretariat to APBON

- The schedule of next upcoming 3<sup>rd</sup> APBON Web Seminar will be announced by early September, and the 2 presenters will be from Marine group and GEO BON or co-chairs.
- And for the MC of the 3<sup>rd</sup> seminar, anybody is welcomed. And the candidate date of 3<sup>rd</sup> APBON seminar probably on 21<sup>st</sup> or 22<sup>nd</sup> October, or later.
- The agenda and schedule will be informed by Secretariats as soon as fixed.