Indigenous Peoples, Heritage and Landscape in the Asia Pacific: Knowledge Co-production, Policy Change and Empowerment

Panel 3: Wisdom of the Landscapes 2.0

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Transcript

Stephen Acabado: Good morning, good afternoon, good evening to everyone wherever you are. Again welcome to our webinar series. We are now on panel three of the scheduled 10 panels for this engaged research in asia pacific webinar series. And before we start i would like to or we would like to acknowledge that the department of anthropology, the center for southeast asian studies, the Cotsen institute of archaeology and the asia pacific center at ucla acknowledges Gabrielino/Tongva peoples as the traditional caretakers of Tovaangar (the Los Angeles basin and So. Channel Islands). As a land grant institution, we pay our respects to the Honuukvetam (Ancestors), 'Ahiihirom (Elders), and Eyoohiinkem (our relatives/relations) past, present and emerging. We are grateful for the the support of the Wenner-Gren foundation for anthropological research through the webinars on the future of anthropology grant, the Henry Luce foundation, the new england university first people's rights center, the national chengchi university center for taiwan philippines indigenous knowledge local knowledge and sustainable studies, the ucla cotsen institute of archaeology and the ucla pacific asia pacific center, the ucla department of anthropology, ucla center for southeast asian studies, university of hawaii at manoa center for southeast asian studies, ifugao state university, the partido state university, and the save the ifugao terraces movement, our co-host of this webinar series. We are also grateful for the help that we're receiving from the webinar planning group. Again they've been working since june to carry out this webinar series. Panel 3 of the webinar series discusses how traditional resource extraction has been employed by indigenous and/or local communities for generations. However political and economic pressures have forced communities to alter their practices to adapt to outside pressures. This shift resulted in gradual loss of traditional ecological knowledge and expedited assimilation of indigenous and local communities to the larger to the larger state entities. In this panel which is the second of two panels that looks at the landscape as an empowering venue for indigenous and and other communities, we provide examples from taiwan, bali, indonesia and bicol, philippines where communities decided to maintain their traditional agricultural and fishing practices but at the same time met the demands of market and political pressures and so before madeleine yakel introduces our panelists i would like to ask professor Da-wei Kuan, a newly minted full professor and the co-convener of this series to give us a brief introduction of our panel.

Da-wei Kuan: Thank you steven and welcome everyone. As we have mentioned in the last few weeks with the growing reflection on the ethnographic method, we examined the power relations in the field, break the dichotomy of researchers and researched people. We also redefined field work as an action of social practice and it's very encouraging but also challenging because we need to be critical and sensitive to the power dynamic. We need to balance the interest of multiple stakeholders and we need to after all contribute to the body of knowledge and move the society forward to a better situation. Therefore we we need to share our experience to build a network for

mutual learning and support each other. That is why we have this webinar series and i'm really grateful to all our panelists, our team workers, our sponsors and participants. You make this network come true. I believe this network itself is also an action empowering us and we are now just co-producing the knowledge. So once again welcome and thank you everyone. Thank you very much and enjoy our discussion of wisdom of landscape today. Thank you. Acabado: Thank you professor Da-wei Kuan. Maddie?

Madeleine Yakal: Good evening and good morning everyone my name is Madeleine Yakal. I'm a phd student at ucla and it's my pleasure to introduce our panelists and moderator here today for panel three. So as you know professor daya or da-wei kuan comes from the tayal indigenous group in taiwan. He received his PHD degree in geography from the university of hawaii at manoa and is currently an associate professor in the department of ethnology at nccu. His research interests include: indigenous geography, indigenous land policy, indigenous community mapping, and community-based resources management. Devoting to integrate his works of academic research teaching and community service for the claim of indigenous land rights he collaborates with different indigenous communities in many traditional territory mapping, land use planning, and community development projects. In addition to the field works in taiwan Daya also commits himself to the comparative studies and collaborations within the austronesian language speaking communities in southeast asia and the pacific including the philippines, hawaii and aotearoa communities or new zealand. Daya has extensively written about taiwan's indigenous peoples issues, including the need to include indigenous perspectives in defining traditional territories co-written with our other panelists Yih-ren Lin. Raul G. Bradecina is an environmental and resource economist, aquatic biologist, academic leader, mentor and development advocate. He has pursued research and extension projects on coastal, riverine and upland communities focusing on ecosystem resource utilization and behavior in culture as they relate with sustainable development. He has been implementing research projects in shrimp systematics, biodiversity conservation, and ecotourism of protected seascapes and landscapes, economic valuation studies of marine protected areas, marine fishery reserve sanctuaries, fisheries socioeconomics, aquaculture and evaluation of livelihoods and adaptation strategies of coastal and rural communities to hydro meteorological disasters in rural southeastern philippines. He has earned academic degrees in aquaculture, ocean science, and resource and environmental economics. He is currently serving as president of a state higher education institution with strong concentration on instruction, research, and community extension on sustainable utilization of coastal riverine and upland resources, ecosystem governance, resiliency and rural development. Agung Wardana is assistant professor at environmental law department faculty of law universitas gadjah mada in indonesia. He is the author of contemporary bali contested space and governance and his articles have been published in among others critical asian studies, the asia pacific journal of anthropology, and asian journal of asian law. His research interests include environmental law and governance, law and social movement, critical heritage studies and sociolegal studies. Yih-ren Lin is director of the research center of humanistic innovation and social engagement at taipei medical university. He received his phd at university college london's department of geography. His expertise includes ecology, indigenous studies, cultural geography, environmental justice and food sovereignty. He has been engaged in numerous indigenous community projects and is currently working with the international partnership for the satoyama initiative or ipsi to promote self-sufficient management of agriculture and natural resources within local communities. Our moderator today is Ching-ping Tang, distinguished professor of political science and director of university outreach at national chengchi university in taiwan. He has long been dedicated to transgressing disciplinary boundaries by publishing rigorous journals of different fields including sociological, anthropological, environmental area studies, developmental studies and political science and administrative science journals. His research interests include administrative reforms and democratization, the voluntary sector and community development, innovative social governance, environmental protection, technology policy and disaster management. In recent years he ventures in leading a multi-disciplinary team to assume social responsibility of the university by promoting just development in the neighborhood of the campus.

Ching-ping Tang: So should i take over?

Yakal: Yes so now we can go ahead and start. I do also want to apologize to everyone that professor Lin is unable to join today. However we will be showing portions of films showing his work so we'll also link those in the chat box so you can watch the full versions when you're able to. so thank you take it away professor.

Tang: So am i supposed to take over. Great! Happy moon festival - this is a very good day for today rather than working but it sounds very interesting i know here so i'm happy to join you to have all this interesting discussion. All right so the first block or the first group of questions about the background of the research and the positionality of the researchers in this research. So i think we have a couple of questions about how to describe your landscape on the communities or how you can define yourself in this kind of research. I know daya has a lot of slides to show so would you like to start first?

Kuan: Yes so thank you professor tang. Here i would like to briefly describe my research so that you can have more idea about what's the landscape of this of my field. So here you can see that this is the map of taiwan and we indigenous people mainly live in the central mountain area or the eastern coastal area and for the mountain area we face very you know many different ecological issues especially the water and land forest resources conservation. And here is basically where i began my research. It's a catchment of a reservoir in northern taiwan but upstream the reservoir is exactly where my hometown is. It's the homeland of Dayan indigenous people so you can see that there is a reservoir downstream but upstream we do cultivation we do hunting and gathering in the forest in on the slope. And this is the landscape of our living space. We have beautiful mountain, beautiful beautiful forest and beautiful river. And my study starts with the awareness of the restriction from the government. There are different laws implemented upon the land use so many regulations and restrictions over our people but there there was no FPIC, no consideration of indigenous culture of land use, no consideration of our need for development and of course no consideration of our philosophy of our relation with our environment. So you can see on one hand there's a lot there are a lot of research land use restriction but at the same time there are a lot of resources exploitation. For example the exploitation of water resources so we have a modern construction like a dam and and reservoir that makes our river into a ditch to conduct the water into the reservoir. And this is another example shows how the river or the creek were turned into a ditch and that not just ruined the landscape but very much challenge our relations with the river. So i

start to you know research and also participate in the community action to rethink our relations with the river and in our our work we try to recall the memory of the community and make the interpretation of our relation with the land with the tresources. That's where i began my research and gradually i extend the research to not just in my own community not just doing the the map mapping work in the community but gradually i also expand to try to collaborate with different community. And from all this experience, I learned that even though taiwan is a relatively a small island but we have very diverse ecological system and we have very diverse indigenous culture after the adaption to the diverse ecological system. So how can we not just be aware of the importance of this indigenous culture and relation with the nature but incorporating this indigenous knowledge into our resource management regime is the work we are trying to do so i'm going to stop here and and give you further explanation and show you more in the next in the following section thank you.

Tang: Can you talk a little bit on the problems you faced?

Agung Wardana: Thank you professor tang for the question. I work with communities of bali's traditional farmer association known as subha in which their rice fields or rice theories or their landscape has just been listed under the unesco world heritage convention as a cultural landscape site which is the jatiluwih village in tbanan district bali indonesia. As you might probably know bali is the most popular tourist destination in the country in which around three up to five million tourists visit the islands and uni and economically the tourism sector contributes up to 70 percent of the regional economy. A small proportion has been contributed by agricultural sector which which is mainly located in the rural area including the village where i work with the jatiluwih village. Farmers in iatiluwih see the village, see their rice theories or agricultural landscape as having a rich and very complex meaning. The landscape does not only play an in an instrumental role in in their lives namely food production, but it's also a heritage that connects them with their ancestor and with their next generation through which their knowledge and identity is built upon. Farming activities in the landscape necessarily involves a set of rituals, religious and customary rituals conducted by farmers. For me this shows how farming is not only a productive labor conducted by farmers but also cultural one which build their close ecological connection to the forests, to the water flows, rivers, soils as well as seeds and also biodiversity within the area. I guess i will stop there later on a little bit more.

Tang: All right so Professor Raul? That's the president.

Raul Bradecina: Good morning everyone. I am working with coastal and upland communities. These landscapes are interconnected following the reach-to-reef connective connectivity concept wherein things that are happening upstream will be affecting. [audio cuts off] So the coastal communities i've been working consists of fishing villages who depend much of their livelihoods on the coastal and marine ecosystems. They are considered to belong to the poorest sector of the philippine society. The fishing communities are among the rural communities in Bicol that display a well-knit community relationship but very much dependent on the resources of the coastal and marine environment. Much of these fishing communities have ancestry from indigenous peoples such as the Aeta and the Dumagat. There are fishing communities close to the mountain ranges of Sagñay, Buhi, Iriga and Isarog have also Aeta ancestry while fishing communities in the islands

close to the social coastal communities along the northern Bicol such as the Polillio islands and aurora provinces have Dumagat ancestry. Some literature say that the Dumagat are akin to sea gypsies while Aetas are lowland counterparts of forest hunter gatherers in our history. The coastal landscape has been subjected to pressures of overfishing and unsustainable extraction for resources using unsustainable fishing practices influenced by the technological advancement in fishing. The growing mass tourism has also displaced subsistence fishers from their ancestral lands and introduced a culture of private ownership and individualism. The upland communities that i've been working for are communities seated near the river and ecosystems of mount isarog, a natural protected area. These communities are farming and livestock growing folks who till the fertile volcanic soil of the mountain plateaus irrigated by rivers from the watersheds in the forest. The folks have Aeta ancestry such as Agta Cimarron or upland Agta and the Agta Tabangnon or lowland Agta. The upland and riverine landscape has been subjected to massive cutting of trees to give way to monocropping of high value crops such as corn and citrus plantations. The massive reduction of forest cover influenced by large-scale single crop production has resorted to declining population of wildlife and aquatic flora and fauna. For instance corn mono cropping intensively uses inorganic fertilizers and pesticides which eliminated endemic plants, animals and fishes and soil microbes that support agricultural productivity. The expanding agricultural production are displacing upland dwellers from their natural abodes and introduced profit oriented culture. So both the coastal and upland communities describe their landscapes as following a trend of degrading ecosystem integrity, declining resource productivity, contracting space, waning community cohesiveness and disempowerment. As a researcher and at the same time local of these particular communities i see myself as not only an advocate of science but also a development advocate who catalyzes change in the community to address the current landscape. I understand that the natural environment is not only the foundation of their livelihood but the essence of their lives as well. Subsistence fishing and upland farming is a way of life for these communities with indigenous descent. I should generate new knowledge that will provide deep understanding of their ecosystem, the social and ecological perturbance that shape their landscape, as well as how their behaviors respond to and been altered by the change landscape. I transform this knowledge into advocacy and active community extension activities in these communities adapting programmatic approach guided by the theme of sustainable development and people empowerment. Here in the university being engaged in community works and research we believe that their lives and livelihoods attachment to the landscape is strengthened by the local traditions and indigenous knowledge that form parts of their social memory. There are sociological knowledge and traditional practices that promote sustainable utilization and sense of community belongings that need to be rediscovered, highlighted and mainstream in advocacies and interventions to capacitate and mainstream their participation in decision making process that govern the use of the resources and environment. In the university we adapt their indigenous and traditional knowledge and practices in developing and implementing rules in use and strategies in ecosystem companies.

Tang: All right okay so it's about time to move on. As a community engaged scholar the first thing we encounter is the politics in the community. Usually they will have a lot of poor struggles and conflicts. So would you like to share some of your thoughts about how to position yourself in this kind of place and how to face or probably avoid any siding issue of this kind of power struggles.

Kuan: So yes thank you professor Tang. That's a very good question and that's important. From my own personal experience because i myself come from the community right so at the same time the community member but at the same time i'm academic worker. So that may give me some advantages that to have the opportunity to approach the idea of my people or the way how my people think. And also i i kind of have the equipment from the academic discipline that i can know what are these government or the academic researchers think about. So the way i position in myself is to you know make myself as a bridge between my community and the government and also sometimes with the academic community so that i can you know translate between all these different stakeholder or different subject so it's not just the translation of the language itself. It's more like the translation of perspective and the translation of knowledge. So that's the way i deal with the different aspect of a stakeholder and in terms of in terms of conflict or as professor tang just pointed out the politics you know of being a bridge it also helped me to think from the different perspective like to know what the government why government thinks like this or what why different stakeholders think like that. So that helped me to transform from one perspective to another and to bridge the different perspective.

Tang: My experience in taiwan was that we have local elections right. So in elections you get division of the community members to different competitive parts. So yeah how would you deal with this you are both insider and external scholar. Yes so what's an interesting experience you have had?

Kuan: Honestly i don't personally involve in the election activities because that's very easy for you to be labeled as one side from another. So i i will continually show my my concern of local activities and participate in the local activity like the waiting or the different ceremony but i will particularly avoid from you know being labeled as a politician or part of the election activities. yeah try i'm trying

Tang: Yeah all right. Agung, what do you think?

Wardana: Yeah i think the question of positionality is very important in engaged research. From my experience before being an academic and researchers i have been working as environmental activists for quite some times. So in one advocacy my organization had worked with this farmer community to refuse a development a project located in the upper forest that has implicated their water source and after stopping the project i wasn't in contact with them until i conducted research for my phd on the politics of the nomination of their village as the unesco world heritage site and then i entered the the village for second times then once i reached the village although i'm not originally from the community but i originally from similar in one district with the community so i have my own cultural as part of their district. I have my sensibility to toward the community because i know their cultural values are. Once i returned to the village they expected me as what i was before when i came through the community for the first time as an activist to support their course. As a researcher of course at the same time and as an activist at first i felt like i was in a constant negotiations between how to navigate my rules and as an academics and as a researcher and as an activist because then the way i deal with that then of course it's very hard time to to do how to balance the rules. In one occasion i try to be a good listener as a researcher and to listen to their problem but sometimes of because my activist background i pushed myself a bit further to

provide advice and even to get involved in advocacy where they face their problem for instance. For example they face a problem of the mind sand mining near their landscape and then were they were very concerned with that and they didn't really know how to deal with that and they asked me to step in in order to help them because my lawyer's background how they could deal with this problem using the legal forum so that's why i advised them and then i also took part in advocacy by sending letters to the government and then and bring the media to coverage these issues as well and that's part of my activist work in this community and when i finish my research then i more i feel more free to express my activist side yeah then i focus myself in advocacy work in assisting them to bring their voice to the general public and to decision makers. And the dilemma i faced was during my research when conducting my academic research but when i finished my research i can't i changed my role into activists that's from my experience positionality.

Tang: All right so Raul, you probably have a lot of resources to bring into the community right? So some of the family members might have might share your ideas but some of them might not and some of the community members might be moral some of them might not be so moral. They might be so more selfish so would you carry your resources to any side of these members?

Wardana: Sorry for Professor Tang, could you say it again because i couldn't hear you because it's.

Tang: Actually this question is for Raul so you bring a lot of the results back to the communities right? So we will do something that you wish to do by citing one part of the community rather than balancing yourself in the community. Can you understand that? We cannot hear you.

Bradecina: Can you please repeat the question again sir or Dr. Acabado?

Tang: All right

Bradecina: Can you please repeat the question again yeah

Tang: So you are the president of the university right? yes and so you bring a lot of resources with you back to the community right? you can do that yes so some of the members might be more willing to do something that your ideas would like to do and some of them might not be cooperative. So my question is that will you be a neutral or your part to some side of the communities to do something that the scholarly idea might be deployed.

Bradecina: Some part of the question are inaudible but i will just say something about that question. As president of the university as president of the university i integrated in our extension programs the costs the issues about community empowerment and addressing issues that are something to do with impoverishment. So as president of the university i allocate resources financial and human resources to address this issue in our community because one of the visions that we have integrated in our university is to promote sustainable development in our service area. In our community extensions and research we generate knowledge and then we bring this knowledge to the community in order to capacitate and empower them say for instance they let we let them join us in participatory coastal resource assessment. We want that they they must have knowledge about their coastal environment and the fiscal resources as the source of their

livelihood and then we also allow them to participate in determining the issues in constraints about resource governance so that solutions should come from them and from these solutions we were able well we developed organizational structure sort of a coastal resource management council wherein they will become part of this structure for governing the resource and here we mainstream their participation in resource governance by creating institutional framework that would that would mainstream their their participation in decision making process. So in this particular direction we capacitate them and we also empower them through participation in resource governance. We believe that a common source of impoverishment is the lack of access to key resources in their area in their community that support their livelihood so for them to be uplifted from their present economic condition is they must be empowered in determining what is right for the resources so that these resources could be sustained and this could be used sustainably. And we also train them new skills that they could use for developing sustainable livelihoods say for example ecotourism. So these are the things that we do for them. Of course in coastal resource extension activities that we are implementing we are always involving them because we believe that this should be part of their learning process because i believe that this would learning on the issues and problems that confront them and deeper understanding of what causes these issues would promote their participation in sustaining not only their environment but also their livelihood right.

Tang: Thank you so let's move on uh in addition to the internal yep

Kuan: Can i say something yeah sure i would like to add in more some some of my experience. I quite agree with Agung about you know being a academic worker you have sometimes been you know to advocate or or or participate in or devote to advocacy for a better social condition. So so i i totally agree with that and but i i also noticed that i mean in taiwan from the taiwanese context as professor tang just asked a question about election. Because election involved in a lot so many different interests not just the public interest but also many personal relations and personal interests. So uh i would say there's a boundary between academic workers and politicians and being aware of the boundary it's important because it it is the position of being an academic worker that make you earn the trust from the community right. So we have to keep the trust with the community. That that is important so we have to you know advocate sometimes but we know that's for the public interest but not for personal interest and that comes to yours your your another question regarding to the resources we brought in we bring into the community because that will attract people. People know that you're coming with resources and uh very often the way the community motivate themselves is based on the family type or the family relation. We need to pick up someone that we want to begin with we want to collect collaborate with and it's very difficult to begin with whole community. Sometimes we begin with one or two families. That's very very normal. then we will encounter the challenge the other family come and come to you or the moment that oh that they're only collaborating with one or two family so they are benefiting each other and excluding the other family, that is also a challenge and i think we need to be aware of that it's a very dynamic situation. We are not able to have all community families participate in our project in the very beginning but we need to be aware of or open to the possibility to have more family been included in the process. That that's my experience thank you thank you

Tang: All right so let's move on. In addition to internal conflicts most of the communities would encounter external impact so that's something that the upper system like the economic system or

we call modern system that may have impact on the individual systems. So let's begin with uh i think i have been jealous last year and impressed me a lot how they might you know adjust themselves to the modern system after enlisted as a unesco world heritage so Agung how do you describe or can you offer some experience in balance?

Wardana: Yeah with regard to resources brought by the listings of the unesco world heritage that at first the farmer realized that they're listing supposed to be about protecting their landscape and also assisting them in coping with their economic challenge because they live in poverty. That's why through by channeling their agricultural activities of farming with global tourism market then they assume that they can have added value for their economy for the local economy but in fact once the management of the unesco world heritage site has been established the the unesco status even then in reality even push the marginalization of the farmers even further because they were heritage listing that that's supposed to be about the protection of their landscape has been hijacked by particular local elites because the this local elite that manages the institution the body that manages the the heritage side. That's why that's become a problem right now in in the farmer community that i work with. We the problem faced by domains uh really is about unfair distribution of the benefit derived from tourists tourism activities brought by the unesco branding.

Tang: Yeah my experience in Jatiluwih was that the farmers kept asking me can we you know i'm from taiwan so the xp can we offer machine you know the machine in the field upper machine instead of using cow in the field. All right so it occurred to me that if they replace the cow so they won't have a poo for the fertilizer so they will not be able to maintain the ecosystem of agriculture. So this kind of technological impact on local communities what do you think is there any solution for that?

Wardana: Yeah uh for sure the tourism is coming tourists coming to their village and then of course would affect their relation to the landscape that a landscape that used to be based on a very spiritual values and symbolic values religious value now has gradually turned into economic value because they see the landscape and economic capital economic asset in which tourists come to their village in order to to see the landscape and they get revenue from that. And of course when tourists come they expect to see something based on their imagination but that's why particular activities try to be hiding yeah for instance the the activities for taking cows within the landscape because the the cows is not very good aesthetically it's not very good for the authorities so that they move the cows to somewhere else so tourists cannot see it. And that's why the standard has been set up in order how to satisfy the interest of the tourists instead of the continuing practicing their traditional agricultural activities so that's why they need to follow that standard.

Tang: Right so for Raul i my experience in taiwan was that the local community usually won't have any autonomy of the future resource management. For example they will face the external throwing ship to destroy the future resources so i think it should be the same problem in your country so what's your solution and what is your position on this question

Bradecina: Is the question addressed to me? yeah thank you very much i'm sorry we have a very poor connectivity now because everybody in the university is using the internet. Okay in in our

place particularly in the coastal landscape of the community that i am working with actually the source of conflict is commonly the resource use conflict. This is because of the fact that the coastal ecosystem is a common pool resource where again it is considered as a public good and miscreated a behavior for raising more fish meaning everybody has the incentive to maximize the the benefit that could be derived from the ecosystem or from the environment resulting to degradation and poverty. So here there are two activities there are two directions that we would like to pursue because of resources conflict. First many people would like to maximize fishing because they would like to address their living condition. They would like to earn money. Another one there are also those who are very much concerned about protecting biodiversity and sustaining this for the future particularly the government the ngos and the academe like us so we address this by coming up with a design. We adapt the marine protected area approach wherein we modify it following a community based management marine community management protected area. A protected area that is managed by the community as a means of empowering the fisherfolk and promoting sense of ownership. The design of marine protected area addresses these two issues so we have the core or no take zone at the center of the marine protected area and also the marine reserve or take zone but using only passive fishing gear or sustainable fishing so in this particular design we were able to address use conflicts in hostile communities. So this is how we address issues that confront the community in relation to the environment that supports their livelihood. Of course in this community manage scheme of their environment we integrate in the governance governance scheme socioecological knowledge indigenous knowledge such as beliefs, traditions and taboos that are helpful very much helpful in encouraging community members to participate and cooperate in implementing policies that govern sustainable utilization of fiscal resources as well as critical habitats. Also through this community-based approach we still able to rework and re-establish the social capital by building trust to each other both vertical and horizontal trust because sometimes in the community trust is also affected by resource utilization particularly if the resources in their environment is declining. The behavior to raise for fish create an individualistic behavior that resort to mistrust and degrades the fiber the community fiber that unite these people and result to poor management poor outcome or poor outcome in protected area management. So all these things are strategies that we implement in order to promote social cohesion, trust and social capital in fishing communities starting with their environment that defines their economic welfare.

Tang: Okay okay dr daya you raise so many questions issues in your communities right? So did you see any solution or improvement from the recent development of the communities?

Kuan: Yes in terms of the political and economic impact you just mentioned i think in the taiwanese context we have the impact from the government regime right. There's a new political order, their new social elite that is replacing the previous traditional decision-making system but it doesn't mean that the previous traditional decision-making system doesn't exist. It's more like existing at the same time so we have to negotiate not just with the traditional system but also now the newly established social elite and that's one one challenge. And another challenge is the government governmental regime. As i just mentioned that they took away most of the land and forest from the indigenous people so now more than 90 or 99 percent i think of the forest are managed by the government i mean becoming the state property. So arguing our traditional territory claiming our traditional territory and arguing that we do have the knowledge to manage the resources so we

deserve to participate in the co uh the management regime is one of the effort we try to solve the uh the problem. Another another problem is the economic pressure we do have a very very limited land parcel that were assigned to indigenous people called indigenous reserve land that you know began since japanese colonial era and success by the kmt government. So we do have some land parcel with our title on it but you know because the privatization policy that kind of break down the collectivity of land use and then ownership we have in the society. So we also face the problem of under table land trade so the then acquisition from the outside pressure the market mechanism is also kind of challenge and and bringing the quite social economic crisis onto indigenous people and i think they are related. I mean the land right and land use, they are related to each other. So here i would like to share one of the case how we deal with the the governmental restrictions and and hope this kind of effort can have in it to make indigenous people have more power and and to use our land. So i'm going to show you the screen yes this is the sense of our contemporary land use in the field in my field site. So you can see the agriculture happen on a very steep slope and according to the government regulations it's illegal very often it was categorized as illegal land use because there is a system that saying that you cannot do your cultivation of over this deep slope length. But if we look into the land use closer then you we can see there are actually a lot of subtle way for indigenous people to you know maintain the field maintain the terrace. It was not seen from a very macro scale but we we go into the field and we look into with a very micro scale we know that they were there are a lot of effort this farmer trying to protect the land including you know a lot of subtle ways that they they have since a long time ago they practiced the traditional farming. So one of the case we we have here is we examine the so-called illegal farming land from the scientific perspective. So we use the spatial science technique to analyze so-called illegal farm from land and we learned that actually because of very because of this very subtle and local ecological knowledge some so-called illegal cultivated land are actually maintained very well. So we have this kind of advocacy to the government that we we suggest that we need to adjust the regime to integrate indigenous knowledge into the current management management. And we we kind of get some outcome positive outcome from that but that we have a new so-called national land planning act that gives more space for indigenous people to to do our own land planning project. So in this project in jinshivu community, the community people work with the landscape planner planner and work out their own plane for their land use and that turned out to the very first case that indigenous community can have on land use plane. So with this land use plane indigenous people in this case can have more autonomy and more space to utilize land so that can kind of solve the economic problem which means we have more space for for land use and for the community development. That is also a way indigenous people can keep the land without you know just selling it to the outsider. That's my experience here i would like to share.

Tang: All right so you actually get to the fourth section that mentions how the production of the indigenous knowledge and the scientific knowledge can be yeah practice right so let's go move on to the the fourth section. So Agung do you have any observation on this how local knowledge can be integrated into the scientific knowledge.

Wardana: Yeah the question on the can you hear me yeah okay yeah uh the question on the uh traditional knowledge and the scientific knowledge is very important one because it's part of the co-production because we know that the traditional knowledge is based on their long time experience. For instance in farming uh in in the community where i work with they have their own

traditional knowledge on for instance in farming season during the year they farm twice a year in order to maintain the fertility of the soil and and with regard to this then once they before the unesco were inherited was being nominated for the community there was so many persuasion for for the community to use chemical fertilizer to change the organic fertilizer into chemical fertilizer because the fertilizer chemical fertilizer company has been very aggressive in expanding the market and that's why the local community utilize their traditional knowledge and then we also as a scholars and activists at the same time help them to bring their voice using our scientific research to bring their voice and advocate their rejection to the chemical fertilizers not only because of the that's bad in terms of scientific scientific findings that uh chemical fertilizer bad for the soil but also we utilize mythology and also myths and local narratives. Why this would affect their means in protecting their local biodiversity. Once you use the chemical fertilizer that by diversity needed for the rituals would be gone. So that's why we tried to combine their local knowledge in how they see the world, how they see the biodiversity, how they practice their farming with scientific knowledge in order to oppose particular interests to expand the use of chemical fertilizers in this context. and yeah please

Tang: Yeah as i know farmers in bali have two kind of choices. The first one is to choose the one harvest a year so that they choose the variety that the only hardest one rule or they can choose the two harvest variety right so if you choose to harvest variety then you need more water to irrigate and you will cause some kind of conflicts. So how do they solve the problem?

Wardana: Yeah in terms of harvest they have two harvestation. The first harvest is for growing rice the local seeds the local variety of rice which is the red rice is very popular in bali and even indonesia. The and the second season they grow other types of plants for instance onions and so forth so the rice only wants half as per year so to maintain the fertility of soil that's part of their their i guess that part also their resistance during uh 1970s and 1980s where in the green revolution was imposed by the government. And then they tried to oppose to this position of the green revolution by rejecting the use of hybrid seeds and also chemical fertilizer. That's why until now they can maintain the use of their local seed meanwhile other suba other farmers has changed into hybrid seed rice seeds hybrid varieties of rice but in jatiluwih where they still maintain the local seed because of their their struggles against the green revolution at the time so that's part of their stuff.

Tang: So how about fisheries Raul? Do you have any example for the combination of local knowledge or under scientific knowledge?

Bradecina: Yeah here in there is an existing tuna fisheries in the community that i work with. People are fishers are catching skipjack tuna and yellowfin tuna and it could already it would always be expected that in a common pool resource like tuna fishery or skipjack tuna fishery people would always race for fish and everybody would like to maximize benefits from the resource. However we have this traditional knowledge of respecting a particular private institution in the form of what we called as a tabaw. A tabaw is a fish aggregating device that is used to aggregate tuna skipjacktuna wherein community fishers would go and fish on that particular aggregating device because they know that this tabaw has an investment coming from their fellow fisherman. When they go when they come home they provide some form of compensation. Part of

their cuts they give it to the owners. So this is one way of an institution wherein the rules in use are being respected by community in order to recognize investment of a fellow fisher man despite of the fact that the environment in which they get the resource for their livelihood is a common pool meaning it's for all. Another one is that we have this local tradition of baruri which means that every fisherman every fisherman when they come home they are obliged to give some portion of their cuts, share it to their fellow fishermen. So this is a practice here that is that we would like to sustain despite the fact that we are modernizing and people because of economic pressure than to become more incentive oriented and individualistic. And just like taiwan we are along our our communities are situated along the kurushu current or the north northern equatorial current and it is commonly this is frequented by by typhoon and they have this ecological knowledge that when some insects are seen flying in mass they believe that there is in there is impending typhoon and they would suspend fishing along the shore. So this helps them some way in some way to uh they could use this indigenous knowledge in some of their adaptation strategies.

Tang: Right all right so uh what will be the role of the scholar to you know bridge these two kind of knowledge? Do we have any idea any of you

Bradecina: Yes we would like to integrate these traditional knowledge into ecosystem management that they could adapt for developing rules in use because using traditional knowledge result to more compliance among fishers because unlike in farming wherein there is private ownership of the land. They deal in fishing there's no private ownership here. If the sustainability would only depend on the cooperation and trust of each member of the fishing community so encouraging every member of the community to cooperate and have trust on everybody. Traditional knowledge, ecological knowledge are very important because the they respect this traditional knowledge and they can relate to this.

Tang: So how how to do that and according to the experience in taiwan the traditional knowledge has been dissipating you know we just cannot not know exactly what they are and many times they we need to do very hard work to find them out. So how would you do do you have any experience on this?

Bradecina: In our case we integrate their knowledge in the seasonal fishing calendar and other activities in fishing that made themselves input in our coastal resource management activities wherein we present this coastal resource management plan to the local government units for appropriating some budgets before we can implement this.

Tang: So local government participate. Any NGOswith you?

Bradecina: Yes yes because still these communities are being governed by local government units in terms of the fishing activities. The local government units allocate some funds to support their activities activities that promote livelihood, activities that promote rehabilitation and management of coastal resources.

Tang: So Daya mention the bridging role of the scholar right? Do you want to elaborate that?

Kuan: Yeah yes i would like to share some of my experience oh and and i can explain try to explain from two aspects. one is more if it's not if it's epistemological, the other is more methodological. So for more epistemological aspect we do need to have multi multiple discipline disciplinary cooperations. Of course it's a dialogue between multi multiple stakeholders like the government, the academic community and the the indigenous community right but for bridge in this three-way dialogue i think academic worker can and play a very important role in it because i just mentioned translation is important right? The translation of perspective and the translation of knowledge. So in terms of the translation of knowledge i see there at least two important things. The first is how we need to approach the indigenous knowledge of land or indigenous ecological knowledge and very often we need the support from anthropologists, from geographers, cultural researchers and with the understanding of indigenous knowledge it is it's important but not enough. We also need to you know communicate with the government or with the current policy or current institutional regime right. So we need to collaborate or we need the support from like political scientists. We need the support from lawyers. We need the support from those who are familiar with the government up policy and institutional design. So with the multiple up collaboration from different discipline disciplinary then we can on one hand approach indigenous knowledge and other hand dialogue with the government. Take an example: in Dayan culture we have a term, gaga. Gaga refers to all the the regulation or norm in the world. So we have the gaga agent in our language which means the gaga or the norm to take care of the land right. But if but if you talk to the government to the government officers saying that we want to take care of our land they don't understand it. They don't know how to make that part into the law but if you translate translate that into a management regime into a public administrative regime you translate that into a land right system. Then they can understand it right? So we need to this kind of uh translation from the support from different disciplinary and the other aspect is the methodological one. As professor tang just just pointed out, many knowledge is not spoken right? It's very difficult for you just go there and talk to people have an interview and and take your note and then you know oh that's your indigenous knowledge. No it's it's sometimes it works but sometimes it doesn't. So being part of the community work with the community a very close observation and work with uh it's important because many knowledge is in practice. Only after practicing the knowledge then you see it then you know what it's about so that's my my experience.

Tang: Any other opinions? Okay so let's move to the last but probably very important question or issues. How can we promote or actually protect indigenous rights in your society? And we know that indigenous knowledge could be very vulnerable. Very strong external and political economic institutions might destroy them and of course they are in their very serious status that they can probably not very effectively protect themselves. So can you evaluate how for example taiwan, philippine, and bali, indonesia how this government has been able to protect the indigenous rights? Start with agung?

Wardana: Yeah thank you yeah in indonesia in general protection of indigenous rights has been a very contentious issue for the government. Until now this has been a draft of bills on on the recognition of the rights of indigenous people following the u.n the creation of the division of indigenous people but the central government seems to be very reluctant to put this forward in into adoption because they assume that once we recognize the indigenous rights then they have their own their own autonomy to manage their resources, their communities their land. Meanwhile this

management this way and seeing the world this way and seeing resources could be very different or even contradictory into this how states change their resources. That's why indonesia now they still rely on the state uh perspective in natural resources because the resources that owned by indigenous people by using state law can be easily appropriated for palm oil plantation for instance or or mining for instance but once you get indigenous rights then it's not it's not it could be not that easy to approve to appropriate in their territory. That's why it's become a potential issue. In my experience in bali of course also indonesia there's some part also uh some uh court for instant constitutional court has been very progressive in akumari in opening up the the recognition of the indigenous right. For instance the the other foreigners or forests owned by customary community on these people has been recognized as part of their their domain part of their ownership collective ownership. Before that before the constitutional constitution, the indigenous forest should be put within state forest in which state has the authority to manage them. That's why the indigenous people didn't really have autonomy to manage their forests. Once the conditional court gives the decision then the indigenous people have their own their own authority to to protect their own forest territory but the problem uh later on is that the government usually assume that the boundaries of indigenous territory is fixed just like the boundary of the state right. Meanwhile on the ground the boundary of the traditional territory, indigenous territory is fluid it's not really unlike the state territory. It's fluid. It's following their ecological condition also it could be happening they cross. They cut across different regions. They cut across different districts so that then create a technical problem for drawing the boundary of the indigenous territory in protecting religious right because we need to define first the indigenous territory. Meanwhile the indigenous territory is fluid and cut across the administrative regime. And in ball the issues on indigenous rights also has been an issue. That's why the provincial government of ball tried to accommodate their demand by enacting a provincial regulation on the on the indigenous village or a customary village in which this legislation provides a recognition to the autonomy of the custom revealed in this context. Then the customary village as the community owned by indigenous people can be respected by the government's uh the policies and legislation. But the problem then because if we see bali a as a a very complex institutional setting because in bali in a village in bali uh a village in bali or local governments or local authorities in bali have been very complex. In one or in one village there are at least three local institutions three three uh local authorities. The first one is the administrative village. The state or the state institutions that structure within the village and the who deal with administrative tasks and the second one we have institution called customary village or customary authority deal with customary affairs for instance religious rituals and other rituals customary rituals and beside these two authorities we have subha as well yeah who is who that is the association of farmers then the members the members of those three institutions are very often overlapped, yeah and this why that the power dynamics in protecting the indigenous knowledge indigenous rights is very difficult to to draw the line. For instance when we talk about in which institution we need we need to be given authority to protect the indigenous or indigenous rights then there will be a debate because we could not decide whether it's belong to administ administrative authority or belong to customary authority or belong to subha but when we deal with the rights of farmers at the local community then we deal with subac and that's why in in my case study the power dynamics in jatiluwih is really about how to uh the dynamics within this through institution the local local authorities because they they claim that they represent their own constituents or in assessing the the benefit from the unesco world heritage site.

Tang: So very briefly how about Raul?

Bradecina: Could you please state again the question

Tang: Yeah how the government protects indigenous rights in philippines?

Bradecina: Yes actually we have here two very significant statutes that protect and promote the rights of indigenous communities. First is the indigenous peoples act of the philippines which guarantee the ancestral lands to the indigenous communities. Another one this particular statute or also a allow the indigenous people to stay in protected areas. There is a law that declare key biological areas in our country which designate poor zone or where economic activities commercial economic on a commercial scale are being prohibited but this law allows indigenous people to stay within this area because of the philosophy that it is part of their culture. So this laws allowed them these protect and promote the rights of indigenous communities here in the philippines.

Tang: So Daya, how about in taiwan?

Kuan: Yes as i just mentioned that during the japanese colonial era most of the forests and land were taken away by the state and they did very limited possible reserve lane to indigenous people and this regime was succeeded by the kmt government. During 1980s we do have a boom in indigenous movement including the indigenous land movement i mean the claim for indigenous land. And in 2005 we in our congress we enact a law called indigenous basic law and according to the indigenous basic law, the government uh recognized not just the indigenous right over so-called reserve land but also the traditional territory. So now literally our right over the traditional territory has to be recognized by the government but still there are a lot of challenge for example let me very briefly show you the PPT here. okay yes for hunting for example in 2004 the government aiming to you know recognize indigenous people's right to hunt in the forest so the first bureau have had an experimental project for individual people to hunting in certain regions and they require indigenous people to you know report in advance to register to the forestry bureau. Say uh to report that we i want to go hunt and i want to hunt what species and how many prey i want to get t in this hunting. From the perspective of the forestry bureau because they want to you know manage the overall amount right it's a quote management system but for indigenous people from the indigenous perspective our tradition we don't go we don't say what we want to hunt or or how many prey we want to get in advance of the hunting activities. It's violating our tradition so uh it's an example that the government do have its uh logic right. You want you want to maintain the number of the species but from the indigenous perspective you don't do that. So after the research by some researchers like professor Pei Jai-Chyi and his colleague they pointed out that indigenous people even those we don't count the number or predict the number of uh the prey we want to get prior to the hunting activities but we do have a lot of regulation over the landscape. We do have a lot of regulation in our traditional territory. So from the indigenous perspective indigenous logic we don't manage the number but we manage the landscape and by managing the landscape we can also maintain the sustainability of the the habitats of animals. So that's example that the academic researchers kind of translate the different perspective of knowledge. So recently we see that the first bureau had a new project that has more collaboration between the government academic and the community and they change the system from applying events to report afterwards and they

have academic researchers to assist in monitoring the species in number and they have the community developed there on organization and authorize the community organization to manage the forest. So this is the recent example the first bureau signed an MOU which is the community association of people saying that uh in the future they will come just have a contract with the community so they will have the community to you know take the responsibility to manage the forest. So this is an example showing that firstly we need to have the community to make the interpretation of our knowledge and we also to make the public, the mainstream society understand the public our knowledge. The public opinion is important. We need the legislation process legalization of our right but we also need to provide the solution for the government. The government is not very smart sometimes right so we need to have again the academic community playing the rule as the role as a translator and provide the proper and possible solution. That's my experience

Tang: Right so a bit late now so let's proceed to the q and a section. Some interesting questions - so how about what positive recommendation do you have to maximize the decision-making when the outside research works in the area means that we mentioned that you have conflicts in your communities and really maximize the collective decision-making words kind of ease this kind of complex so how do you think we can do to improve that? Any ideas?

Kuan: Okay very briefly from my experience being aware of different decision making system is important but as i just mentioned we have the modern creation of the uh governmental regime the bureaucratic system in a village but we also have the traditional cultural decision-making system in the valley. We do have men in my in my my group my community who are more active in the public space but we also have women who are very smart, full of knowledge if you get proper occasion for them to express their experience. So my very short question i mean very short short answer to the question is being aware of multiple diverse decision-making system that are coexisting in the community and try to approach them all of them as possible as you can.

Tang: Right but some of the tribal culture won't be democratic right? For example in southern part of taiwan we have a very hierarchical structure of the tribal culture so some family will have overwhelming decision-making power but some families won't so it's kind of complex in the modern concept of democracy. So how do you think about this?

Kuan: Yeah i agree. I agree and we need to uh admit that there are equal i mean unequal power relations in the community but also we need to be very careful that what you what we see unequal on one hand and some other counterpart on the other hand. Taking the chieftain system in taiwan community for example the chief family they have more power to speak in the public but they also take more responsibility to take care of the the weak in the community. They take the responsibility to memorize the history or the aura to keep the overall history in their mind. So my answer is yes i i do see some some young taiwan people they are also thinking they need to change or adapt to the new political political decision making system but my my answer is we bring in more information and also properly drop out the question to the community and make the community to have more more information to make their decision if they want to change the the system, they can do it.

Tang: Right Raul you want to say something?

Bradecina: Can you please rephrase again the question?

Tang: All right so the question is how to encourage people to participate in collective decision making in the community

Bradecina: Yeah actually here as i've been saying we always start our engagement with community with scooping of issues and we do this through what we called as participatory exercises. So here it is the community who inputs. We put in information and then from this information we integrate this into the management activities like the goals and the objectives wherein the community themselves craft and then we organize a community council where resource users in the community are officers and members. So here we mainstream them into decision making process as much as possible. We organize this group on a multi-stakeholder approach or basis wherein women, the youth, the fishers the boat owners, the resort owners are also members. So in this way community are empowered. Their voices are being heard and they are the ones that discuss among them how they are going to address how they would address the problem in their environment.

Wardana: Yeah uh thank you uh for the question. that's very good great questions and very often that we when talk about participations in this decision-making process the the way the government conduct the decision-making process is very technocratic ones so participation is is judged or is uh assessed by whether or not the representative of each community are there in the process of decision making without being aware of the unequals power relation that's why the the question from professor tang is very important how that we realize the unbalanced uh relation of power within community although we have for instance in ball during the in the context of heritage management we have the body management body who are claimed who is that is claimed to be co-governance by involving every stakeholders in the in the government in the governance in the government system the government body. But the architecture of this co-governance model seems to be unaware that the imbalance relation of power because once you have farmers sit together with government officials together with a representative of tourism industry so together with scholars we know that the farmer would be shy to express their opinion because they feel that they are powerless in this context and that's why although we have co-governance model doesn't necessarily that all interests are treated equal because the imbalance of power relations in the community. And if i learn from my experience in bali the the subak leaders in bali has been powerless in negotiating the subak interest in relation to customary and administrative authorities in the village. This is also the case why suba institution receive the least proportion from the tourist revenues meanwhile the majority of the revenue goes to the administrative and our customary authorities. This shows that how the imbalance population for me we as a scholars and activists at the same time we need to be aware of this power relation. And then in my experience when when we face this imbalance in power relation i try to bridge or to build a bridge where the subac leaders can can speak up to to the higher tiers of government for instance when they face problem in decision making in the country within the level of district government then uh we then build the bridge how to bring their voice into the provincial government and to the national government so the national government is aware that there is something wrong is going on in the ground and then then they need to be extended to to create to balance this power relation. I guess that's my take on that.

Tang: All right thank you so probably the last question for everybody but i think this very hard question to answer so i think we have a lot of students as the audience. They want to know what would you suggest to engage in participatory research but in the future especially after the COVID-19.

Kuan: It's not easy to answer especially regarding to COVID19 but i do have something to share. I remember one time i was in the east coastal area working with the community for mapping their traditional territory of ocean. So we were in the coastal area and we invited some community member to share us you know as a tour guide they give took us to a very short trip along the coastal area and show us their knowledge of the you know gathering on the coastal area and most of the time a man in middle age he speaks a lot so he showed us the different shellfish and crab or things together and he explained the knowledge of it in the history and when he was holding a crab and proudly explain his knowledge of the the crab a woman a woman who stands aside me told me that slowly that she told me that the crab he was he is holding it is poisoned has poison. At that moment i understood that women do have more knowledge than men in turn gathering on the coastal area even though the men speak a lot so that really really inspired me that i need to give more chance to those who you know don't have opportunity to speak up so back to the the questions how to engage how to you know practice the engagement in the community. Of course you have to you know go there right, contact with people and think and have a mutual sharing with the people. You don't just take from them right. You want to share with them your knowledge your ability or your research should you should think about how can these things contribute to the community. How can you mutually benefit each other. I think that's the very first step that you can you can try

Tang: Any other response?

Wardana: Yeah i would like to add on that. Besides of course we decide going to the community and work with them and stay with them in order to understand their vision of the world the other thing need to be considered is being very sensible with their life and with the local context and also at the same time we need to take side engage research means you take side that you don't take the condition of our your community work with uh taken for granted but you try to push that condition into a better condition and a just condition so you know that you're there you would you'd like to contribute your knowledge and that's why you need to take side. And then the question would be which part which groups then you would take your sides on. And for me that's the powerless the most marginalized one in the community. That's why you need to take side in order to help them change their condition into a better one than just one

Bradecina: In our case we have a research and community extension activity for stock enhancement of abalone or black clip oyster in a particular island and because of the COVID pandemic we're not allowed to make contacts with fishers so what we did is because we would like to develop a sanctuary for abalone in that particular island because he would like to protect the remaining stats and enhance the population in the future to sustain their livelihood. There is a need to integrate the sentiment of fishers and community community officials in the municipal ordinance that it is a sort of a law or policy that would govern the monitoring the use the the activities that are being prohibited inside the sanctuary. There is a need for us to integrate the sentiment of the

resource users so what we did is we coordinated with the local government official the mayor and the mayor told me that she can request the officers and facilitate to bring them to the municipal office and through Zoom meeting we can discuss with them. We can listen to their sentiments online and still integrate their sentiments on the on the law or the municipal ordinance that would be developed and discussed by the municipal council before it will be finally implemented in their in their community. So that's how we did it in our case

Tang: Right we are approaching to the end of the seminar. Any last remark for the audience?

Bradecina: There's question here this question here coming from Maddie: How do you advocate for policy changes given that most laws and projects of government and corporations are not [inaudible]. hello can i still uh answer that

Tang: You want to answer that? yeah we are right answer yeah question number one okay really quick okay okay

Bradecina: I think because communities are dependent on ecosystem services here we address this by conducting economic valuation of ecosystem services and presenting this to policymakers because when when they see monetary uh monetary amount of the monetary value of a particular ecosystem then and only then that they would take action and protect the environment that promotes the livelihood of indigenous people

Tang: So it's about time to end this uh very exciting discussion and i appreciate your feelings and your feedback and i think as professor Daya told us that this is a very valuable network for us to continue our research and for young students to involve in your work and i think professor acabado might have some announcement so

Acabado: Thank you everyone um actually it's maddie who's going to give us give the last word for this webinar but i would like to take this opportunity to thank the panelists and the moderator and to everyone who attended this panel. Maraming salamat and mabalos.

Yakal: Yes I want to echo Dr. Acabado and say thank you to our moderator for really engaging discussion and thank you again also to our attendees for submitting your questions. Your comments we read all of them and share them with the panelists every week so that they can see how you're engaging with their work. You can also reach us by email if you check our website our gmail account is there. I do also want to promote our panel for next week. It is going to be on weaving and empowerment so you can register for that on zoom at our website. If you also look to the chat box you can see the link for our e-certificate and survey. Even if you don't want the certificate we really encourage you to fill out the survey so that we can keep continuing to improve our panels every week. This was our third panel out of ten we have seven more to go and we really would love to see you participate in each panel every week. I also want to remind you that if you are not able to watch the whole panel today or to watch panels one or two you can check out those on our website. They are up there where you can re-watch them and you can also read the transcripts. Those are available for download and just a reminder too we apologize that professor lin was unable to participate today but we do have a couple links to some films of his research that

you can see i also posted them in the chat box. They are also on our website and on our website you can see information on all of our panelists and our moderator and with that again thank you for participating and hope to see you next week for panel 4.

Kuan: Thank you Maddie

Bradecina: Thank you very much. thank you very much. Nice to meet you all.

Wardana: Thank you Professor Tang, thank you Professor Daya, thank you Professor Raul.