Addressing Water Security Challenges in the Himalayan Region

Workshop Session Report
(White Paper)

About the Session

Session Background: Often called Earth's "third pole," the Himalayan region is home to one-fifth of the world's freshwater supply. Glacial runoff forms rivers in almost every country across South and Southeast Asia, with an estimated 1.8 billion people dependent on this water flow. However, large-scale water diversion projects and hydropower development have had dramatic downstream consequences, including lack of access to fresh water and negative ramifications on downstream ecosystems. The environmental sustainability of the Himalayan region is critical to the international community's climate change goals and directly contributes to the stability and economic well-being of downstream nations in South and Southeast Asia.

This panel discussion session was organized by the International Water Management Institute at World Water Week in Stockholm, Sweden on August 24, 2023. The event was supported by the U.S. Department of State, the International Tibet Network, the Mountain Resiliency Project, and International Campaign for Tibet.

Panelists:

Lobsang Yangtso, Programme & Environment Coordinator, International Tibet Network

Lobsang Yangtso was born in Tibet and completed studies in India. She finished her PhD from the Jawaharlal Nehru University, New Delhi. Currently, she works as a Programme and Environment Coordinator for the International Tibet Network. She has also worked as a Research Associate at the Centre for China Analysis and Strategy, New Delhi. Ms. Lobsang has published articles in various journals and presented papers at international/national seminars and conferences at Dharamsala, Delhi, Bergen, Copenhagen, Glasgow and Prague.

Tsechu Dolma, Founder, Mountain Resiliency Project

Hailing from Tibet and Nepal, Tsechu is director of the Mountain Resiliency Project (MRP), a Himalayan nonprofit she co-founded. MRP is bringing innovation to food, energy, and talent security as a key step in an ongoing struggle to build climate change resilience. Prior to that, Tsechu co-founded and developed women and girls economic and social empowerment for ACHA Himalayan Sisterhood in New York. She has also advised UNDP in Colombia on natural resource management and impact on indigenous and Afro-Colombian communities. She is a 2014 Brower Youth Award Winner, a 2013 Udall Scholar for Environmental Policy, 2012 New York Needs You Fellow and a 2009 ELLA Baker Fellow. She was named one of the 2015 NBC News International Women's Day: The Legends and Leaders to Know. An environmental scientist and anthropologist by training, Tsechu received her MPA from Columbia School of International and P**ub**lic Affairs and a BS from Barnard College, where she led an alternative service break trip to Nepal.

Manohara Khadka, Country representative, IWMI Nepal

Dr. Manohara Khadka is Country Representative of International Water Management Institute in Nepal. She is an expert in water resources management and rural livelihoods in the Himalayan region, with emphasis on feminist political ecology, gender equality, and social inclusion. Before joining IWMI, Manohara was Natural Resource Management (NRM) Portfolio Manager and Senior Gender Equality and Social Inclusion (GESI) Advisor at the Embassy of Switzerland in Nepal. She managed natural resource management, social studies/research portfolios and GESI integration in programs of the Swiss Agency for Development and Cooperation in Nepal. She was also a focal point for SDC's global program on water. Manohara served as NRM and Gender Specialist at the International Centre for Integrated Mountain Development (ICIMOD) - the Hindu Kush Himalayan region based in Kathmandu, Nepal. Manohara has published over 40 peer-reviewed journal articles, book chapters, manuals, strategy papers, books, policy briefs, blogs, guidelines, op-eds, and newspaper articles on policy, gender, inclusivity, and livelihood dimensions of water, forestry, climate change, watershed management, decentralized agricultural services, pastoral livelihoods and biodiversity conservation.

Moderated Panel Discussion

Following the opening remarks, Dr **Alok Sikka, IWMI India Representative and moderator** of the panel discussion made a brief presentation to help the context setting before the panel discussion.

Alok acknowledged the previous speakers for already setting the scene and making his task easier as most of the background information was already covered. He highlighted the amount of degradation which is taking place in the region, besides the climate change and population dynamics. To set the tone, he also gave a general understanding about how the Himalayan region is physio-graphically distributed across from south to north and from west to east. He felt happy to mention that all the three panelists are from the Himalayan region, and he himself has experience of working in the outer and the lesser Himalayas. The key challenges that he mentioned included altered hydrology-with major risks like floods and droughts, accelerated soil erosion and land degradation, land use change, hydropower projects affecting downstream water availability, ecological issues, depleting natural springs and environmental security, Upstream-downstream linkages: conflicts and complementarities and economic well-being of downstream areas.

He talked about the complex interplay and interconnections between hydrology, ecosystems, and human activities, and its cascading effects of water scarcity on agriculture, domestic needs, energy, and industry. There are shared benefits and trade-offs across the basin countries, and this requires an integrated framework to study these interactions and trade-offs.

Understanding of water-energy-food-environment (WEFE) nexus with a climate lens is therefore important in addressing water security challenges and evolving a suitable framework to analyze these trade-offs. Given this background, the session would try to explore how water and climate security challenges are playing out, and identify some of these impacts, and look into some of the institutions, policy, and the governance issues in the region, and how best we can strengthen the networks of all the key players in the region to address such issues of common interest and shared benefits.

With this context setting and above objectives, **Alok** introduced the panelists and invited them to the panel discussion.

Panel's Perspective on Water Security Challenges in the Himalayan Region

Tsechu Dolma

Dolma works in the greater Himalayas, up in the high Mountains, and for her, the biggest concern is that the built water industry infrastructure development has been very extractive.

She also emphasized that central governments, whether in Kathmandu, New Delhi or Beijing, must invest in the income generation, sustainable livelihoods, capacity building opportunities, local climate change resilience for the communities that she works for and with, including making sure that rural mountain communities are fully accounted for by central governments. In this context, it also is imperative to make sure that the urban populations and the urban governments are held accountable for fulfilling these critically important factors, which are integral to the health of Himalayan communities and environment. To accomplish this, a system of transparency from the People's Republic of China and from other central governments regarding what policies get implemented at the local level up in the mountains is essential. A primary example is how those residing closest to the glaciers and the communities that have developed over generations near the glaciers will be impacted. There is a clear responsibility to ensure collective water sources have a sustainable future, such that the youths there will not have to be forced to migrate to the urban areas. In sum, it's about capacity building, it's about transparency, and it's about holding urban central governments accountable.

Manohara Khadka

Manohara shared her own experience of working in the Himalayan region- Nepal, India, Bhutan, Myanmar, and Bangladesh where water serves as a vital link to energy, food and biodiversity systems, and plays a crucial role in food production, energy development, and promoting inclusive socio-economic development. Water is used not only for irrigation and energy, but also for homestead farming, domestic uses, including drinking, sanitation, livelihoods, biodiversity conservation. Water security challenges in the region should be looked at from a holistic perspective, not only water as one component but connector to the people, energy system, food system, and gender and social inclusion. Drying up of the mountain springs, which are the main source of water for drinking, sanitation, livestock, irrigation, enterprises, and energy, and overall livelihoods, is a serious concern that needs attention. Tackling water security in the region requires transformation in the way we manage water for multiple uses and users.

She emphasized on the empowerment of marginalized communities, including women and girls who have been really contributing to the natural resource and water security in the region. The second point is that, because of climatic and non-climatic factors like rapid urbanization in the region, power plant development, besides the climate change, and other non-climate factors also impact water availability. So, when we look at water availability, we need to really look at water availability in terms of timing and also quality. And access, not only for agricultural products or energy, but also safe drinking water. For example, in Nepal, only one out of five people of the population have access to safe drinking water. It's consequences and impact, especially the women and girls who have a major role still in managing water for households. Marginalized communities and women face discrimination in access to water and their interest needs a priority attention. She also stressed equity as another important point with a focus on

equitable access to water, especially to those the marginalized community, including women with limited voices and influence in decision-making.

Lobsang Yangtso

Yangtso categorically stated that what happens on the Tibetan plateau is integral to water security in the Himalaya.

The Tibetan plateau is the source of Asia's major rivers, and the plateau is a very fragile, and strategically critical ecosystem that is extremely vulnerable and sensitive to climate change. Therefore, the Tibetan plateau's ecosystem has a significant impact not only on the regional but also global weather patterns and water security. However, over the past two decades, Chinese authorities have scaled up mining, energy damming, other infrastructure development projects, and urbanization projects. This is having a huge deleterious impact on the immediate environment as well as the Tibetan people. Downstream countries also are experiencing the impacts and stand to even more so going forward. In short, the Chinese government's policies have been neither helpful nor useful in terms of managing the water security challenges in the Himalaya region.

On May 20, 2023, the Chinese government passed a Tibetan Plateau Ecosystem Protection Law, which talks about mining activities in nature reserves where the headwaters of major riparian systems and water resources like the Yangtze, Yellow River, and Yarlung Tsangpo are located. This law grants Chinese authorities the authority to carry out mining without any constraints, even on activity on the headwaters of these major rivers. This "law" poses risks to the immediate Tibetan environment. So, this" law" implies that it will solidify Chinese disregard of the very real negative impacts on the downstream nations because these mining activities will happen on the Brahmaputra or the Indus or the Mekong region as well.

Significant investments in massive infrastructure development projects in the border areas are also adding a lot of stress to the already distressed ecosystem and the sensitive landscape. This will undoubtedly cause additional negative impacts on the water security issues in the Himalayas—regarding both sustainability and geopolitics.

Adaptation Measures in the Face of Climate Change and Receding Glaciers to Ensure Water Security and Economic Well Being

Tsechu Dolma

Dolma articulated that for a lot of the farmers she works with, agricultural technology solutions are the way of the future. Almost everyone has a phone, and radio connectivity. There's a lot of opportunity within Ag Tech, and it can really help with connecting farmers and rural

populations with the advancements that a lot of the governments and laboratories have access to.

Moreover, it's not enough for adaptation policies to be limited solely to mountain populations. There must be a lot more done from Kathmandu, Beijing, New Delhi, and Dhaka. This includes more and firmer policies, accompanied by a dedicated push from these governments for increased transparency. On the other hand, if the governments continue in the current vein of having very heavily extractive infrastructure in the high Himalayas, then it will have severe repercussions for all of us. In contrast, if governments, the Beijing, Kathmandu, and New Delhi governments, instead invest in making Ag Tech solutions available not only to people within each country, but also across boundaries, a lot more will be available there. We need policies representing a mix of making Ag Tech available for rural populations by making these investments. However, for this policy shift to work there must be a decrease in investments in extractive industries that are blocking stable water security and economic wellbeing.

Implications of Water Challenges for Women, Poor and Marginalized Communities

Manohara Khadka

According to Manohara water insecurity in the region is changing socio-political and economic activities that have implications for the people, the environment, and water governance. The impacts of climate variability and climate change in water availability, access and climate induced disasters have exacerbated physical, social and phycological burden for women and marginalized groups to access water for basic needs and livelihoods.

The drying of mountain springs is one of the serious implications. Fetching water for domestic uses is still the dominant role of women and girls in rural areas due to outmigration of males, and drying up of spring has exacerbated workload for women and girls in fetching water. It has also contributed to poverty for these people. Poor people have to spend more money on safe drinking water, and they often struggle to access water for sanitation and other needs. Lack of water in WASH facilities in schools has impacted the education performance of adolescent girls, as they don’t attend schools during menstruation.

Policies of water and natural resources poorly understand complexities involved in water security in the region. The sectoral policies have gaps in understanding water challenges as socio-political and environmental processes, and the roles water can play for addressing poverty and inequality, and empowering women and marginalized groups. An analysis in Bangladesh, India, Nepal and Pakistan reveals gaps in understanding gender and designing and implementing water, energy and agriculture technologies, related knowledge, skills and resources in gender inclusive ways. The exclusion of women in policy spaces and development

priority setting in the water sector is another gap. In sum, policies are unable to understand and address gender differential challenges and knowledge of women and men across different social groups on water security, and their needs and priorities.

Access to information, knowledge, and resources is an institutional capacity gap in most countries of the region. While the region is well-known for community-based natural resources management and its positive impacts on rural livelihoods and halting environmental degradation. Public and private sector institutions, community-based organizations involved in water supply, irrigation and climate change adaptation interventions have limited capacity and know-how in planning and implementing water management programs in gender transformative ways. Improving inclusion of women and marginalized groups in policy spaces, planning and program development and implementation requires their inclusion.

Key Social and Environmental Ramifications of Up Stream Multi-Purpose Projects the Downstream Ecosystem and Well Being

Lobsang Yangtso

Based on her work in the Tuting area in Arunachal Pradesh studying the impact of climate change on the Brahmaputra River and how local people perceive it, Lobsang illustrated the socioeconomic ramifications of upstream dams and other projects.

First, it is quite notable that the Brahmaputra has turned into a muddy river and that this is now becoming a recurring event for the past few years. Local people have raised their concerns, but the situation has not received as much attention as it deserves.

According to Lobsang, local communities and politicians speculate that if the Brahmaputra has turned muddy, there must be some hydropower projects going on upstream on the Yarlung Tsangpo in Tibet. (Yarlung Tsangpo is the Tibetan name for the Brahmaputra). However, illustrating a core problem of information sharing, there has been no official clarification from the concerned governments. However, an observable regional impact both in Assam and Arunachal Pradesh, is that fish have been dying, diminishing local population's ability to procure a vital food and economic resource. Compounding this negative result is the 10 inches of sediment accumulated on the riverbed, which has reduced agricultural productivity in the region.

These concerns are very real and the consequences potentially existential. Despite the scale, no solution and no clarification on the causes of the Brahmaputra turning muddy have been forthcoming. This constitutes a clear example of what happens upstream and has a huge unavoidable impact on downstream nations. States should come up with and give a proper solution or clarification for the local people. The key measures or strategies to address these

consequences are, 1) consider alternative energy sources, such as solar or wind energy. 2) encourage public awareness and participation in climate decision-making.

Key Measures to Address above Consequences

Lobsang Yangtso

Encouraging public participation and awareness building must understand the needs of the local people on the border area. There are some places where there is no electricity and no internet. So, in that region, how are we planning to create awareness? Right now, everything is on social media, and everyone talks about digital. So, it's very important to understand and provide facilities and information in the local language as well. And then finding ways to strengthen institutions and legal frameworks is important in terms of the capacity of environmental agencies.

Conducting a comprehensive and independent environmental impact assessment of all the projects in the Himalayan region is also crucial. In that assessment, public participation and local people's involvement in decision-making are important.

Global Networks in Water and Environmental Security can Aid Himalayan Nations by Facilitating Collaboration and Sharing Expertise, addressing Transnational Water Security Challenges in South and Southeast Asia

Tsechu Dolma

More work needs to be done to advance gender equity and social inclusion, especially in bridging the data gap. There's a lot of work to be done all round, but the burdens should be falling on governments most of all.

To hold our national governments accountable, we need forums like this. There's a reasonable debate as to why to spend so many resources and travel to go so far away and gather in one place and have these conversations. For me, the value is quite evident. Having these forums really helps us hold our national governments accountable. This creates a space where we can build this transnational cooperation. And forums really help us elevate our concerns from within our countries.

For us in Nepal and India, activists like me often live up in the mountains and spend months working with the villages without digital connectivity. It can feel so removed. However, forums like this allow us to bring the stories from our fieldwork, bring the community-based approaches, bring the community-based solutions, and highlight them so that other people

who have the ears of the decision-makers in these international forums can raise these voices and policy needs.

Collectively, stakeholders can put the pressure on each other to make advancements in having more transparent environmental practices and truly investing in the capacity development of people who live closest to these elements. For those in Nepal and India, this means investing in the capacity of Himalayan people, making sure that the huge outmigration we're seeing in Nepal of young people leaving the remote mountain regions for Kathmandu, or Delhi for economic opportunities, or even going to the Middle East is curbed.

We can create more opportunities for young people up in the mountains. Building a future within the mountains does not have to be–and the planet cannot afford– the current emphasis on extraction. Instead, we must have more community-based approaches. And having the ear of our central governments would be very helpful. So, this is why I travel so far to come to forums like this, with the hope that we can motivate Beijing, Kathmandu, and New Delhi to do the right thing and choose to put the investment in more climate-resilient communities.

Key Policy and Practice Solutions from Gender and Social Lens to Address Water Security Challenges and Implications

Manohara Khadka

Manohara highlighted three points. Firstly, water is a very complex connector to energy, food, ecosystem, biodiversity, and overall livelihoods. So, the prospective nexus is essential for policy framing on water security and management. Secondly, regarding policies from a gender and social equity perspective, most countries in the Himalayan region have progressively emphasized human rights and inclusive development. However, when you look at sector-level policies, not all water-related policies consider gender and social inclusion. Thus, policies should emphasize equity and social inclusion.

Thirdly, there's a need to work closely with local governments, as they play a crucial role in anchoring cooperation and supporting community-based institutions like water user groups, farmer user groups, and irrigation user groups. Local governments should be capacitated to understand water challenges and contribute to development and livelihoods.

Another critical point is the importance of building institutional capacity, not only at the science and data level but also in policymaking. Policy discussions should be inclusive, considering various perspectives with multidisciplinary lens, including social, political, and economic aspects. Science and data should inform policymaking to address the complexity of water issues effectively.

Policy Solution(s) to Accelerate Multilateral Water, Energy, and Environment Issues in the Region

Lobsang Yangtso

Creation of effective transboundary water management, specifically by forming river basin organizations, is the heart of any solution. For instance, the Brahmaputra River should have an international treaty organization to facilitate formal information sharing, collaboration, joint scientific research, and assessments.

Second, there should be a strategic alliance among environmental organizations in downstream countries to support comprehensive data sharing. Inclusion of local people in decision-making processes, respecting their traditional knowledge, and adopting a rights-based approach that empowers frontline communities are crucial.

Human rights and environmental issues are interconnected. Recent UN Human Rights reports highlighted the imprisonment of Tibetan environmental defenders. Collaboration and support for environmental defenders across the Himalayan region are essential for protecting their work and promoting environmental protection.

Comment by Franz Matzner, International Campaign for Tibet

The unvarnished truth regarding regional stability, global climate change, and geopolitical reality cannot be ignored when evaluating the importance of Tibet. A central theme of the 2023 World Water Week was addressing the fact that by 2025 we're going to see up to 50% of the world's population facing water scarcity, with Southeast Asia representing one of the hotspots. What can be done? There are many integrated challenges to address. However, considerable evidence is mounting that hydroelectric dams on Tibet's major rivers is not a salve—but instead are exacerbating many of the region's challenges. Further, emerging science is questioning whether these projects legitimately contribute to significant emissions reduction. Related, alternatives such as renewable energy projects coupled with co-management—by that I mean examples like solar farms and wind installations that also are designed to maintain herding and grazing practices—are a viable option with the potential to address multiple regional challenges. We know the technology is there, so it is a matter of making choices. The question is why China is dismissing responsibly developed renewables that can enhance the region's stability while also helping mitigate climate change? Why are these policies not seeing more investment than risky dam building? Another important theme of the conference was utilizing water for peace via transboundary partnerships. This question is as much intertwined with environmental sustainability and social responsibility as it is geopolitics. Therefore, a

question is would these practices enhance the stability of the region and also help with climate change? On a scale of 1 to 10, how well is the Chinese government doing at that in Tibet? Is the Chinese government living up to its responsibility to use water for peace?

Tsechu Dolma

In terms of using water as a tool for peace, Dolma articulated that the People's Republic of China (PRC) is behaving quite the opposite. The PRC has been using water as an assertion of dominance over downstream communities. It should be seen as a form of neocolonialism, where water resources are used to exert power and control. On a scale from 1 to 10, the PRC's use of water for peace is very poor, probably close to zero. Cooperation and collaboration are essential when dealing with transboundary water issues. However, when water is used as a tool for dominance, it creates adverse relationships with downstream communities and disregards the long-term economic impacts on those communities.

Lobsang Yangtso

Integrating traditional knowledge into decision making is essential. In this context**,** treatment of Tibetan nomads is a primary concern illustrating how human rights and environmental sustainability are two sides of the same coin. The Chinese government has forcibly removed more than 1 million Tibetan nomads from their traditional grasslands to concrete houses, claiming that Tibetan nomads are the cause of grassland degradation on the Tibetan Plateau. The authorities also use claims of poverty alleviation as a justification for this displacement to urban areas, asserting that their way of life is very traditional and "uncivilized". The goal is to "modernize" them. This thin veneer ignores that the Tibetan nomads have lived on the Tibetan Plateau for thousands of years where the grasslands are more suitable for a nomadic way of life. However, policy making has completely ignored their traditional knowledge and understanding of the land, despite how it dramatically affects not only their lives, but also the surrounding and global environment.

Understanding and respecting the local people's traditional knowledge in terms of the environment is crucial. Tibetans understand the land. In an age-old pattern of colonialism, Beijing policy asserts that Tibetan's way of life is uncivilized and contrary to the science, that nomads are the cause of grassland degradation and other environmental harms. That is the reality Tibetans are facing right now—and the consequences will be severe. From both an environmental justice perspective and policy efficacy.

Cooperation and collaboration are essential when dealing with transboundary water issues. However, when water is used as a tool for dominance, it creates adverse relationships with downstream communities and disregards the long-term economic impacts on those communities.

Speaking to the concept of sanctions, it may be the right time to sanction China for causing a negative impact on the glaciers and having an impact on other countries, not only on Tibet. Regardless, global leaders should place increasing pressure on the Chinese government and other governments who are creating a negative impact on the water sources as well. At the same time, it's important to make the polluters themselves accountable.

Platforms like this where the realities of what is happening on the Tibet Plateau are discussed is an important step forward. However, in the case of Tibet, at other UN climate change conferences and water conferences, when water security in the Himalaya comes up, most other countries and speakers do not speak about what the situation is and likely impacts regarding what is happening upstream in all the Himalaya regions. They don't want to answer any questions. They don't want to mention it. They just consider that there is nothing called upstream of the Brahmaputra and Mekong region. It is good that right now we are discussing it. We need more platforms to have an open and clear discussion among ourselves so that we can put pressure on the Chinese government and make them accountable for what is happening to the environment, not only in the Himalaya but also in other countries.

Policy Recommendations

Tsechu Dolma

- The People's Republic of China, and other central governments, must halt policies that prioritize extraction. These activities are inconsistent with modern science, sustainability, and environmental justice.

- Central Governments must invest significantly more in integrated policy frameworks that prioritize income generation, sustainable livelihoods, capacity building opportunities, and local climate change resilience.

- Rural mountain communities also must receive equal investment in order to provide equal opportunity and resilience.

- Innovative solutions exist and should be deployed. For example, Agricultural Technology solutions provide greater opportunity.

- Ensure capacity building includes distribution of renewable energy and internet connectivity to address persistent isolation of dispersed communities- no electricity and no internet. In these regions, planning must include policies to create awareness, including via investment in social media, and other digital access.

- International networks, forums, and international bodies like the United Nations should call attention to the risks and harms of the PRC's current activities, including its assertion of dominance, control, and power as unsustainable for the future.

Manohara Khadka

- Recognizing gender and social exclusion/inclusion issues of water security in policy is the first step to tackle water security issues in socio-ecological ways. Governments should support implementing policies that acknowledges community's rights to water, forests and natural resources and their roles in local adaptation and resilience building.

- Building capacity of local governments to design, implement, and assess the impacts of policies on equitable access to and control over water, land and energy in a changing climate and social-economic drivers is critical. For this, the roles of water research, knowledge and innovation is crucial for promoting evidence-based policies and practices.

- We need to focus on nexus ways of implementing policies. While some sectoral policies such as nutrition and agriculture have gender provisions, other policies such as water and energy have little or no such provisions. Gender responsive policy provisions of agriculture can support energy access by women and marginalized groups if we focus on nexus thinking and approach in implementation.

- Support community water and natural resource governance to scale up proven techno-social innovations and approaches such as collectives of water conservation, agriculture, and forest management. The region has successful approaches of community based natural resources management. Locally led practices and indigenous knowledge for conserving soils and water on farm and watershed scales are valuable resources for tackling water insecurity challenges in the region.

- Collective actions of women and smallholder farmers on water management, dry-season irrigation, multiple uses water system, biodiversity conservation and natural resources management should be scaled up. Link the traditional and local practices of water conservation, management and storage to policy.

- The nature-based solutions should be promoted to revive water sources that are dried up and restore degraded lands, while reducing time poverty of women and marginalized groups to access water for drinking, sanitation and homestead farming.

- Empower women, youths, Indigenous communities, and marginalized groups to have voices and perspectives in environmental policymaking, and climate resilient water management, agriculture, land and biodiversity conservation solutions identification, testing and scaling.

- There is a need for promoting gender responsive water, land and environment management solutions such as efficient water use technologies, conservation agriculture, managing water for multiple uses, early warning systems, scaling small-scale water storage.

- Innovations on water solutions should be bottom up, and people centric. Identifying the needs of local communities on innovations and designing and linking innovations to the local needs are key processes to consider. Development and research programs should focus on understanding different Indigenous communities and their knowledge of water and land resources management and distribution, and scaling of sustainable and resilient solutions.

- Empower women in technological innovation and scaling. Target them for technological knowledge and skills development and technology scaling interventions.

- There should be more forums which allow stories from community-based approaches, offer community-based solutions, and highlight them so that other people who have the ears of the decision-makers in these international forums can raise these voices.

Lobsang Yangtso

- Establishment of a stable and transparent transboundary water management system is imperative. Specifically, river basin organizations composed of governments and civil society are necessary to plan for regional challenges. For instance, she as a panelist, feels the Brahmaputra River could have an international treaty to facilitate formal information sharing, collaboration, joint scientific research, and assessments.

- China should enter into water treaties with surrounding countries in order to seek responsible regional plans that balance stakeholder needs.

- Through public statements, bilateral channels and international institutions such as the International Union for the Conservation of Nature (IUCN), express concerns over the unsustainable development of Tibet's water resources and the implications for the region.

- China should repeal the Tibetan Plateau Ecosystem Protection Law instituted by the Chinese government that grants local authorities carte blanche decision making regardless of in situ impacts or downstream pollution affecting the region's riparian system.

- The People's Republic of China and other central governments must conduct a comprehensive and independent environmental impact assessment of all the projects in the Himalayan region. Environmental assessments are recognized as a critical method to evaluate the range of options and impacts, as well as ensuring public participation and local people's involvement in decision-making are important.

- China should grant unfettered access to all Tibetan areas for independent media, scientists, non-government organizations, UN monitors and other international observers.

- Invest in sustainable renewable energy sources, such as solar or wind energy. Properly sited and constructed for co-management, such installations can generate clean energy while maintaining additional values, such as grazing and herding. Technology exists so it is a matter of making choices.
- All Himalayan local communities shall have appropriate access to information concerning the environment, opportunity to participate in decision-making processes and an effective access to judicial and administrative proceedings, including redress and remedy.

- Environmental organizations in downstream countries should form a strategic alliance demanding comprehensive data sharing, inclusion of local people in decision-making processes, respect for traditional knowledge, and adoption of a rights-based approach that empowers frontline communities.

- Sanctions in the future are uncertain at this point. However, there are opportunities in the private sector to address these issues. Technologies like blockchain for carbon credits and ensuring transparency and accountability in tracking emissions can help address these concerns.