

LINKING CLIMATE CHANGE WITH PUBLIC POLICIES: STORIES FROM THE COMMUNITIES



Workshop Report
2nd - 3rd August 2021



LINKING CLIMATE CHANGE WITH PUBLIC POLICIES: STORIES FROM THE COMMUNITIES



Workshop Report
2nd - 3rd August 2021

BHUTAN MEDIA FOUNDATION

CONTENTS

FOREWORD	III
1. BACKGROUND	1
2. WORKSHOP OUTLINE	2
3. INTRODUCTORY SESSION	3
3.1 Welcome note, Nidup Zangpo, Executive Director, Bhutan Media Foundation	3
3.2 Introductory remarks by Ramesh Bushal, Earth Journalism Network, Nepal	4
3.3 Introductory remarks by Tashi Dorji, Senior Journalist and mentor	4
3.4 Introduction of the participants	5
4. PRESENTATIONS	6
4.1 The future of <i>Pangtse shing</i> and <i>Pangtse</i> oil production	6
4.2 Threat of flashfloods and GLOF in Lhuntse	10
4.3 Conserving water resources with PES	13
4.4 Growing mandarin becoming trickier	17
4.5 Cordyceps and highland communities	21
4.6 National water shortage	25
4.7 Dying yak herding practice	29
4.8 Containing the glacial lakes	32
5. VOTE OF THANKS	35
6. CONCLUSION	35
ANNEXURE I:	36

FOREWORD

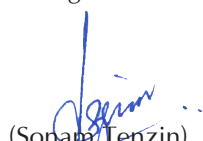
Linking Climate Change Reporting with Public Policy is a workshop organized by the Bhutan Media Foundation. The workshop is the culmination of a two-year climate change reporting project supported by Earth Journalism Network. The project supported eight reporters to carry well-researched, in-depth stories on the impact of climate change on vulnerable communities in conservation and the imminent danger of climate change. Guided by our visionary Monarch, the Constitution of Kingdom of Bhutan mandates the preservation of 60 percent forest cover for all times to come.

The report cover the effects of climate change faced in various parts of Bhutan, its implications and risks. Climate Change is a global phenomenon that largely affects the livelihood and health of people. In Bhutan, it is the people depending on agriculture that are affected the most. Another prominent danger of climate change is the formation of supraglacial lakes in Bhutan. The Glacier Lake Outburst Flood (GLOFs) poses a threat to our settlements and hydropower plants which has a direct effect on our country's economic development.

The report brings limelight to the stories that better inform policy makers on what is happening in the nook and corners of Bhutan expected to lead to better actions taken. Similarly, Numerous agencies have been instituted to tackle the increasing challenge of Climate Change. The National Environment Commission, Bhutan Trust Fund for Environment Conservation, Royal Society for Protection of Nature were all established under the noble vision of our Monarchs. According to the Third National Communication and the 2nd Nationally Determined Contribution (NDC) to the UNFCCC 2020, the transport sector in Bhutan has been identified as a major source of GHG emission under the energy sector responsible for 60% GHG emission. The Ministry of Information and Communications formulated the low emission Development Strategy (LEDS) 2021 for the Transport sector in an effort to reduce Green House Gases (GHG) emissions. These are some of the key initiatives of the RGoB in tackling Climate Change.

I hope that the stories will inform our policy makers and development partners on how a Himalayan Kingdom is tackling the global issue of Climate Change.

Finally, I would like to thank the Executive Director and staff of Bhutan Media Foundation for your commitment and coming up with this report. I look forward to seeing such innovative and impressive reports in the future as well.



(Sonam Tenzin)

Director

Department of Information and Media

Ministry of Information and Communications

I. BACKGROUND

As climate change continues to affect many vulnerable countries in the world, the global community is far from achieving its goal of reducing carbon emission for a more sustainable world.

Bhutan is among those countries in the world that are highly vulnerable to the impacts of climate change. Its development is highly dependent on climate-sensitive sectors like hydropower, agriculture and forestry. Recognizing this threat, Bhutan has been following the sustainable development path and is recognized for its efforts in environmental conservation.

But LDCs like Bhutan face several challenges in combating climate change due to lack of resources and capacity. As an environmental champion representing the LDCs, Bhutan has rallied the global community to contribute more towards conservation of the natural environment.

While climate change related data is lacking coupled by lack of institutional capacity, the impact of climate change is clearly visible in the country such as erratic monsoon, receding snowline, rise in temperature, shift in vegetation and species extinction among others.

The threat of a catastrophic glacial lake outburst flood in the Himalayas remain imminent while relocation measures are yet to happen. Water shortages have rendered hundreds of acres of paddy fields fallow in many parts of the country while landslides, flashfloods and erosion cause damages to roads and infrastructure. A multipronged approach to climate change, involving all the stakeholders and the community is required urgently.

The global community must come together to help build institutional and financial capacities of least developed countries to combat climate change. Dialogues and discourses are an integral part of refining our understanding of climate change.

To this effect, the Bhutan Media Foundation supported by Earth Journalism Network, Nepal organized a workshop bringing together environmental experts and local journalists to discuss critical issues on climate change and environment.

A total of eight reporters had received a grant project to pursue a story from the communities. Before going out reporting, the reporters received training on climate change reporting.

In summary, the workshop captured the stories presented by the reporters and the participants engaged in a discussion. The objective of the workshop is to sustain the public discourse broached by the grant stories.

2. WORKSHOP OUTLINE

The format of the workshop was that of a presentation and discussion. Each grantee made their presentation by highlighting the following:

- Synopsis of the story
- Challenges
- Opportunities

This was followed by interactive discussions where all the participants were allowed to make comments, raise questions or probe into the subject-related matters.

3. INTRODUCTORY SESSION

3.1 Welcome note, Needrup Zangpo, Executive Director, Bhutan Media Foundation

Good morning, ladies and gentlemen. I have the absolute pleasure of inviting you to the Workshop on Linking Climate Change with Public Policies: Stories from the Communities. The workshop is the culmination of a two-year climate change reporting project supported by Earth Journalism Network.

The objective of the project titled 'Linking Climate Change Reporting with Public Policy' is to produce well-researched, in-depth stories on the impact of climate change on vulnerable communities in Bhutan. The project supported eight reporters to do two stories each over two years, 2020 and 2021. In the first year, the reporters travelled to remote communities in different parts of the country to pursue stories about the impact of climate change on them. In the second year, the same reporters reported from Thimphu and district headquarters, adding policy perspectives to their stories. Thus, the reporters managed to complete a full circle of reporting, examining an issue from both impact and policy perspectives.

Unlike most reporting grant programmes, this reporting grant was not an exclusive activity. Before giving away the grant, the grantees were given a two-day climate change reporting training to ensure that they were fully prepared to take up the grant. Then, they were attached to three mentors who guided them through the information gathering and story-writing process.

The result is a critical mass of 18 climate change stories, including four TV documentaries, on diverse topics such as the impact of climate change on mandarin growing, the potential of pangtse shing, the threat of glacial lakes, the future of cordyceps and yak herding, and conservation of water resources. A story reported from remote Lhuntse highlighted the danger of GLOF and flashfloods to the low-lying areas of the district. It immediately alerted the district disaster management committee, which decided to conduct an in-depth study and assessment on the potential risk of GLOF and build flood protection walls in the low-lying areas.

This exemplifies the modest success of the project in a country where the understanding of the science of climate change is rudimentary. However, it has not been all plain sailing. Travelling across rural Bhutan is always difficult. This has been made more difficult by travel restrictions due to Covid-19. Yet, the reporters persevered, and the result is a critical mass of climate change stories. The stories are also possible due to the guidance of three mentors who sharpened the focus, improved the structure, and added depth to the stories.

We are gathered here today because we want to discuss the issues brought up in the stories further. The grantees will make a brief presentation highlighting the issues

discuss their stories, the challenges and opportunities they faced while reporting, and possible way forward. Joining the grantees and mentors today are some eminent members of society from whose knowledge and experience the workshop will benefit immensely. We would have liked to invite more participants if we were not obliged to keep the number small following the Covid-19 protocols. I wish you all a fruitful discussion.

3.2 Introductory remarks by Ramesh Bushal, Earth Journalism Network, Nepal

Ramesh Bushal from Earth Journalism Network joined the workshop remotely via skype. Ramesh said that in the last few months reporters have been writing stories that has had impact at policy level. However, he said there is a need to increase both the quantity and quality of reports.

While reporters should write more stories, it is more important to write good stories backed by data and evidence. EJN he said is aimed at helping journalists build their capacities. Reporters must inform the communities but also aim to influence law and policy makers.

Ramesh said more opportunities await journalists in the future in building their capacities. He said, EJN is interested in documenting impactful stories on climate change.

3.3 Introductory remarks by Tashi Dorji, Senior Journalist and mentor

Senior environment journalist and mentor Tashi Dorji opened his introductory remarks by highlighting the importance and relevance of climate change to Bhutan and the need to understand its impact to the country at a deeper level.

Bhutan is considered a biodiversity hotspot and rich in natural environment, and over the years the impact of climate change has become highly visible. But lack of resources, specialization among journalists and the technicality of the subject pose limitations when it comes to writing effective stories that can influence public policies.

Tashi Dorji shared that Bhutan is home to over 800 species of birds, which is more than the total number of bird species in Canada and USA combined and the entire European continent. Many international birders have been able to witness their 'life birds' (species that a birder has seen in the wild for the first time) in Bhutan, such as the critically endangered White Bellied Heron and Parrotbill.

Bhutan has a rich historical legacy when it comes to environmental conservation. In 1969, Bhutan became one of the first countries in the region to enact the Forest Act. The Fourth Druk Gyalpo later revised the act and also created the first three protected areas or national parks in the country; Jigme Dorji Wangchuck National Park, Khaling and Phibsoo wildlife sanctuaries.

In 1988, the international community identified Bhutan as a global environment hotspot. Bhutan also took part in the Rio conference in 1992 and ratified the United Nation's Framework on Climate Change (UNFCCC)

In 2008, after democratization, His Majesty the Fourth King and the people of Bhutan received two prestigious awards, The United Nation's Champion of the Earth award and the World Wildlife Fund J. Paul Getty award for conservation leadership. Environmental conservation remains Bhutan's top national priority and is one of the pillars of Gross National Happiness.

Despite the country's strong conservation efforts, Bhutan continues to face several challenges as well as impacts of climate change. One of the biggest challenge Bhutan will face is shortage of water. It's only a matter of time when our water sources will dry up, Tashi Dorji said.

In the end, he said, by engaging and training local reporters in writing effective climate change stories, the media can play a vital role in influencing public policies and changing human lives.

3.4 Introduction of the participants

The participants consisted of eight local reporters and experts from various environmental fields including the Bhutan Ecological Society, the Royal Society for Protection of Nature, Bhutan Trust Fund for Environmental; Conservation, and Clean Bhutan. After the introduction, the moderator opened the floor for presentation by the grantees of Bhutan Media Foundation's Climate Change Reporting Grant to introduce their stories and share their reporting experiences including challenges and opportunities. Each of the presentation was followed by discussions, comments and feedback among all participants.

4. PRESENTATIONS

4.1 The future of *Pangtse shing* and *Pangtse* oil production

Grantee: Choki Wangmo, Reporter, Kuensel

SYNOPSIS

Pangtse shing benefits rural communities but faces threat from deforestation

*With highest density of *Symplocos paniculata* in Kabesa Gewog, Punakha, people have enjoyed symbiotic relationship with the plant for long period of time. The residents of Peltari in the gewog has recorded no incidence of severe drought, water shortage, or soil erosion for aeons. The chiwog has the highest density of *Symplocos paniculata*. According to villagers, the naturally occurring plant began to spread throughout the paddy fields of Punakha. The tree is highly adaptable and grows naturally on barren, salty, and severely arid soil like degraded land and dry areas but the yield is higher among those on the terraces. Researchers said that the tree can improve social and ecological resilience, particularly towards mitigating the impacts of climate change. It can sequester carbon, bind soil, reduce soil erosion, and landslides, as well as regulate temperature and water, directly assisting in adaptation and mitigation efforts. Although not at a commercial level, people also extract high-quality oil from the seeds of the trees. With support, villagers have an opportunity to gravely improve their socio-economic conditions. However, without policy support from the stakeholders, residents have started cutting down the trees, therefore increasing the risks of climate change and its impact. Dependence of imported oil might also result in total wipe-out of this precious species. The article covered the socioeconomic and ecological benefits of the species to people and the threats if community-based conservation strategies are not carried out sooner.*

Policy support for Pangtse oil production

*In the second phase of climate change reporting grant, the report explored how the government policies and support could help people in Kabesa, Punakha to optimize oil production from *Symplocos paniculata*. Despite huge potential to earn from oil production with the opportunity to substitute cheap alternatives flooding the market, not many have been achieved in the last many years. Pangtse oil was popular in the past and most sought for. But in a changing industrial atmosphere, rudimentary processing with low output, poor economies of scale, and high cost of energy and time discouraged villagers in Peltari. Without an enabling policy and government support, processing has remained fragmented, minuscule and suffers from low yield. The people are forthcoming and waiting for such opportunities but the government couldn't provide enabling environment. However, government support through commercialization projects in pangtse makhu production could encourage villagers to maintain the trees that are naturally growing. Initiatives and encouragement from the forest department and artificial regeneration of *Symplocos paniculata* could also help in reviving the diminishing practice. Pangtse shing plantation and upgrading oil extraction technology would help increase the production and also create market*



Simplocus Paniculata (Pangtse Shing) in Peltari, Punakha

demand. Except for the formation of farmers' group in Peltari, nothing concrete was achieved. However, relevant government officials said that the government policy supports any kind of oil production within the country if the feasibility studies showed prospects of commercialization. In the beginning, he said, it would be difficult to produce a refined oil but with right equipment, refining processes would be easier.

PRESENTATION

Opening her presentation, Kuensel Reporter Choki Wangmo said she had approached the story about the future of Pangtse shing and Pangtse oil production from a climate change perspective.

Scientifically known as *Symplocos paniculata*, Pangtse shing grows in abundance in Kabesa gewog in Punakha. The tree mostly grows in Peltari village and for years, the people and the plant has been sharing symbiotic relationship where the trees provide ecological benefit to the paddy fields and in turn draw nutrients from the field.

While it's difficult to trace the origin of the tree, the species is known for its high adaptability as it grows on dry barren terraces. Pangtse shing provides an opportunity to minimize some impacts of climate change as it prevents drought and soil erosion. The trees absorb carbon, provide socio-economic benefits to the people and builds ecological resilience.

However, many farmers today expressed that the tree was doing more harm than good to the paddy fields, which is why many are losing interest today. The tree's shade blocks sunlight for the paddy fields while it also shares nutrients.

Without a lack of any support from the government, there is a general decline in the number of trees. The immediate consequences is drying up of water resources. The story concludes that community based conservation strategy by involving the community will have far reaching benefits.

In her second part of the story, Choki Wangmo said she had explored how the government can help revive and popularize pangtse oil production among villagers. The oil, known for its high medicinal value and taste, is in high demand among consumers. The process however is rudimentary, tedious and labor intensive as it takes hours to produce a liter of pangtse oil. The trees also do not bear seeds every year.

The government so far has not indicated any form of support and has not gathered any data or information on pangtse oil production in the country. There are no farmers' cooperatives and no support in the form of upgrading processing and extraction technology from the traditional practice.

CHALLENGES

Due to lack of any information, Choki Wangmo said she mostly relied on international journals and research papers. But due to differences in geography and topography, there were several limitations while relying on foreign literature. The lack of local expertise further added to the challenge.

OPPORTUNITIES

Choki Wangmo said reporting from the ground has helped her in gaining new perspectives and in expanding her horizon as an environmental reporter. There is now a need to follow up on the government to find out their plans and programs in encouraging pangtse oil production in the country. Choki Wangmo also said, future stories can explore viability of Pangtse makhu in the domestic and international market.

DISCUSSIONS

The participants raised that besides the many benefits of pangtse oil production highlighted by the story, there is also immense potential in agro forestry. Agro forestry which has been implemented in several places have immensely benefited the community as well as the environment. Dr. Norbu from RSPN said, there is scope for the reporter to tell the story from the government's side. The story should therefore explore more on the government's intervention.

Nidup from Clean Bhutan said climate induced shift in vegetation could also lead to decline in the number of trees. He said, the story should capture other uses and benefits of the trees besides oil.

Other participants suggested mapping of pangtse tree in the country, exploring the international market and the need for the government to conduct more research and studies on the plant.

4.2 Threat of flashfloods and GLOF in Lhuntse

Grantee: Sonam Lhendup, freelance reporter

SYNOPSIS

Danger of wrathful waters in Lhuntse

Autsho town and Low areas of Lhuntse face twin risk of GLOF and artificial dam burst. It faces the risks of glacial lake outburst flood (GLOF) from the source of Khomachhu and an outburst flood from an artificial dam formed by Tsatichhu. The Tsatichu dam formed in September 2003 partly burst on July 10, 2004, resulting in a massive flood. After the breach, the water level of the dam decreased by only five meters from the actual size of the dam.

Autsho town and other low-lying areas in the Kurichhu basin also face risks from GLOF. The findings of the story inferred that the Terjatse glacial lake listed as potentially dangerous and which feeds Khomachhu, a major tributary of Kurichhu pose risk downstream.

Besides Autsho town, the event of a GLOF could damage settlements by the banks of Khomachhu such as Khomagang, Dhenchung, and Tsikhang.

Lhuntse dzongkhag resolves to fight GLOF and floods

Following the first round story, the disaster management committee of Lhuntse Dzongkhag has resolved to seek support from the Department of Disaster Management (DDM), the National Centre for Hydrology and Meteorology (NCHM), and the Department of Geology and Mines (DGM) to save Lhuntse from potential threats of GLOF and flash floods.

In the intervening time, the coordination among different government agencies hinged on financial resources that none of them has in order to mitigate the threats of GLOF and artificial lake outburst floods.

PRESENTATION

Freelance reporter, Sonam Lhendup said his stories focused on the looming threat of flashflood and Glacial Lake Outburst Flood in the low lying areas of Lhuntse dzongkhag such as Autsho and communities lying by the banks of Khomachhu including Khomagang, Dhenchung and Tsikhang.

These low lying areas have witnessed devastating flooding when an artificial lake, Tsatichu, which was formed in 2003 partly burst in 2005. After an investigation carried out by the department of geology and mines in 2004, it was concluded that there were about 33 million cubic meters of water in the artificial lake. The lake measured 1.4 square kilometer and after it burst, water level in the lake dropped by five meters.



Vulnerable Autsho town in the Kurichu basin

Not much study has been conducted since then. The story also found that the Terjatse glacial lake, located in the headwaters of Kurichhu and listed as one of the potentially dangerous glacial lakes in the country also poses serious risks to settlements downstream.

Sonam Lhendup's next story explored how the various government agencies and district administration have discussed on reducing the vulnerability among affected settlements that are prone to disaster. In response to the story, the government agencies and the district administration held a meeting to discuss the scenario. Lack of funding was identified as one of the biggest challenges in responding to the threat of flashflood and GLOF in the district.

CHALLENGES

Lack of data and resources in approaching the story. Sonam Lhendup said the remote location of the lakes and lack of access route due to dense forest and swollen rivers made the journey difficult and challenging. There is also superstitious belief that the lake is protected by a mermaid which deters scientific research and investigation.

OPPORTUNITIES

Sonam Lhendup said, hands-on experience in reporting from the ground and understanding the glaciers and the threat posed by them was immensely useful for his profession. Sonam said, he learnt a lot about the impact of climate change and would like to do more research on the subject. The story was successful in bringing together sector heads, local leaders, Dzongdas and Mangmis to discuss on the scenario.

FUTURE STORIES

Sonam Lhendup said future stories could focus on risk assessment among the vulnerable communities living by the river banks.

DISCUSSIONS

The participants agreed that there is not much coverage in the news on the Himalayan glaciers and the threat posed by them in the form of Glacial Lake Outburst Floods. In the Punatshangchu basin, even with the looming threat of GLOFs, many hydropower projects are being built by the river basin besides homes, government structure and paddy fields. Although hazard zonation map was been prepared, it has not been implemented. Journalists have not covered much on what kind of impact GLOFs could have on human lives and infrastructure. Journalists should ask the government and policy makers on what is being done to reduce vulnerability. There is no sense of urgency as of now. However, the participants noted that the story was impactful as it led to the first ever disaster management committee meeting in Lhuentse and in bringing together government officials, local leaders and the community to discuss on the issue.

4.3 Conserving water resources with PES

Grantee: Tashi Phuntsho, Reporter, Kuensel

SYNOPSIS I

Conserving water resources with PES, an example from Yakpugang

At a time when the issue of water shortage is growing in Bhutanese villages and towns, payment for environment services (PES) scheme has proved the right answer.

In Yakpugang, Mongar the scheme is a major success story. Members of Yakpugang Community Forest (YCF) and the dzongkhag's water user group have renewed PES agreement. The parties agreed to extend the contract term to 10 from five years and also revise the payment from Nu 30 to 50 per unit on the water meter a month for the town. The rate remains the same for the Mongar Regional Referral Hospital. Mongar forest Division under the DoFPs facilitated the establishment of the PES scheme.

The beauty of the scheme, which was first initiated in 2010, is that it incentivizes the community forest members to protect the forest from excessive grazing and over-harvesting. Seen from a broader perspective, maintaining the watersheds upstream will result in good water yield and quality which will be beneficial to the hydropower stations downstream, irrigation and drinking water supply.

The idea is based on sharing the cost of conservation between the communities and the service users.

"There is no specific study on the impact of climate change on water resources in the area, but we are experiencing more extreme weather events, triggering landslides and other disasters if the watershed is not managed properly" Signal Delma said. Service users/beneficiaries/buyers pay Nu 228,200 annually. During first two terms, they were provided an incentive of Nu 52,000 and Nu 148,200 respectively.

Challenges.

Frequent changing of dzongkhag and local government leader create gaps in the implementation of the scheme. Lack of capacities of the local partners is another.

SYNOPSIS II

The payment for ecosystem services (PES) has received global attention to provide incentives for local actors for sustained supply of ecosystem services and adoption of sustainable management practices. It is also seen as an instrument for promoting conservation and addressing rural poverty.

The third contract term for Yakpogang PES was signed last year with a revised annual fee of Nu 2,28,200. The agreement was signed among Yakpogang Community Forest (YCF) Management group, town representatives, and Mongar Regional Referral Hospital.

The PES scheme focuses on implementation of five activities such as maintain recharge zone, plantation in degraded areas, control illegal activities, clearing streams and limiting grazing. It is managed by more than 110 households from Yakpogang and Kedheykhar village in Mongar.

Seen from the broader perspective, maintaining the watersheds upstream will result in good water yield and quality which will be beneficial to the hydropower stations downstream, irrigation and drinking water supply.

Agriculture Minister Yeshey Penjor, said, when it comes to policy matters, the National Environment Commission is looking after the payment for ecosystem services. The commission is a regulatory authority and implementing the environment assessment. Similarly, if people are harvesting timber from the community forest, certain percentage of money has to be polled back for plantation. If people are taking up commercial farm, there should be paying back certain percentage for plantation or compensation nearby communities. "We do not need a separate policy since it is under the Water Act," Lyonpo said.

According to the International Union for Conservation of Nature's (IUCN) report through consultations for the assessment and planning of the second PES phase in 2018, revealed that concerns have been raised about whether there could be mechanisms to better control the water allocation to water users, which are mainly hotels. "There was a need to determine a mechanism to ensure equitable distribution of water."

"These activities will help the government to improve the PES strategy at the national level and help replicate or upscale the same in other parts of Bhutan," the report says.

With increasing population, unchecked rural to urban migration, increased population density in the towns and cities, rapid increase in imports of cars, and rising demand for fuel wood, roads and building construction, the environment is under threat which can further expose the population to climate change vulnerabilities.

The report argues that localised PES should be promoted focusing on bundle of services for changing behaviours of stakeholders (both the buyers and sellers) rather than generating money. "Emphasis should also be given on maintenance and enhancement of services.

PRESENTATION

Kuensel reporter Tashi Phuntsho presented a success story about how the payment for environmental services scheme has been able to address the shortage of water in Yakpogang, Mongar. The scheme brings together Yakpogang community forest management group, town representatives and the Mongar regional referral hospital. It incentivizes the community forest members to protect the forest from excessive grazing and in preserving watersheds.



The main water source in Yakpugang Community Forest, Mongar



In short, under the system, one group of people protects the drinking water source while another group pay for their services.

Besides providing quality and reliable drinking water supply, the scheme also directly benefits hydropower generation and irrigation as it ensures continuous water supply. Under the scheme, water users are required to pay a minimum fee which is then used to preserve and protect the watershed.

Tashi Phuntsho said that there are no scientific study on the impact of climate change on water resources in the area. However, community members said that they are experiencing more extreme weather events in the form of landslides and flashfloods.

His two stories focused on how the PES system has been successful in Yakpogang and how the government can replicate such schemes in other parts of the country given the increasing popularity. The result is that the community members will benefit with reliable water supply while also benefitting the environment.

OPPORTUNITIES

Tashi said that the story opened up the possibility to cover more stories about water sources drying up in the country.

CHALLENGES

While interested in writing for the English section of the newspaper to reach a wider audience, Tashi said, he is yet to write the English version to his dzongkha story. There were also difficulties in sourcing information from the watershed management division of the department of forest.

DISCUSSIONS

After the successful implementation of the PES Scheme in Yakpogang, an official from Bhutan Environmental Trust Fund said the scheme has been instituted in few other places including Paro and Tsirang.

Other participants raised that there are opportunities in the future to write a comparative analysis story on all PES schemes in the country and suggest future climate change adaptation options. Such stories will encourage more communities in the country to take up PES schemes as it provides incentives as well as protects the environment.

4.4 Growing mandarin becoming trickier

Grantee: Sonam Penjor, Editor, Bhutan Times

SYNOPSIS

Despite minimal impact on climate change made by our country, and a strong environmental record, Bhutan has already experienced climate-related threats to biodiversity, agricultural production, among others.

There is evidence of rising temperatures and changing rainfall patterns. For example, simulations by the Royal Government of Bhutan's National Center for Hydrology and Meteorology forecasted a 10-30 percent increase in annual rainfall from 2021-50. These challenges will likely become more pressing in coming years and a commitment to green investment and environmental protection more fundamental.

Declining of the agriculture productivity over the years, mandarin among others which is the reliable main cash crops for many years, the farmers experience decrease in the productions leading many farmers to shifting to other crops. According to the farmers, this is mainly attributed to climate change.

The Himalayan country of Bhutan is typically an agrarian country with more than 60 percent of the people depending on agriculture. However, farming has been constrained by the mountainous topography and rapid changes in environmental variabilities. With climate change, agricultural production and food security is likely to face one of the biggest challenges of the twenty-first century. The country has already been experiencing some impacts of climate change, such as crop loss to unusual outbreaks of diseases and pests, erratic rainfalls, windstorms, hail storms, droughts, flash floods and landslides annually.

However, the research done by the Agriculture Research and Development Centre (ARDC), shows that the decreasing production is attributed mainly to minimal management of orchards and low adoption of new technologies. It is compounded by orchards being abandoned and the lack of care also adds to citrus greening which has a direct negative impact on production.

In order to tackle all those issues, the Government has initiated a programme of rapid agricultural development. And for the 12th Five Year Plan, the government received \$25.3 million for climate-resilient agriculture in the country from the Green Climate Fund in support of Bhutan's efforts to prepare and adapt to climate change and to ensure that Bhutan is heading towards low carbon and climate-resilient developments.

In addition, Agriculture minister also said that the government would consider developing mandarin specific policies if there was public demand for to revive of the mandarin cultivation in the country.

PRESENTATION

The editor of Bhutan Times, Sonam Penjore's article analyses the impact of climate change on Bhutan's agricultural sector with a focus on declining mandarin production in the country. The five districts of Dagana, Pemagatshel, Samdrup Jongkhar, Sarpang and Tsirang are the major orange growers in the country.

Orange is considered one of the main cash crops fetching good returns for farmers and export revenue for the economy. Orange is one of Bhutan's top food exports. But in recent times, the number of people cultivating the citrus fruit is slowly declining as they experience increasing incidences of citrus greening (citrus pathogen that renders the fruit bitter and unfit for consumption)

Sonam Penjore said the impact of climate change such as rise in temperature, extreme weather events, erratic rainfall, windstorms and drought along with outbreak of pests and diseases have affected overall mandarin production. The government however has maintained that declining production is attributed to poor management of orchards and low adoption of technology. Farmers are also reluctant to use pesticides due to religious reasons.

No proper study has been done so far to understand the impact of climate change in declining mandarin production.

CHALLENGES

Sonam Penjore said that the main challenge in writing the story was lack of data and the limited research linking mandarin production to the impact of climate change. He also mentioned difficulty in travelling due to the restrictions caused by the Covid-19 pandemic.

OPPORTUNITIES

The story opened the possibility of creating awareness among the people and the government on mandarin production. Sonam Penjore also said that the grant story allowed him the opportunity to interact with people in the grassroots. In the future, there is a need for more studies and timely information should be made accessible. He ended his presentation by thanking the Bhutan Media Foundation for the opportunity and said more such programs must be made available to reporters in the future.

DISCUSSIONS

After the presentation, the participants expressed that since there is lack of study on the impact of climate change on mandarin production, it cannot be established, with a certainty, that the decline in mandarin production in Bhutan could be linked to climate change.



A mandarin tree in Dagana

The participants acknowledged that orange, as a major cash crop, deserves more studies and research. A participant pointed out that there is an executive order in 2009 to regulate and assess neglected orchards in the country. However, it is yet to be implemented. Should this be implemented, it will address the challenges currently faced by orange growers.

It was also suggested that there is scope for the reporter to explore future stories such as the origin of orange in Bhutan and how the diseases emerged in the beginning. However, it was noted that there are no proper documents and authentic government information to trace the origin of mandarin in Bhutan.

Some participants said that mandarin yield is observed to be better in cooler regions, which could also be an impact of climate change. Global warming is pushing species and vegetation further north. Other participants suggested adopting the practice of genetically modified organisms (GMO) to increase orange yield while others objected to the idea.

The need to understand the importance of pollination as well as water availability for the plant was also highlighted during the discussion. Like Pangtse shing, orange yield also varies significantly every year.

4.5 Cordyceps and highland communities

Grantee: Samten Dolkar, Reporter, BBS

SYNOPSIS

In Transition...(A fungus, A community and its culture)

Cordyceps have played a vital role for the people living in the highlands. The harvesting of the fungus is a shift in their livelihood whereupon it has mostly replaced their other conventional way of earning an income which otherwise used to be yak rearing and agriculture. Since then, it has always been a lucrative business with highlanders relying on cordyceps. It has played a significant role as a source of employment, livelihood strategy and contributor to country's economy.

In this documentary, I have followed a village in Wangdue Phodrang, Dangchhu. Dangchhu is a scattered settlement in the eastern mountains of Wangdue Phodrang. As a highland community, although it holds a grim and humble history of struggle to make ends meet, it is a thriving community now. Thanks to the cordyceps.

However, it is feared that the cordyceps are disappearing. The area where the fungus grow is seemingly becoming warmer and snow fall decreasing. Along with these problem, the nomadic life of these highlanders are also affected because they have been too dependent on the fungus.

Fungus and Beyond: An attempt to highlander's sustainability

In this documentary, Fungus and Beyond: An attempt to highlander's sustainability, it first focuses on highlanders capability to hire a helicopter which is very uncommon among other Bhutanese people, even the richer ones. It compares and contrast the way the cordyceps are harvested in Bhutan and other Himalayan region although the issue of cordyceps disappearance is a shared problem.

However with some best practices, there are more Bhutan can do to an already existing rules and regulations. For example, a proper research on what really causes the disappearance of the fungus, cordyceps farming and a legal provisions to improve monitoring and to stop invaders are some plans that the government has mentioned.

While the government is still looking for ways to sustain cordyceps for all times to come, it is equally important for them to give alternative source of income to the highlanders to decrease their dependency on cordyceps. In light of declining cordyceps and other important factors, the government has other plans such as National Highland Development Program to help retain Yak rearing culture.

PRESENTATION

The reporter from BBS television, Samten Dolkar documented a community in transition from traditional yak rearing to collecting cordyceps. While the expensive caterpillar fungus has provided a lucrative source of livelihood for the highland communities, new concerns emerge on the rapidly declining number of cordyceps in the wild.

Her video documentary follows the village of Drangchhu in Wangdue Phodrang, which has immensely benefitted from cordyceps collection. Their main occupation used to be salt making and yak rearing.

Samten Dolkar said cordyceps are rapidly disappearing in the highlands as the air has become warmer and there is less snowfall.

Her next documentary discusses the need to sustain cordyceps collection. While the government continues to look for ways to ensure sustainability, the other alternative being explored is reviving yak-rearing practice among the highlanders.

Since there is no evidence that climate change is directly contributing to its decline, overharvesting is believed to be one of the major reasons for its disappearance.

Meanwhile, the government is also exploring the possibility of farming cordyceps.

CHALLENGES

As a television documentary, Samten Dolkar said the production process was expensive and the lack of resources had compromised on the quality of the documentary. Her story also suffered from lack of local expertise.

It was also challenging to capture people's interviews, footages and clips. Since there are not many studies conducted, Samten Dolkar said, she had to rely on foreign literature and experts.

OPPORTUNITIES

Samten Dolkar said it was her first helicopter ride to the highlands. The story gave her the opportunity to connect with the highland communities and gain first hand experience of reporting from the ground.

She said she is already working on her next video documentary that will capture the impact of climate change on cordyceps at a deeper level by observing snowfall pattern and receding snowline.



Cordyceps - a main source of income for the highland communities

DISCUSSIONS

The discussions around Samten Dolkar's two video documentaries focused on the need for policy regulations to sustain Cordyceps collection. In the face of dying practice of yak rearing and declining Cordyceps collection, the highlander's future looks bleak.

Most highlanders believe returning back to the practice of yak rearing would not be a better alternative as horses have become more popular than yaks today. Therefore most are now investing in their children's education.

The highland community has experienced significant improvements in their livelihood as a result of Cordyceps collection. This transformation has brought along other challenges like difficulty in finding workers to build houses and other structures.

The participants recommended covering another story on how decline in the number of Cordyceps in the wild would affect the health and welfare of yaks as it constitutes one of their principal diet while grazing.

Some of the participants asked if Cordyceps farming suggested by the government would be practical.

4.6 National water shortage

Grantee: Chayku, News editor, BBS

SYNOPSIS

Trading White Gold

Threats of climate change loom large in Bhutan. Although our efforts have made us the only carbon-negative country in the world, the impacts of climate change are visible to us. Among many, the threats felt by the rice-cultivating farmers are magnanimous.

Nyishog Gewog of Wangdue Phodrang has been living with these threats for a long time, but at the same time, they have also found a way to harmonize with the impacts through water trading.

Unlike today, locals said water used to be in abundance. It has been a decade since they have started to experience a shortage of irrigation water. The need for more water has become persistent to the community with dry weather persistently becoming a threat to the crops, especially during the paddy transplantation season. And whatever little people get, they divide among themselves and they guard their share of water throughout the paddy season so that others don't divert it to their fields. It is a story of sleepless nights. And those who own larger acreage of fields and those who don't have access to irrigation water are left to buy water from others.

The community uses a measurement stick to sell the surplus water. And this way, households without water have been resorting to traded water to irrigate their fields.

Amid this practice, people question the sustainability of the water trading system while they also ask for the intervention from relevant stakeholders so that they have equal access to the community resource without having to pay for.

Water for All

This is the follow-up of part I of the reporting, Trading White Gold. In the first part, the issue circled around unequal distribution of water, especially for irrigation. In some parts of the paddy cultivating communities, this disparity had played against the people resulting in conflicts and endurance of immense trouble. For a long time, this has raised questions about the presence of relevant stakeholders and their roles in ensuring that everyone has an equal right over the state's water resources. This part of the story talks about policy interventions to ensure that there is enough water with a specific focus on food security.

The story begins with the glimpse of distress people and communities face due to such disparity and brings on board the views of experts who talk about the nexus of water scarcity and food security.

With the government of Bhutan being the major player in the country's development, the story also captures the government's plans and policies in the pipeline that will make sure that such scarcities are solved. The focus is specifically on the Agriculture ministry and its roles, plans, and policies to tap all the available water resources in the country to act against the adversities of insufficient irrigation water brought about by climate change.

While the experts involved in the story share their recommendations and way forward through the presentation of research findings and expertise, the relevant stakeholders share their climate-friendly plans and policies that will hold the Bhutanese agriculture system to its root.

PRESENTATION

"Water, water everywhere/nor any drop to drink." Chayku, reporter from BBS began his presentation quoting ST Coleridge's Rime of the Ancient Mariner. Located in the Himalayas, which is described by some as the water reservoir of the world, Bhutan has plenty of water with over 600 known water sources, 200 watersheds and five major river basins.

However, what used to be in abundance is now slowly disappearing. The impacts of climate change has become visible. Chayku's video documentary focusses on the villages of Nyisho, Larjab and Chaybakha in Wangdue Phodrang where hundreds of acres of paddy fields are lying fallow due to shortage of water.

The entire district of Wangdue Phodrang has witnessed more than 20 water sources drying up in recent times. This has forced farmers to shift to cultivation of other crops such as chili which requires less water.

As sources continue to dry up and water becomes scarce, disputes among villagers are happening more frequently. Farmers spend several days and nights guarding their water. However, the communities are also coming together to address the issue amicably. Water trading is slowly becoming popular as villages with excess water sell their surplus to those facing shortages.

In his second part of the documentary Chayku asks the government on its interventions, policies and plans to address water shortage. The government's national water flagship plan is expected to address the shortage of water in the country. Under the plan, government officials are already in the process of identifying and locating water sources across different places in the country.

Chayku's story also explores the relationship between water availability and food security. If Bhutan is to consider food security, water is a major determinant. Without adequate water, he argues that achieving food self-sufficiency would not be possible.



A water source for the Nyisho community in Wandue Phodrang

OPPORTUNITIES

Chayku said there are opportunities for the government to realign development plans to ensure adequate water supply. There is also opportunities in changing people's mindset and encouraging individuals and communities to preserve water. There should also be a platform for the public to share grievances and suggest recommendations

At a professional level, Chayku said the story allowed him to explore the issue of water shortage at a deeper level. His next story will explore food security and water availability in Bhutan.

CHALLENGES

Chayku also listed lack of access to local expertise as one of the biggest challenges in sourcing information. He said video documentaries usually are expensive to produce, is time consuming and it was difficult to hire production crews with limited budget.

DISCUSSIONS

Participants suggested addressing the shortage of water for irrigation by bringing water directly from the main river. But questions remain on how cost effective it would be for farmers. Some of the participants asked whether the trend of decreasing water supply is a recent phenomenon.

One of the participants recommended looking at the possibility of covering another story on the impact of farm road construction to Bhutan's water regime. With more than 5,000 kilometer of farm roads constructed in the country, it is believed to have disturbed the flow of natural water resources in many places. However, the lack of study may pose a challenge.

Redefining water source was another comment from a participant. Many people tend to protect the point where the water comes from rather than the trees and forest which actually feeds water in the point.

Another participant suggested, the government could explore cloud seeding to create artificial rain for agricultural fields.

4.7 Dying yak herding practice

Grantee: Phub Dem, Reporter, Kuensel

SYNOPSIS

Government and yak herders pin hopes on a federation

Despite being a developing country, Bhutan, which restricts accessible developmental activities to maintain its carbon footprint, is bearing climate change. Besides climate scientists, highlanders are the frontline observers of climate change as the impact is significant at higher altitudes, and these indigenous communities are left unattended. There are 41,918 yaks in the country, and the isolated nomadic populations are often forgotten, although they play a vital role.

According to livestock statistics, there are 99 herders in Haa in 2013. Today there are only 57. The trend of yak herding is declining, although it is a traditional practice that has been the primary source of income for centuries to the highlanders. There may be other factors that discourage yak herders from discontinuing the practice, but climate change is among them.

It was observed that climate change has a profound effect on the condition of rangelands, the proliferation of warm-climate plants like the rhododendron and other lowland trees encroaching upon pastures where yaks graze. Springs and high-altitude wetland, one of the significant sources of water, are reportedly depleting.

This poses an enormous threat to yak rearing if appropriate measures are not taken to encourage the sustainability of this practice. However, both government and yak herders are pinning their hopes on the national yak federation.

The question is, will the yak federation preserve the declining yak rearing community—the informal custodian of the northern frontier? Through the federation, the yak herders voice could be heard at the national, regional, and international levels.

The government has been providing subsidies to enhance their livelihood and cater to marketing their products, but highlanders expect basic facilities. Will the federation alone solve the issue? This issue is only isolated to yak herders of Haa. What about other highlanders? Is the government coming up with mitigation and adaptation plans and policies before it is too late?

PRESENTATION

Kuensel reporter Phub Dem's story about the dying practice of yak herding reports on the lack of policy support and intervention in the highland communities to sustain the practice while facing extreme impacts of climate change.

The impact of climate change is more visible in the higher altitudes as rainfall and snowfall patterns change. Due to shift in vegetation, warm-climate plants like rhododendron and other lowland trees are encroaching the yaks' pastureland.

Water has also become scarce for the yaks and they are required to leave their pastureland to look for water.

The story is set in Haa. Of the 99 yak herders in Haa in 2013, there only remains 57 today.

Despite the impact being felt by the highlanders, Phub Dem's story revealed gaps in government interventions where highlanders were provided with milk churning equipment that was of no help.

The government is however exploring other alternatives such as promoting eco-tourism and boosting local production. Other options to minimize the impact of climate change is rangeland improvement.

Both the government and the communities are today pinning their hopes on the national yak federation. In the end, the story asks the government if mitigation and adaptation plans and policies will be implemented before the practice of yak herding disappears altogether.

OPPORTUNITIES

Phub Dem said the grant story offered her the opportunity to observe and feel the impact of climate change first hand and to understand the issues and challenges faced by yak herders. The transformation, she said, was starkly visible as communities that used to be small and contented looks like a temporary shed today.

In the future, Phub Dem said she wants to explore writing more news articles on the impact of climate change in other highland communities in Bhutan besides Haa as well as explore mitigation and adaptation plans.

CHALLENGES

There were not many experienced yak herders who could tell their stories. Most of the herders today are new and do not know much about climate change. There is also a dearth of research and studies on the impact of climate change in the highlands.



DISCUSSIONS

The participants shared that while the story establishes that the impact of climate change is visible in the high Himalayas, there is no scientific evidence that links the impact to climate change.

Due to lack of studies, all impacts whether man made or natural is blamed on climate change. For instance, overgrazing by animals could also have contributed to the impact. Although impacts are being observed, there is a need to validate that things are happening or not due to climate change.



Kencho, one of the young yak herders in Haa

4.8 Containing the glacial lakes

Grantee: Karma Wangdi, Reporter, Bhutan Times

SYNOPSIS

A Brief Tale on Bhutan's GLOF and its Way Up for Future Danger

The National Centre for Hydrology and Meteorology's 2019 reassessment showed that 17 glacial lakes are potentially vulnerable to outburst at any time. Glacial lakes are real threat to human lives and its settlement alongside the river valleys, and which would give its way first is still unclear. This is because experts have pointed out that it is daunting task to study and keep monitoring glaciers which is located at a height of 4000 meters above sea level. Moreover, there is no clear policy regulation by the government and related stakeholders. Secondly, the hazard zonation mapping for GLOF needs updating. As there is no Updation for Hazard zonations mapping, this leaves a clear indication for the danger of future GLOFs as 70 percent of the human settlement lies alongside river valleys.

The Early Warning System (EWS) and Automated weather Station needs Updation, meaning the existing system fluctuates to display live data frequently. As a result the technician at the station faces difficulty in manning the station. For this matter, the government and relevant agencies must address before it's too late.

Furthermore, it is very much challenging to retrieve data from the government agencies by news reporters and researchers. It has caused delay in reporting news and informing the state and its people on time. So, to combat any potential future GLOFs, the data delivery remains a top priority. This would aid in early mitigation and even adaptation to climate change for Bhutan in near future.

PRESENTATION

Karma Wangdi from Bhutan Times presented his story about the imminent threat of glacial lake outburst flood with 17 potentially dangerous glacial lake located in the Bhutan Himalayas. However, there the hazard zonation maps have not been updated and the early warning system still remains inefficient.

Therefore, Karma Wangdi in his story argues that the government must update both the early warning systems and the hazard zonation maps. There is also a need for clear policy regulations and hazard zonation maps for all river basins.

Karma Wangdi said the hazard zonation map has not been updated since it was last prepared in 2010 with Austrian assistance.

With 70 percent of the human population living alongside rivers, glacial lake outburst floods pose serious threat on human lives, settlements and infrastructure if the early warning system and hazard zonation maps are not updated soon.



Automated Weather Station in Gangthangkha, Wangdue Phodrang

CHALLENGES

Karma said it was challenging to retrieve data from government agencies on GLOF related issues which has caused delay in reporting his news. Climate change related data is lacking while the potentially dangerous glacial lakes could burst anytime.

OPPORTUNITIES

While lack of data poses challenge there is still much scope in the future to report on GLOF. Future stories could focus on relocation, mitigation and adaptation measures by the government.

DISCUSSIONS

Participants urged that the journalists must continue to talk about hazard zonation and relocation measures along the river banks as it is understood that there has been no move from the government so far to relocate settlements even with the imminent threat posed by the glacial lakes.

Participants also pointed out that the reasons for lack of expertise and data is that there are no independent agencies in the country to study climate change.

5. VOTE OF THANKS

Program Officer of Bhutan Media Foundation Tenzin Yangden delivered the vote of thanks on behalf of BMF. She thanked all the participants including officials from the environmental agencies, journalists, the trainers and mentors whose contribution to the workshop has been immense. Lastly she extended BMF's deep gratitude to Earth Journalism Network, Nepal for all the support rendered to the strengthen the media fraternity in Bhutan.

6. CONCLUSION

Lack of data, local expertise and in depth knowledge on the issue of climate change was highlighted by all reporters while pursuing their grant project.

However, despite the challenges faced by the reporters, some of the stories have been impactful in generating public discourse and revealing gaps in government interventions. For instance, freelance reporter Sonam Lhendup's article on the danger of flashflood in Lhuentse prompted the district disaster management committee to conduct an in-depth study and assessment on the potential risk of GLOF and build flood protection walls in the low lying areas.

While there are no hard evidences to understand the impact of climate change, officials from the various environmental agencies as well as the journalists acknowledged that global warming is happening and extreme weather events have multiplied in recent times.

Whether it was natural or man-made Bhutan has witnessed several climate induced disasters and impacts. Therefore, the workshop ended on the note that journalists must continue to write effective climate change stories to generate public discourse, influence public policies and change human lives.

ANNEXURE I: Agenda of the Workshop

Time	Activity	Remarks
DAY 1		
9am-9.30am	Participant registration	
9.30am-10am	Welcome by Executive Director and introductory remarks by Mr Ramesh Bushal, EJN	Mr Ramesh will join online from Kathmandu, Nepal
10am-10.30am	Introductory remarks by trainer and mentor, Mr Tashi Dorji	
10.30am-11am	Tea break	
11am-12.00pm	Presentation by Grantee Choki Wangmo, Reporter, Kuensel, on 'The future of pangtse shing and pangtse oil production' followed by discussion	
12.00am-1pm	Presentation by Grantee Sonam Lhendup, freelance reporter, on 'Threat of flashfloods and GLOF in Lhuntse' followed by discussion	
1pm-2pm	Lunch break	
2pm-3pm	Presentation by Grantee Samten Dolkar, reporter, BBS, on 'Cordyceps and highland communities' followed by discussion	
3pm-4pm	Presentation by Grantee Tashi Phuntsho, reporter, Kuensel, on 'Conserving water resources with PES' followed by discussion	
4pm-4.30pm	Tea break and End of 1st Day	
DAY 2		
9am-9.30am	Participant Registration	
9.30am-10am	Recap of the previous day	
10am-11am	Presentation by Grantee Sonam Penjor, Editor, Bhutan Times, on 'Growing mandarin becoming trickier' followed by discussion	
11am-11.30am	Tea Break	
11.30am-12.30pm	Presentation by Grantee Chayku, News Editor, BBS, on 'National water shortage' followed by discussion	
12.30pm-1.30pm	Lunch Break	

Time	Activity	Remarks
1.30pm-2.30pm	Presentation by Grantee Phub Dem, Reporter, Kuensel, on 'Dying yak herding practice' followed by discussion	
2.30pm-3.30pm	Presentation by Grantee Karma Wangdi, Reporter, Bhutan Times, on 'Containing the glacial lakes' followed by discussion	
3.30pm-4.30pm	Presentation by Grantee Gopilal Acharya, trainer and mentor, on 'Springs are drying up' followed by discussion.	
4.30pm-4.45pm	Votes of thanks	
4.45pm	Tea and End of Day 2	



BHUTAN MEDIA FOUNDATION

Telephone: 00975-02-331705 | 331709

P.O. Box: 1655 | Lhado Lam | Thimphu, Bhutan

Email: bmf@bmf.bt | www.bmf.bt

Designed & Printed: Yoebar Prints (17500188)