SUSTAINABLE MOUNTAIN DEVELOPMENT SUMMIT - IX

8-14th DECEMBER 2020

INTEGRATED MOUNTAIN INITIATIVE

SDFU
SUSTAINABLE DEVELOPMENT FORUM UTTARANCHAL

"*Emerging Pathways for Building a Resilient Post Covid-19 Mountain Economy: Adaptation, Innovation and Acceleration*"

Dehradun, Uttarakhand

Making India Proud of our Mountains

NAINITAL BANK THE NAINITAL BANK LTD. • ICIMOD • NMHS National Mission on Himalayan Studies • NORTH EASTERN COUNCIL GOVT. OF INDIA • HIMMOTHAN • GRAPHIC ERA • DHI • lead

FOREWORD

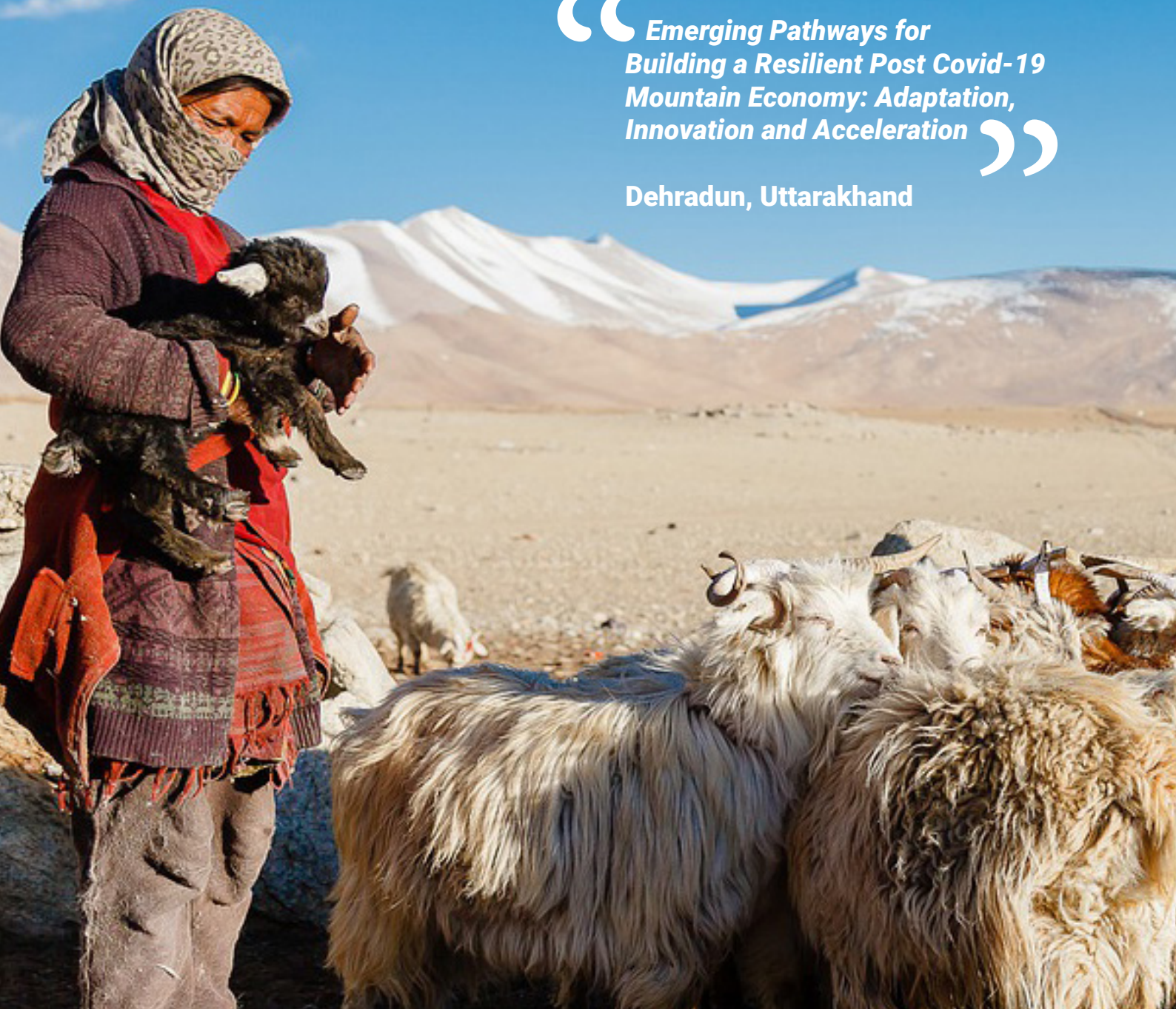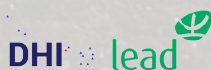We are happy to share with you the proceedings of the 9th edition of IMI's annual flagship event- Sustainable Mountain Development Summit (SMDS).

SMDS IX focused on **'Emerging Pathways for Building a Resilient Post-Covid19 Mountain Economy: Adaptation, Innovation and Acceleration'** to address the need to look at mountain sustainability and resilience in the pandemic times.

Mountain economies are largely dependent on factors like inflow of tourists, remittances from migrants, subsistence mode of farming, external food, general supplies and Government spending. These have all been severely impacted due to COVID-19. Due to the fiscal burden and low revenue, Mountain states in IHR are also disadvantaged in their effort to tackle the pandemic. Taking measures beyond relief and healthcare becomes challenging including regular developmental schemes. The Mountain states require a series of initiatives to create job opportunities and sustain the local economies. The focus will have to be on local resources whilst capitalizing on community networks. Simultaneously, the challenges of climate change and water security loom large over the fragile Mountain ecosystems.

It is in this backdrop that SMDS IX sought to be a platform to discuss some of the emerging pathways for building a resilient economy in IHR through the combined approaches of adaptation, innovation and acceleration. The deliberations during the Summit delved into the corresponding Sustainable Development Goals (SDGs).

The summit was held virtually and hosted by Sustainable Development Forum of Uttaranchal (SDFU), IMI's State Chapter and Uttarakhand State Council for Science & Technology (UCOST), an institutional member of IMI. It was attended by over 1000+ people. The 3rd Indian Himalayan Youth Summit held as part of the 9th SMDS was attended by over 200+ youth participants from all across the Indian Himalayan states. Despite the trying times of CoVID, the enthusiasm shown by the youth participants signaled the successful commencement of the weeklong event. A "Mountain Legislators Meet" was also held where Mountain Legislators' from across the Himalayan region engaged with Experts on the key concerns of Health and Tourism during the pandemic and on how to work together to achieve common goals.

We are thankful to our Members, Partners and Stakeholders who organised and participated in the Summit to make SMDS IX a grand success.

IMI is a civil society initiative, guided by the values of integrative, inclusive, collaborative, voluntary, democratic and open working to bring diverse stakeholders, individuals and institutions together to work on issues of mountains and enable us to realize our potential and goals.
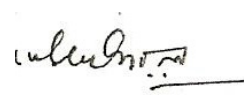
While we have made progress we continue to raise the bar on our collective aspirations and the potential of realizing the opportunities which IMI is in a unique position to do.

We continue to seek the support of our Members and Partners.

With warm regards,

(Prem Das Rai)
Former MP LS & Governing Council
President, IMI

(Dr. Rajendra Dhobal)
Chairman, SDFU,
Uttarakhand

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Introduction

The dramatic spread of Covid-19 has disrupted lives, livelihoods, communities and businesses worldwide. Social distancing strategies have been adopted by most countries aiming to reduce contact of infected persons with large groups by closing schools and workplaces, restricting travel, and cancelling large public gatherings. The global economy has been projected to contract by over 3% due to the pandemic and the global lockdown.

In India, the nationwide lockdown due to the pandemic has sent economic shocks across all states, especially in the Indian Himalayan Region (IHR), where people are heavily dependent on the informal sector for livelihoods. The International Monetary Fund (IMF) has forecasted India's growth estimate for FY21 at 1.9%. Tourism and hospitality industry, which is the mainstay of many in the IHR, has come to a screeching halt. According to an impact assessment by the UN World Tourism Organization, arrival of international tourists could decline by 20-30% which would translate to a huge loss in international tourism receipts for India and the IHR. It has also been estimated that India's hospitality sector is staring at a potential job loss of about 70% of the total workforce engaged in the industry. There is now a rising fear of reverse migration post Covid-19 and how to provide gainful employment to all those people will pose a severe challenge to all State Governments. The Covid-19 pandemic has added another layer of vulnerability to the economic, social and environmental ecosystems of the IHR.

These issues are compounded by the existing climate change vulnerabilities in the IHR which is becoming increasingly vulnerable to chronic water stress, hydrological disruptions, and extreme weather events (floods and droughts). According to a climate assessment report by ICIMOD the Hindu Kush Himalayan region would continue to warm at a faster rate even if the world is able to limit global warming at 1.5 degrees Celsius. This has alarming implications for the IHR's energy, livelihoods, agriculture and ecology, given that the Himalayas are the source of three major transboundary river systems of the Indus, Ganges, and Brahmaputra that collectively support an estimated 700 million people. Incorporation of climate proofing strategies in all sectors is now a necessity in the IHR.

Development initiatives in the mountains must now be taken up with a view to build resilient mountain communities to overcome the shocks presented by the pandemic and climate change.
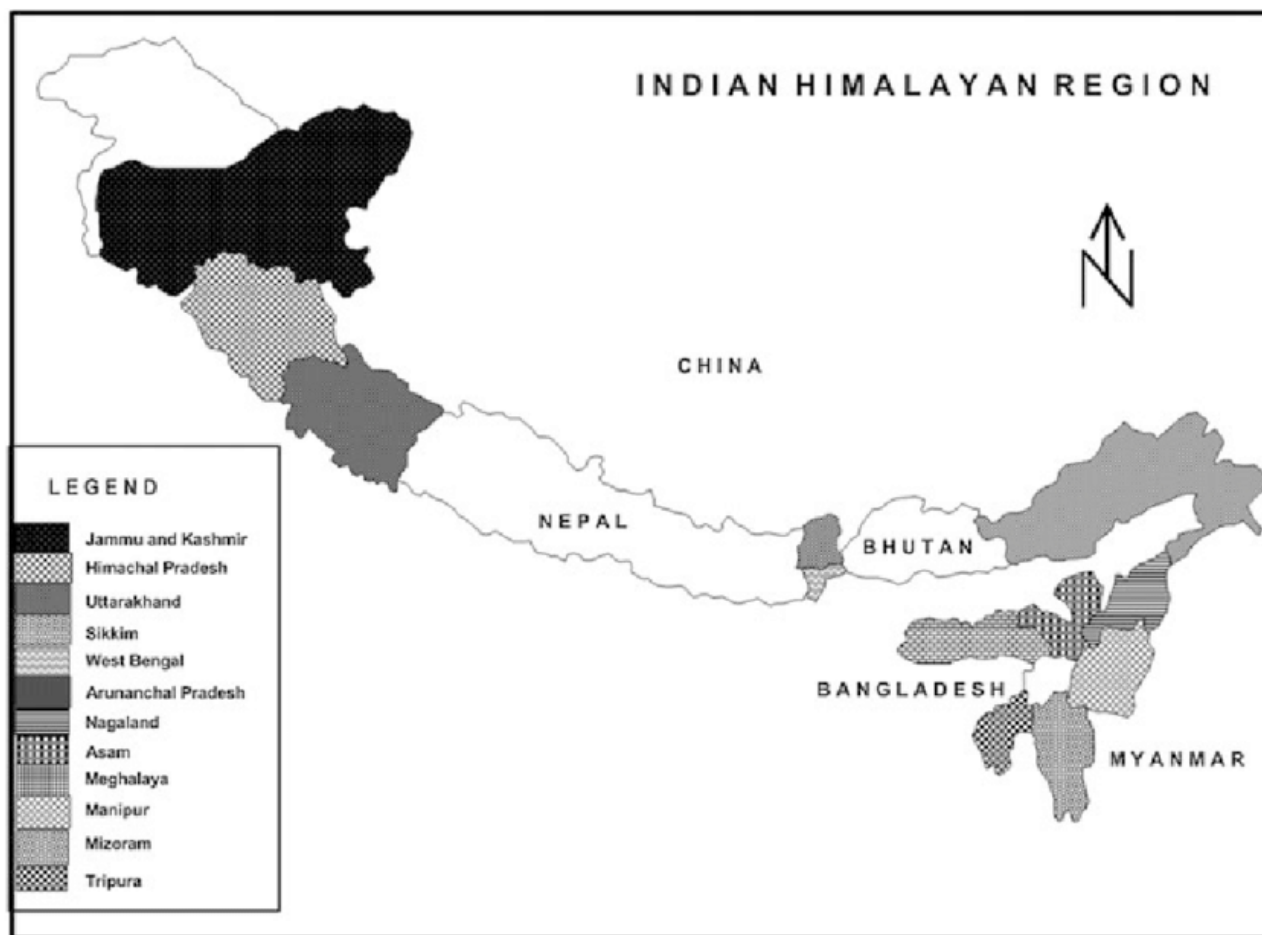
The Indian Himalayan Region

Figure: Map of Indian Himalayan Region

The Indian Himalayan Region (IHR), consisting of the two union territories of Jammu & Kashmir and Ladakh, the nine states of Himachal Pradesh, Uttarakhand, Sikkim, Arunachal Pradesh, Nagaland, Manipur, Meghalaya, Mizoram, Tripura, and the hill districts of Assam (Dima Hasao, East Karbi Anglong and West Karbi Anglong) and West Bengal (Darjeeling & Kalimpong) covers over 16.2% of India's total geographical land area and around 4% of the population.

The region is one of the rich biodiversity hotspot regions of the world with over 10,000 plants, 300 mammals, 977 birds, 281 herpetofauna, 269 fishes, several species of invertebrates and microorganisms, many of which have global conservation significance. Uniqueness (endemism) is yet another important attribute of the region. Hence, it is imperative that the states in the Himalayan Region come together to preserve the ecosystem and human welfare in the region. Many springs that dot the mountainous landscape. The Himalayan mountain system is the source of one of the world's largest supplies of freshwater and supports over 700 million people. The Himalayan ecosystem is also comparatively far more vulnerable and susceptible to impacts of climate change and natural disasters than the rest of the country.

Background of IMI

The Integrated Mountain Initiative (IMI) is a civil society led network platform working across the IHR with a vision of "Making India proud of our Mountains". The forum is a collective initiative for recognising the value of mountain regions and enabling the people to realize their potential by integrating knowledge and experience of multiple stakeholders working on diverse issues across the IHR states.

IMI brings mountain concerns center stage in regional, national, and global agendas through sustained and informed dialogue among all stakeholders and also enables action by following up on the deliberations with policy makers, implementers and communities.

Background of SDFU

The SMDS-IX was hosted by Sustainable Development Forum - Uttaranchal (SDFU), which is also the Uttarakhand State Chapter of IMI. SDFU is a group of well-known scholars, former administrators and subject experts who have come together with a view to create a collaborative initiative involving a number of constituents from grassroots to research and policy making committed to and working towards the common vision and mission of sustainable development of the mountains in general and Uttarakhand in particular.

SDFU's mission is to bring knowledge and experience together for deliberating on a sustainable development roadmap for the mountain regions and enabling the search for solutions to the challenges faced by the people in the environmental, social and economic domains in mountain areas, especially in Uttarakhand.

Sustainable Mountain Development Summits

Sustainable Mountain Development Summit (SMDS) is IMI's flagship annual conclave. Every year 3-5 salient themes engaging the immediate attention of and relevant to the mountains and hills are taken up for threadbare discussion and debate. Conclusions and recommendations emerging from this exercise are pursued by IMI subsequently for actionable output.

The thematic focus of previous SMDSs are as below:

SMDS	THEMATIC FOCUS
SMDS-I (2011), Nainital, Uttarakhand	Hydropower, Adaptation measures under Climate Change, Rural Tourism, Community forestry
SMDS-II (2012), Gangtok, Sikkim	Water, Forests & Communities, Mountain Livelihoods
SMDS-III (2013), Kohima, Nagaland	Forests, Water: Rivers, streams & springs, Mountain agriculture
SMDS-IV (2015), Itanagar, Arunachal Pradesh	Disaster Risk Reduction, Mountain Agriculture, Forests
SMDS-V (2016), Leh, Ladakh	Water Security, Skills for development in the mountains
SMDS-VI (2017), Aizawl, Mizoram	Climate Change & Sustainable Mountain Cities Well-being of Next Generation of Farmers in the Indian
SMDS-VII (2018), Solan, Himachal Pradesh	Well-being of Next Generation of Farmers in the Indian Himalayan Region
SMDS-VIII (2019), Shillong, Meghalaya	Sustainable Mountain Initiatives for Livelihoods & Entrepreneurship for Youth

Each of these summits have been characterized by diverse discussions, debates and exchanges. They have also produced specific policy briefings and recommendations, which are helping change the dialogue on development practices and policies for the mountain states. Each summit had 200-300 participants, representing a diverse mix of policymakers, eminent scientists, researchers, academics, research and educational institutions, government representatives, legislators, business and industry representatives, international, national and grassroots level NGOs, field practitioners, consultants, experts, eminent citizens and media.

SMDS-IX: Emerging Pathways for Building a Resilient Post-Covid-19 Mountain Economy: Adaptation, Innovation and Acceleration

The 9th edition of SMDS focused on the overall objective of building pathways towards a resilient and sustainable mountain economy in the IHR in the context of a post Covid-19 scenario and Climate Change.

Mountain economies are largely dependent on factors like inflow of tourists, remittances from migrants, subsistence mode of farming, external food and general supplies which have all been severely impacted due to Covid-19. Due to the financial burdens of being low revenue states, mountain states in IHR are also duly disadvantaged in their efforts to tackle Covid-19 and taking measures beyond relief and healthcare becomes an uphill task. With the existing financial burdens of these states, Covid-19 has further exacerbated their developmental challenges. Covid-19 induced reverse migration is set to have a huge impact in the local economy. The mountain states will require a series of initiatives to ensure that job opportunities in the local economies are created and sustained. Focusing on local resources and capitalizing on community networks would hold key. Simultaneously, the challenges of climate change loom large over these fragile ecosystems. Water security is one of the most pressing challenges for mountain communities.

It is in this backdrop that SMDS-IX sought to be a meaningful platform to discuss some of the emerging pathways for building a resilient economy in IHR through the combined approaches of adaptation, innovation and acceleration. The deliberations during the Summit delved into the corresponding Sustainable Development Goals (SDGs) for mountain development.

As a part of the Summit, the Mountain Legislators Meet was held where the findings of the research and academic deliberations held during SMDS-IX were presented to devise a road map for the Sustainable Development of the Himalayan States.

The Mountain Youth Summit was held on the sidelines of SMDS IX to bring together young voices from different states of IHR.

SMDS-IX: Themes and sub-themes

With the theme of **"Emerging Pathways for building resilient mountain economy: Adaptation, Innovation and Acceleration"**, SMDS IX consisted of three main sessions:

Session 1: Re-imagining a post covid-19 IHR for a resilient future: The need for Adaptive Strategies
   Sub-theme 1: Migration and Sustainable Local Economies
   Sub-theme 2: Disaster Risk Reduction (DRR) and Climate resilient future for IHR
   Sub-theme 3: Water Security and Climate Resilient Future for IHR

Session 2: Building resilient rural economy in IHR in a post covid-19 scenario: A call for innovative solutions
   Sub-theme 1: Innovative Solutions for farm sector
   Sub-theme 2: Digital jobs and a Green Future

Session 3: Co-creating Resilient Mountain Solutions through partnerships:
   • Accelerating collaborative efforts
   • Institutional strengthening, forging partnerships and funding opportunities
   • Mountain Legislators' Meet

3rd Indian Himalayan Youth Summit

The 3rd Indian Himalayan Youth Summit brought together agri-entrepreneurs, innovators, achievers, researchers, climate warriors and youth leaders from across the mountain states of India for an interactive session and shared their experiences and ideas for building a resilient future. The objective of this pre-summit was to build on the previous youth engagements of IMI in the past few years, create a Mountain Youth Network for Sustainable Economy and Ecology (MYNSEE) and take the lead in awareness on SDGs amongst the youth. This proposed network is to be a youth leaders collective that will conduct peer mentoring, advocacy of climate action and entrepreneurship amongst local communities, schools, colleges and universities, and act as a catalyst for youth development and action.

Mountain Legislators' Meet

A Mountain Legislators' Meet of all IHR states was held to bring together lawmakers to deliberate on the policy implications and engagement necessary emerging out of SMDS IX sessions. Health and tourism in the context of Covid-19 were the two areas of focus during the session.

Dr. R.S. Tolia Memorial Lecture & Award

In order to commemorate the memory of Dr. Raghunandan Singh Tolia, to carry forward the cause of integrated mountain development, and in deep gratitude to its founding President, IMI instituted an award called the Dr. RS Tolia Award in 2017 to recognise the efforts of individuals and organisations that have made an impact in integrating and addressing the issues of mountain communities. The award for 2020 was presented during the Summit. SMDS IX also featured a Lecture in the memory of Dr. Tolia.

3rd Indian Himalayan Youth Summit

8-14th DECEMBER 2020

The 3rd Indian Himalayan Youth Summit

Inaugural Plenary
December 8, 2020 at 14:00-15:40 Hrs.

The welcome address of the Inaugural Plenary session of the 3rd Indian Himalayan Youth Summit was delivered by Vice President of the Integrated Mountain Initiative (IMI) and Chairman of Sustainable Development Forum Uttaranchal (SDFU), Dr. Rajendra Dobhal, representing the event host state. The opening address and keynote address were delivered by Former President of IMI, Shri Sushil Ramola and Coordinator of Mountain Partnership Secretariat, FAO, Rome, Dr. Yuka Makino respectively. Vice President of IMI, Shri Amba Jamir delivered the introduction, and Councilor of IMI, Dr. Lalbiakmawia Ngente and Member of SDFU, Shri Anoop Nautiyal made the announcements and gave the Vote of Thanks respectively. The other speakers of the session were Shri Samuel Yonzon of Dairy Makarios Bous, Adventurers and Entrepreneurs, Ms. Tashi Malik and Ms. Nungshi Malik, and Advisor of the Task Force for Music and Arts (TaFMA), Government of Nagaland, Shri Theja Meru. The session was moderated by Councilor of IMI, Shri Roshan Rai.

Welcome Address
Dr. Rajendra Dobhal
Vice President, IMI and Chairman, SDFU

Dr. Dobhal began by introducing the speakers and added that a few very eminent names were joining the session. Platforms like the Indian Himalayan Youth Summit exist, not just to listen to these dignitaries, but to give a space to young people to be heard. There was representation from the different Himalayan states, with 112 delegates participating in the session. The sheer diversity and uniqueness of the platform lend to the importance of the summit and should inspire participation of mountain youth.

Introduction to the 3rd Indian Himalayan Youth Summit
Shri Amba Jamir
Vice President, IMI

Shri Jamir started with an overview of IMI and its chapters spread across the states. IMI's area of focus is the Indian Himalayan region spreading across 10 states, 2 Union Territories, and 2 districts from West Bengal. The focal areas of IMI are water, mountain agriculture, disaster risk resilience, and sustainable habitats.

The Sustainable Mountain Development Summit has been IMI's flagship event since 2011, bringing together researchers, academics, individuals in business, and policymakers from regions like Nainital, Gangtok, Kohima, Itanagar, Leh, Aizawl, Solan, Shillong, and Mussoorie. Along with the Indian Himalayan Youth Summit, numerous parallel events are organized. The Mountain Legislators' Dialogue and the Indian Himalayan Photography Competition are examples of such events.

A platform such as the Indian Himalayan Youth Summit is pivotal in the integration of youth, climate change action and entrepreneurship. The IHYS was first held in Kohima, followed by Aizawl and Dehradun. There was a felt need to become ecologically conscious citizens, and the first declaration was made on this issue. The second summit, held in Aizawl, discussed mountain agriculture and health. It is notable that the issue of migration discussed during those summits was out-migration, while now most of the discussions are on reverse migration.

The 3rd Indian Himalayan Youth Summit was the only summit so far to have representation from all the Himalayan states. The diverse group of representatives included nurses, students, research scholars, as well as people with disabilities. Given the virtual nature of the summit, PWD champions were all consciously brought together to ensure a more inclusive table.

The themes were selected by the youth themselves through consultative dialogues. In order to make the summit more youth-focused, the design of the sessions was also changed. The 2-day Summit would host many interesting moderators who would ensure the delegates could communicate what they wanted to. The call for action was not just from IMI to youth but also from youth to IMI.

Shri Ramola welcomed all the youth to the summit and added that all the youth were welcome, not as silent, but as active players.

Youth are encouraged to consciously leverage the opportunities in the Himalayan region. Understanding the unique opportunities of the region could help in bridging the employment gaps. Youth are a huge asset as they have the skills and the need to find work. With the help of nature which also follows solace and healing, the youth can make new ventures. There is a need to reorient oneself to look at nature and tourism and bring in young people to these areas. Mass tourism in the past has ravaged the environment and is not the desired recipe. There now is an opportunity to regenerate and reinvent tourism as nature tourism.

Youth can become development entrepreneurs and bring the ecology, economy, and equity in balance. It is important for them to work with small and rural communities who usually work with farm products. It is similarly important to work on issues like climate change, forests, food, alternative energy, tourism, bamboo, traditional arts, and crafts. The gig economy, which comprises related activities and products, holds potential today.

The region has numerous opportunities available. However, the first step to make use of these opportunities is to work on digital literacy. The other important thing is the attitude of positive action.
There is a need to focus on how to build entrepreneurship. IMI has focused on bamboo, medicinal and aromatic plants, and tourism and is well placed to build networks on these frontiers and work with the youth. Government support is needed but IHR communities should not depend on it.

Youth speaker I
Shri Samuel Yonzon
Dairy Makarios Bous, Kalimpong, West Bengal

Shri Samuel Yonzon shared his story of resilience. He had been on the verge of giving up but through belief and hard work, he changed his story into one of perseverance. His story was summarized under the title - "Your Effort- Your Greatest Asset in the Armory". Working in a metropolitan city as a sound engineer, Shri Yonzon had to move back to his ancestral home with his wife and child. This shift affected him not just professionally, but financially as both he and his wife were without jobs when they returned to the mountains.

He also had to deal with failed projects which resulted in huge losses. It was through this phase that a friend, who is a successful entrepreneur, asked him what he had been doing to pursue his dream. Shri Yonzon replied that he was doing nothing. His friend then responded, "You have big dreams, but you have to start from somewhere".

This piece of advice that his friend gave him 8 years ago gave him the push he needed. Shri Yonzon had asked his friend to help him and partner with him. Eventually, they started a meat shop and a canteen for momos. It was during that time that he found a hack for preserving milk in the process. His love for milk got him interested in dairy, and today, he runs his own dairy business in Kalimpong town. It took 7 years for the business to grow, and the journey was a difficult but rewarding one. Today, his company is one of the

biggest dairy companies in Kalimpong.

Shri Yonzno's message to youth is to never quit. One needs to keep working hard. Youth must be creative. Every time one solves a problem, they are raising themself to a higher level.

Youth speaker II
Ms. Tashi Malik and **Ms. Nungshi Malik**
Adventurers and Entrepreneurs, Uttarakhand

Ms. Tashi and Ms. Nungshi, the first siblings to climb the Seven Summits, spoke about their adventurous journeys as young climbers.

What started out as a love for the mountains and a sport, turned out to be a social movement on women's rights through their work The siblings have not only completed the 7 Summit Challenge but have also started fighting against female foeticide and for women's empowerment. They have started their own foundation to fight for women's rights.

The mountains are different and more challenging than the plains. Mountain youth will have to rise to the challenge and be innovative. There are many hurdles but giving up is not a solution.

Youth speaker III
Shri Theja Meru
Advisor of the Task Force for Music and Arts (TaFMA),
Government of Nagaland

Shri Meru shared his humble journey as a musician over the past 3 decades. He has had to resort to taking up many jobs to make a living. His career milestones include Dream Cafe being launched in 2003 in Kohima and the creation of Rattle and Hum Music Society in 2017. As part of Dream Cafe, he and his team promoted music while encouraging youth to dream big and pursue this avenue. His belief is that hard work, consistency and a 'dare to dream' attitude can take anyone anywhere.

Former Prime Minister of India, Pandit Jawaharlal Nehru once said, "Find your purpose, the means will follow". The youth must never stop dreaming. Coming from a very humble background, Shri Meru didn't have many resources. His parents were not rich. But one thing he had was his belief in the power of dreams. No matter how big the dream is, it can indeed come true.

Keynote Address
Dr. Yuka Makino
Coordinator of Mountain Partnership Secretariat, FAO, Rome

Dr. Yuka spoke about opportunities for the youth of the mountains via the Mountain Partnership, an official United Nations partnership to improve the lives of mountain people. The Mountain Partnership has 412

members. Dr. Makinos' team does advocacy, raises awareness, and works on capacity development. They write reports on mountain development around the world. Youth can be part of her team. Young delegates should network and connect with each other to design meaningful solution-based projects.

What does it mean when we say "youth matters" in the mountains? It means the approach is youth-led, youth focused and focuses on youth empowerment. Dr. Makino's dream is that five years from now, mountain countries can produce baskets of goods. The youth can do this online and market internationally.

There is also a need for targeted investments, sustainable production and diversification of food systems in the mountains, as well as strengthening skills and value chains. Effort at the local level is integral to success. However, if these changes do not go into national policies, government plans, and investments at the state and national level, we cannot have the sizable impact we wish to have.
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Question & Answer session
Moderated by **Shri Roshan Rai**
Councilor, IMI and Development Professional, DLR Prerna

- **How will youth engagement be sustained and taken forward by IMI and its state chapters?**

Shri Sushil Ramola responded that the first step is to gather data on youth and the activities they are engaged in. This is something that is being done by the IMI. Through this, institutions such as IMI can then proceed to assist the youth in a manner that is focused and relevant. There is a need to look at programs, projects, and policies to bring youth together. IMI is engaging with youth through a medicinal and aromatic plants project that is currently in its design stage. In this way, IMI would play the role of an enabler, catalyzing the building of abilities and channelizing the energies that the youth have.

Shri Amba Jamir added that there are many youth networks and youth-led initiatives. Synergies are important, and IMI's state chapters must spring into action. Creating the space to hear youth voices is one of the important steps.

- **Does anyone support new projects in Uttarakhand?**

Dr. Dobhal responded, mentioning that new policies and schemes for entrepreneurship and skill development opportunities are available in the region. We do not have the desired ecosystem as there are problems of information asymmetry and faulty infrastructure in the mountain states. He suggested getting trained in the market.

Shri Ramola added that training microentrepreneurs and building networks are important. There is also a need to have desire, passion and ideas for intervention.

- **Is agricultural support available for dairy products?**

Dr. Makino responded that it is included in the Mountain Partnership's plans and has to be something that can go from local to global. The Partnership seeks to work through partners in the country.

- **Is tourism a part of the green partnership?**

Dr. Makino responded that tourism is a part of green partnership. Her team has collaborated with the tourism ministry where they are marketing tourism products along with food-tourism.

Announcements
Dr. Lalbiakmawia Ngente
Councillor, IMI and CEO, L.B. Associates

Dr. Lalbiak announced the winners of IMI's Photo Story Contest which was held in the month of October 2020. The theme of the contest was 'Life Under Lockdown: Visual Stories from the hills'. This was an attempt to create knowledge through documenting, visualizing and contextualizing the experiences of local communities in the IHR during the COVID-19 pandemic. The first prize was received by Chinmaya Shah from Uttarakhand, second prize by Stanzin Khakyab from Ladakh and third prize by Nawami Gurung from Darjeeling.

Vote of Thanks
Shri Anoop Nautiyal
Member, SDFU and Founder,
Social Development for Communities Foundation

Shri Anoop Nautiyal thanked the participants, speakers, youth delegates and all who joined the plenary. He encouraged everyone to look forward to the rest of the summit. The summit really is for the youth and there is hope that the mission to bring their voices to the table is met.

Valedictory Plenary
9th December at 1400 - 1630 Hrs.

The welcome address at the Indian Himalayan Youth Summit 2020 Valedictory Plenary session was delivered by Vice President of the Integrated Mountain Initiative (IMI) and Chairman of Sustainable Development Forum Uttaranchal (SDFU), Dr. Rajendra Dobhal. President of IMI, Shri P.D. Rai delivered the presidential remarks. The Special Guest of the session was Principal Economic Advisor, Government of India, Shri Sanjeev Sanyal, and the Chief Guest was CEO of the NITI Aayog, Government of India, Shri Amitabh Kant. The Vote of Thanks from youth was delivered by Youth Delegate, Ms. Rigzin Lachic from the UT of Ladakh, and from IMI was given by Secretary of IMI, Ms. Priya Shrestha. The session was moderated by Associate Project Officer, Agricultural and Natural Resources Sector, Asian Development Bank, Shri Krishna Rautela.

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Welcome Address
Dr. Rajendra Dobhal
Vice President of IMI and Chairman of SDFU

Dr. Dobhal highlighted the discussions from the previous sessions and the significance of such dialogues. The recommendations provided by the youth will reach the NITI Aayog and the Government of India. There is a need to continue working and having conversations, especially through the Youth Summits even in the future.

Thematic Presentations by representatives of the Youth Delegates of the 3rd IHYS

Group I
Sustainable Eco-tourism
Shri Ankit Sood, Himachal Pradesh

Shri Ankit Sood categorized the group's recommendations into two categories - Economic and Policy. The recommendations were greatly informed by the unprecedented experiences of Covid-19.

Economic recommendations:
1. Preserve and promote indigenous practices and local products
2. Strengthen the ecosystem for micro-enterprises by providing specific financial support, and linkage to the right market
3. Diversify tourism products and ensure income distribution
4. Facilitate skill development programs (digital and green skills)

5. Promote green tourism and homestays
6. Strengthen digital infrastructure in remote areas
7. A Regional Entrepreneurship Development Institute in the mountain region.

Policy recommendations:

1. Mountain-specific financial instruments
2. Waste management policies that account for not just the waste generated by the locals, but by the tourists too
3. A specific plan on awareness building, capacity building with monitoring mechanisms.
4. Formation of an alliance between the department of all Himalayan states to work in sync with a common goal for developing the IHR as a green tourism destination
5. Regulation of natural resources and plastic consumption in the IHR
6. Identification of offbeat, potential destinations which are emerging on the tourist map and supplementing with infrastructure particularly, roads, water, electricity, homestays
7. Ecological auditing of known and not-so-known destinations to be carried out by established organizations in the Himalayan region.

Thematic Group II
Skill Development & Entrepreneurship
Shri Khagendra Pradhan, Sikkim

Shri Pradhan discussed the challenges and recommendations for skill development and then for entrepreneurship.

Skill development challenges:

1. Skills offered are not locally relevant to the mountains
2. There is a lack of skilling opportunities
3. Skills training is of poor quality
4. Trainers are not well-equipped
5. There is low safety for low-skilled jobs, and pay is below the minimum wage

Skill development recommendations:

- **Government**
  1. Increasing the number of Skill Development Institutes and mechanisms. to improve quality of training
  2. Improvements in school level skill/ vocational training
  3. Development of a 'Mountain-specific Skills Policy, to be created and implemented by both the center and state governments
  4. Creation of better policies to improve wages, social protection, safety, and dignity of labour for low skill and low-paying jobs
  5. Provision of additional incentives for industries to use local manpower
  6. Creation of internship/apprenticeship opportunities for youth in government institutions and promotion of such opportunities in the private sector through incentives
  7. Introduction of a separate program for entrepreneurs to develop relevant skill sets

- **Markets:**
  1. Taking advantage of training local people by using government schemes
  2. Spending time and resources to create a skilled workforce in local communities

3. Building connections with local education institutes and creating programs. for internship and apprenticeship

- **Communities:**
    1. Bring about a change in social attitudes about employment
    2. Institution of Village Development Boards, such as by the state of Nagaland. At the community level, funding needs to support local skill development programs

Entrepreneurship challenges:
1. Difficulties in finding investors and initial capital, especially for small startups
2. Difficulties with approval of loans and schemes
3. Lack of fair access to government funds and schemes
4. Lack of investment in skilled local talent
5. Lack of physical and digital connectivity in the mountain states

Entrepreneurship recommendations:
- **Governments:**
    1. Introduction of more policies in favour of entrepreneurs
    2. Improvements in Ease of Doing Business for small entrepreneurs and start-ups
    3. Ensuring fair and easy access to funds and schemes based on merit or idea-based selection process
    4. States like Ladakh and Sikkim have legal treaties and acts barring investments from outside. Provision of support to entrepreneurs while keeping these treaties intact.
    5. Provision of support for the creation of backward and forward linkages
    6. Introduction of merit-based fellowships for entrepreneurship development.
    7. Strengthening and improving border markets
    8. Improvements to basic infrastructure and digital connectivity
    9. Improvements to ban king access, and changing attitude of bankers towards financing small entrepreneurs

- **Markets:**
    1. Prioritization of bootstrapping start-ups and then looking for capital later
    2. Creation of a support system to help new entrepreneurs
    3. Improvement in logistics as this is a major concern for mountain states
    4. Focusing on sustainable products that can have a national market

- **Communities:**
    1. Acting as a support system for entrepreneurs
    2. Provision of mentorship for fellow entrepreneurs
    3. Introduction of community-level financing of small entrepreneurs (like Village Development Boards)
    4. Development of communication skills to be able to communicate the idea to investors

Thematic Group III
Migration, Politics & Policy
Ms. Namrata Neopaney, Sikkim

Ms. Neopaney presented her group's recommendations on migration, politics, and policy.

1. Conducting research, study, and data collection on migration
2. Provision of skills training according to the needs of the region
3. Promotion of entrepreneurship to generate employment in the states
4. Addressing issues of mental health, particularly in the Covid-19 scenario
5. Focusing on healthcare systems and infrastructure to curb out-migration
6. Measures specific to women and migration, including measures related to property rights and trafficking

Thematic Group IV
Sustainable Resource Management
Ms. Khushboo Sharma, Sikkim

Ms. Khushboo Sharma presented the recommendations for Sustainable Resource Management categorised into recommendations for government and the youth.

- **Government:**
  1. Transparency, Accountability & Participatory Approaches:
     - Informed decision making involving local bodies
     - Building accountability
     - Emphasizing synergy and cooperation

  2. Skill Development, Capacity Building & Education:
     - Strengthening NRM foundation by Capacity Building Programs
     - Facilitation of research and funding
     - Incorporation of local-based knowledge into efforts

  3. Linking Science with Policy & Practice:
     - Ensuring linkages between science, policy, and practice
     - Framing unbiased policies based on evidence

  4. Resource Equity & Redistribution of Resources:
     - Ensuring proper distribution of resources
     - Implementation of community-owned resource management practices

- **Youth:**
  1. Revival of traditional knowledge and combining it with modern development to achieve better resource management. Examples of this are mixed farming and subsistence farming.
  2. Defending and promoting sustainable resilient food systems. by scaling agroecology as the science of natural resource management.
  3. Building the capacity of youth to collect data from the ground before any major projects are sanctioned.
  4. Community-based research should be focused.
  5. Sharing research outcomes with locals and they should be acknowledged.
  6. Promotion of centers for indigenous building crafts/identifying sustainability through evolution in architecture and building environments.
  7. Education of one's communities to raise awareness about adopting sustainable lifestyles.
  8. Leveraging youth alliance as a platform, bringing youth and youth-led organizations to facilitate knowledge exchange and collaborative action.

Shri Rishabh Shrivastava presented the key points of discussion that emerged from his group Sustainable Development Goals.

1. Data and Research:
   - Importance of a baseline evaluation
   - Data needs to be accessible, uniform and measurable
   - It is important to have region-specific data on SDG indicators
   - Digital platform for data and research

2. Balancing environment and development:
   - Local institutions need to be strengthened
   - A data repository for Indigenous Ecological Knowledge can help make informed decisions
   - There is a need to bridge Indigenous Ecological Knowledge and Science

3. Participation should be promoted:
   - Decentralized governance (73rd and 74th Amendment)

4. Society and Youth:
   - There is a need for regular dialogue through platforms. such as the IHYS, where youth can be vocal, share their experiences, challenges, and solutions
   - Capacity building for youth on issues such as what the SGDs are, how to implement them etc.
   - Importance of quality education
   - Digital access and connectivity
   - Skill mapping for return migrant youth and development of relevant employment models such as entrepreneurship

5. Economy:
   - Importance of shifting from a linear model of economy to a green, circular model
   - There is potential to learn from the Bhutan model, in particular how they have managed their tourism and resources
   - Vocal for Local
   - Market linkages
   - Equity, rather than equality in benefit sharing
   - Branding Indian Himalayan Region
   - Northeastern and Himalayan states can adopt a 'bamboo economy'

Recommendations:

1. Addressing the SDGs in a holistic manner. All the 17 SDGs are interconnected and it is not advisable to target only some of them.
2. Contextualization of the SDGs to the Himalayan region
3. Increased focus on IEC and capacity building, including through a pan-Himalayan advocacy group
4. Strengthening community governance through institutions, decentralized spaces and actions.
5. Documentation of traditional knowledge and replication of successful traditional practices

6. Promotion of a green and circular mountain economy

Special Guest Address
Shri Sanjeev Sanyal
Principal Economic Advisor, Government of India

Shri Sanjeev Sanyal is currently the Principal Economic Advisor to the Government of India. He is an internationally acclaimed economist and best-selling author and has spent two decades in the financial sector as well as the Global Strategist and Marketing Director at the Deutsche Bank till 2015.

Covid-19 has reminded us of the sheer uncertainty of the world, particularly in the mountain region, which is prone to climate change and risk besides socio-economic vulnerabilities. Both flexibility and resilience of economic and policy designs are essential, along with diversity in economic engines. Only engaging in tourism for example, in these dire Covid-19 times is hugely risky, and one needs to diversify to cope with the world.

Engaging the next generation in policy issues will lead to new paths and a more resilient future. The youth must look at the existing bureaucratic hurdles to becoming an entrepreneur rather than asking for the introduction of more government schemes. Entrepreneurship comes from a culture of entrepreneurship and cannot just be built through government schemes. Entrepreneurship needs to be inculcated in its spirit.

There should be a focus on improving the existing skilling institutions, instead of increasing the number of them.

The region's talent must be retained, while simultaneously de-clustering talent. There is a need to attract human capital even for jobs considered menial.

Other recommendations include promoting digital technology and the preservation of indigenous knowledge or civilization memory, introducing targeted systems especially on plastic issues in tourist spots, and creating a focus on mental health which is a big challenge in the mountain states especially regarding the drug and narcotics usage.

Valedictory Address by the Chief Guest
Shri Amitabh Kant
CEO, NITI Aayog

Shri Amitabh Kant is presently the CEO of the National Institution for Transforming India (NITI). He is a key driver of the 'Make in India', 'Startup India', 'Incredible India', and 'God's Own Country' initiatives that positioned India and Kerala as leading manufacturing and tourism destinations.

It is essential to mainstream mountains and their agenda along with the challenges that exist. Looking into the myriad challenges and multi-folding of it in the COVID-19 world we must explore the opportunities it presents.

The NITI Aayog is committed to the 17 SDGs and the 169 targets and policies which address the so-

cio-economic and environmental dimensions of the mountain states. Several Himalayan states have performed well according to the SDG India Index. Sikkim is the first organic state while both Himachal Pradesh and Sikkim are frontrunners in the Index. Tripura, Meghalaya, Mizoram and Sikkim have led the way for eradicating poverty according to the Index. Apart from this, matrilineal tribal societies of the Himalayan states have inspired the rest of the country for a more gender-equal society.

The IHR, being resource-rich and the 'Water Tower of Asia,' holds an important and unique place in India. The NITI Aayog has identified spring revival as an important area of development in the IHR. With the rise in natural disasters on the backdrop of climate change, mountain states need to look into this more closely.

Tourism sector can be one of the key areas to bounce back post Covid-19. The Hornbill Festival of Nagaland, Loktak Lake of Manipur, Solung Festival of Arunachal Pradesh, monasteries of Ladakh, the Dal Lake of Ladakh, and religious tourism in the region can lead the charge. It is crucial that initiatives of eco-tourism are not top-down. Instead, they must be based on the participation of the community so that the benefits can circulate down to the local population. In fact, responsible tourism can be an effective tool to generate employment and income with an unlimited potential for innovation which has the interest of the young and entrepreneurial.

While the Covid-19 is a truly unfortunate event in recent human history, it has also created an opportunity for us to emerge stronger. It has exposed several vulnerabilities around us that require the energy, intelligence, drive and innovation of youth who can rise up to the challenge. The youth must explore opportunities in the areas of technology development, health care, education, social welfare, and promotion of sustainable alternatives and livelihoods that are aligned with the demands of the region.

It is necessary to identify the areas where we can improve and explore more alternatives. Government initiatives for youth like Startup India, MUDRA, etc. would be helpful in starting new ventures. Innovations from the IHR are required to unleash its economic potential, and better policy mechanisms and opportunities are needed under the umbrella of sustainability. The NITI Aayog has launched women's entrepreneurship platforms and the Export Preparedness Index which ranks states within similar categories in the spirit of competitive federalism. The Index is useful to states and Union Territories to benchmark their performance against their peers and analyze the potential challenges and prospects of developing better policy mechanisms to foster export-led growth. Export-led growth for any state would ensure high-income generation and employment opportunities for the youth in the region. All economic development in the Himalayan states must happen under the umbrella of sustainability, considering the diversity of the region, the fragility of the mountain's ecosystem, and the immense biodiversity present in the mountain regions.

Question & Answer Session
Moderated by **Shri Krishna Rautela**
Associate Project Officer, Agricultural and Natural Resources Sector,
Asian Development Bank

- **Will building IIITs, NITs and IITs in mountain regions indeed bring development and stop migration, given the absence of quality medical and technical facilities?**
- **What are the constructive changes suggested in the New Education Policy? Are there any good examples that can demonstrate the implementation of new measures based on changed policies in the mountain region?**
- **How can one expect to improve the educational institutions when they don't exist? How can one sustain talented people in the absence of opportunities?**

Dr. Dobhal responded that geographical location does not have much to do with development. There is no mountain-specific and centric educational institute. There needs to be a push towards this.

Shri P.D. Rai spoke about the existence of the digital divide and how it is related to the question of who gets educated. There is no silver bullet to solve all the problems related to education. It needs to be a collaborative approach. The need of the hour is to build better with the existing resources to improve accessibility and availability.

Ms. Rigzin Lachic added that we should be focusing on quality in the process. In doing so, culture, religion, and society should be integrally inculcated.

- **What are the pathways and possibilities for sustainable tourism in the IHR?**

Shri Sood shared how tourism assets are being used by the locals. Sometimes, conflicts arise over resources shared by communities like electricity and water. Ther are also issues of waste management.

Ms. Priya, the Secretary of IMI spoke on the issue of biodiversity conservation in the Himalayan Region. Some issues, such as waste management, are clearly visible and others, such as biodiversity conservation need a deeper understanding and careful approach. It is important to consider how communities benefit, who benefits the most and how resources are utilized. We must look at who gets the income from tourism.

- **In most Himalayan states, documents such as the Vision Document 2030 (Strategies and actions for achieving SDGs) are yet to be completed and made available in the public domain. Furthermore, these documents are often prepared by external consultants rather than locals. What are the speakers' views on this?**

Shri Shrivastava shared that the SDGs are very applicable and interconnected. The SDGs are principally designed in a manner where one issue aids/connects with another. It would be beneficial to contextualize each of the 17 SDGs to the Himalayan region.

Dr. Dobhal added that Vision Document 2030 exists for states like Uttarakhand, and it is up to the states to chart their own way.

Closing Remarks
Shri PD Rai
President, IMI

Shri Rai thanked all the people who were a part of and involved in IHYS 2020. The discussions were rich and will aid in charting the future of the IHR.

Youth are more vulnerable now because of the pandemic, and the girl child is even more so. According to the findings of the 'Learning During the Lockdown' report, the internet is accessible to only 36 percent of people, with large gender differences. These issues cannot be fixed in isolation and need a collaborative effort.

The youth must value the mountains and their assets, like glaciers, water, and micro-climate that support biodiversity hotspots and make us creative. We must look at sustainability in its true sense and harness our richness in a sustainable manner. Entrepreneurship is one of the key components we need to look at and

work on it. At the same time, skilling the youth and engaging with providers and addressing its downstream problems cannot be ignored. Finally, the importance of engaging with educational institutions, will lead us to better mechanisms and policy formulation

A strategic plan will be formulated, which will be taken forward in the form of a declaration by March 2021.

Vote of Thanks on behalf of the youth delegates
Ms. Rigzin Lachic
Youth Delegate, Ladakh

Presenting the vote of thanks on behalf of the young delegates and thanking all the speakers and people involved in IHYS 2020, Ms. Lachic highlighted the outcome of the Youth Summit, its discussions and recommendations.

There is an urgent need for resilience and adaptation to the changing times and the challenges it presents. The real needs of the youth, which include skilling and awareness, need to be addressed.

Vote of Thanks on behalf of IMI
Ms. Priyadarshinee Shrestha
Secretary, IMI

Ms. Shrestha delivered the vote of thanks on behalf of the IMI.

The Youth Summit can be one platform for shaping the future of the mountain states. The voices of young people are critical in policy formulation and translating them into reality. The discourse on plastic waste is more crucial now than ever. Partnerships and mass sensitization need to continue. Community participation in projects like 'Zero Waste Himalaya' are important and can continue to be successful provided we are serious about them.

IX SUSTAINABLE MOUNTAIN DEVELOPMENT SUMMIT

8th-14th December 2020
Dehradun, Uttarakhand

INTEGRATED MOUNTAIN INITIATIVE
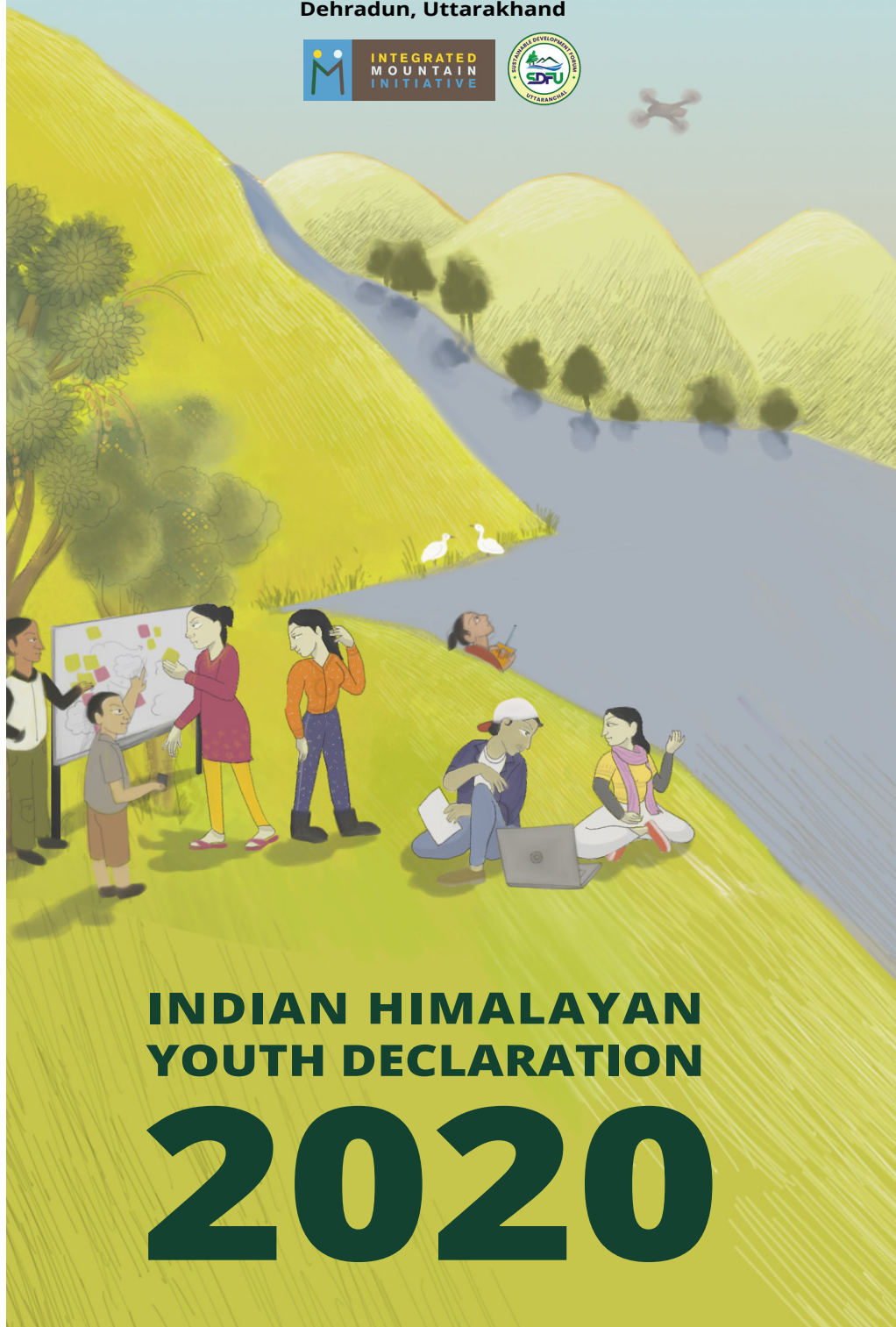
SDFU

INDIAN HIMALAYAN YOUTH DECLARATION

2020

Declaration

We, the youth of the 3rd Indian Himalayan Youth Summit, organised by the Integrated Mountain Initiative (IMI) and virtually hosted by the Sustainable Development Forum Uttarakhand (SDFU) on 8th & 9th December 2020 represented by the states of Meghalaya, Nagaland, Sikkim, Uttarakhand, Arunachal Pradesh, Himachal Pradesh, Manipur, Mizoram, Tripura, Union Territories of Jammu & Kashmir, and Ladakh, Darjeeling & Kalimpong districts of West Bengal, and Dima Hasao and Karbi Anglong districts of Assam do:

REAFFIRM our commitment to adopt sustainable lifeways and systems for the well-being of our mountains and the mountain communities

RESOLVE to participate in the conservation of our unique biodiversity keeping in view the developmental processes of the region

UPHOLD the need for planning, management and governance systems that are vibrant, inclusive and sensitive to the aspirations of mountain youth
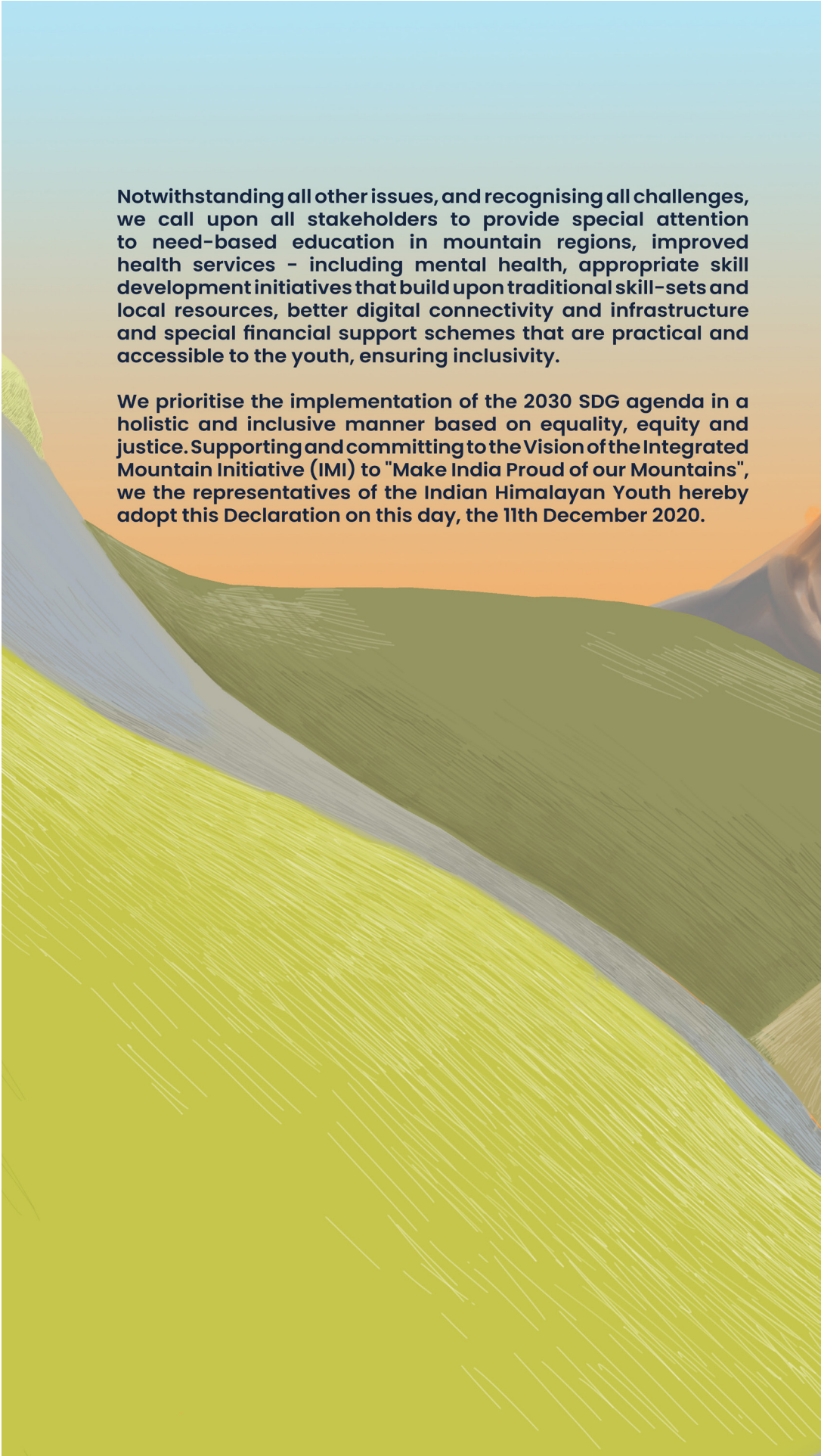
RECOGNISE the value of traditional knowledge systems, practices and values and the need to mainstream them into education and development planning of the mountains

RECALL and **REFER** to previous Youth Declarations of the Indian Himalayan Youth;

COMMIT to be active agents of change for sustainable development of the Indian Himalayan Region.

and we also do hereby

1. Recognise the rich mountain resources, as well as, the fragile geophysical structure of the Himalayas, and we call on policy makers and planners, including communities to embark a circular economy pathway for self-sufficiency and self-reliance thus ensuring sustainability;

2. Acknowledge the unique characteristics of sustainable mountain farming, resource management and inherent indigenous knowledge systems in mountain communities. Therefore, we call upon youth, governments, developmental agencies, research institutions and universities to map, document and assimilate such practices and knowledge systems into research, developmental planning and policy making for mountain regions;

3. Recommend the need to establish real-time data sharing and management platforms, harmonised with the metrics and formats required for reporting on the SDGs, their targets, and indicators, across all mountain states to access, monitor and analyse all aspects of development;

4. Strongly urge governments to ensure that skill, entrepreneurship development and capacity building initiatives form an integral part of the education system. They should be mountain specific and must be supported with appropriate and inclusive technical, financial and infrastructural mechanisms and services, which in turn strives towards accessibility, accountability and transparency;

5. Call upon society at large to take responsibility to handhold and support youth through internship and mentorship for skill development;

6. Prioritise and emphasise risk assessments and resilience building across all sectors to mitigate disasters in the IHR region;

7. Acknowledge mental health issues and recognise the urgency for the implementation of a consistent approach in addressing and creating engagement, at all levels and across all institutions;

8. Recognise the need to develop sustainable tourism destinations, encouraging responsible tourism and promote local produce and;

9. Emphasise on creation and implementation of policies on migration

Notwithstanding all other issues, and recognising all challenges, we call upon all stakeholders to provide special attention to need-based education in mountain regions, improved health services - including mental health, appropriate skill development initiatives that build upon traditional skill-sets and local resources, better digital connectivity and infrastructure and special financial support schemes that are practical and accessible to the youth, ensuring inclusivity.

We prioritise the implementation of the 2030 SDG agenda in a holistic and inclusive manner based on equality, equity and justice. Supporting and committing to the Vision of the Integrated Mountain Initiative (IMI) to "Make India Proud of our Mountains", we the representatives of the Indian Himalayan Youth hereby adopt this Declaration on this day, the 11th December 2020.

Sustainable Mountain Development Summit - IX

Inaugural Programme
December 11, 2020 at 15:00-16:30 Hrs.

The Inaugural Session of SMDS IX was attended by the Chief Guest, Former Chief Minister of Uttarakhand Shri Trivendra Singh Rawat, by the Guest of Honour, Honorable Chief Minister of Meghalaya Shri Conrad K. Sangma, along with Dr. Eklabya Sharma, Deputy Director General of ICIMOD, Dr. Rajendra Dobhal, Chairman of Sustainable Development Forum Uttaranchal (SDFU) and Shri P. D. Rai, President of IMI who chaired the session.

Welcome Address
Dr. Rajendra Dobhal
Vice President, IMI and Chairman, SDFU

Dr. Rajendra Dobhal announced that it was the occasion of International Mountain Day, and that the theme for 2020 was mountain biodiversity. The Indian Himalayas have a unique geography and biodiversity, comprising 16% of the geographical area of India, with 4% of the population, and spanning 9 states, 2 Union Territories and 2 hill districts of Assam and West Bengal. The IHR is home to more than 5000 glaciers, which are the source of water for most of India. The region is marked by its seismic activity and landslides and is vulnerable to cloud bursts. Supporting 26% of India's forests and 30% of fauna, the Indian

Himalayan Region is inhabited by 300 distinct mammals, over 900 species of birds, and 10,000 plant species.

The SMDS-X will be held in Darjeeling in 2021.

Session Chair Address
Shri P.D. Rai
President, IMI

Shri P.D. Rai informed the participants that the SMDS is one of IMI's annual flagship events. It has evolved with time, and SMDS IX is interesting in its own way. There are four such aspects of SMDS IX.
First, Uttarakhand, the host state of the summit was also the home state of Dr. R. S. Tolia, who had been the curator of the first SMDS, held in Nainital in 2011. The event would pay tribute to Dr. Tolia on the 14 December, the last day of the summit, with the R.S. Tolia Memorial Lecture and Award.
Second, it was the International Mountain Day, which is celebrated to understand the mountain ecosystems. SMDS IX goes to the heart of mountain biodiversity.

Third, the annual SMDS gave all the partners and organizers the opportunity to convene and discuss various ideas.

And fourth, SMDS is a space for reflection for the members, partners and collaborators of IMI. With SMDS IX being conducted online, the pandemic has made evident the importance of information technology in the times to come.

The formal discussions would begin with Migration and its impact on the mountain economy, with an intent to be studied in detail. Other issues that would be covered included water security, solutions for the farm sector, digital opportunities and disaster risk resilience. At least five key outcomes from the discussions during this summit would be shared with important legislators and policymakers, especially with regards to public health, employment and mountain tourism.

Youth Summit Report
Rigzin Lachic and **Eric Kevin Dkhar**
Youth Representatives of the 3rd IHYS

Rigzin Lachic and Eric Kevin Dkhar introduced the Indian Himalayan Youth Summit and read out the Indian Himalayan Youth Declaration 2020.

In the declaration, the youth reaffirm their commitments to use sustainable ways to maintain the unique biodiversity of the Himalayan region, keeping in view the development process and upholding the planning, governing and management systems which are inclusive to everyone.

Mountain farming and the inherent indigenous systems in mountain communities are unique to the region. There is a need to mainstream the traditional values, systems and practices of the region, and act as agents of change for sustainable development in the Indian Himalayan region.
With the IHR's rich mountain resources and the fragile geophysical structure of the Himalayas, policymak-

ers, planners and communities must embark on a circular pathway of self-sufficiency and self-reliance, thus, ensuring sustainability.

The youth, government, development agencies, research institutions and universities must map documents and research developmental planning for the mountain region. Other institutions too must undertake the same commitments, share data and information on the SDGs and access, monitor and analyse all agents of development.

Education must be need-based, need-specific, accessible and inclusive. It must be oriented to entrepreneurship and capacity-building systems with financial and infrastructural improvement to make them accessible, transparent and accountable. There is a need for appropriate skill development initiatives,
Risk assessment of natural disasters in the Indian Himalayan Region must be prioritized. Society must acknowledge the need to address mental health issues across all levels and across all institutions.

There is a need to develop sustainable tourism opportunities and destinations and promote local produce in the region, as well as implement policies on migration-related issues in the region.

There is a need for better digital infrastructure and practical accessible financial schemes ensuring inclusivity. The 2030 SDG Agenda must be carried out in the region in a holistic and inclusive manner based on equality, equity and justice.

Keynote Address
Dr. Eklabya Sharma
Deputy Director General, ICIMOD

Dr. Sharma focused upon the biodiversity of the Hindukush-Himalayan (HKH) mountains and the resilient recovery of the mountain economy based on a policy paper developed by ICIMOD in June 2020.

The HKH is a global asset for food, energy, water, carbon and cultural and biological diversity, and is the world's most irrigated region. Rural people of the region are heavily dependent on biodiversity for their livelihood. 50% of the 36 biodiversity hotspots in the world are in mountainous regions, of which four are located in the HKH region. The region contains both immensely arid areas in the western part, as well as the wettest region in the world in Meghalaya.

The elevation, with a range of vegetation zones from tropical zones to alpine, provides an opportunity for various species to thrive, including the snow leopard and red panda. However, nearly half of known species are on a declining trend in terms of number. 70-80% of the original habitat in the biodiversity hotspots have already been lost since the 1500s. At this rate, the Indian Himalayan Region would lose another one-fourth of endemic species by 2100.

Over the years, key ideas and events have transformed the relationship between nature and people, starting from the 1960s, when man and nature needed to balance for the survival of the planet. People later started looking into biodiversity and the uses of biodiversity. By the 2010s, people and nature were seen as synergistic systems. Various interdisciplinary fields have now evolved and are studying the same. Mountain development discourses and regional partnerships in the HKH too have evolved between 1983, when ICIMOD was founded, and present day. There is a global paradigm change, marked by changing regional dialogues, landscape approaches, mountain programmes for work, ecosystem services, Sustainable Development Goals, Paris Agreement, Global Landscape Forum, etc. There is an increasing trend

in the number of protected areas. This has been possible because in numerous areas, nature and people coexist, allowing for them to be managed together.

In June 2020 ICIMOD released a paper delving into the impacts, risks and vulnerabilities related to Covid-19 in the mountain region. The region has experienced severe socio-economic instability with re-gards to gender, climate resilience, food security, environment, and economic dimensions. Migration and remittances have been negatively affected, and the tourism sector and enterprises have been critically impacted. One reason for this was the blocking of borders during the lockdown. Actions need to be taken to address the challenges facing the tourism sector and create green jobs and a green economy. Since mountains are known for their culture, there is opportunity to leverage the cultural festivals for ecotourism purposes.

Covid-19 resulted in interruption in farming activities, limited availability of nutritious food, increased food demand due to returnee migrants and limited trade, shortage of food commodities, price rise in local markets, layoffs and decreased income and decline in purchasing power. Natural resources and niche products of the region are great options to bring more profits to the people living in the mountains.

There have also been psychological and social impacts of the pandemic. There is increasing mistrust at the community level, making dissemination of correct information through mass dissemination and social networks essential. In mountain societies, social institutions are important for a resilient recovery.

There have been gendered impacts of the pandemic, with men returning to their hometowns and villages under the lockdown. This included disproportionate livelihood opportunities for men and women, increased workload for women and more violence faced by women. There is a need to focus on these gender di-mensions.

The environmental impacts of the pandemic include degradation of ecosystems, spread of diseases, illegal trade, improved air quality in the short term, increased demand for clean water and reduced attention on water induced disasters, and increased amount of medical waste. There is a need to scale up climate smart social protection systems to help mountain communities absorb future shocks. Establishing a climate investment fund for mountain areas is important to protecting people and enhancing ecosystem services.

It must be acknowledged that all 8 HKH countries signed the Hindu Kush Declaration. The declaration had become an institutional mechanism to develop a science-policy forum and a ministerial forum for all the countries every alternate year. India had played a vital role in this.

Guest of Honour Address
Shri Conrad K. Sangma
Honorable Chief Minister of Meghalaya

Shri Sangma's address focused on the various negative impacts of Covid-19 on health and communities in Meghalaya and across the globe. Despite the pandemic, the state of Meghalaya is committed to becom-ing one of India's top ten states in terms of Gross Domestic Product. Measures have been initiated during the pandemic for long-term improvement in tourism, arts and craft, and banking sector in the state.

The Meghalaya government has launched various schemes to support small businesses and is actively working with banks to improve credit. Due to the vulnerability of the state to natural disasters, various proj-ects and rules have been newly introduced to protect the natural environment, including a ban on mining

to check landslides.

Despite high precipitation and rainfall in the region, water shortage issues persist in the state due to its unfavourable topography. Large scale watershed management projects have been initiated to tackle the same. A significant number of MNREGA projects are in water-related work.

Large-scale reverse migration has taken place due to the pandemic, and youth databases have been created for this. Mapping needs to be undertaken to address the youth related issues. Livelihood initiatives are being planned, skilling Meghalaya's youth, including those who have returned because of the pandemic. Entrepreneurship is a favourable option for youth.

Chief Guest Address
Shri Trivendra Singh Rawat
Former Chief Minister of Uttarakhand

Shri Trivendra Singh Rawat highlighted the need to first understand the Himalayan region, including its social and economic dimensions, before seeking to develop it. This summit can serve as a platform to discuss important issues for the region, within the context of Covid-19. Mountain development must be linked to nature and biodiversity. It can make the primary sector profitable and should also focus on self-employment for the youth.

The Uttarakhand government has taken measures to promote livelihood generation and employment, including launching schemes to encourage self-employment and skill-based employment. Tourism and cultural development must become a priority. Internal tourism is a vision and should be the next objective. Skill mapping and skill development are needed. Local Himalayan products should be promoted, providing access to both local as well as international markets. The youth can play a vital role in the development of the Himalayan region.

Vote of Thanks
Shri Amba Jamir
Vice President, IMI

Shri Amba Jamir recognized that although the Covid-19 pandemic had meant a shift away from the conventional in-person SMDS to a remote format, the event funders had not wavered in their support. He expressed his gratitude to Nainital Bank, ICIMOD, Government of Arunachal Pradesh, Himmotthan Society, North Eastern Council, Uttarakhand Science and Technology Council, National Mission on Himalayan Studies, Graphic Era Hill University, Swami Rama Himalayan University, and the Darjeeling Himalaya Initiative. He thanked all press and media partners, state partners and members of IMI, as well as the IMI secretariat and all the volunteers and anchors of the SMDS IX sessions.

Migration and Local Economies
December 11, 2020 at 16:40-18:10 Hrs.

The session on Migration and Local Economies was chaired by Chairman of the Investment and Development Authority of Nagaland (IDAN), Shri Alemtemshi Jamir. The co-chair was Associate Project Officer, Agricultural and Natural Resources Sector, Asian Development Bank, Shri Krishna Rautela. The other speakers of the session were PhD Candidate at the University of Bonn, Ms. Namrata Rawat; Senior Lecturer at the University of Melbourne, Australia, Dr. Dolly Kikon; Project Director at the Nagaland GIS Centre, Government of Nagaland, Shri Mhathung Kithan; CEO and Director at the Rajiv Gandhi Foundation, Dr. Vijay Mahajan, and Regional Programme Manager at ICIMOD, Ms. Nanki Kaur.

The session highlighted the trends of migration in and out of the IHR. There is an urgent need for the youth to be trained in skills for their livelihoods, and implementation of various strategies for local economies to bounce back from the pandemic. Participants discussed measures that must be driven at the state and local levels for a new paradigm in socio economic development.

Photo credits: Shweta Jangir

Opening Remarks
Shri Alemtemshi Jamir
Chairman, Investment and Development Authority of Nagaland (IDAN)

Introducing the theme of the session, 'Migration and Local Economies', Shri Alemtemshi Jamir spoke about how human history is inseparable from the history of migration. Human society has continuously engaged in migration, but Covid-19 has brought the migration process to a slight halt. In fact, the pandemic has brought in reverse migration, especially in the mountains. The session would delve into these issues.

Speaker I
Dr. Dolly Kikon
Senior Lecturer, University of Melbourne

Dr. Kikon began the presentation by acknowledging the indigenous owners of the land, paying respects to elders of the past, present and future, expressing her happiness and pride in her Naga heritage. She and her fellow educators faced exhaustion during the pandemic due to the additional household work, but the plight of migrant workers was worse.

While conducting field research along the foothills of Assam and Nagaland as a PhD student at Stanford University, Dr. Kikon realised that the people there depended on mining, a seasonal activity, to earn a local livelihood. After the completion of the mining season, the youth migrated out in search of work.

The pandemic has made clear the importance of data of all kinds—not just numbers, but also stories. Victoria, Australia is an example of this, where, as the number of Covid-19 cases started decreasing, it became important to amplify the stories of essential workers, small business owners, the youth, the unemployed, and the migrants.

The Himalayan region has been witnessing a phenomenon like reverse migration for the first time. This, however, was only the beginning of a pandemic in the era of climate change. It is important to consider how far the repercussions could travel. The effects of a disaster such as Chernobyl were felt in the then Soviet Union even several years after the disaster Scientists have found that the smallest of insects in the Swiss Alps were born with defects, implying the disaster had travelled so far.

Many state governments and their agencies, including the Government of Nagaland, are training high school students in soft skills to work in the hospitality sector The 2020 reverse migration has affirmed the vulnerability and precarity of this soft skills approach, Youth need to be trained in skills for their livelihoods and that would enhance their traditional and indigenous skills and knowledge.

Speaker II
Ms. Namrata Rawat
PhD Candidate, University of Bonn, Germany

Ms. Rawat started her presentation with an overview of migration flows in the Indian Himalayan region, particularly in the context of the Covid-19 pandemic.

With the exception of Uttarakhand, all the mountain states have had a balanced flow migration, i.e., migrants moving to and out of the states. Uttarakhand, however, has been witnessing disproportionate out-migration, with 1 lakh permanent and 4 lakh temporary migrants based in cities. Even the temporary migrants visit their home region very less. This out-migration has been exacerbated in the last 10 years. Himachal Pradesh, Jammu and Kashmir, and Ladakh have witnessed more in-migration than out-migration. The North-eastern region is a significant receiver of migration, along with intra-district migration.

The pandemic has led to visible reverse migration due to feelings of uncertainty and panic. Migrants from these states were predominantly engaged in sectors such as service and hospitality, which have seen large-scale loss of jobs.

There is a disparity between the data on reverse migration from official government sources and other sources such as newspapers. However, it can be seen that states like Uttarakhand and Assam have witnessed very large numbers of returnees. The pandemic has escalated unemployment and led to a loss of cash income along with a shortage of food. The livelihood coping mechanisms individuals have turned to during the lockdown include agriculture, livestock and other allied activities.

States have responded differently to emigration. Some states have put up Migrants Skill Registers, conducted Aspirations Surveys, or assisted skilled migrants with establishing start-ups. States in the North-eastern region focused on documentation, registering return migrants on portals and providing them with cash income at their locations. Others took assistance with schemes for self-employment, food and employment guarantee schemes, and basic income-schemes such as the Pradhan Mantri Garib Kalyan Anna Yojana, Pradhan Mantri Kisan Samman Nidhi Yojana, and MGNREGA.

Uttarakhand reacted enthusiastically to the reverse migration, celebrating it as an opportunity. The community played a commendable role in helping the returnees, as seen through examples of churches and traditional organizations which mobilized funds and other necessities for the returning migrants.

A rapid assessment conducted by Sustainable Development Forum Uttaranchal consisted of a survey of 250 participants, as well as 10 focus group discussions across 5 districts of the state - Pauri Garhwal, Tehri Garhwal, Uttarkashi, Almora and Champawat. 67% of return migrants had been employed in service sector activities like food & beverage and hospitality industry. The survey showed that they are returning to agriculture and livestock as their main source of income, along with three schemes - Pradhan Mantri Garib Kalyan Anna Yojana, Pradhan Mantri Kisan Samman Nidhi Yojana and MGNREGA. They exhibited an inclination towards local self-employment, and working in agriculture, animal husbandry and tourism. However, a lack of guidance, poor banking services and low internet connectivity act as barriers. Some respondents expressed dissatisfaction with health and education services, particularly given the negligible digital connectivity.

A focus on agriculture, job security, market linkages, health, education and self-reliance is required, along with entrepreneurship, agricultural innovation, digital connectivity and improved banking systems. There is a skills and demand gap in states like Nagaland, forcing trained youth to migrate out in search of employment. If young women are provided with support, particularly property rights, they are more likely to take a risk and start a new venture.

Many educated youth who have returned to their home states face serious mental health challenges and there is a need for mental health professionals in the region.

There is a lack of data available from before the return migration started, making it difficult for agencies to recognize who these migrants are, what skills they have or the quantum of in and out-migration.

Speaker III
Shri Mhathung Kithan
Project Director, Nagaland GIS Center, Government of Nagaland

Shri Mhathung Kithan discussed the state of Nagaland's responses to the Covid-19 pandemic. Existing issues such as dispersed habitation, remoteness and inaccessible terrain, diverse culture, and a multilingual population are the main reasons which cause an imbalance in the state's planning and development, further contributing to their low socio-economic development.

According to the 2011 census, the state is predominantly agrarian, with 70% of the population dependent on agriculture and the allied activities. Areas where economic opportunities are available in the state are organic farming, agriculture and allied produce, bamboo-based industries, medicinal, aromatic plants and floriculture, food processing industries, minerals, IT and international business and trade.

The rural traditional markets face limited market exposure and there is limited income in the state. Many trucks enter Nagaland from Assam but leave empty, reflecting the dependence of the Naga economy. This weak networking system leads to low scope for economic gain. However, the state has rich natural resources such as natural gas, limestone, petroleum, marble, etc. Further, Nagaland has a strategic advantage as it is located at the hub of the economies of India, China, and Southeast Asia, has immense potential to be a preferred investment destination, and become a possible gateway of the North-eastern region.

The pandemic served as a reality check for Nagaland, with the lockdown creating an economic fear in the state. The Government was posed with the challenge of accommodating the 18000 migrants who returned to the state. The realization of the importance of sustainability and the need for finding innovative ways to accelerate growth was a positive that emerged from the situation.

The Government in taking initiative by constituting the State Core Group on Agriculture and Allied Sector for bringing out sustainable Economic Development Plans, conducting a Skill Survey of the returnees, implementing Nagaland Job Link Portal, creating a database to examine ways to absorb the returnees into employment and development of e-commerce platform YellowChain for economic recovery and job creation. YellowChain is a centralized ecommerce platform which links entrepreneurs, service providers, producers, sellers, buyers, and citizens. It serves as a one-stop-shop for citizen service to improve the livelihoods of its local population through wealth creation, a sustainable market, and internal circulations of the economy.

Speaker IV
Shri Vijay Mahajan
CEO & Director, Rajiv Gandhi Foundation

Shri Mahajan's presentation focused on solutions, wherein he highlighted the need to create jobs. To address migration from the hill states, there is a need to create 250,000 jobs each year, which amounts to about 3% of the hill population. This is feasible by building a pathway towards mountain enterprises and beyond subsistence micro-enterprises, the the deci-enterprises, i.e., those which employ at least 10 workers.

25,000 such new deci-enterprises are needed every year to generate livelihoods for 250,000 people. There are three key points that are important for the mountain economy to achieve sustainable growth. First, the GDP for the mountains must be 'Green and Digital Prosperity'. This means there is a need to stop material-intensive activities such as mining and quarrying, forest logging, big-hydro-electric projects, road-cutting beyond minimal necessary, and mass tourism.

Second, employment in the mountains should be 75% self-employment. The younger population should adopt a mindset of the dignity of labor and should be made proud of being self-employed. And third, we must stop depending on government resources for setting up enterprises, and instead rely on our capital and community capital loans. The Mondragon Cooperative in Basque, Spain is an example of this.

The 'DOING WELL' approach can be adopted to address the returning migrants. DOING WELL includes: Digital enablement like digital financial inclusion, digital education, digital skilling for employment; Orga-

nizing into SHGs, cooperatives, FPCs; Internet commerce like digital marketing and digital services; Non-farm activities like handloom, construction, services ; Gender and Gen next's role like women in agriculture, women owned non-farm activities; Water based activities like rainwater harvesting, water management; Energy like renewable energy; Land includes high value crop farming, horticulture, and waste land regeneration; and finally Livestock like dairying and poultry farming.

Funding is required to set up these enterprises. It is not necessary to approach a local branch bank, which requires tedious paperwork, energy, and money to get the loan approval. There are alternatives on the internet where there are more than 100 digital lenders who can be approached through cell phones. Through these digital lenders, anyone can apply for a loan. Furthermore, the loan approval or disapproval does not take time.

Three notes of caution must be considered. Firstly, every dreamer cannot be an entrepreneur. One cannot be an entrepreneur if he/she cannot deal with people, accounts, finance and regulations. Secondly, every start-up cannot become an entrepreneurship. And thirdly, scaling up does not mean simply growing large. Another way of scaling up is through micro-finance.

Working with IMI Deci Enterprise Agora would provide market access, money (access to funding), and mentoring.

Speaker V
Ms. Nanki Kaur
Regional Programme Manager, ICIMOD

Ms. Nanki Kaur recognized that migration is an important livelihood strategy, not only in the Eastern Himalayan Region, but in other parts of the world.

Migration in the mountain areas is both a way of life and a mechanism towards resilience. However, it is also vulnerable to climate change disasters, disruptions, and other shocks as observed during the Covid-19 pandemic. The pandemic has severely hit the labor market, especially for workers in the informal sector, most of whom are from the mountain region. Various ways must be found to deal with disruptions in supply chains.

Projections indicate that the Southeast Asian countries are likely to lose approximately US$ 30 billion dollars of remittance income in 2020. In October 2020, a ministerial declaration was signed for the first time by all eight countries of the Hindu Kush Himalayas. They launched the Hindu Kush Himalaya Call to Action which aims to strengthen the resilience of the mountains and the people.
Three actions can be considered so that migration becomes a positive strategy of livelihood and builds a resilient labour market.

Firstly, social protection systems like MGNREGA Act need to be scaled up to help rural labor dealing with the shock of the pandemic. The MGNREGA has features of a shock responsive protection system and is a safety net.

Secondly, skill development can create access to new jobs related to climate-resilient development. Investment in renewable energy can create a huge quantum of jobs. Resilient jobs in agriculture and tourism sectors require re-skilling.

And thirdly, digital systems would create more opportunities. Every policymaker should start thinking about skill development, resource management, access to finance, etc.

Question & Answer Session
Moderated by **Shri Krishna Rautela**
Associate Project Officer, Agricultural and Natural Resources Sector,
Asian Development Bank

- **What kinds of jobs that should be created for local economies given the occurrence of reverse migration?**
- **What should the role of the government and the private sector be, now that the returnees had come back with skills and that digital connectivity has become the backbone of these economies?**
- **What is the role of finance, especially the dependence on state finances?**
- **How can we address the lack of aspirational jobs, and that low paying and low skilled jobs have been taken up by the migrants?**

Dr. Dolly Kikon cautioned the participants that there is a need to use more relatable and contextually appropriate words when working with individuals in the mountains, and indigenous communities in particular. Everyone must use alternative terms to the English language of 'reskilling' and 'entrepreneurship', because with the usage of such words, a lot of youth will refuse to go back to their land. They will instead see themselves as 'business people' and not as farmers. Communities who have generations of traditions and practices are respected and the importance of value and sustainability when talking about a phenomenon like reverse migration must be understood. She urged participants to be cognizant of devaluing Himalayan culture, and rather to celebrate the richness of it.

Shri Vijay Mahajan mentioned how two days prior, the new public WiFi policy had been approved which would enable wholesale and retail seamless WiFi connectivity like mobile and digital connectivity.
India is a land of entrepreneurs. The Kakenada experiment, which forms the basis of entrepreneurship development, in fact took place in India. Existing theories therefore show that entrepreneurship can indeed be cultivated in people.

- **What are the success stories of YellowChain?**

Shri Kithan replied that it had been four months since the implementation of YellowChain and that it needed assistance in terms of media and promotion. YellowChain has 500 sellers in 4 months. They are now starting a service delivery as well and have partners across the state. There are people who are earning Rs 14,000 per month. The responses they are receiving indicate that YellowChain is progressing.

- **What is the role of climate change in outmigration and reverse migration? What kinds of jobs that can be seen because of this?**

Ms. Kaur responded that policy direction and action plans in the mountain states are about adapting to climate change. Agriculture, forestry, water and renewable energy play a role in regard to political commitment. The traditional sectors need financial investment especially a in organic farming or springs. Pakistan, for example, has focused on reforestation to create jobs lost during the pandemic. New renewable energy solutions can be designed. People are going back to traditional sectors as Dr. Kikon had mentioned.
Ms. Namrata Rawat added that existing livelihoods such as agriculture can be made more aspirational

among youth. The integration of technology into these livelihoods can make them more attractive to the youth. Both boys and girls in Uttarakhand want to join the army, but very few want to engage in agriculture. The in-migrants are doing the jobs which locals are refusing to do as these jobs are very low-paying and perceived as being low in dignity. Although there are plenty of jobs for informal workers, there is a need to integrate them into the system.

Closing Remarks
Shri Krishna Rautela

Shri Krishna Rautela summed up the discussion, highlighting the key points. This included an observation that upscaling and current skilling may not lead to a secure and long-term jobs and employment. Additionally, other states can make note of initiatives such as Nagaland's YellowChain.

He thanked all the panelists and participants and closed the session by wishing everyone a Happy Mountain Day.

Water Security and Climate Resilient Future for the Indian Himalayan Region

December 12, 2020 at 15:00-16:30 Hrs.

The session was chaired by IFS and Ex-PCCF (Rtd.) Govt. of Uttarakhand, Vice Chairman, SDFU, Uttarakhand and Member, SMC Uttarakhand, Shri STS Lepcha. Tata Trusts & Member Secretary Springshed Management Consortium (SMC) – Uttarakhand, Shri Vinod Kothari, was the Co-Chair for the session.

The other speakers of the session were Team Leader SCA-Himalayas at Swiss Agency for Development and Cooperation, Dr. Mustafa Ali Khan; Senior Watershed Management Specialist at ICIMOD, Shri Sanjeev Bhuchar; Councillor, IMI and Former CEO, Delhi Jal Board, Shri Ramesh Negi; Team Leader-WaSH at Himmotthan Society, Dr. Sunesh Sharma; State Coordinator, North East Initiative Development Agency (NEIDA), Ms. Sentimongla Kechuchar; and Associate Professor, TERI School of Advanced Studies (TERI SAS), Dr. Vinay Sinha.

The session explored water security in the Indian Himalayan Region, particularly focusing on spring recharge and springshed management. Participants drew on local examples from the mountain states and discussed recommendations and innovations for water security in the region. The participation of communities, particularly women and vulnerable groups, in water management emerged as a key recommendation.

Photo credits: Uma Das

Opening Remarks
Shri STS Lepcha
Ex-PCCF (Rtd.) Govt. of Uttarakhand, Vice Chairman, SDFU, Uttarakhand and Member, SMC Uttarakhand

The session was opened by Shri STS Lepcha, with a tribute to Dr. RS Tolia, the Founding President of IMI. Water is an essential resource for living beings. Earlier, water used to be common property, but due to increasing incidences of water scarcity, it is no longer so. Water is now being commoditized. In September 2020, water was traded on the Chicago Merchant Exchange.

Water scarcity is an outcome of climate change. It is now known to us that 2 billion people across 17 countries are affected by water scarcity. By 2024, two-thirds of the population will be affected by water scarcity. And by 2050, 10 billion people may be affected. In the future, this crisis might lead to a war for water.

One way to overcome this crisis is to find ways of combating climate change and reduce vulnerability. Since this is a vast area, the session would focus on spring recharge and its management in the IHR.

Speaker I
Dr. Mustafa Ali Khan
Team Leader SCA-Himalayas,
Swiss Agency for Development and Cooperation

In his presentation, Dr. Mustafa Ali Khan provided a macro picture of global water use and highlighted a few technologies supported by the Swiss Agency for Development and Cooperation (SDC) in the mountain context. The work done by SDC on watershed and spring shed management was presented.

Since 2014, an eightfold increase has been seen in freshwater use globally. South Asian countries like the Northern side of India, Afghanistan, Pakistan lying in the Hindu Kush Region are facing high water stress. Globally, South Asia is second last in terms of availability of per capita renewable freshwater. Nearly 2 billion people across South Asia are dependent on the Hindu Kush Himalayas. Approximately 40% of the Indian population largely depends on the Himalayas for freshwater.

Various factors impact water availability and water use. Water availability is being impacted by climate change, which includes parameters like precipitation, temperature, snow, and ice. The socioeconomic drivers of water use include using water for drinking purposes, irrigation, hydropower, or tourism/industry.

It is not only the quantity of water, but also the quality that is important. Rural India, for example, struggles with water contamination from arsenic, fluoride, iron, salinity, nitrate, and other contaminants. A few innovative technologies are being used by SDC to address the issue of water quality and quantity. A mobile app called iMOMO (Innovative Technologies for Monitoring, Modelling and Managing Water) helps community members themselves measure the water flow, which is otherwise a costly and time-consuming process. It is suited for natural water streams, irrigation furrows, water channels and sewer drainage systems. All calculations are performed directly on the app, and the measurements are automatically synchronized with the web where they can be managed, analysed, and shared/exported.

Web-based scheme irrigation management systems, such as one at wua.imomohub.kg allow real-time monitoring of data on run-offs, maintenance of rating for gauging stations, generation of hydrological bulletins and automatic forecasting of river flows. The app is useful in monitoring operational river discharge, irrigation abstraction compliance, improving on-farm irrigation scheduling, and estimate field-scale water availability.

BluAct has developed a nanofibril which can remove pathogens and inorganic pollutants, heavy metal ions, radioactive waste, and cyanides from polluted water. The technology is over 99% effective in removing bacteria like E. coli and Salmonella, besides removing fluoride. BluAct requires no energy and pressure, and the operation cost is low.

Some key initiatives undertaken by the SDC in the water sector in the IHR include national-level dialogues on reviving springs in the Himalayas in collaboration with the Department of Science and Technology (DST), the NITI Aayog, the Ministry of the Environment, Forest, and Climate Change (MoEFCC) and the Himalayan states. SDC also contributed to the NITI Aayog's report on 'Inventory and Revival of Springs in the Himalayas' and developed a report on springshed management initiatives. A portal (www.themountainsprings.in) was built in collaboration with DST. They supported ground activities for springshed management in Kalsi block of district Dehradun, Uttarakhand in collaboration with MoEFCC and the state government and facilitated development of springshed projects in Darjeeling hills, West Bengal in collaboration with DST and the State government.

Glacio-hydrology modelling-based Integrated Water Resources Management (IWRM) is being planned in collaboration with MoEFCC and Uttarakhand government. New land treatment and water quality monitor-

ing methods are being introduced through demonstration in collaboration with MoEFCC, NITI Aayog and state governments. Decision support systems are being developed for springshed management in IWRM planning in the IHR. Hands-on training on springshed management and IWRM planning are being provided for state governments in collaboration with DST.

Speaker II
Shri Sanjeev Bhuchar
Senior Watershed Management Specialist, ICIMOD

Shri Sanjeev Bhuchar focused on springs as the lifeline of the Hindu Kush Himalayan region. Approximately 240 million people depend directly on the Hindu Kush Himalayas (HKH) for their livelihoods. 1.9 billion depend on HKH for food, water, and energy. It also contains the world's 4 biodiversity hotspots. It spans around 3,500 kilometres from Afghanistan in the West to Myanmar in the East, including the Indian Himalayan region.

Springs are essential, especially for the millions of people living in the mid-hills and mountain regions of the Hindu Kush Himalayan region. They are the primary source of drinking water and water for other uses. They also are a source for river base flows and are important for biodiversity and ecosystems.
Springs play a critical role in the achievement of the Sustainable Development Goals (SDGs), particularly SDG 6, i.e., access to clean and safe drinking water for all, as well as for SDG 1 and SDG 5, poverty reduction and gender equality, respectively. The challenge is that the springs are depleting. 50% of the region's 3 million springs have dried or become seasonal (NITI Aayog 2018).

One of the challenges is the disappearance of good traditional knowledge and practices. We also need to know about the linkages of the springs to the river system and recognize the importance of hydrogeology.

Additionally, most water fetching work is done by women, who have children to look after. This is further exacerbated by the large-scale out migration of men. Springshed management must be gender inclusive and socially inclusive. Community participation in springshed management is a must. An example of such management practice can be seen in Digtoli village in district Pithoragarh of Uttarakhand where the local community and scientists have been working together on springshed management. There are also examples of women-led spring revival efforts made in Kavre, Nepal.

The presentation concluded with the emphasis on the critical need to take the spring revival work forward for inclusive and sustainable development in the HKH, and in integration and resilience building efforts. It should also be integrated into mountain-specific education.

Speaker III
Shri Ramesh Negi
Councillor, IMI and Former CEO, Delhi Jal Board

Shri Ramesh Negi explained that in the Himalayan states – Uttarakhand, Himachal Pradesh, Meghalaya and even Assam– water policies are in place, but they do not translate into practice.

Communities need to participate in water conservation, management in the catchment areas and water use efficiency. Though there is talk of community participation in the policies, the biggest gap is a lack of

data and knowledge at the village and block levels in the rural areas and at the ward level in the urban areas. It is therefore difficult to have the participation of the public. The government must think beyond their basic responsibility.

First, a mandatory system of local data information networks is required. This should be available at the Panchayat level about their water use, challenges, and better management practices, and will require relationships with various departments.

The Prime Minister has frequently mentioned that the MGNREGA funds can be used to address water issues in the villages. However, there is no clear direction for implementation. Funds need to be dedicated in a clear and mandatory way, and to be channelized through a selected committee at the local level.

A formal implementation system and regular monitoring system are required. An example of the Palampur, Himachal Pradesh experiment with GIZ was cited wherein the municipality has a partnership with the locals to manage the catchment area. Over time, there has been a decline due to irregular monitoring. Evaluation must be done independently.

Second, old leaky water pipes lines and other challenges result in a 22-35% water loss. Through a dedicated funding system, technologies must be introduced to prevent water loss and educate people about efficient water use.

Lastly, community radio can be leveraged as a platform for individuals to share experiences and indigenous knowledge related to water

Speaker IV
Dr. Sunesh Sharma
Team Leader-WaSH at Himmotthan Society

Dr. Sunesh Sharma presented the key challenges regarding springshed management in Uttarakhand.

First, 50% of springs are drying up or have dried up in the Himalayan Region (Source: NITI Aayog 2018). However, there is a progressive increase in demand for water.

Second, there is a data gap resulting from a lack of baseline information on springs and spring-fed systems, which leads to poor planning.

Third, of 39,202 habitations/villages in Uttarakhand, only 21,363 habitations/villages have drinking water facilities. The rest face a huge water shortage either due to the dried-up water sources or the failed drinking water projects.

Lastly, in Uttarakhand, the cost of providing water security per person in the hills is higher than in the plains. This is due to the lack of road connectivity and difficulty in geographical terrain.

In the broader Himalayan context, of a total of 593 blocks in 11 states of the Himalayan Region, there are 285 that were found to be water scarce. Springs are the lifeline of 93,760 habitations of Uttarakhand, Himachal and Ladakh.

Himmotthan Society was launched in December 2001 with a focus on watershed development, livelihoods, water, and sanitation. In 2004, the organization signed an MoU with the state government of Uttarakhand to collaborate on key rural development issues in the state. Himmotthan Society has adopted an eight-step methodology for springshed development. They are currently working in 650 villages, impacting

the water security of over 35,000 households.

Taking forward the recommendations of the NITI Aayog Springshed Management Consortium, the Springshed Management Consortium of Uttarakhand was constituted in November 2018. It currently works on vulnerability assessments in 11 hilly districts of Uttarakhand, spring inventories, online portal- spring MIS, hydrological survey, DTR preparations, implementation, monitoring, and evaluation of springs

Proposed solutions for urban water security in the western Himalayas include promoting nature-based solutions such as rainwater harvesting and conservation of recharge zones, considering metering, differential pricing systems, and incentivising mechanisms for the promotion of the judicious use of water and strengthening institutional capacities and improved coordination between departments

Furthermore, a State-Wide programme on Springshed Management through Springshed Management Consortium (SMC) using forest hydrology approach must be developed.

A comprehensive plan of spring revival, involving local communities would be useful. The plan must involve capacity building at the field level, data collection and monitoring at regular intervals.
There is a need to revive traditional water management practices and increase participation of women and vulnerable sections of society. Knowledge empowerment and involvement of citizens in data collection and decision-making in the context of urban water security is a must.

The water service of Himalayan people must be acknowledged and incentivised.

Springshed programs under Jal Jeevan Mission must be mainstreamed by convergence with existing development programmes such as Annual Work Plan of Forest Dept, CAMPA, NABARD, IWMP, MGNREGA and other programmes

Speaker V
Ms. Sentimongla Kechuchar
State Coordinator, North East Initiative Development Agency (NEIDA)

Ms. Kechuchar focused on a multi-stakeholder and participatory springshed management initiative in Nagaland.

Only 10% of households in Nagaland have access to piped water supply. Rural households are especially disadvantaged and must depend on multiple sources of water.

North East Initiative Development Agency (NEIDA) has achieved key milestones on spring rejuvenation. As of 2018, the organization has collaborated with numerous other stakeholders such as the state, technical experts, and NGOs in Nagaland through a Public-Private Partnership (PPP). An objective of the PPP is to promote coordination between stakeholders working on springs. It also seeks to build expertise in Nagaland's government and non-government agencies at the village, district, and state levels so that the work can be scaled without external support. Finally, converging the multiple sources of funds ensures that the work can be carried out at scale.

Funding has been secured from Tata Trusts as well as through MNREGA funds. Technology is implemented

in hydrology mapping and analysis, selection of springs, spring inventorization, spring-wise DPR preparation, monitoring setup- rain gauge, water quality testing, GPS, creation of data platform and digitisation of spring inventory

NEIDA works on creating infrastructure like trenches, gabion structures, retention walls and regularly monitoring for maintenance.

Capacity building is especially important for spring rejuvenation. NEIDA provides training to para-hydrogeologists. They also focus on community mobilisation, awareness and orientation events, IEC materials, the participation of community institutions- VC, VDBs, WATSAN Committees

Communities are central to springshed management, as exemplified by the initiation of spring boxes (100 springs in 100 villages) in Nagaland.

Speaker VI
Dr. Vinay Sinha
Associate Professor, TERI School of Advanced Studies (TERI SAS)

Dr. Vinay Sinha discussed the importance of forest hydrology in springshed management.

Uttarakhand's water sources are drying up and facing a low discharge rate. 60.71% of these are 'gadhera', while 20.82% are springs. 1219 sources of springs show decreasing trends of discharge. Over half of the villages in Uttarakhand were imperilling the water security of the spring dependent population. Areas having low discharge springs which are further surrounded by low discharge springs are especially vulnerable.

The channels through which one can understand springshed management systems are - atmospheric system, surface ecosystem (landscape/ surface land practices/ soils) and hydrogeology system (quantity and quality). Surface practices and establishing hydrological models are important too.
Besides the establishment of target zones, it is important to have a well-established scientific study of forest hydrology in springshed management. A model which considers several indicators, including curvature, depth of soil, forest type (58 micro types of forests), precipitation for the period 1988-2019 has been developed.

Roads, construction and uncertain rainfall are causes of drying springs. Forests are the major driving factor to restore discharge. Oak forests provide a better discharge than pine, as do deodar and birch/ rhododendron forests. To increase discharge, community forest support is important and crucial.

Key Observations and Q & A
Moderated by **Shri Vinod Kothari**
Member Secretary,
Springshed Management Consortium (SMC) - Uttarakhand

Co-Chair of the session, Mr. Vinod Kothari of Tata Trusts & Member Secretary Springshed Management Consortium (SMC) – Uttarakhand, has indicated a few key suggestions to take forward springs in a mission mode, ensuring better water security at Himalayan villages, (i) currently most of the water system comes

from forest and community treat this subsidy from forest or eco-system service, hence we need work out mechanism to incentivize villages/community for protection of springs; (iii) inventory of village springs should be maintained at the Gram Panchayat level, and should be part of village assets register and (iii) Uttarakhand SMC is good model to replicate in other mountain states, this would help furthering the springs conservation efforts.

Question and Answer Session

- **What are the relations between springs and rituals, practices, socio-religious beliefs?**

Shri Sanjeev Bhuchar responded that springs in the Himalayan Region are regarded as spaces for ritual, occupying an important role in the belief system. Springwater is regarded mostly as holy and having strong healing properties. With modernisation and urbanisation, these practices and beliefs are becoming less important, which becomes part of our changing behaviour. He cited the example of the existing sacred springs of Sikkim.

- **Why is there no system in which hill states can ask for green bonds or revenue instead of providing clean water and air to other states and countries as a whole?**

Shri STS Lepcha highlighted that there is no baseline for such measurements as yet. Due to this, the bonus cannot be calculated, nor converted to yield revenues.

Closing Remarks
Shri STS Lepcha

Shri STS Lepcha highlighted several key recommendations from the session. They include incentivisation of springs, use of technology to scale, manage and monitor springsheds, following the Uttarakhand example to establish a consortium for springshed management, developing a task force to establish an efficient model for springsheds that are regularly updated and linked closely with research (science-policy interface), calling for more research on forest hydrology and geology of mountain states and the institutionalisation of successful models (like spring boxes in Nagaland).

Innovative Solutions for the Farm Sector
December 12, 2020 at 15:00 – 16:30 Hrs.

The session on Innovative Solutions for the Farm Sector was chaired by the Director of G.B. Pant 'National Institute of Himalayan Environment'(NIHE), Dr. R.S. Rawal, and co-chaired by CEO of SARG Vikas Samiti (SUPA Agricultural Research Group) and Treasurer IMI, Ms. Binita Shah. The other speakers of the session were Shri Bhawesh Niroula of Niroula Tea, Darjeeling; Shri Phurpa Tsering of Norphel, Arunachal Pradesh; Shri Riyaz Ganie, representing Ms. Sana Masood of Farm2U, Kashmir; Shri Nitin Dayalu of Old Hill, Uttarakhand and Shri NeichuteDoulo of Entrepreneurs Associate, Nagaland.

The participants discussed their innovative agricultural solutions for the IHR. The discussion provided actionable insights into reviving the farm economy post Covid-19. Ensuring high quality of produce and community participation emerged as common

Photo credits: Tarun Bhartiya

Opening Remarks
Ms. Binita Shah
CEO, SARG Vikas Samiti

Ms. Binita Shah welcomed all the participants and speakers from across the Himalayas to the second day of the SMDS-IX summit. Ms Binita informed the participants that agriculture and livelihoods is a core area of interest of IMI. Though Agriculture in the IHR is the most engaging occupation of the rural people it does not have a major contribution to the GDP of the state. Small and scattered land holdings, difficult terrain and climatic conditions do make agriculture based livelihoods a challenge for the Himalayan people. In spite of these endemic conditions a number of innovative farming models have been made by the Himlayan people themselves . Also despite all the setbacks for agriculture in the region in 2020, there are several inspiring success stories that have emerged. Some of them would be shared during this session. Recalling SMDS memory Agriculture has been discussed in SMDS 5, 7, 8 before SMDS 9.

Session Chair Remarks
Dr. R.S. Rawal
Director, GBPNIHE

Dr. Rawal explained that the sustenance of the Himalayan people is dependent on the farm sector. Agriculture in the region has been changing rapidly over the years, from traditional cereal-based systems

to high-value cash crops. Whenever one talks about the Himalayan region, the size and diversity of the Himalayas always come to mind. But it is also essential to recognize the facilities of the region, which are integral to the livelihoods of the people and impact life in the region. We should keep these three aspects - size, diversity and facilities - in mind when we talk of innovations in the IHR.

The Himalayan landscape is still largely rural, with around 70% of the population still living in rural systems. The region is also witnessing rapid urbanization, with a high rate of urbanization of over 40%, a trend that must be given due consideration. The prevalence of small landholdings in the Himalayas is another important factor to consider when discussing innovations within the region.

A report prepared by Prof. Tej Partap for IMI under an FAO project indicates that a large percentage of people in the Himalayan region are food insecure, with food insecurity ranging from 5% to 85% in the region. The farming and agriculture sector in the Himalayan region is very specific and unique, and innovation is required in different agricultural sectors or types. As an example, highland pastoral systems and apple farming would require very different innovations.

Speaker I
Shri Phurpa Tsering
Chairman, Norphel

Shri Phurpa Tsering is a progressive Kiwi grower who runs a kiwi-based winery enterprise. He is the chairman of Norphel, a company based in Dirang, Arunachal Pradesh.

The lack of space in the Himalayan region is a major challenge for agriculture in the region. Because of space constraints, mountain farmers are unable to compete with individuals in the plains where there is more space for cultivation and labour is cheaper. Average kiwi production in Shri Phurpa's region stands at about 250 MT per year, of which Mr Tsering produces 180 MT. Kiwis are priced much higher in metropolitan cities than in local markets, however they are unable to enter these markets. This led to the conclusion that farmers must look at value added products.

They decided to add value to the kiwi fruit that they produce by making wine out of the kiwi. Shri Phurpa purchases the kiwi fruit from small-scale cultivators in the region, and uses it to produce wine. The Chief Minister of Arunachal Pradesh provided subsidies for launching the winery, including zero-investment licensing. They also use kiwi stems that are cut in the off-season to make saplings. Arunachal Pradesh is currently the highest producer of Kiwi saplings, and supplies the product to Sikkim, Nagaland, and Bhutan. Such production involves many local people of the region.

The production of dwarf varieties of avocados is also becoming a lucrative business in the region. One sapling cultivator has developed a very lucrative business selling saplings, without purchasing any machines as well. No nursery is required, all that is needed is open space and some people for maintenance. Mr Tesering strongly recommended the enterprise of producing and selling saplings of high value crops like Kiwi, avocado etc.

Speaker II
Shri Nitin Dayalu
Old Hill, Uttarakhand

Shri Nitin Dayalu runs a cheese business called Old Hill in Mukteshwar, Nainital district, Uttarakhand. He founded the business along with Chetan Mahajan. The business was set up with the objective of producing high quality products for the Indian market.

The first unit of their business was started in April 2018. They began with only 2 farmers and are now working with 150. Old Hill provides greater income to their employees than cooperatives do. They produce various types of cheese, for example cheddar, parmesan, etc. Old Hill products compete with imported cheese and serve high-end markets in the country.

The idea for his business was formed in June 2017, but it took the partners some time to set up the business as they had to search for space, infrastructure, and sort out logistics and overcome budget constraints which took even more time. Milk is collected locally from five villages and collection centers on a commission basis. Local people, mostly women from surrounding villages, are employed to make the cheese at their production site. Once the cheese is prepared, they package it, and sell it in urban markets, primarily in the National Capital Region. They also supply their product to industrial and institutional buyers. The production cycle emphasized on making high-value products using only small amounts of inputs and infrastructure.

Old Hill has seen a lot of growth in revenue in their third year and believes that there is a lot more potential to supply retail units in India's metropolitan cities. While having a large-scale factory is not possible for them in the Himalayan region, having various small production units scattered across the region is definitely feasible. Old Hill mainly employs women as they do not have other opportunities in the area. They have received positive feedback from their employees and have slowly built high levels of trust among their employees and customers.

High-quality and unique products are key to a business achieving success. The business has been generating a small monthly profit, and they are now considering replicating their model in other locations in the area.

Speaker III
Shri Bhawesh Niroula
Niroula Tea, Darjeeling

Shri Bhawesh Niroula, who is a trained IT engineer, moved back to his hometown near Darjeeling to set up an enterprise, working with the tea-growers from the locality.

The location is a hamlet 15 kms away from Darjeeling. He has ancestral land there as his father was a government employee. He also wanted to do something for the community. This is how he began planting tea as an alternative to cash crops, which were not sustainable due to the weather and man-animal conflicts.

Tea was introduced in Darjeeling as a crop during the colonial period. The British had found Darjeeling

to be the best suited to tea cultivation, and Darjeeling tea came to be known as the champagne of teas. Some of the most expensive tea still comes from Darjeeling.

Shri Niroula's father started this plantation in 2000 and formed a cooperative of tea farmers. There were 80-90 farmers scattered around a few kilometers near his hamlet, whom he encouraged to plant tea.Initially, there were challenges in accessing markets. None of the tea gardens in Darjeeling were owned by locals, instead owned by big corporations from Delhi and Kolkata. This is what inspired him to produce his own tea. He wanted the locals to own their own tea gardens. He arranged for processing units to be bought.

Now, they have a team of 180 farmers and produce 10,000 kilos of specialized tea. They sell their produce to markets in Europe, such as Germany, as well as to Japan and other parts of the world. They also sell some of their high-quality produce to locals - 80% of the product is exported and the remaining 20% is for the locals as they seldom get the chance to drink good tea.

10% of the profit earned is reinvested in the community. Niroula Tea also trains their farming partners in organic farming, and to grow spices like cardamom, ginger, etc.

Niroula Tea is trying to help the migrants who have returned during Covid-19. They also work with women's Self-Help Groups, outsourcing the production of traditional packaging materials such as jute bags to women. Further, they directly employ 20-25 people in their factories. Through these opportunities, they are trying to both curb out-migration as well as encourage migrants to return home.

As part of 'tea tourism', they have built two cottages for visitors, potential clients, and tourists to stay in their tea gardens. Visitors can interact with the farmers, as well as make and process their own tea. This initiative is also helpful to young entrepreneurs in the region who wish to set up their own small establishments.

Speaker IV
Shri Riyaz Ganie
Farm2U, Kashmir

Shri Riyaz Ganie represented Ms. Sana Masood, the founder of Farm2U, which supports the apple farmers of the Kashmir valley.

Farm2U provides pre-harvest and post-harvest solutions to over 10,000 farmers. Kashmir produces 1.8 million metric tonnes of apples out of the 2.2 million metric tonnes of apples that India produces. It is the sixth largest producer of apples in the world. Some of the technologies used in their model are the creation of financial models for their farmers, orchard design and development, and integrated cold storage facilities for farmers.

Post-harvest interventions provided by Farm2U have reduced wastage from 30% to 15% and non-value-added cost from 30% to 12%. Farm2U assists farmers with various post-harvest processes, facilitating access to markets. They also consult the farmers, data analysts and scientific advisors. Farm2U has had positive social and environmental impacts through its interventions. Disruptions in the supply chains are one of the challenges faced since Covid-19, and the company has added online marketing services for the farmers as well.

Speaker V
Shri Neichute Doulo
CEO, Entrepreneurs Associate, Nagaland

Shri Doulo began by sharing the interventions by the Entrepreneurs Associate to increase the passive income of farmers in Nagaland and Manipur.

The first innovation was through rearing 'mithun', a species of bovine. Mithun, which is mostly reared for meat, thrives in forested areas. Their idea is to create forest fenced reserves for the mithun, where they can be reared in free range conditions. This is feasible since the mithun recognizes its owner and does not require much time or energy to maintain. Meat from one mithun can sell for up to 1 lakh rupees in the market.

The second innovation, which began in 2014, promotes the plantation of fruit trees, including avocados, pomegranate, plums, persimmons, oranges, lemons, and others. This initiative was branded 'trees for wealth' and has seen increased profits for farmers. Their target is to plant 2 million fruit trees by 10,000 farmers in five years' time—hopefully 5 million including Manipur. This will not only help generate income, but also help combat climate change.

The third innovation is the creation of micro-nurseries. Since most farmers own small landholdings (as small as 10-20 feet), it is convenient to plant small fruit tree nurseries. These can also generate profit within a few months. They are also trying to encourage value addition of horticultural produce, which could help create large amounts of passive income for farmers in the region.

Question & Answer Session
Moderated by **Ms. Binita Shah**
CEO, SARG Vikas Samiti

- **What were the turnovers of Shri Phurpa and Shri Dayalu's businesses?**

The annual turnover of Shri Phurpa's business was 3.5 crore for saplings and 7.8 crore for the winery. Saplings are one of the most value-added products.

Shri Dayalu's venture is on a smaller scale, with a turnover of 70 lakhs in the ongoing financial year. He hopes to double this number in the next year.

- **Are the businesses market-driven? How do they consider the welfare of farmers groups and mobilize them?**

Shri NeichuteDoulo responded, stating that if these initiatives are not market-driven, they will not be sustainable in the long-run. Some fruit trees are being planted separately; others are being planted using inter-cropping systems. Many farmers are encouraged to use scientific methods with fruit tree plantations, while many others are encouraged to plant these trees in their backyard, in the periphery of their fields, and any other spaces that are available. Through this, they can generate a lot of passive income.

- **Does Old Hill provide training?Are they thinking of franchising?**

Old Hill has not yet provided any training to external audiences, but they would be willing to get in touch with people regarding this.

- **Which other states are encouraging value addition for agriculture?**

Shri Phurpa said that Maharashtra gives tax subsidies for wine production in the state.

- **How can Himalayan products be marketed to areas outside India, where they are popular?**

Shri Bhawesh responded that there are a lot of certifications required for import-export processes. For Himalayan products, he suggested having contacts in the targeted markets. He mentioned that clients and customers are very interested in local, sustainable products and are interested in the stories of the products that come from these places.

Closing Remarks
Dr. R.S. Rawal
Director, GBPNIHE

Shri Bhawesh responded that there are a lot of certifications required for import-export processes. For Himalayan products, one must have contacts in the targeted markets. Clients and customers are very interested in local, sustainable products and are interested in the stories of products.

Closing Remarks
Dr. R.S. Rawal

Dr. Rawal appreciated the various ideas that have originated in the region and have demonstrated success. One does not need machinery to start a business, as people often assume. This can make it easy for local farmers to scale their businesses.

It is important to focus on high-value products in the region. GBPNIHE is interested in starting activities in new locations, which others may approach him for if interested in collaboration.

With regards to Farm2U, another intervention could be through facilitation of sustainable product and market development. Off-farm development can also provide opportunities. There are many other activities through which farmers can generate more income. Various ideas and opportunities do exist in the Himalayan region which serve as models for budding agri – entrepreneurs .

Photo credits: Sourav Karmakar

Disaster Risk Reduction and Climate Resilient Future for the Indian Himalayan Region
December 12, 2020 at 16:40-18:45 Hrs.

The session on Disaster Risk Reduction and Climate Resilient Future was chaired by the Founder of the Save the Hills, Kalimpong, West Bengal, Shri Praful Rao, and co-chaired by the Director of the Wadia Institute of Himalayan Geology, Dehradun, Uttarakhand, Dr. Kalachand Sain. The session was also attended by Assistant Director of Disaster Management and Rehab Department, Mizoram, Dr. Lalrokima Chenkual; Officer on Special Duty, Nagaland State Disaster Management Authority, Shri Johnny Ruangmei; Chairman of Forum on Disaster Mitigation, INAE, Dr. R.K. Bhandari; Professor and Head, GMR Division, National Institute of Disaster Management, Dr. Surya Prakash; Professor and Vice-President for Innovation, University of Sheffield, Dr. Dave Petley; Lead Scientist, Project Landslip, Dr. K.R. Vishwanathan; Research Associate, Amrita University, Shri Ramesh Guntha; Secretary of IMI and Team Leader at WWF India, Ms. Priyadarshinee Shrestha; and Councillor at IMI and Development Professional, DLR Prerna, Shri Roshan Rai.

The session highlighted the climactic and anthropogenic factors leading to disasters in the region. The participants discussed technologies and other best practices which can be adopted at all levels for disaster information management, disaster prevention and mitigation. There is a need for a collaborative approach to disaster risk reduction, working closely with grassroots communities.

Opening Remarks
Shri Praful Rao
Founder, Save the Hills, Kalimpong, WB

Shri Praful Rao commenced his discussion with a brief description of the various disastrous events that have occurred in India in the past few years and its drastic impact on the Indian Himalayan Region (IHR).

The uncertainties brought about by the pandemic is a new form of disaster. However, with the advance in science and technology, there is production of several vaccines in record time. Such progress in science and technology can help in the accurate prediction of storms along with evacuation as seen in advanced countries. A prime example is Bangladesh and its embankments, which have resisted floods. There is a great need to be careful in the IHR as the mountains are active, extremely fragile in nature, and sensitive to climate change.

Speaker I
Dr. Kalachand Sain
Director of the Wadia Institute of Himalayan Geology, Dehradun, Uttarakhand

Dr. Sain called upon the need to harness science and technology for self-resilience and a strong scientific quest in the region.

Despite the distress caused by Covid-19, there are positive effects of the lockdown on nature. The pollution levels decreased in most of the cities, and the visibility of the Himalayas from faraway places increased.

At the same time, the IHR is under threat due to increasing events of landslides, flash floods, anthropogenic threats like unplanned mining and encroachment, and glacial lake outburst. While identification of the vulnerable hotspots through modelling, creation of early-warning systems, adapting recent technologies and policy-level changes are solutions to minimize the loss caused by anthropogenic disasters, we must also reduce the impact as a scientific community. To make a climate-resilient society, different organizations need to come together to frame policies and make efforts to mitigate the disasters.
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Speaker II
Dr. Lalrokima Chenkual
Assistant Director of Disaster Management and Rehab Department, Mizoram

Dr. Chenkual presented an overview of disasters and the impact of climate change on landslides in the state of Mizoram. Apart from landslides, Mizoram is also vulnerable to floods, cyclones, hailstorms, cloud bursts, village fires, electrical disasters, and fires. Since the Disaster Risk Reduction (DRR) and climate change are interrelated; the impact of disasters, whether natural or man-made, have not only human dimensions but also environmental dimensions. Environmental conditions may exacerbate the impact of a disaster, and vice versa.

An emphasis on deforestation, forest management practices, agriculture systems, etc. can exacerbate the

negative environmental economic impacts of a storm or typhoon, leading to landslides, flooding, silting, and ground/surface water contamination. A positive correlation between rainfall and the landslide events over the past 13 years has indicated that climate change leads to an increase in erratic rainfall events, which further cause landslides and flash floods in the state.

These landslides are not due to the continuous drizzle, but anthropogenic factors like the absence of rain gutters, improper planning, improper drainage management, improper vegetation, etc. Development activities like the construction of buildings, road cutting, embankments, and cut and fill structures block surface drainage.

The major challenge lies in identifying the cause of rainfall as a result of climate change or anthropogenic factors. Studies on saturation zone and rainfall threshold for Landslide Early Warning is another challenge that needs to be addressed.

Recommendations include training of volunteers for Disaster Management equipment, creation of Disaster Manage Plans at village level and community-based DRR.

Speaker III
Shri Praful Rao
Founder, Save the Hills, Kalimpong, WB

Shri Rao discussed Save the Hills' experience in disaster information exchange using WhatsApp in the Darjeeling-Sikkim Himalayas. STH consists of 223 members from diverse backgrounds including state and district level officials, PhDs and media personnel, members from UK and USA. They work on making information about disasters reach the grassroots.

WhatsApp can be used to crowdsource real-time information from local communities since they are more experienced, and act as first responders in some hazards. The primary aim of the Save the Hills "Hazard Alerts" WhatsApp group is rapid and reliable dissemination of hazard information and warnings at the grassroot level in the highly vulnerable Darjeeling-Sikkim region.   Information is provided asynchronously and in real-time through this application.

The fact that the, WhatsApp allows limited members in a group (250) is a challenge. There are also limited resources and outreach, and it further lacks official clout. It has, however, been able to make effective use of cost-effective cell phone technology and serve the local community. Local communities, who have more information and experience in managing disasters are the chief respondents.

Speaker IV
Shri Johnny Ruangmei
Officer on Special Duty,
Nagaland State Disaster Management Authority

Shri Ruangmei spoke about disaster response in the state of Nagaland. The state is prone to disasters such as Dzukou Sanctuary Fall drowning, landslides, forest fires, flash floods, earthquakes, hailstorms, and thunderstorms.

Nagaland is the first-ever state in the country to have a state disaster risk transfer initiative for rebuilding efforts during post-disaster. The initiative is imperative for rebuilding efforts in a post-Covid world. The Nagaland State Disaster Management Information System works as an interactive disaster management tool. The Nagaland State Disaster Response Force (NSDRF) has trained over 1000 personnel from the state police. They have also trained 2138 community first responder volunteers from 208 villages since 2016. The community volunteers are under the Aapda Mitra Scheme of NDMA from 2017-18. NEPEx (Nagaland emergency preparedness exercise) also conducts regular practice and tests the capabilities of state missionaries. The state has established its own weather monitoring system and a web portal. NSDMA has been providing Nagaland weather data to IMD since 29th March 2018 with an accuracy of 89-95 %. Mithun Caravan is another initiative where school students learn DRR activities.

Recommendations include the implementation of Nagaland Risk Transfer initiative; continuation of NEREx; training of Community First Responders in the remaining villages and blocks along with other capacity-building programs; strengthening the DM Institution in the state and Districts as the state of the arts SEOC and DEOCs. An implementation of the Nagaland School Safety Policy along with a 3D risk mapping of district headquarters are also a must.

An integration of emerging technologies in the risk mapping, planning, and response to disasters is essential. An analysis of the loss and damage data of the disasters in the state must be recorded along with the linkages of convergence response to Disaster Management. A development of appropriate policies and up-dation of DM plans; implementation of the State Disaster Mitigation programs and adopting a Techno-Legal regime will help mitigate the effects of the disaster in the state

Speaker V
Dr. R.K. Bhandari
Chairman from Forum on Disaster Mitigation, INAE

Dr. Bhandari illustrated how climate change has impacted the IHR over the last 25 years, resulting in the massive melting of glaciers and the formation of glacial lakes, leading to rising sea-level. New and innovative ideas should be incorporated to minimize the impact of dam failure created by landslides.

- **What lessons can be learned from past landslides to avoid deaths and losses?**

The greatest attention needs to be given to training the first responders of the communities. Furthermore, we need to focus on sustainable development in harmony with nature. Freedom from disasters including landslides, multi-hazard risk-resilient infrastructure, environmental protection, soundness of the project plan, quality of understanding of the problem, and credibility of input data is essential.

We must have the humility to concede past mistakes, time to practice non-violence against the mountains, and integrate disaster mitigation with development planning. The emerging need is to promote environment-friendly drainage-based solutions, educate, engage, and empower communities, treat science as the master and technology as a servant, invest in futuristic investment, critically review what ails DPRs and EIAs, and ensure that what we learn from disasters is not wasted.

In 2020, the Indian Prime Minister said climate change needs to be fought in a holistic way. Four elements were emphasized - the creation of a vast talent pool, ensuring that technology reaches all segments of society, transparency in the system of government, and dealing with mother earth with a spirit of trusteeship.

Speaker VI
Dr. Surya Parkash
Professor & Head, Geo Meteorological Risks Management Division,
National Institute of Disaster management

Dr. Surya Prakash explained that the government of India is currently following the Sendai Framework for the intersection of Climate Change and DRR and has adopted four priorities and seven global targets for action.

The Asian Ministerial Conference on Disaster Risk Reduction held in Delhi discussed imbibing DRR in all development sectors and disaster structures by utilizing technologies such as social media.

According to the Intergovernmental Panel on Climate Change, the framework to correlate climate change with disaster risk management showed anthropogenic activities playing a big role.

The pattern of disaster is changing in the hills. Most events now occur at the beginning or end of the monsoon period, which is from June-September. Heritage sites, educational centers and health centers are also affected, causing challenges for the locals. There is also environmental loss, as the changing climate is resulting in the loss of freshwater from the mountains.

The way forward requires strengthening international cooperation by sharing and exchanging data, technologies, best practices and professionals, providing different kinds of training and capacity development, virtual knowledge portals and ensuring proper usage of mobile technologies for early warning, organizing conferences, workshops for dissemination of information between stakeholders, establishing Field Museums, Exhibition Parks, Geo tourism, Simulation/Experience Centers, etc., following up on agreements, building partnerships and networks for linkage, coordination, and collaboration, allocating adequate budgets for undertaking activities related to climate & disaster risk reduction and resilience and establishing effective monitoring and regulatory mechanisms.

Encouraging ecosystem-based community-centric interventions and use of local resources, skills, and indigenous/traditional knowledge is key. A rural village which started its own disaster response and resource center and created hand-drawn hazard maps and prevention & mitigation plans is an example of a success story.

There is also a clear need to embrace the 10Cs for Climate and DRR. These are clarity, communication, competence, confidence, credibility, cooperation, collaboration, coordination, command, and control produced results.

Speaker VII
Dr. Dave Petley
Professor and Vice-President for Innovation,
University of Sheffield

Dr. Petley displayed a map of Himalayan fatal landslides between 2004-2017. The sub-Himalayan region has the highest landslide activity and is the most landslide-prone area in the world. Reducing landslide risk in Nepal, India, Bhutan, and Pakistan is a high priority.

There is an important lesson to learn from Hong Kong, which has a dense urban settlement with steep slopes and high rainfall patterns. Between 1950-2015, 500 people in Hong Kong were killed due to landslides. In 1977, the numbers started declining as they established a Geotechnical Engineering Office. They had undertaken 3 key programs to reduce the damage - contain risk from new development, reduce risk imposed on existing development and minimize landslide consequences.

Similarly, IHR is a landslide-prone area. This is due to the weak geology and rapid tectonic processes, steep slopes, and monsoon rainfall in the region. Humans are only making the situation worse. This is due to poor land use and water management by practicing deforestation, and bad drainage techniques. Roads are built on steep slopes and too, have bad drainage. Construction and quarrying activities further trigger landslides.

The recommendations for the IHR are better site selection for development, appropriate engineering for roads and buildings, management of water, aim to build resilience, repair of risky slopes and management of erosion by not cutting trees and instead restoring them.

While each recommendation will individually reduce risks, it would be ideal to implement all.

Speakers VIII & IX
Dr. K.R. Vishwanathan
Lead Scientist, Project Landslip; and
Shri Ramesh Guntha
Research Associate, Amrita University

Dr. Vishwanathan and Shri Ramesh introduced Landslip– a multi-country, multi-stakeholder project funded by UK NERC/FCDO under the SHEAR program. The pilot areas of the project are the Darjeeling region and the Nilgiris.

Landslip has partnered with GSI, Practical Action India, Amrita University, and field partners, Save The Hills and KeyStone. The United Kingdom partners are the British Geological Survey, King's College London, UK Met Office, Newcastle University, Practical Action UK. CNR-IRPI, Italy is another partner. There are three dimensions to the creation of the Landslip model.

First is the meteorological dimension: The UK meteorological department has taken data from the past 38 years and created 30 weather patterns. These weather patterns can be forecasted 2 weeks ahead and provide early warning.

Second is the landscape dimension, which includes landslide susceptibility, probabilistic forecasting, etc. And third, the social dimensions, including vulnerabilities of the people, relationship with institutions, etc. An experimental landslide forecast bulletin was issued every day in a systematic manner for testing in Darjeeling from 1st July – 13th November and in the Nilgiris from 27th July. Documentation is available in a paper and a mobile format, having detailed information of the landslide, the latitude longitude, and date of occurrence. It includes safety information (Covid-19 precautions) and additional information, such as how to identify the type of landslide.

The Landslide Tracker App is a mobile app which allows users to easily log in and navigate through the reported landslides. Specific questions along with pictures of the landslide can be captured. It can provide real-time data. The application is ready for production. The app is secure, scalable, and fool proof and

can also work without network access.

During the monsoon of 2020, the application recorded 500 landslides There is continuous improvement through feedback mechanisms, and the process is iterative and learning oriented. This will help crowdsourcing of data by preparing a landslide inventory and susceptibility map. In turn, it will enhance knowledge on landslide risks.

Question & Answer Session
Moderated by **Shri Roshan Rai**
Councillor, IMI and Development Professional, DLR Prerna

- **How can we bridge the data gap in the IHR?**
- **How can we create a live information system in real-time?**
- **How can we be assured about the quality of information that is shared on WhatsApp?**

Shri Surya Prakash said it is time to work towards real-time information and build a national database of landslides. When the Geographical Survey of India started building the dataset, only 3000 landslides were recorded initially, which increased to 10,000 and is now 50,000.

There is a requirement to build a portal displaying a live database as there are different organizations reporting on landslides in their own data formats.

- **"How can we be assured about the quality of information that is shared on Whatsapp?"**

Shri Surya Prakash said the landslide app and paper versions have been produced after much research and can be adopted as a standard unit of reporting landslides in the IHR. The 227 members in the hazard alert group are a disciplined group and do not stray away from environmental issues.

Closing remarks
Shri roshan Rai

Shri Rai reiterated the need to collaborate more at a community and trans-boundary level, beyond state and national boundaries. He also focused on education about climate change.

Photo credits: Banshanlang_Marwein

Digital Opportunities and Green Future
December 12, 2020 at 16:40-18:10 Hrs.

The session was chaired by Former President, IMI and Founder and Chairman of B-ABLE, Shri Sushil Ramola with Co-Chair, PCCF, Van Panchayat, Government of Uttarakhand, Ms. Jyotsna Sitling. The panellists included Founder-Director, Digital Empowerment Foundation, Shri Osama Manzar; President and CEO, National e-Governance Division (NeGD), Shri Abhishek Singh; COO B-ABLE, Shri Vishal Amarawat; Head of Tourism at TATA Trusts, Ms. Mridula Tangirala; and tech entrepreneur and Founder of iShippo, Shri Karma Bhutia.

The session discussed utilizing digital technology to harness the potential of the IHR's youth and rich ecological resources for securing a green future. Different approaches to delivering connectivity to the last mile were discussed. There was a focus on 'bundling' digital connectivity with services such as livelihoods, health and education, leading to greater prosperity for the region

Opening Remarks
Shri Sushil Ramola
Former President, IMI and Founder and Chairman of B-ABLE

Shri Sushil Ramola welcomed the panellists.

According to reports, India has about 2000 agritech entrepreneurs working in the country, many of whom can work in the Himalayan region. This example signals immense potential to enable youth through digital technologies.

This session would explore building a digital and green economy for the Himalayas.

Ms. Jyotsna Sitling
PCCF, Van Panchayat, Government of Uttarakhand

Ms. Jyotsna Sitling began by discussing how mountain resources can be harnessed to provide dignified employment opportunities to the youth as well as a green future. The resources include biodiversity, forest

and landscape with diverse language, culture and craft. The aspirations in the mountain region match the opportunities and geography, thus, making a bundle of youth employability opportunities.

Different aspects of skill development and entrepreneurship in the mountain region need to be considered. The findings on youth aspirations in the NITI Aayog's 2018 report on the Skill Development and Entrepreneurship landscape of the IHR region are in sync with the various other reports generated in the region. The sectors considered include sustainable mountain tourism, agricultural entrepreneurship, ecosystem services-based employment, promotion of digital services for youth and digital support for green construction.

Ecosystem development and the use of digital technology in developing the mountain states must be thoroughly looked into. We need to examine how and where to implement digital technology. Additionally, the specific barriers faced by women need to be addressed. Women do not have direct access to resources, especially Information Technology.

Speaker I
Shri Osama Manzar
Founder-Director, Digital Empowerment Foundation

Shri Osama Manzar emphasized the need for all-pervasive, seamless and democratic internet in the mountain areas. Liberalization of access to the internet was approved by the cabinet minister two days prior to the session. Therefore, having a license or franchisee is no longer necessary to provide internet. This is a great initiative from the perspective of youth entrepreneurship in the mountain areas.

Mountain regions face limitations– travel is expensive and timebound, and development reaches these regions later than others. But the mountains also have a key natural asset – height—which makes digital connectivity much easier.

The presence of digital infrastructure can enable strong development. Digital Empowerment Foundation has devised a women's entrepreneurship model, resulting in their empowerment, while addressing issues of health, education and livelihoods through digital infrastructure. This is an economic as well as a green approach.

Speaker II
Shri Abhishek Singh
President and CEO, National e-Governance Division

Shri Abhishek Singh addressed the issues of connectivity and infrastructure. Connectivity in the Northeast Region has long been a challenge. In the early 1990s most of the locations were connected with VSATs. After that, BSNL broadband connections were added, and later telecom liberalization was introduced. Optical fibre connections are not recommended in the mountain region, which is prone to landslides, causing the wires to snap. One solution to meet these challenges is fibre instead of PCIL poles. In another experiment in Uttarakhand in collaboration with IIT Bombay, balloon-based internet connectivity has proved to be helpful.

The most robust solution would be a combination of fibre connectivity, which is underground or over the

poles of the power grid, bundled with services of health, skilling, education, e-commerce, etc. The fibre connectivity would ensure that every village is connected. And the services would ensure that the Northeast region, which is rich in exotic fruits, vegetables and handicrafts, can find markets in the mainland regions.

Connecting the hilly states is a time-consuming process. IMI and other non-governmental agencies must lobby so that the hilly regions are taken into consideration at par with the other parts of the country.

Speaker III
Ms. Mridula Tangirala
Head of Tourism, TATA Trusts

Ms. Mridula Tangirala identified the key socio-economic trends that will be relevant in the next ten years in India.

The upper-middle class is going to double. This trend was prevailing even earlier and has now sped up due to the pandemic.

Wellness and Nutrition will take centre stage. A move from mass-production to hyper-personalisation, farm or non-farm based, will take place. Organic foods, super-foods and wellness will elevate, 16-20% higher over the next year. Private labels will gain more popularity, being aided by technology with wider customer reach. Traceability, standardization and affiliation will be adopted much more.

Only 2-3% of India's fruit produce is processed, compared to more than 23% in China and 50% in Indonesia, indicating a large opportunity gap in India.

There will be an increased focus on conservation and watershed management, where the mountains can play a huge role.

Mountains have a natural advantage in terms of higher organic produce, links to heritage and youth potential. Young out-migrants have gained exposure and are now coming back. They can link communities and markets much more efficiently.

There are three trends that mountains can capitalise on. First, aggregation, which can be technology or community enabled. Second, customization and personalization, which the tourism sector can take advantage of. Third, collaboration, which is becoming increasingly easier through the adoption of technology.

Speaker IV
Shri Vishal Amarawat
COO B-ABLE

Shri Vishal Amarawat highlighted the relevance of skill development and entrepreneurship interventions for the mountain states. School dropout rates are much higher in the mountain states than in the plain states. Only 1.3% of youth are undertaking formal training due to the unavailability of infrastructure or institutions such as ITIs and BTIs. Additionally, there is a lack of jobs due to fewer MSME units.

There are four major challenges in the mountain states: accessibility, commutation, cost of transaction, and extreme weather conditions. These can be addressed by digital interventions, creating opportunities for green futures.

Tourism through micro-entrepreneurship and green opportunities is becoming a promising model. Digital interventions can build a skill and micro entrepreneurship ecosystem that will provide training via blended learning models, delivering education at the doorstep. EdTech is also a growing sector and individuals in the mountains will be able to become part of that ecosystem. A lot of content creation for digital delivery of education is needed. The foremost concern, however, should be the creation of infrastructure.

Speaker V
Shri Karma Bhutia
Founder of Ishippo

Shri Karma Bhutia focused on how to solve the digital problem, using Maslow's Hierarchy of Needs as a base for the discussion. Before the onset of Covid-19, we had sufficient resources to aspire to even more than what one requires physiologically. But with industries coming to a halt during the lockdown, we returned to the basic physiological needs. We once again need to start building up.

Post- Covid-19, there will be large scale job losses and income destruction as well as the biggest global recession of this century. The fuel for the growth will come from borrowing, either in the form of post-crisis austerity measures through the government or something else. The result is that we are pushing ourselves into more and more debt.

The elephant in the room is transitioning towards a green economy. There is a disconnect between theory and the ground.

NERES offers a platform to start-ups and aspiring entrepreneurs in the Northeast region. A few examples of these entrepreneurs are Sikkim's Shoten Group, which manufactures 'yacon syrup' (Agriculture and Allied services), Manipur's Nibiaa Devices, which has an IoT data management platform for aquaculture and measuring and maintaining various water parameters (IT and ITES), Assam's Chamuh Engineering and Machineries Pvt. Ltd., which developed battery-aided paddy transplanters for small farm mechanization (Agriculture and allied services), Manipur's Hillsland Edtech Private Ltd., which developed a vernacular educational platform. (Education, Retail, Logistics), and Manipur's Forest Pick, which deals in naturally growing wild tea (Health and wellness). These are innovations that are taking place digitally or partially digitally.

Main Discussion
Moderated by **Shri Sushil Ramola**

- **How to realise the potential for a green future in terms of concrete ideas? Who can we bring together on this journey to achieve our goals?**

Shri Abhishek Singh answered that instead of conventional ways, we should focus on bundling digital with services. For example, with the Covid-19 pandemic, every school needs to be connected with higher speed internet. Building a private services provider for connectivity would ensure that both the service pro-

vider and the centers accessing these services are being benefited.

Shri Osama Manzar said that through women's entrepreneurship, digital connectivity can be established, and then bundled with health, education and other skill development or business sectors. Health workers and SHG groups can be trained in entrepreneurship, and digital skills provided to the youth. In the Northeast and hilly areas of India, patriarchy is less prominent. Because of this, digital access through women would be easier and productive. For example, Digital Empowerment Foundation (DEF) has led trials of 'SoochnaPreneurs' or digital entrepreneurs with information services, at the village level. DEF is also collaborating with AirBnB to make women hosts. This can be done in a manner that is green and facilitates cross-cultural exchanges.

- **Craft, culture and heritage in the Northeast and hilly regions are found in abundance. How can these be clustered and connected to the market, so that prosperity reaches the last person?**

Ms. Tangirala discussed that traditional knowledge about coarse foods, wild foods, mixed cropping exists, but we have lost touch with it. We must examine how to bring it back with some depth.

Two steps can be taken – aggregation and a focus on biodiversity.

There is a requirement for aggregation and collaboration among the youth and communities to bring back the traditional skills to the customers. Alongside, the collaboration of technology with traditional knowledge can prove to be beneficial. The Himalaya Calling project was cited as an example. Tourism is skill-based and can be picked up while on the job, through aggregation and collaboration. Peer-to-peer learning plays an important role in this. Crafts clusters can specialise in forward-backwards linkages in markets. Another segment is to create USPs and reclaim specialization. There is also a need for customization to connect to the market better.

If communities adopt measures for protection of biodiversity, protection of hydrological systems, forestation etc., they can be combined with tourism.

Shri Amarawat said there is a requirement for customised solutions, customised products, incubation centres and model creation centres that will establish models for start-ups and fresh entrepreneurs.
There should be creation of virtual training centres. We need to generate high-quality digital content. With high-quality YouTube videos, for example, one can learn new skills in areas like robotics.

A digital platform can help finance companies reach customers without any physical interaction. This requires aggregation, bringing all the digital finance companies together.

Lastly, digital platforms can help in supply chain management. For example, digital technology will be the driver for forward and backward linkages.

- **How can we move forward from here?**

Shri Karma Bhutia highlighted the work of a few more young entrepreneurs. Sonam Tashi Gyaltsen, who has created a co-working space called 'Work from the Himalayas', and Hatti Ladakh, which has led to the rise of small entrepreneurs.

Due to the pandemic, several IT hubs with connectivity should be created.
The next thing we need to focus on is to create more fellowships, like the Naropa fellowship for entrepreneurship. This will allow us to shine a light on products and services that we can offer from the Hima-

layan region.

Finally, the issue of connectivity needs to be discussed. One example to follow is Starlink, an Elon Musk company that will place 40,000 satellites around the globe. This would provide connectivity to rural areas and across the sea to the ships, etc.

Question & Answer Session
Moderated by **Ms. Jyotsna Sitling**
PCCF, Van Panchayat, Government of Uttarakhand

- **Are community-based organizations able to take the lead in creating and maintaining solar power for long-range and last-mile Wi-Fi?**

Shri Osama Manzar explained that it is essential to consider how one can make connectivity independent of electricity, which is not a reliable source. In Mewat, Haryana, youth are managing an initiative for last mile connectivity using solar-based electricity. This model supports local youth who are trained to understand technologies. The infrastructure building is costly in comparison to the maintenance.
Barefoot College has trained women, called 'Solar Mamas', in the maintenance of solar-enabled technology. Such a model can be replicated elsewhere and can be managed as an enterprise.

- **How long will it take for digital connectivity to reach the mountain areas?**

Shri Manzar answered that organizations can explore working with local governments to bring connectivity faster. PM Wani, the Wi-Fi scheme has been approved to provide internet access without a license. Even the van panchayat can be trained for providing network connectivity in an environment-friendly way.

- **How do we balance between hazards generated in the ecosystem by the digital medium and growing dependence of needs?**

Shri Bhutia said that due to the current work from home situation, there is physical stress, resulting in conditions like spondylitis, as well as mental health impact. There is continuous mobile activity and individuals constantly look at a screen. This tends to require more concentration rather than being present physically for a seminar. On a global level, there might be a bigger impact, but it will be visible after a decade or two. And that would be a mass societal health issue.

Shri Manzar added that the major side effect which we might face is misinformation and fake news. This is due to overutilization of the network.

Closing Remarks
PCCF, Van Panchayat, Government of Uttarakhand

Ms. Jyotsna Sitling concluded that it is critical to lay emphasis on the scope of tangibles rather than scale of intangibles. For example, when marketing foods as nutraceutical, we need to invest in product research to ensure we are creating a product line that is tangible and appreciated by consumers.
AI and machine learning can be used to fill gaps, build value chains and systems in the informal economy.

Institutional Strengthening, Forging Partnerships and Funding Opportunities

December 13, 2020 at 14:00-16:00 Hrs.

The session was moderated by Former Markets Leader, PwC India, Ms. Bharti Gupta Ramola. The other speakers in the session were Customer Success Lead, FutureSkills, NASSCOM, Shri Venkatraman Umakanth; Chief Economist, World Resources Institute, Dr. Madhu Verma; Chairman, Nainital Bank, Shri Dinesh Pant; Director, Wadia Institute of Himalayan Geology, Dehradun, Dr. Kalachand Sain; Co-founder, Naropa Fellowship, Shri Pramath Raj Sinha; and Dean, Faculty of Business, FLAME University, Shri Dwarika Prasad Uniyal.

The session aimed to reimagine the IHR economy, with speakers bringing perspectives from multiple domains, including education, skilling, banking, and geology. The discussions brought together the key themes from previous sessions, assessed the limitations of the IHR economy, and explored solutions from individual to institutional levels. Speakers proposed innovative solutions within their areas of expertise as well as potential new partnerships to foster a unified approach to prosperity in the region.

Photo credits: Tarun Bhartiya

Opening Remarks
Shri P.D. Rai
President of IMI

Shri P.D. Rai presented the highlights from the 3rd Indian Himalayan Youth Summit and the previous sessions of SMDS-IX. He stressed that this session would synthesise the discussions of previous sessions and take a deep dive into how institutions and partnerships can play a role in taking forward these issues and outcomes.

Ms. Bharti Ramola
Former Markets Leader, PwC India

Ms. Bharti Gupta Ramola focused on the mountain economy. The Indian Himalayas comprise 16% of the total land area of India, where a large proportion of this is covered in forest and border area, while it constitutes 14% of the total population. The land availability for the economy, therefore, is limited. With the issue of high altitude and poor connectivity, the Purchasing Power Parity (PPP) is lower due to the high cost of providing and accessing services. According to a study by the 13th Finance Commission, the cost of infrastructure ranges between 2 and 6 times higher in the mountains than in the plains, with an average of 2.5 times. There is an imbalance in the percentage of people employed in different sectors and that sector's contribution to the economy. Nearly 50% of the people in the IHR states work in agriculture, but only contribute 10% of the GSDP of the states, 10-30% people in the tourism sector contribute 50% of the GSDP, and less than 10% employed in the manufacturing states sector contribute 40% of the states' GSDP.

Migration is much higher in the IHR as compared to other states. However, there is a lack of accurate data on migration. The existing data does not take into consideration migration within the state and estimates of return migration vary considerably. In Uttarakhand, for example, return migration estimates range from 2.5 to 5 lakh. Limited economic activity in the states is leading to fewer resources and finances. The Panchayati Raj is inconsistent across the region and the situation with the tourism industry is distressing. Most households were dependent on migrants' remittances and have faced a massive setback due to the loss of jobs during Covid-19.

It is important to reimagine the IHR economy and what can be done, from the individual to the institutional levels. Some key points that would be taken up during the session were - reminding the state of the economy in the mountain states, looking at the limitations of the economy and the issue of funding, examining the problems and solutions from the individual to institutional levels, and looking at suggestions, partnerships, and mobilising financial resources to reimagine the IHR economy.

Speaker I
Shri Dwarika Prasad Uniyal
Dean, Faculty of Business, FLAME University

Shri Dwarika Prasad Uniyal began his talk by emphasizing that the education system in the mountain states needs to be reimagined. The region has below standard degree colleges and isolated universities, and hence, mainstreaming higher education is one key aspect to look at. Elite IITs and IIMs are insular to the region's students and economy.

There are three key ways in which the education system can be reimagined. First, degree colleges can become entrepreneurial hubs and vocational centers to invigorate the youth, and address migration. These can become small and micro-enterprises through skill-led education. The colleges can form partnerships, for example, with the IITs and Central Universities. Second, there is a need for creation of digital jobs so that mountain states can become a hub of digital enterprises. The focus of education must be on coding rather than on manufacturing. Third, content, music, and tech-tourism need to be encouraged. There are a number of young artists in the region, whose talents can be leveraged.

Speaker II
Dr. Madhu Verma
Chief Economist, World Resources Institute

Dr. Madhu Verma commenced her discussion by reminding everyone of the difficulties of working in the Indian Himalayan Region, owing to the terrain and other challenges such as budget constraints.

Financial resources need to be developed. However, it is essential to do so along with investing in natural capital. Nature-based innovations and solutions, such as Green Bonuses, are the key that mountain states can capitalize on. Cuisine, folklore, and other cultural aspects can be combined as a holistic package for the development of the region. Similarly, tea from Darjeeling or organic food from Sikkim can also be leveraged.

Building capacities and securing funding is crucial to the development of the region. The entire value chain needs to be looked at from tourism or industry. The region's immense potential should be scaled up and tapped in the right direction.

Speaker III
Shri Pramath Raj Sinha
Co-founder, Naropa fellowship; Founder & MD,
Harappa Education; Founder & Trustee, Ashoka University; Founding Dean, ISB

Shri Pramath Raj Sinha shared his experiences establishing the Naropa Fellowship. The fellowship is based on the core belief that preparing students and engaging them in the region will result in remarkable young people working to address the gaps and challenges of the Indian Himalayas.

There is a need to consider a different approach to education - inculcating strong education that focuses on the society, culture, nature of the Himalayan Region vis-a-vis entrepreneurship. In doing so, young people can engage themselves in social or profit-making ventures.

Establishing more degree colleges is not required. Rather, young people need a platform or a gateway where they can come back to the region. There are two key mechanisms that can be considered. First, there is a need to implant ideas where young people can contribute, and where challenges can be converted into opportunities. This calls for formalization and reorientation of the educational system that supports 1-year programs. Second, there is a need to improve and develop the digital space.

Speaker IV
Shri Venkatraman Umakanth
Customer Success Lead, FutureSkills, NASSCOM

Shri Venkatraman Umakanth began by expressing his support for an emphasis on the formative years of education. The New Educational Policy is also focusing considerably on soft skills and setting a tone for an entrepreneurial mindset. Developing an entrepreneurial mind takes time, and we need to embrace entre-

preneurship as a culture. Before reimagining, reorienting, or building new skills, we need to realize the skills that are already present in the Himalayan Region. Asking questions like - "Can we try to change informal training/learning into formal training/learning?", "Can we make the local arts and crafts international?" is crucial.

There is a need to understand technology and leverage present skills and infrastructure. There is a lack of digital marketing which requires digital skilling. There is also a need for corporate investments, such as through their CSRs. A good balance with the environment must be maintained while improving and working on these developments.

Speaker V
Shri Dinesh Pant
Chairman, Nainital Bank

Shri Dinesh Pant highlighted how banks are providing loans, credit, and funds in the IHR. The biggest challenge in the region is the lack of skills and schemes, because of which there is credit offtake. People are not getting the opportunity to invest, and a 3-lakh crore window that has been provided by the RBI is greatly underutilized.

Surat is a success story. After being devastated by a plague, it managed to develop and emerge today as a hub. Similarly, the pandemic, which has caused massive devastation, can be converted into an opportunity to replace China as an investment and manufacturing hub.

To achieve this, people must do business right. The need to bring in investment, technology, and skills to the people is crucial. Training centres in places like Uttarakhand are required. The local governments must take initiative in these endeavours.

Speaker VI
Dr. Kalachand Sain
Director Wadia Institute of Himalayan Geology, Dehradun

Dr. Kalachand Sain reminded everyone of the rich resources the Himalayan Region presents. However, understanding the kinds of resources and how we can focus is key to reimagining the economy and development of the IHR. For example, Uttarakhand and Himachal Pradesh have 80 geothermal resources - we should translate our scientific knowledge and convert them to generate employment.

The implications of generating geothermal energy are four-fold. First, it is green energy, and therefore is renewable and sustainable. Second, it has no impact on climate change with no carbon footprint. Third, it will create jobs and opportunities. And lastly, there is a need to concentrate on its healing properties, and nature-based tourism should be enhanced.

Water and Marketability

- **What can be done for payment for eco-services, and what role can the IHR play in the market for water?**

Dr. Verma responded that the Himalayan Region is supposed to be the water tower for the rest of the country due to its glaciers and forests. Himachal Pradesh and Sikkim, for example, provide water services to the region. There is no compensation for the consumption of forest resources of the Himalayan states. It is time for the states to get compensated. Brazil and Costa Rica are examples of such a model. Additionally, the Finance Commission considers contribution to the economy through these ecological services while allocating resources and funds. However, only forest share is included. Other ecosystem contributions should be devised to make it more equitable.

Dr. Kalachand also discussed two aspects that are important to understanding the water market. First, there is a need to understand the impact of climate change on the Himalayan glaciers, as the Himalayan glaciers are different from the Arctic and Antarctic glaciers. Second, research must be leveraged to understand how the glaciers are sinking or retreating through endogenic processes.

Grassroots Work in the Region

- **How to equip the youth to be ready for the future of work?**

Shri Pramath Raj Sinha responded that physical and digital infrastructure need to be upgraded and improved in the Himalayan Region so that they can reach the last mile. Investing in digital infrastructure can be a leapfrog opportunity. Firstly, it helps ensure quality. Everyone can get access to quality education through the digital mode. Secondly, it bridges the infrastructure gap in scale as well as quality since it is easier to bridge the digital divide rather than the other divides. And lastly, it brings relevance and helps in learning new concepts as digital access brings agility and flexibility in knowledge spread.

Shri Venkatraman Umakanth agreed with Shri Sinha that access to quality education through digital infrastructure is required. There is also a crucial need to look into multi-disciplinary skills rather than adopting an industry perspective to skilling. Technology can play a huge role along with digital skilling. The future of work is mostly about agility and adaptability.

- **What are the speakers' opinions on green jobs?**

Shri Uniyal highlighted the "goodwill bonus" of the IHR, which gets a lot of appreciation outside the region and can be built upon. This can be an instrument to create an institutional framework and entrepreneurial ventures. Through the linkage of value chains, people in the big cities can provide resources and link them with grassroots institutions. Jobs related to creativity, agriculture, fashion, and skilling can produce a consistent product. 'Responsible tourism' can bring last mile job creation. Small ventures can make use of microblogging sites like Instagram as a key in creating value chains at the micro-level and also promote their ventures. Young people can make use of these opportunities and in the process, create more jobs.

- **The Himalayan Region is not viewed as a disaster-prone region. This is because disaster is seen through only material loss and not ecological losses. There is also a need for better engineering in the IHR. What can the IHR's reaction be in relation to disasters, including top-down and bottom-up solutions?**

Dr. Kalachand highlighted that anthropogenic impacts can be controlled or reduced along with other mitigation measures. If the policies are not implemented properly, we will continue to face issues like landslides. There is a need for a mixture of top-bottom and bottom-top responses. We need to follow guidelines and learn how to live with it through behavioural expectations and identification.

Shri Pant spoke about the proactive role of banks during disasters. Banks are on alert and ready to support with friendly schemes to help during such times of distress. The 2013 Uttarakhand Floods, where banks played a crucial role in reallocation and insurance, is an example.

Dr. Verma stressed on the need to identify and map the locations of disasters and understand them. Green accounting is essential while mapping. This involves examining the value of loss in the state and the ecological services it provides.

Question & Answer Session
Moderated by **Mrs. Bharti Ramola**
Former Markets Leader, PwC India

- **Is there a need to reimagine the entire education system and start innovation and creative and critical thought processes in schools that will lend action at a degree college level? By the time they reach degree college the students have gone through linear formal schooling that is reductive.**

Dr. Kalachand responded that region-specific problems should be identified and added in curriculums to reimagine the entire education system and bring in critical thought processes at the school level instead of waiting till degree colleges. Disaster courses must be emphasized so that youth can come up with innovative solutions.

- **We might need a program to address the hazards of digital infrastructure. It is a huge shift in the lifestyle itself and the program mainly needs to address the wellbeing of students, stakeholders, and ecology itself. Is there a body in the mountains which is addressing this?**

Dr. Kalachand responded, highlighting the importance of adapting to the hybrid modes of infrastructure. This is a mixture of physical as well as digital infrastructure and dissemination of information.

Shri Pramath Raj Sinha added that the infrastructure hazards are known. This includes mental health, and we must be sensitive and empathetic to these hazards. Rather than these hazards deterring us, we need to be able to cope with palliative measures.

Shri Dwarika Prasad spoke about the need to innovate in what we are teaching, how we are teaching, and be mindful of pedagogy. The format needs to change while the entire education needs to be reimagined.

- **What are the speakers' thoughts on institutions, partnerships, and skills?**

Shri Pant said that we can explore new forms of partnerships between banks and education and skill development institutions. Banks can deploy money through schemes and help institutions. The economy will grow at the desired level only if banks can help and accommodate the needs of the people.

Dr. Kalachand said that addressing the challenges requires funds and that is why the role of the bank is important. Accomplishing anything scientifically requires a multi-institutional and multi-disciplinary approach. Institution-institution collaboration along with discipline-discipline interaction is needed.

Photo credits: Tarun Bhartiya

Dr. R.S. Tolia Memorial Lecture & Award; & Valedictory Session

December 14, 2020 at 15:00-17:30 Hrs.

The Chair of the session was Director of the G.B. Pant 'National Institute of Himalayan Environment'(NIHE), Dr. R.S. Rawal. The Dr. R.S. Tolia Memorial Lecture was delivered by Former Director, Wildlife Institute of India, Dr. G.S. Rawat. The RST Award 2020 was presented to Dr. Ajay Rawat. The other speakers at the event were Chairman, SDFU, Dr. Rajendra Dobhal; Former President, IMI, Shri Sushil Ramola; President, IMI, Shri P.D. Rai; Secretary, IMI, Ms. Priyadarshinee Shrestha; Councillor, IMI, Dr. Lalbiakmawia Ngente; Member, SDFU, Shri Krishna Rautela; and Secretary, SDFU, Ms. Binita Shah. President, Darjeeling Himalaya Initiative, Shri Praful Rao; and Councillor, IMI and development professional, DLR Prerna, Shri Roshan Rai. Honorable Chief Minister of Himachal Pradesh, Shri Jai Ram Thakur sent his address as Chief Guest of the session.

Context Setting
Dr. Rajendra Dobhal
Vice President, IMI and Chairman, SDFU

Dr. Rajendra Dobhal set the context by recounting anecdotes and achievements from the life of Dr. R.S. Tolia, who was known to him personally. Dr. Tolia, who was born in 1947, grew to be the Chief Secretary of Uttarakhand, Chief Information Commissioner, and a builder of institutions such as the IMI. The SDFU too was Dr. Tolia's brainchild. There was a time when Dr. Dobhal had travelled to visit Dr. Tolia in the hospital in Delhi when he was quite unwell. He had conveyed to Dr. Tolia that he would see him next in Dehradun. Dr. Tolia however, responded that he would be travelling straight to Munsiyari, Pithoragarh instead as he had a lot to work on and to achieve as yet. This moved Dr. Dobhal, who felt there is much that youth and others could learn from his passion for his place.

To honour the memory of Dr. Tolia, Dr. Dobhal read out a few select excerpts from 'The Essential R.S. Tolia', edited by S.K. Das in 2017. These included the following quotes:

"A man of the mountains, and a mountain of a man".

"His breed is now rare among the academics, and still rarer among the administrators. He is truly a karamyogi and a janyogi. Our hats off to this man of letters as well as action, a passionate lover of mountains and an illustrious son of Utta rakhand".

"...Tiger he was till the end, roaming freely in the territory he had carved for himself".

The fifth Memorial Lecture would be delivered by Dr. G.S. Rawat, the Director of the Wildlife Institute of India. He is a fellow of the National Academy of Sciences, India, a member of the Ladakh Planning Board, former Councillor of IMI, member of IMI and of SDFU. He is also a life member of the Association of Plant Taxonomy and earlier served in the Botanical Survey of India, Dehradun and in the departments of Botany at Kumaon and Garhwal Universities. Dr. Rawat was awarded an FAO fellowship for 6 months of training in habitat evaluation at Colorado State University.

Dr. R.S. Tolia Memorial Lecture
Dr. G.S. Rawat
Former Director, Wildlife Institute of India

Dr. G.S. Rawat paid tribute to the memory of Dr. Tolia. Dr. Tolia spearheaded organic farming in Uttarakhand, created Centers of Excellence and boards such as the Livestock and Fodder board. He made important administrative reforms after he took over as Secretary for establishment of the state of Uttarakhand and created an institution for the rural development and forest departments to work together. His vision was to create a conservation, development and harvest plan for wild medicinal plants for each forest division in Uttarakhand.

The IHR supports an immense diversity of ecosystems and habitats, both terrestrial and aquatic, rivers and lakes. The region is also rich in ethnic diversity. There is rich agro-biodiversity and farming practices. The eastern part of the IHR is known as 'the cradle of angiosperm evolution' and there is valuable biocultural and traditional knowledge among the people.

With regard to conservation in the IHR, forest coverage and protected area coverage is much higher than the national average. There are cultural world heritage sites in this region. There is a good network of community conservation reserves, reserved forests, and local people have strong cultural and spiritual linkages with natural and natural objects. Youth have emerged as champions of conservation. A few positive stories have emerged with regards to biodiversity and conservation. In Nagaland, the church and local communities in a village came together to protect a rare Amur Falcon. In Meghalaya communities have a system of sacred groves and living root bridges. In interior regions of Uttarakhand, communities are setting aside parts of grazing land for medicinal plants etc. There is community-based ecotourism in Spiti and Ladakh, where families are opening up homestays for tourists who want to see the snow leopards.

The current global thinking is that biodiversity is more than just flora and fauna. It is also human centric. There are linkages between biodiversity and human wellbeing. Humans ought to live in harmony with nature so that their wellbeing is ensured. With this year's theme of International Mountain Day being biodiversity, the importance of mountain biodiversity and human wellbeing are being increasingly recognized. In terms of national thinking, the Government of India has set 12 major targets and several other goals, which include restoration of habitats, genetic diversity, assessing ecosystem services and traditional knowledge systems of local indigenous communities.

However, despite these efforts, there are quite a few concerns in the region, such as, habitat degradation, climate change and emerging diseases, decline of crop genetic resources, illegal trade of wildlife parts and products, human-wildlife conflicts, lack of participatory approaches in conservation, and relatively low investment in biodiversity science and its applications.

We still have a long way to go in these aspects. Ecological restoration is required in all areas, whether aquatic or terrestrial. Regional and interstate cooperation must be boosted to combat emerging diseases, curbing illegal trade in wildlife parts and DRR caused by extreme climatic events and pandemic. Traditional farming practices and special drives for conservation of land and traditional crop varieties must be revived.

The capacity and awareness of the Biodiversity Management Committees (BMCs) and other Community-ty-based Organizations (CBOs) in meeting their national targets must be strengthened. Newly created Union Territories do not have Biodiversity boards as yet; these are needed. Biodiversity conservation should be linked with rural livelihoods. Many government schemes can be leveraged for this.

Quality environment education through inclusion of biodiversity science, participatory action research and the use of science and technology is required. Unemployed rural youth can be encouraged to participate in citizen science, participatory action research and green enterprises. An example of this is the Young Mizo Association, who have worked in the restoration of rivers, streams and bringing back aquatic life and forests

Dr. R.S.T. Award 2020
Shri Sushil Ramola
Former President, IMI

Shri Sushil Ramola read an excerpt from a Foundation Day lecture Dr. Tolia had delivered at CBRI. It reflected his belief in thinking about the larger purpose and common good for the mountains.

Since 2017, this award has been given to individuals and institutions impacting the lives and livelihoods of people, environment and social aspects of the mountain areas. This year, Dr. Ajay Rawat had been unanimously selected as the recipient of this award.

Dr. Ajay Rawat had made a number of contributions to academia, social work, forestry, environment conservation and the sensitization of people. Some of his achievements include being a pioneer in the field of forest history in India, stopping illegal mining in the upper catchments of the river Gaula and removing encroachment in the reserved forest of Champawat. He has saved about 10 lakes of Nainital lake region from ecological destruction, and has helped in increasing the daily earnings of boatmen in these lakes.

A few words from the winner of RST Award 2020
Dr. Ajay Rawat

Dr. Ajay Rawat thanked the jury for conferring this honour on him.

He and Dr. Tolia had met in college. Dr. Tolia had done his PhD. under the guidance of Dr. Rawat. Lever-

aging primary sources of historical data, Dr. Tolia had been able to shatter a commonly held myth about Uttarakhand being a regulating province and create a milestone in the field of history.

Dr. Rawat had engaged in a number of efforts due to the direction and support of Dr. Tolia. This included an initiative to revive the Nainital Lake, a study on the illegal timber trade and a landmark study in disaster management following the UP and Bihar floods of 1998. Upon Dr. Tolia's encouragement, he had also written the history of Badrinath ji, which had not been done till then and which led to the interesting finding that there is a branch of Badrinath ji in western Tibet.

Outcomes & Recommendations of SMDS - IX
Ms. Priyadarshinee Shrestha
Secretary, IMI

Ms. Priyadarshinee Shrestha presented six outcomes that had emerged from the SMDS IX sessions.
First, there must be a focus on a green and digital future for the IHR. Digital infrastructure is essential to leapfrog physical infrastructure challenges and bridge scale and quality divides. Digital infrastructure is essential to agility.

Second, education for skilling and entrepreneurship need to be reimagined. There must be skilling for IHR-specific employment opportunities. Educational institutions and degree colleges must be reimagined as entrepreneurship hubs. A focus on skill-led initiatives, green job creation, content led - music/tech/tourism/studio/artists is needed.

Third, circular economies and green markets are required. Local markets and demand need to be created. It is important to advocate for and promote border trade centers/hubs across the IHR and lobby for market access for Himalayan products

Fourth, data is limited. This applies to all sectors, and in every IHR state, UT and district. Data sharing is needed.

Fifth, partnerships and collaborations need to be institutional, community level and beyond borders. National institutions should be linked in the states and community.

And sixth, measures must be taken to build a resilient IHR. DRR needs to be mainstreamed into development pathways. Ecosystem services of the IHR need to be acknowledged and quantified and compensated. Institutional knowledge capacities for water conservation are to be further strengthened, and pilot initiatives to be undertaken. SDGs need to be contextualized and localized for the IHR context

The specific recommendations for post SMDS-IX action/follow up are as follows:
- An Indian Himalayan youth network/alliance on SDGs - to take forward the declaration and provide a common platform for continuous engagement
- Indian Himalayan university as a knowledge partner to the stakeholders, including the government, with campuses in all IHR states, focussing on IHR issues and concerns
- Indian Himalayan consortium on water security/springs, and cross-learning across IHR on success stories, technologies and innovation
- Data center/dashboard on IHR - across themes and sectors
- Realtime data collection and sharing for DRR, a collaborative effort at community, GOs and academic

- Advocate for green bonus, compensation for ecosystem services (ESS) - need or mapping and modelling to go beyond forest cover and include water, biodiversity etc.
- 'Goodwill bonus': attracting the best talent to contribute towards sustainable dev in the IHR

State Chapter Actions for Taking Forward SMDS-IX Recommendations
Dr. Lalbiakmawia Ngente
Councillor, IMI, &
Shri Krishna Rautela
Member, SDFU

Shri Krishna Rautela announced that it is now time for IMI and the state chapters to take these recommendations forward and convert them into actions and results.

The SMDS first began in Uttarakhand, where it was ensured that there was participation from all the Himalayan states. This spurred a movement, wherein the states have led the path. Apart from the annual SMDS, states have also championed causes like Cleanup Himalaya, Mountain Cities, DRR conference, youth summits etc.

After three years of hosting the SMDS summit, IMI was created. It was shaped so that there is action at both the central and state levels.

Based on the discussions, some of the states have come up with their own ideas for what they would or could do going forward. Sikkim is speaking about creating a credible data base on vital statistics relevant to the IHR, such as migrant labour, agriculture etc. to help bridge the data gap. Himachal Pradesh is talking about agriculture and horticulture food processing, marketing of products, support to young professionals. Nagaland is talking about activating a youth cell in IMI at a programme level. Darjeeling and Kalimpong are engaging with youth from across the IHR. They have undertaken zero waste peer educator training, Cleanup Himalaya, and will continue to take these forward. They will also facilitate events for practitioners on specific issues. Uttarakhand has worked on a report on reverse migration, which they will be making more comprehensive. Other action points include an assessment of digital divide, discussion paper on water security and climate resilient Uttarakhand, a compendium of innovative and sustainable farming practices in Uttarakhand, conducting more youth dialogues, promoting youth entrepreneurship, and further exploring the idea of a mountain university with campuses around hill states. And Tripura will work on the propagation of lesser known, important NTFP yielding species, bamboo value addition, home herbal gardens and skill mapping.

In addition to these, there are some other thoughts on state chapter actions from IMI members. These are:
- Carry forward discussion and create linkages
- Recommend and follow up to have mountain specific plan of GOIs flagship scheme
- Conduct research at state level
- Networking with government agencies to select migrants for future programs
- The state chapters can take action through the action plan of IMI
- Research, awareness workshops and translating advocacy materials into local dialects
- Engage with state government agencies on skill development
- National debate specifically concerning the mountains
- Research at IHR level
- Facilitate subsidised efforts to fodder production

- IMI to chalk out appropriate actions in collaboration with the government and government agencies
- IMI can help in coordination and implementation of ideas
- Provide brief technical guidance note
- Facilitate of skill development program for the Northeast through Ministry of Skill Development
- Creating a Himalayan youth group (18-35) leading to IMI membership
- More visibility of IMI and efforts towards branding IMI as an institution
- Create a way to talk to state CMs and Chief Secretaries of each state for fostering partnership with IMI
- Take forward the word of Uttarakhand CM of making a Himalayan vision 2040 document
- Move towards establishing an IMI Institute of Himalayan studies
- Engagement for expanding membership base
- Decadal study of Indian mountain states for SMDS-X, example 10 key issues with vision for next ten years

Dr. Lalbiakmawia Ngente saw many common policy themes emerging through what Ms. Shrestha and Shri Rautela had shared. There are many action points that need to be acted upon by the state chapters, however 3 clear points cut across all themes and are vital for all issues:

First, there is a need for IMI and state chapters to work together closely for resource mobilization and plan implementation.

Second, a roadmap within a given timeline, which assimilates all the discussions and relevant suggestions from this summit and before must be prepared.

And finally, there is an urgent need for the creation of a database, sharing of data and cross learning across the IHR on success stories, technology and innovation.

Passing of the Baton
Dr. Rajendra Dobhal & **Ms. Binita Shah**, from the host of SMDS-IX, and
Shri Praful Rao & **Shri Roshan Rai**, from the host of SMDS-X

Dr. Dobhal announced that it was unanimously agreed that the SMDS-X would be held in Darjeeling. He passed the baton to Darjeeling.

Shri Praful Rao spoke about the origin of the Darjeeling-Himalaya initiative. For the first few years, Darjeeling attended as part of Sikkim, until it was decided that they would become a separate unit. While the Darjeeling & Kalimpong chapter is a unique one, being a tiny part of a state that is largely in the plains, they would do a tremendous job as hosts of SMDS-X. They have a crew, focused and creative youth of Darjeeling, and the necessary infrastructure to host such an event.

Shri Roshan Rai appreciated the solidarity shown by IMI and all the state chapters towards the issues spoken about by Darjeeling and Kalimpong. The time of the mountains and specific regional issues has come.
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Chief Guest Address
Shri Jai Ram Thakur
Honorable Chief Minister, Himachal Pradesh
(Read out by **Shri Krishna Rautela**]

Shri Thakur expressed his joy that the IMI and SDFU had successfully hosted the SMDS-IX summit in a virtual format. IMI s a strong civil society platform that brings together diverse stakeholders to highlight IHR issues. Covid-19 has greatly impacted a variety of domains and understanding its impact in the Himalayan context is a difficult task. A platform such as the SMDS is a ray of hope.

The main issues discussed, such as migration, water security, disaster risk, digital ration, green future etc. are all relevant and the Himalayan states can come together to find a solution. The emerging recommendations and action points must be implemented.

President's Remarks
Shri P.D. Rai
President, IMI

Shri P.D. Rai reflected on the RST award and his interactions with Dr. Tolia. He had met Dr. Tolia in 2010, and their warmth and mutual respect for each other had grown over the course of the summits. Dr. Ajay Rawat's speech had captured the companionship, friendship and camaraderie of knowing Dr. Tolia. Dr. Ranbir Rawal, Director of GBPNIHE, G.B. Pant Institute would be delivering the closing remarks.

GBPNIHE and IMI complement each other. The former focuses on the generation of knowledge through science, research and knowledge management, while IMI then converts these learnings into actions. There is a need to integrate the knowledge of GBPNIHE and Wadia Institute of Himalayan Geology into the workings of IMI's state chapters.

Shri Rai is committed to work with the states and co-create the plan. IMI goes forward not only with plans and outcomes, but also with its values of integration, inclusion, collaboration, volunteers, passion, democracy and openness.

Closing Remarks
Dr R.S. Rawal
Director, G.B. Pant National Institute of Himalayan Environment

Dr. R.S. Rawal agreed that both IMI and GBPNIHE are natural partners. This partnership will further strengthen in the future, particularly through the state chapters. The institute would make all possible efforts to collaborate for the cause of the IHR.

The most interesting part of the session was the actions for the different state chapters. The outcomes of those action points would be witnessed at SMDS-X in Darjeeling the following year. Since SMDS X would be a decadal event, it can reflect upon the entire progression of IMI.

Vote of Thanks
Ms. Binita Shah
Secretary, SDFU

Ms. Binita Shah thanked the speakers of the session, all the participants and IMI councillors, councillors of SDFU, and all the panellists who had been part of the IHYS and SMDS-IX.

Hosting SMDS online was an incredible opportunity for SDFU. They had to find new ways to convey the unique and special aspects of the state of Uttarakhand. This involved a great deal of capacity building within the team, something that was possible because of the young team.

Shri Krishna Rautela, Shri Amba Jamir and Shri Anoop Nautiyal had been instrumental in organizing a fantastic youth summit.

Generating funds during Covid-19 was a challenging task. A number of organizations stepped up, showing their sensitivity towards mountain issues. These were Nainital Bank, ICIMOD, North Eastern Council, the Government of Arunachal Pradesh, Graphic Era University, Swami Rama Himalayan University, Himmotthan Society, UCOST, G.B. Pant National Institute of Himalayan Environment & Sustainable Development, National Mission on Himalayan Studies.

Among other supporters were Lead India, Darjeeling Himalayan Initiative and the Government of Uttarakhand.

She also thanked Shri Sonam Tashi and the entire team from Echostream, and Liden who handled the social media activities allowed for wide engagement, volunteer rapporteurs and the young team of the IMI secretariat led by Golan, Prerana, Amreeta, Namrata and Barsha.

Chitku Studio led by Priyanka Tolia helped design the various SMDS-IX mementos. Thanks to the media and Dr. Satyadeep Chettri's efforts, the event received publicity and good vibes.

MOUNTAIN LEGISLATORS' MEET

13th DECEMBER 2020

Mountain Legislators' Meet 2020

The Indian Himalayan Region (IHR), constituting Jammu & Kashmir, Ladakh, Himachal Pradesh, Uttarakhand, Sikkim, Arunachal Pradesh, Nagaland, Manipur, Meghalaya, Mizoram, Tripura, and the hill districts of Assam (Dima Hasao, East Karbi Anglong and West Karbi Anglong) and West Bengal (Darjeeling & Kalimpong) covers over 16.2% of India's total geographical land area and host a rich diversity of culture with huge repository of traditional ecological knowledge.

Given their relatively small and scattered populations, mountain communities often go unheard in political and policy discourse of the country. Despite significant progress, technological advancement, and communication developments in the lowland areas of India, economic growth in the Himalayan States has not translated into inclusive livelihood opportunities for the rural poor, especially the youth. Poverty, vulnerability, and inequality are widespread, and access to resources and services and gainful employment opportunities are limited. An essential question is how poverty, gender, vulnerability, social inequality, and livelihood insecurity in the mountains can be better understood and addressed giving special emphasis to the younger generation's aspirations.

A Mountain Legislators' Meet is annually organized by IMI to bring together lawmakers of the IHR to deliberate on the policy implications and engagement necessary emerging out of SMDS IX sessions. In the context of COVID19, this year the discussion of MLM will focus on:

- Health and vaccine issues
- Green recovery in the Tourism sector

Proceedings

Introduction

Context Setting
Shri P.D. Rai
President IMI

Shri P.D. Rai welcomed all the viewers, Speakers, Hon'ble Members of Parliament, Hon'ble Members of the Legislative Assembly, and those working closely with public policy in their respective constituencies to the 9th Sustainable Mountain Development Summit (SMDS) which is a flagship annual program of the Integrated Mountain Initiative (IMI). He further added that the 9th SMDS is being hosted by IMI's State Chapter of Uttarakhand, the Sustainable Development Forum of Uttaranchal (SDFU).

Shri Rai spoke about the 3rd Indian Himalayan Youth Summit (IHYS) which was organized as part of SMDS IX on the 8th and 9th December where about 120 state delegates from across the 9 mountain States, 2 Union Territories and hill districts of Assam and West Bengal participated. The youth deliberated among themselves on 5 chosen themes and came out with a Youth Declaration. He added that Shri Amitabh Kant, the CEO of NITI Aayog, was the Chief Guest during the 3rd IHYS and he reiterated the support of the government to the youth of the Himalaya. Shri Kant further spoke about the importance of sustainable development in the Indian Himalaya due to its fragility emphasising that there is an urgent need to build back better and greener. Shri Sanjeev Sanyal, the Principal Economic Advisor, Government of India, attended the Valedictory plenary of the 3rd IHYS where he argued that the digital way is the way forward in the mountains.

The Inaugural Session of the SMDS IX was on the 11th December 2020 which was attended by the Hon'ble CM of Uttarakhand, Shri Trivendra Singh Rawat, as Chief Guest. He spoke about the need for

a Himalaya vision. He also recognized the work of IMI and the importance of the integration that IMI does through summits such as these. He also emphasised that the recommendations need to go forward in the form of policies for all the mountain states. The occasion was also graced by Shri Conrad Sangma, Hon'ble Chief Minister of Meghalaya and he spoke about the work being done to address job losses and the pandemic in his state, while also recognizing the contribution of IMI to the sustainable development agenda of the Indian Himalaya.

Shri Rai further spoke about the SMDS IX where the discussions have been around post-Covid-19 scenario and how to get the mountain economy back on track. Through the discussions we have learnt that the state coffers are not in good shape, there are problems across the borders, and now we need to build back better, and build resiliently in areas like climate change, Disaster Risk Resilience, Water security, green jobs, farming sector and technology (through Innovation). Cross- learning about local innovative ventures facilitated by the summit was fascinating such as how organic Kiwi wine is being produced in Kameng, Arunachal

Pradesh, or how world-class cheese is being made in Uttarakhand, how the value of tea is being realized for small growers of tea in Darjeeling, or how apples are being packaged and exported in Kashmir. In the last session the discussion was on partnerships and funding that can be built for people and communities to realize the full potential of the digital future.

With this summarization, he handed over the to Shri Vincent Pala, MP of Shillong, Meghalaya who is Chair the Mountain Legislators' Meet 2020.

Address by Chair of MLM 2020
Shri Vincent Pala
Member of Parliament (Lok Sabha), Shillong, Meghalaya

Shri Vincent Pala welcomed and thanked the all for attending the MLM 2020. He talked in brief of his association with IMI and the previous MLM which was conducted in Shillong in 2019. He spoke about the common issues of mountain states of India, one crucial one being financial burden which has intensified with Covid-19 and it has huge impact on different communities. Therefore, sending a message to work collectively and urging all stakeholders to gather for collective action to build pathways towards recovery should be different and have features of resilience, around migration, climate change, so capitalizing upon community networks is essential. Shri Pala briefed the House on the theme of the session on MLM which is public health and tourism, both extremely important in the post-covid era. With this he invited Shri K. Srinath Reddy to speak.

Session I: Health and vaccine issues

Talk on Covid-19 Health & Vaccine
Prof K. Srinath Reddy
President, Public Health Foundation of India

Prof Reddy started by emphasising the importance of public health as sustainable development cannot take place if health is endangered. The key points covered by Prof Reddy are below:

- Health is crucial whether it is Climate Change or economic development, everything is interlinked, infact Covid is a Zoonotic disease. These are all integrally related.
- India currently has the 2nd highest cases in the world, but those are not adjusted for the population size. When we look at the number of deaths or cases per million population, we are not as high as countries in Europe or the USA. This doesn't mean that there is cause to be complacent, we still need to control the pandemic to ensure that the loss of life, death and disability also greatly contained.
- If we look at deaths per million in India, it is about 103.6 deaths per million right now. Whereas if you look at the United States it is about 900 deaths per million. It is similar for European countries.
- Nevertheless the threat remains, also seen in the mountain states. We need to look at these measures of cases and deaths per million, along with trends to gauge how the pandemic is evolving or regressing in these areas and then take public health measures to slow down the pandemic until more effective measures come in place.
- Many measures that are being used from the beginning of the pandemic including the doubling rates are no longer useful in an established pandemic. But what is usually more important are the cases per million, tests for million, test positivity rate, case fatality rate. It is useful to track deaths per million to look at case management of confirmed cases and preventative measures taken.
- You have to look at other measures like weekly death count or weekly count of fresh cases. The

problem with counting cases is that it is quite dependent upon the testing type employed. We now know that the RTPCR test which is the standard test everywhere does have a few false negatives and we already know that the rapid test has even higher false negatives. Therefore, while important cases per million are not all that reliable as a tracker.

- Now if we look at the Himalayan states, there is considerable variation. For example if we look at Ladakh, it has the highest deaths per million, highest tests per million and highest cases per million, but case fatality rate is low. It is 1.3 whereas for a state like Sikkim it is 2.3. This is because when you test more you are likely to influence the denominator in terms of the number of cases and that leads to inclusion of many more my milder cases as well and therefore your case fatality rate will appear low. Whereas if you reduce the total testing rates, the case fatality rate will be high. These are some things to be kept in mind while interpreting these data in real time for comparing other countries and states.

- Overall deaths per million is a good measure of success both in terms of population based prevention as well as detected case management.

- To track the epidemic, weekly death count is a good indicator. While there can be undercounting it is not variable over time therefore the noise to signal ratio can be controlled. Therefore, weekly death count coming down is a good indicator of the epidemic coming under control. WHO has also said that it is ideal to keep the test positivity rate under 5%, therefore we might also like to track that.

- The public health objective now is to slow down the pandemic as it is unlikely that we will be able to get rid of it completely. It may become endemic in our population but there may be less death and disease due to public health measures including vaccines.

- Till the time that happens we need to slow down the disease, this is why public health measures like lockdown, social distancing, masks, hand washing, were important but we must not forget super spreaders can be in crowds, they could spread to 20-40 people. We therefore need to prevent super spreader events while continuing with other public health measures.

- There are three escape routes from pandemic, first is herd immunity to quickly let the virus spread to about 60-70% of the population and get herd immunity. Unfortunately, ICMR survey says 90% of the country overall is still not exposed to the virus. Therefore by the time we reach 60%, we will have many more deaths. Herd protection: example if 60% in Delhi acquire immunity, 40% who are non-immune might get infected when they go outside to another part of the country. We will need herd immunity across the country and the world. This is not practical and might take a few years.

- Vaccine: There are about 7 different platforms for vaccines, but ultimately the objective is how to stimulate immunity, not just in terms of antibody but cellular immunity which can be protective. The antibodies seem to decline in about 3 months time but the cellular immunity lasts for 6 months or more. The important thing is, how to protect vulnerable until the vaccine has reduced transmission. Even the vaccines are not going to be in large numbers, need vaccines which don't have stringent cold storage requirements. We have to wait and see how effective it will be, or how safe it will be. First consideration is safety since we will be giving this to healthy people, second is efficacy, third is duration of protection.

- What we need is efficacy, duration of protection by vaccines should be tested and slow down in chain of transmission must be aimed.
  (i) Continued wearing of masks is needed despite vaccine tests at least for a year, public health precautions have to be taken.
  (ii) First priority for getting the vaccine will be those who are essential workers (frontline healthcare workers etc.) and vulnerable (elderly or having comorbidities).

Shri Sonam T Venchungpa
MLA, Sikkim

- For Mountain development, the vaccine becomes crucial, but who will fund it when mountain states are already strained, resource mobilization is tough for mountain states?

Anwer: It should be funded by the government, and administered free of cost, as it is a public good. Enhanced tax structure or cess can be decided by state and central government, but the vaccine needs to be free.

Shri Jitendra Chaudhury
Former MP, Tripura

- The number of Covid affected persons compared to other countries is less, is it actually true? In my state there is no organized system to test what you see in other countries.

Answer: Testing rates have been low, in recent times testing has picked up. Deaths per million becomes a measure for monitoring the epidemic. Number of deaths is actually lower in the whole of South Asia, due to large youth population, rural residences

Shri Amar Singh Rai
Former MLA, West Bengal

- In Darjeeling with tourist inflow there is a misconception regarding COVID, tourists are being complacent. How to change the mindset of people? While we can be impressed to see rates of death are declining, when we look into it a lot of people may be hiding their symptoms due to social stigma.

Answer: Declining deaths is a good indicator. It is not completely gone and there is an undercounting of cases.

Dr Skalzang Dorjey
Chairman, Block Development Council, Leh

- How can villages remotely located be immunized? Can there be priority for Himalayan region?

Answer: Should be negotiated. For difficult to reach areas, this is where lessons from the universal immunization program come handy.

Dr Rohit Sharma
MLA, West Bengal

- How do we plan for effective, speedy distribution given the difficulties of infrastructure, communication and limited supply? Do we have a strong interim plan to take care of immediate issues?

Answer: Public Health measures have to be in place, physical distancing has to be maintained. Slowing down transmission is necessary, due to evolutionary biology, the virus becomes less virulent, if made difficult for it to transmit is one way to battle.

Shri Punchok Tashi
Executive Councilor, LAHDC Kargil

- Does Covid have relation with changing temperatures? In cold weather, are people more vulnerable? In our areas (Ladakh) people remain cut off for 6-7 months, so what could be done for these areas?

Answer: Virus survives longer in cold temperature, 10 times longer, several days that is, in dry temperature assists it.

Shri Himalaya Shangpliang
MLA, Meghalaya

Comment: As policy makers we need to come together to apprise our government about preparation of infrastructure. We need to ask to provide for infrastructure, should have preparation, logistics should be ready.

Shri Tashi Gyalson
Chairman, LAHDC Leh

Comment: We also need to think about preparedness and how to make the vaccine free.

Shri Rakkam Sangma
MLA, Meghalaya

- In Garo Hills, Indica Citrus was administered to patients. Is it that our climate is different, or that we are tribals and have a different diet, because of this our Covid death rate is low? I wish to draw the attention of more scientists to this and request them to do research as there can be some interesting observations here.

Answer: Citrus helps one fight off virus, innate immunity is important. What we eat, builds our immunity, high fibre for gut bacteria, they help, tribal communities are the best example, certainly there is great opportunity to explore.

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Session II: green recovery in the Tourism sector

Talk on Livelihoods, jobs, employment and green recovery in the Tourism sector
Shri Hari Nair
Founder, Holiday IQ

Shri Hari Nair started by talking about the structure of his presentation. The structure of his presentation, along with key points are below:

1. As a consequence of pandemic, global trends in mountains
2. Trends in mountain states subsequent to event of last year
3. Implication we see over next two to three years
4. What should be our strategy?
5. Conclude with a few points about mountain-specific policies.

Global Trends:

- New technology coming into play that has an impact on tourism- in telecom it is 5G, AI will play itself out, blockchain (bitcoin, paper currency) has potential for usage in tourism.
- Remote work is here to stay, white collar work will be done remotely. Equally when people don't travel, then the hotel and airline industry will be impacted by the remote work phenomenon.
- Highly Qualified professionals are moving to smaller places, falling rents are proof, this is so that they can avail greater quality of life.
  (i) Tourism today is merging with characteristics of other industries, such as entertainment, virtual tourism- people can see, feel, and experience sitting at home. (Digital entertainment). For example, AirBnB is offering a large virtual experience.
  (ii) Tourism is becoming about learning, a lot of experiences are actually about locals teaching something local culture to people far away.
  (iii) To be part of a community.

- Local resistance to tourists coming into their locality, mass tourism, Problems:Dramatic loss in green forest, people come to mountains for greenery, for the breathtaking views, these are their strengths, so forests need to be protected. Infrastructure, lots of mountain states are inaccessible, it is a big issue, so it gets concentrated in a few places.

Problems:
- Dramatic loss in green forest, people come to mountains for greenery, for the breathtaking views, these are their strengths, so forests need to be protected.
- Infrastructure, lots of mountain states are inaccessible, it is a big issue, so it gets concentrated in a few places.
- Loss of authenticity, our communities start looking different and cannot resemble, this has economic consequences. We need to reclaim the difference between mountain life and city life.
- ack of specialized education, high quality design, there is no design institute in mountains.

Two trends have come up post pandemic- periodic movement (tests prior to moving), that can have impact on tourism:

- Periodic curbs will become feature of how we respond to this pandemic,
- Local resistance will increase, they wouldn't want to open up, local need for safety and economic needs have to be balanced.

Possible Implications: Product-related
- Length of stay will change People want to stay longer, they are not on holiday, they will be digital nomads. They need leisure infrastructure and working infrastructure- meaning high quality internet structure.
- As people stay long periods, the hospitality psyche has to change- working round the clock becomes essential. Have to consider both what guests want during the night as well as during the day.
- Learning opportunities should be created. Transmitting what is authentic to a community or a place, learning secrets from a place is more interesting, and trains people to impart that education to others.
- Go beyond the superficial community activities. People will be staying longer, so integration into the community will be of different nature.

Possible Implications: Measurement-related
- Rethink measurement of success.
- Mountain states should move from number of travellers as a metric to number of traveller days.
- Need to look at value addition by tourists coming to a community.

Strategy:
- Need to reduce the number of travellers to carrying capacity. To offset this, many more destinations have to be created.
- Marketing: When industry comes to you, marketing is essential, who is going to be the target customer?
- Tourism in the future will be about storytelling. This will be an important skill to build.

Policy:
- Social infrastructure , particularly medical infrastructure needs to be developed since tourists will be staying a long time.
- Integrate tourism with other areas, agriculture , forest should be integrated.
- Build storytelling as a skill
- Regenerating areas that get destroyed due to tourism

Shri Kishore Upadhyay
Former MLA, Uttarakhand

Comment: The biggest challenge in Uttarakhand is that about 9 lakh youth have returned to Uttarakhand due to Covid-19 and are dealing with depression. 65 youth have taken their lives. There is no module for development of the middle Himalayas. All forest laws, water laws etc. should be inclusive, considering the needs of the common man in the Himalayas.

Shri Himalaya Shangpliang
MLA, Meghalaya

Comment: How do we provide jobs to the young m
en and women who have returned? Can we all together create a road map for this which can be submitted to the Centre? How can we develop the tourism sector while not having an overflow of tourists? We should encourage initiatives like online kitchens, showcasing local cuisine.

Shri Sonam T Venchungpa
MLA, Sikkim

Comment: Maybe the number of traveller days divided by the number of travellers would be a stronger metric.

• With regards to the trends—what will happen with proprietor tourist stakeholders we have? To create new destinations, what about the funding? Forest laws need to be moderated for tourism development. How to make Mountain issues relevant at the national level?

Answers: On how to draw the attention of the center: There are globally so many people looking to move. Can we together look at getting 100 highly qualified people to move to the IHR? This in itself will get the attention of the center.On what will happen to existing players: We will have to train them so they understand what is coming. Apart from that, they are creative people and can decide what to do.

Shri Jitendra Chaudhury
Former MP, Tripura

• Domestic travellers are usually middle class. They have been very affected by the pandemic. How will the middle class afford to travel right now? We must push not just for reforms to tourism but also a larger economy. The middle class needs to be benefitted.

Answer: Without domestic middle class travellers, it is difficult to have much tourism. However, we are at a point where the world is changing. Mountain states can get foreign tourists now if we push for the next 3-5 years. The world will become our market for the first time.

Shri Amar Singh Rai
Former MLA, West Bengal

Comment: Overcrowding in Darjeeling is affecting civic amenitiesHill states are going for homestays, more concessions, levies, electricity subsidy, to decentralize tourism.Bring new dimension to tourism, beyond just walking around the mall etc.Forest tourism has untapped potential. Forest laws are stringent, the forest department won't take a step to change, why can't we promote village tourism? Set-up forest product related factories, similar to tea factories. Such as a paper mill or plywood factory.

Dr Rohit Sharma
MLA, West Bengal

- There is growing dependence on IT. How do we ease this transformation for businesses and individuals?

Answer: Every person below the age of 25 will be comfortable with online. But we need to tell them what stories they need to talk about that get other people interested. Will be able to attract worldwide audiences. There is a small blogger in Tamil Nadu who does food blogs, and has millions of followers. We need this kind of authentic content. Homestays are still a big opportunity. New opportunity is 'second homes'. People who want to live for part of the year in hilly states. Need to craft a new homestay policy. The big opportunity in forest tourism is to use it as an opportunity to get travellers to learn.

CONCLUSION

Closing Remarks
Shri Vincent Pala

Shri Pala thanked the speakers and members who attended the meeting for making an engaging and interactive session. He requested IMI to collate all the deliberations and recommendations which can then be forwarded to the North East MPs' Forum and can collectively share it with the Prime Minister as well.

Summary of Proceedings
Shri Amba Jamir
Vice President, IMI

Shri Amba Jamir highlighted the following points from the session:

- One recurring point was the recognition that the pandemic is a big challenge, one beyond the scope of the mountain states to handle alone.
- There was a recommendation that mountain states need to collectively reach out to the Centre to request for a special provision for mountain states to ensure that vaccinations are done properly and more extensively (especially in remote areas) in the mountain states.
- We also need to look into the adequacy of existing infrastructure in the states to manage the vaccines - transport, storage, etc. before the vaccinations are rolled out.
- We need to look into and encourage more research into the knowledge systems such as traditional food, indigenous medicines, etc. , not just to look into how these are being utilized to locally manage the pandemic but also to feed into tourism.
- Inclusive growth is needed to tackle the big challenge of mental health and depression among youth.
- There is a need to bring in synergy among different sectors as currently policies are being made in silos.
- A request emerged for all mountain states to collectively work towards a roadmap or policy towards tourism recovery in the Himalayas.
- The other big challenge everyone in the mountains is facing is how to ensure that returnees have appropriate livelihoods and how to engage them in meaningful jobs.
- A lot of opportunities are emerging through digital movement but the issue of connectivity keeps coming up. If we really want to capitalise on the digital movement we must first tackle infrastructure and connectivity issues for which we must talk to the Centre.
- Online tourism is also coming up in a big way. A good example is that of the Hornbill Festival which is being organized online due to Covid-19.
- An innovative idea to bring in new tourism destinations but where the question here is how do we bring in funds to encourage local communities.
- The other issue highlighted was that we now need to look at global outreach - NRIs and foreign tourists who are looking for new tourism places.
- There was an agreement among the legislators that there should be special economic package for mountain tourism based on natural resources and rural tourism.

Vote of thanks
Dr Rajendera Dobhal
Chairman, SDFU & Vice President, IMI

Dr Rajendra Dobhal thanked Shri Vicent Pala for Chairing this session of MLM 2020. He thanked Prof Srinath Reddy for bringing in data relevant to the mountain states of India which further enhanced the understanding of the multi-dimensional issues of the pandemic. He also thanked Shri Hari Nair for bringing in innovative ideas and policies which can be taken forward for recovery. Dr Dobhal further thanked all the former and current elected representatives who attended the session and engaged with the discussions through their relevant questions, and ensured everyone that the recommendations will be taken forward through a collective effort.

Annexure 1: Attendees

Name	Designation
Agatha Sangma	MP (Lok Sabha), Meghalaya
Amar Singh Rai	Former MLA, West Bengal
Amba Jamir	Vice President, IMI
C Lairosanga	MP (Lok Sabha), Mizoram
D.R. Thapa	MLA, Sikkim
Dr Lorho Pfoze	MP (Lok Sabha), Manipur
Dr Rajendra Dobhal	Vice Presicent, IMI & Chairman, SDFU
Dr Rohit Sharma	MLA, West Bengal
Dr Skaizang Dorjey	Chairman, Block Development Council, Leh
Farwanti Tamang	MLA, Sikkim
Feroz Ahmed Khan	Chairman, LAHDC Kargil
Gabriel D Wangsu	MLA, Arunachal Pradesh
Hari Nair	Founder, Holiday IQ
Himalaya Shangpliang	MLA, Meghalaya
Jitendra Chaudhury	Former MP, Tripura
K Srinath Reddy	President, Public Health Foundation of India
Kishore Upadhyay	Former MLA, Uttarakhand
Lainunmawia Fanai	MLA, Mizoram
Pachhuga Khenglwat	MLA, Mizoram
PD Rai	President, IMI
Pramod Reang	MLA, Tripura
Pravat Chowdhury	MLA, Tripura
Punchok Tashi	Executive Councilor, LAHDC Kargil
Pushpesh Tripathi	MLA, Uttarakhand
Raj Kumari Thapa	MLA, Sikkim
Rakkam Sangma	MLA, Meghalaya
Rigzin Spalbar	Former Chairman, LAHDC Leh
Rinchen Dolkar	
Ritu Kanduri Bhushan	MLA, Uttarakhand
Sonam T Venchungpa	MLA, Sikkim
Syuhio Mara	Mara Autonomous District Council
Tashi Gyaison	Chairman, LAHDC Leh
Vanlalthiana	MLA, Mizoram
Vincent Pala	MP (Lok Sabha), Meghalaya