

PROCEEDINGS REPORT

Science Advice and Diplomacy in the Battle against COVID-19 [Webinar]



Co-organised by



YSFN



Science Advice and Diplomacy in the Battle against COVID-19 [Webinar]

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PROCEEDINGS REPORT**

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I. EXECUTIVE SUMMARY

On the 21st of January 2021, the International Network for Government Science Advice (INGSA) Asia, the Young Scientists Forum Nepal (YSFN), the Nepal Academy of Science and Technology (NAST), and the Nepal Health Research Council (NHRC) co-organised a webinar titled “Science Advice and Diplomacy in the Battle against COVID-19” to foster understanding on the current science advice landscape in Nepal, particularly in response to the ongoing pandemic, as well as to highlight the importance of science advice and diplomacy in managing crises. The webinar was attended by over 100 academicians, scientists, and policy practitioners from around the world, and was also shared on Facebook Live. To date, the video has been viewed by over 2,000 people worldwide.

The webinar was moderated by Dr Prativa Pandey representing YSFN, and featured a keynote from the Chair of INGSA, Sir Peter Gluckman, as well as an expert panel discussion featuring key academicians, scientists, and policy practitioners from Nepal, namely Prof Dr Dibya Singh, the Dean of the Institute of Medicine at Tribhuvan University, Dr Khem Karki, the former Health Advisor of the Ministry of Health and Population, Government of Nepal, Prof Dr Zakri Abdul Hamid, the Patron of INGSA Asia and Chair of the Southeast Asia Science Advice Network (SEA SAN), as well as Prof Dr Ramesh Kant Adhikari and Prof Dr Anjana Singh, who are both academicians at NAST. The webinar also featured opening remarks from Hon. Dr Usha Jha, Hon’ble Member of the National Planning Commission, Government of Nepal, and Er Mr Ganesh Shah, the former Minister for Environment, Science, and Technology, Government of Nepal and Good Will Ambassador of NAST, as well as closing remarks from Dr Pradip Gyanwali, the Executive Chief of NHRC, and Dr Sunil Babu Shrestha, the Vice-Chancellor of NAST.

In his keynote, Sir Peter Gluckman highlighted some crucial lessons on science advice and diplomacy that can be learned from the COVID-19 pandemic, such as the need to build public trust in science and the government, as well as the need to have key structures for knowledge synthesis (summarising and interpreting all the available evidence) and knowledge brokerage (transferring scientific knowledge from researchers to policy makers) already in place before pandemics or emergencies occur. Sir Peter Gluckman also emphasised the need for strong international collaboration as well as efficient national risk registries to prepare for and manage devastating pandemics such as COVID-19.

During the panel discussion, the expert speakers shared their experiences of working in the various sectors of the science-policy nexus in Nepal, and how they have contributed to evidence-informed policy making in the country, especially during the COVID-19 pandemic. The topics of discussion included vaccine acquisition and administration, misinformation and its influence on vaccine hesitancy, dissemination of scientific knowledge to policy makers and the general public, international scientific collaborations, science-policy cooperation, pandemic preparedness, and many others.

After the webinar concluded, the participants were asked to complete a feedback form to help gauge the overall performance of the event. Generally, the webinar was extremely well-received and appreciated by the participants - many of whom requested that more webinars be organised in the near future. The participants also felt that the webinar had achieved its objectives and expected outcomes. This is certainly encouraging for the co-organisers moving forward, and will serve as a benchmark for all future webinars.

II. BACKGROUND

The COVID-19 pandemic is the defining global health crisis of our time, and has placed immense pressure on the scientific community to provide accurate and sound advice on containment strategies and response plans to mitigate its detrimental effects on our health, economy, and society. Globally, countries that have heeded scientific advice and recommendations seem to have largely managed to effectively control the spread of this devastating disease. However, some countries still seem to struggle to manage the pandemic, and are even experiencing second or third waves of infections.

Fortunately, due to multiple international efforts and initiatives, such as the COVAX Facility by the World Health Organisation (WHO), which have funded vaccine development and delivered them to market in record time, COVID-19 vaccines are now a reality. In fact, several vaccines are already being administered in many countries around the world. However, the advent of the COVID-19 vaccines has also brought forth many new challenges including fake news and severe misinformation, while revealing global inequalities that already exist, as illustrated by wealthier nations seemingly 'hoarding' excess vaccine supplies when poorer nations, i.e., lower-middle income countries (LMICs) are struggling to secure basic access to these vaccines. Furthermore, most LMICs have weaker health systems and inherent socioeconomic conditions, which further exacerbate the challenges that arise from the pandemic.

In Nepal, the cumulative positivity rate for COVID-19 is a staggering 13.2%, with a total of 1,979 COVID-related deaths recorded (as of 21st January 2021). With its recent acquisition of 1 million doses of vaccines from India, Nepal currently faces the same challenges surrounding vaccine distribution and administration that many other countries around the world are attempting to solve. Therefore, there is now both an opportunity and necessity for interdisciplinary and transnational discourse on science advice and diplomacy in Nepal, and how these can contribute to the development of effective COVID-19 response plans in the country.

The COVID-19 pandemic has also demonstrated the interconnected nature of our world, and that no one is safe until everyone is safe. Countries across the globe must act in solidarity and work together to overcome the pervasive and destructive effects of the COVID-19 pandemic, and political leaders must be guided by robust scientific evidence, not anecdotes or misplaced biases in order to make sound policy decisions that will affect the lives of millions.

As such, science advice and diplomacy are now more relevant than ever. They are critical for fostering collaborations within and between scientific communities, governments, and private sectors, both at the local and international level, and are key tools in our battle against the global COVID-19 crisis.

III. OBJECTIVES

The main objective of this webinar was to understand the current science advice landscape in Nepal and its associated challenges and concerns, particularly in response to the ongoing COVID-19 pandemic, as well as to highlight the value and importance of science advice and diplomacy in managing current and future health crises.

The specific objectives included to:

- Sensitise the target audience to the roles of science advice and diplomacy in times of pandemic with relevant, unique, and expert insight.
- Build thought leadership on the value and importance of considering and incorporating science advice into policy decisions in LMIC countries such as Nepal.
- Enhance communication and collaboration between scientists and policymakers to promote science advice and diplomacy in LMIC countries such as Nepal.
- Foster science advice capacity in Nepal, in line with the goals of the INGSA Regional Chapters to enable greater information dissemination and access in LMIC countries.
- Strengthen and expand INGSA's role and reputation as an internationally recognised and globally inclusive organisation leading the movement for evidence-informed policy making.

IV. EXPECTED OUTCOMES

After the webinar, participants were expected to be able to:

- Understand and appreciate the roles of science advice and diplomacy in times of pandemic.
- Initiate and participate in conversations regarding the use of science advice in policy discussions and decisions, particularly in LMIC countries.
- Develop networks and collaboration ties within and between scientists and policymakers.
- Recognise the value of engaging with international science-policy collaborative platforms such as INGSA to improve the potential for evidence-informed policy making in their respective countries and regions.

V. WELCOME ADDRESSES



Dr Meghnath Dhimal

Steering Committee
Member of INGSA-Asia &
Coordinator of YSFN

In his address, Dr Meghnath Dhimal welcomed all the guests, speakers, and participants to the webinar, and highlighted the objectives and relevance of this initiative, given the devastating effects of the ongoing COVID-19 pandemic. He also expressed his sincere hope that the session will help participants understand the current science advice landscape in Nepal and appreciate the value of science advice and diplomacy in managing future health crises and emergencies.

In regards to COVID-19, Dr Dhimal highlighted that countries around the world are now slowly recognising the importance of cross-border scientific networks and collaborations in overcoming the pervasive pandemic globally. “Science relies on having open discussions, transparency, and international collaborations,” he added, before reaffirming the potential of these international ties to produce meaningful outcomes in the battle against COVID-19.

In closing, Dr Dhimal acknowledged the support from the guests and participants, and the hard work of the organising team in making the webinar a reality, and shared his best wishes for a successful session.

In his address, Prof Abhi Veerakumarasivam posited that at some point in the near future, the knowledge generators, i.e., the academic community may have the necessary skills and capacity to provide science advice, as well as an awareness about their role in knowledge brokerage, but ultimately, there must be demand for this knowledge from policy makers. As such, Prof Abhi noted his excitement that the participants of the webinar consisted of both academicians and policy makers from around the world, and hoped that the session would facilitate important dialogue and discourse between the two groups.

Prof Abhi also expressed his hope that the panel discussion would provide critical insights into how international science collaborative platforms such as INGSAs-Asia may support individual countries such as Nepal and the larger South Asian region to enhance their capacity for science advice and knowledge sharing.

In closing, Prof Abhi thanked the co-organisers for their efforts in putting the webinar together, and the esteemed guests for their willingness to participate in this initiative. He also shared his wishes that the objectives of the webinar will be achieved, and that there will be many more opportunities to continuously engage with his Nepal counterparts in the near future.



**Prof Dr Abhi
Veerakumarasivam**

Chair of INGSAs-Asia

VI. OPENING REMARKS



Er Mr Ganesh Shah

Former Minister for Environment, Science, and Technology, Government of Nepal & Good Will Ambassador of NAST

In his opening remark, Er Mr Ganesh Shah noted that Nepal had recently received its first batch of COVID-19 vaccines, and emphasised that this procurement was only possible due to the collaborative and cooperative efforts of scientists across the region. He further highlighted the importance of such collaborative efforts in facing other global issues such as preparing for the Fourth Industrial Revolution and managing climate change.

Er Shah also emphasised that the responsibility of the scientific community transcends caste, creed, and border, and that science must serve the entire human race.

“Your [responsibility] is to humanity,” he said. With regards to fostering international scientific collaboration, Er Shah posited that personal connections between scientists from different countries and regions are just as important as formal partnerships between national academies and research institutions around the world.

In addressing the policy makers at the webinar, Er Shah stressed the need for them to have appropriate scientific advisors during policy development and implementation. “Even our Prime Minister must have a very strong scientific advisor,” he added.

Er Shah proposed that moving forward, scientific institutions around the world should meet and collaborate regularly, and that science diplomacy must be the top priority of every country, including Nepal. As such, he urged the scientific community in Nepal to come together and collaborate with the government, as well as their international counterparts to ensure that science is sufficiently incorporated into every policy decision for the country.

In closing, Er Shah thanked the organisers for their efforts, and hoped that initiatives like this will help Nepal overcome the devastating COVID-19 pandemic soon enough.

In her opening remark, Hon. Dr Usha Jha highlighted that the ongoing COVID-19 pandemic has provided a unique opportunity for scientists and policy makers from around the world to come together, and learn how to move forward as one. “We must capitalise on this [opportunity],” she added.

Dr Jha also noted that the objectives of the webinar, particularly the intention to sensitise the participants to the roles of science advice and diplomacy in times of pandemic, were relevant, well-focused, and meaningful. Dr Jha further noted that the webinar would provide important insight into how the COVID-19 pandemic has impacted the lives of the population in Nepal, which policy makers can consider and use when developing long-term action plans in managing the effects of the pandemic.

In closing, Dr Jha thanked the organisers for generating necessary dialogue on the topic, and vowed to use her position as a leading policy maker in Nepal to consider and implement all the crucial lessons learned from the webinar’s discussions when developing the country’s COVID-19 response plans.



Hon. Dr Usha Jha

Member of National
Planning Commission,
Government of Nepal

VII. KEYNOTE PRESENTATION



Sir Peter Gluckman

Chair of INGSA

Sir Peter Gluckman started his keynote by highlighting that the COVID-19 pandemic has created an urgent need to review and reimagine how knowledge is incorporated into decision-making before and during emergencies, and that the pandemic has taught us some interesting lessons about the evidence-policy interface and the relationship between science and diplomacy.

The pandemic has also revealed several issues with misinformation and disinformation - i.e., what is a fact, where does the fact originate from, and whether that fact will be used well or poorly - and has highlighted the various difficulties in making complex decisions in the face of uncertainty, similar to how climate change has

exposed the different priorities and interests that influence the way in which evidence is perceived and reflected in decision-making. Sir Peter Gluckman also noted that throughout the COVID-19 pandemic, science has become a proxy for other political debates, e.g., in domestic policy making, where there are debates about the implementation of lockdowns and the conflicting priorities of health and economy, and in foreign affairs, where there are issues surrounding nationalism and the supposed politicisation of the World Health Organisation (WHO).

Sir Peter Gluckman then shared his thoughts about the word science, as compared to the German word *wissenschaft*, where the latter describes all the knowledge disciplines including natural, medical, social, and data sciences, as well as the humanities. Sir Peter Gluckman believes that our society should be thinking in terms of *wissenschaft*, especially for issues such as COVID-19 and climate change. He further described the importance of having a pluralistic, interdisciplinary, and transdisciplinary approach to solving issues, and how different knowledge disciplines can contribute to the way in which governments make decisions in the interests of their people.

According to Sir Peter Gluckman, there are three key components that are true to all aspects of science advice. The first is the generation of scientific knowledge itself. As seen throughout the current pandemic, knowledge generation is a shared undertaking by the global scientific community, but it also requires and involves local scientists and academics in each country. The second component is knowledge synthesis, i.e., how evidence from all relevant knowledge disciplines is consolidated in a way that is useful for policy makers. Sir Peter Gluckman noted that national academies around the world have typically been the venue for knowledge synthesis, but argued that this process can occur anywhere, e.g., national science commissions, universities, and even ad hoc expert groups.

However, Sir Peter Gluckman emphasised that knowledge is only as trustworthy as the population that hears it, and therefore, transparency and science communication skills are very important. He also made an interesting observation that trust in science and trust in the institutions of government are tightly linked. As such, countries with higher levels of trust in their governments tend to also have higher levels of trust in the science presented.

Accordingly, the third component is knowledge brokerage, which Sir Peter Gluckman noted requires very different skills. This process transfers knowledge from the scientific community to the

decision makers in a way that the latter can understand and apply. Sir Peter Gluckman also noted that knowledge brokers are not always the same people that had synthesised the evidence and thus, Chief Science Advisors play an important role.

Using his own experience in the position as an example, Sir Peter Gluckman highlighted his role in ensuring that the Prime Minister and his cabinet understood what the scientific evidence was saying, and how to reach out to the scientific community with further questions. In addition, Sir Peter Gluckman stressed the necessity and importance of explaining both what the scientific community knows and does not know, i.e., what are the limits of the current knowledge, and what are the uncertainties around it.

He further emphasised that this was a mistake made in the early stages of the COVID-19 pandemic, where the scientific community overclaimed what information could be provided by modelling. Though modelling is important, we must also take into account the social sciences, human responses, and other dimensions to fully understand the situation at hand.

In speaking about building an efficient science advisory system, Sir Peter Gluckman believes that there are several important elements that must be present. The first is the institutions. We must ensure that there is institutionalised access to science advice, such as through national

academies and science commissions that facilitate the “right science” reaching policy makers in the “right way”. Another important element is that the people involved in knowledge synthesis and knowledge brokerage must have the necessary skills to perform these roles efficiently. Sir Peter Gluckman stated that this is not a matter of advocacy, but a matter of communicating the knowledge that is needed.

He further noted that in a pandemic, there are two aspects to consider. The first is timeliness. The more prepared a country is by having the necessary institutional arrangements in place, the faster the key people in decision-making can be in the room. The second aspect is developing appropriate risk registers, which provide countries with the relevant information to prepare for and manage disasters even before they happen.

With COVID-19 being a shared global issue, Sir Peter Gluckman highlighted the importance of considering how science and international diplomacy could and should closely interact. In relation to this, Sir Peter Gluckman called attention to the Independent Panel for Pandemic Preparedness and Response, which was created by WHO and chaired by the former Prime Minister of New Zealand, Helen Clark, and the former President of Liberia, Ellen Johnson Sirleaf, that recently issued a report with a critique of current international diplomatic efforts.

Sir Peter Gluckman shared three brief quotes from the report. The first was that the procedures and protocols attached to the operation of the International Health Regulations Emergency Committee seem to come from an earlier analog era that needed to be brought into the digital age. The second was that there had been gross failure in the early days of COVID-19 to take the existential threat of the pandemic seriously. The third was that the incentives for international cooperation were insufficient to ensure the effective engagement of all states with the system in a disciplined, transparent, accountable, and timely manner.

With regards to the pandemic also, Sir Peter Gluckman believes that in many developed countries, science lost out to politics, e.g., nationalism that led to a severe delay in necessary decision-making to contain the spread of the virus. He further noted that the countries that have been successful in managing the COVID-19 pandemic are those that were willing to make the difficult decisions early in the pandemic. In that regard, Sir Peter Gluckman congratulated Nepal for being quick in applying science advice in their COVID-19 response plans. On the other hand, Sir Peter Gluckman suggests that the international scene is not prepared for rapid partnerships between governments or private and academic sectors. He emphasised that we must learn from the Ebola and COVID-19 vaccine developments, and identify what we can do to accelerate

these partnerships, especially in the interests of the smaller, lower-middle income countries.

Sir Peter Gluckman then highlighted how INGSA has contributed to both the evidence-policy interface and to science diplomacy. In regards to the former, INGSA has established rapporteurs in over 100 countries around the world to document how different countries are engaging the evidence-to-policy pathways during the pandemic. The first report on this was published in September 2020, and can be found on the official INGSA website - www.ingsa.org. This database has been used extensively by the Independent Panel for Pandemic Preparedness and Response to analyse how science advice operates during emergencies.

In terms of science diplomacy, Sir Peter Gluckman noted that INGSA has an active division that consists of academics, diplomats, and scientists in foreign ministries that all have some role in diplomacy. Under this division, there is a smaller group known as the 'Foreign Ministries Science and Technology Advice Network' (FMSTAN), which has about 30 countries represented, that had been actively reviewing the issues surrounding WHO and international health regulations.

From these discussions, a draft document detailing a new convention on pandemic management has been produced and shared with the Independent Panel for Pandemic Preparedness and Response, as well as

the International Health Regulations Emergency Committee. Sir Peter Gluckman further highlighted that INGSA has been engaged in informal discussions on the issues of vaccine nationalism, and that the input from these discussions have been used to generate similar conversations within the member foreign ministries themselves. INGSA has also acted as an important track to connect science advisory mechanisms in low- and middle- income countries with each other, as well as with the Global North.

In closing, Sir Peter Gluckman emphasised that there are certainly some important lessons that we must learn from the COVID-19 pandemic. The first is that science advice requires pre-preparedness, i.e., having the basic structures for knowledge synthesis and knowledge brokerage already in place before an emergency occurs. The second is that risk registers are immensely crucial. The third is that although the global science advice system is not up to scratch, it actually presents a unique opportunity for countries such as Nepal to have an equal voice in the international community and to help move things forward. The fourth is that science is key to diplomacy, and developing science inputs in defined ministries is critical. As a final statement, Sir Peter Gluckman noted that every country requires science diplomacy and thus, must think through what mechanisms they need to have in place to facilitate knowledge synthesis, knowledge brokerage, and risk preparedness.

VIII. PANEL DISCUSSION



Prof Dr Ramesh Kant Adhikari

Academician at NAST

Panelist

Prof Dr Ramesh Kant Adhikari, who is the Chair of Nepal's National Immunisation Advisory Committee that is responsible for vaccine acquisition and immunisation programmes in the country, highlighted that the Committee follows a strict and rigorous scientific process when planning and conducting these health measures.

He further highlighted that the Committee has been working very closely with key international agencies, particularly the World Health Organisation (WHO) and the United Nations Children's Fund (UNICEF) to monitor the current vaccine landscape,

i.e., which vaccines are in the pipelines, and whether these vaccines are suitable to be implemented in Nepal.

During the discussion also, Prof Adhikari provided interesting insight into vaccine administration in Nepal, and its associated challenges and considerations - particularly the worsening issue of misinformation and its potential influence on vaccine hesitancy. Prof Adhikari noted that despite their general acceptance towards modern science and healthcare, the general public in Nepal are still wary when new vaccines are being introduced. This problem is then exacerbated by the rapid spread of inaccurate information on social media about the supposed negative effects of the vaccines, which further discourages the public from taking them.

Despite the severe problem of vaccine hesitancy globally, however, Prof Adhikari noted that Nepal's vaccine coverage is relatively high. In closing, Prof Adhikari called for strong international scientific collaborations to solve the COVID-19 pandemic through vaccination programmes and public health measures.

Prof Dr Dibya Singh, the Dean of the Institute of Medicine (IOM), Tribhuvan University, noted that the institute has leading figures and specialists from all ranges of the health sciences. Prof Singh believes that institutions like IOM have an important role to play in providing science advice to policy makers, developing and conducting research, as well as developing diagnostic, treatment, and public health advisory guidelines to manage the ongoing COVID-19 pandemic.

Prof Singh also emphasised that vaccines are not a miracle cure for the COVID-19 pandemic, hence the need to continue practicing preventive measures, e.g., social distancing, using face masks, and washing hands or using hand sanitisers frequently. Prof Singh further highlighted the need for stronger collaboration between scientists and policy makers, the value of having health diagnostic facilities in rural areas, and the importance of digitalising health data and disease registries to better manage future health emergencies or pandemics.



Prof Dr Dibya Singh

Dean at Institute of
Medicine, Tribhuvan
University

Panelist



Prof Dr Anjana Singh

Academician at NAST

Panelist

Prof Dr Anjana Singh briefly discussed the history of transmissible diseases, particularly the Black Plague in the 13th century and the Spanish flu in 1918, which caused devastating numbers of deaths around the world. She also mentioned that in 1990, one would take about 30 days to travel by ship from Wuhan, China to Europe. However, in 2021, one would only take 12 hours to make that same journey by flight. As such, diseases have become significantly more dangerous due to their ability to spread very quickly throughout the world.

Prof Singh further highlighted that the Ebola outbreak in Africa caused necessary vaccinations such as those for polio and smallpox, as well as crucial cancer treatments and Cesarean deliveries to be reduced in favour of urgent Ebola treatments - a problem that seems to be resurfacing with the

COVID-19 pandemic.

During the discussion also, Prof Anjana Singh highlighted that policy making is essential in preparing our society to manage COVID-19, as well as other diseases that may emerge in the future. In addition, she echoed Prof Dibya Singh's sentiment that the vaccines will not cure the pandemic overnight, and that achieving herd immunity may take some time. Therefore, the public must continue to wear masks, wash their hands, and practice social distancing as much as possible.

Prof Singh also emphasised that scientific knowledge cannot simply stay within the scientific community, and must instead be delivered to the general public. To achieve this, Prof Singh listed some key initiatives currently being undertaken by the scientific community in Nepal, such as producing books and broadcasting content that relay scientific information to the general public, including school-going children.

In closing, Prof Singh remarked that technologies used in the management of the COVID-19 pandemic must be made affordable to even developing countries such as Nepal.

Dr Khem Karki shared his experience of working for the Government of Nepal, and emphasised the importance of international knowledge- and data-sharing in solving global issues. Dr Karki also shared that despite having policies, protocols, and guidelines in place to manage the COVID-19 pandemic in Nepal, the absence of an established health surveillance system made it difficult to gather local data-based evidence for policy making.

Dr Karki further described how expert opinions were the subject of controversy during the pandemic, as these opinions seemed to change from time to time. However, Dr Karki argued that the public must be made aware of the ever-evolving nature of science, and by extension, science advice - particularly during a pandemic. Dr Karki also emphasised the need to educate the public about authentic sources of information, such as government entities and institutions, and to ensure that the pandemic is not politicised because this will only delay and derail necessary response plans.

In closing, Dr Karki described how Nepal's acquisition of vaccines from India has fostered better understanding between the two countries despite past political disputes. As such, he believes that science diplomacy can be key in overcoming global political issues or strains, and increasing collaboration and cooperation between countries around the world.



Dr Khem Karki

Former Health Advisor of the Ministry of Health and Population, Government of Nepal

Panelist



Prof Dr Zakri Abdul Hamid

Patron of INGSA-Asia & Chair of Southeast Asia Science Advice Network (SEA SAN)

Panelist

Prof Dr Zakri Abdul Hamid posited that the appointment of Eric Lander, a prominent geneticist as the Science Advisor to the incoming President of the United States of America, President Joe Biden, signifies political leaders' understanding of the gravity and severity of the issues that have been created by the pandemic. Prof Zakri also noted that the negligence of the former president towards the role of science advice in policy making has led to the deaths of hundreds of thousands of people in a rich and developed country.

He also highlighted the importance of pandemic preparedness, which is still

lacking in most countries around the world.

He also highlighted the importance of pandemic preparedness, which is still lacking in most countries around the world. In speaking about science diplomacy, Prof Zakri supported the idea of organising a science diplomacy forum - first on a national level, then expanding it internationally through established science advice and diplomacy networks such as the Southeast Asia Science Advice Network (SEA SAN).

During the discussion also, Prof Zakri noted that the issues surrounding vaccines are similar to those seen surrounding global discourse on genetically modified organisms or the human immunodeficiency virus (HIV) epidemic in South Africa - they are all contentious issues that have significantly negative public perception. Therefore, Prof Zakri emphasised the critical role of the scientific community in each country to engage and communicate with their respective populations about important scientific issues, such as public acceptance towards vaccines, in order to effectuate real and meaningful change.

In closing, Prof Zakri contended that the current pandemic is an issue that lies at heart of the science-policy interface, and must be addressed urgently.

Sir Peter Gluckman shared his experience in managing various emergencies, such as earthquakes, shipwrecks, bioterrorism, and emphasised the importance of scientific knowledge and advice for national crisis management and disaster preparedness. He also added that scientific advisors “think in a pluralistic manner”, which enables them to point out issues that emergency managers may not be paying attention to. This underlines the importance of having scientific advisors involved in solving crisis situations.

Sir Peter Gluckman also noted that the issues surrounding vaccination hesitancy today are reminiscent of the issues that had plagued the management of Ebola in Africa in the past, where misinformation was an enormous challenge. In regards to this issue, Sir Peter Gluckman noted that having and presenting consistent and credible information is key in overcoming potentially conflicting information from various sources, which can lead to loss of public trust and result in unnecessary deaths.

During the discussion also, Sir Peter Gluckman stressed that the advent of the COVID-19 vaccines is not the “beginning of the end” of the pandemic, as there is still a long way to go before the pandemic is truly eradicated. Sir Peter Gluckman added that potential viral changes or mutations, the inadequacy of the current vaccines to eliminate the changing virus, and the imbalance in the vaccine distribution



Sir Peter Gluckman

Chair of INGSA

Moderator

between the Global North and Global South may all result in terrible outcomes. As such, Sir Guckman noted the importance of maintaining key precautionary measures such as practicing social distancing and wearing face masks.

Sir Peter Gluckman also noted his belief that this pandemic will certainly not be the last. Therefore, there is a dire need for international partnerships, as well as established science advisory mechanisms that can be rapidly engaged during emergencies. In addition, Sir Peter Gluckman believes that academies, medical universities, social scientists, leaders of indigenous communities, and all other relevant stakeholders must play their respective parts and participate in the decision-making process for the management of

a pandemic. Though he acknowledged that the development of COVID-19 vaccines has been remarkably fast, there is still a great need for better mechanisms to bring the academic, private, and government sectors for an even more efficient response to health crises.

In closing, Sir Peter Gluckman stated that INGSA will always be available to help any country in terms of providing science advice, supporting capacity building, and engaging in science diplomacy.

IX. CLOSING REMARKS



Dr Pradip Gyanwali

Executive Chief of NHRC

In his closing remark, Dr Pradip Gyanwali noted his belief that the webinar had done well to outline the value and importance of science advice and diplomacy, and why they should be an integral part of every country's toolkit. "It can offer a mechanism to build trust, create dialogue, and allow access between nations," he added, before reaffirming the need for strong science advice and diplomacy, particularly in times of pandemic.

Dr Gyanwali assured that the NHRC is ready to contribute to the discourse on science advice and diplomacy, and will implement the outcomes of these discussions in managing and overcoming the COVID-19 pandemic in Nepal, as well as other emergencies that may arise in the future. He also noted that the NHRC will continue to support policy makers and assist in building the science advice capacity in the country.

Dr Gyanwali ended his closing remark by thanking the organising team for putting together a successful and timely webinar, and noted his sincere appreciation towards the esteemed guests, speakers, and participants for their valuable time and contributions to the session.

In his closing remark, Dr Sunil Babu Shrestha noted that the webinar had provided important insight into the impact of the COVID-19 pandemic, and highlighted the vital role of the scientific community in developing an effective vaccine to protect our population against this threat. He also noted that science diplomacy is crucial in building the necessary networks and connections to facilitate the smooth acquisition and equitable distribution of these developed vaccines.

In speaking about NAST's involvement in managing the ongoing pandemic in Nepal, Dr Shrestha shared that the academy has launched many significant initiatives, including the establishment of a well-equipped biological research laboratory to study the disease-causing virus, as well as the dissemination of evidence-based information through multiple online platforms to educate the general public about the importance of taking the vaccine.

Dr Shrestha emphasised that science is not limited by borders, and that science diplomacy is key in creating the necessary opportunities for technology transfer, scientific collaborations, research and development, data sharing, and scientific capacity building to solve global issues. He also noted that the COVID-19 pandemic has brought countries around the world closer together, and provided an excellent opportunity for strong international collaborations in the field of science and technology.



Dr Sunil Babu Shrestha

Vice Chancellor of NAST

Dr Shrestha ended his closing remark by thanking the organisers, guests, and participants for their involvement in this important initiative, and reiterating NAST's commitment to supporting partnerships in current and future scientific ventures.

X. POST-EVENT SURVEY

After the webinar concluded, the participants were provided with a feedback form (Appendix II) to share their thoughts and comments, as well as to answer a few questions that would help gauge the success of the event in achieving its objectives and fulfilling its expected outcomes.

For the first survey question, “How important do you think science advice and diplomacy are in managing global health crises such as the COVID-19 pandemic?”, nearly all respondents (96.2%) agreed that science advice and diplomacy were important in managing these crises. Though one cannot say for certain that these positive attitudes towards science advice and diplomacy were fostered solely by the contents of the webinar, especially since the majority of the participants had strong scientific backgrounds, one can certainly posit that the session had developed and strengthened any prior understanding or appreciation for the importance of science advice and diplomacy in dealing with large-scale health emergencies.

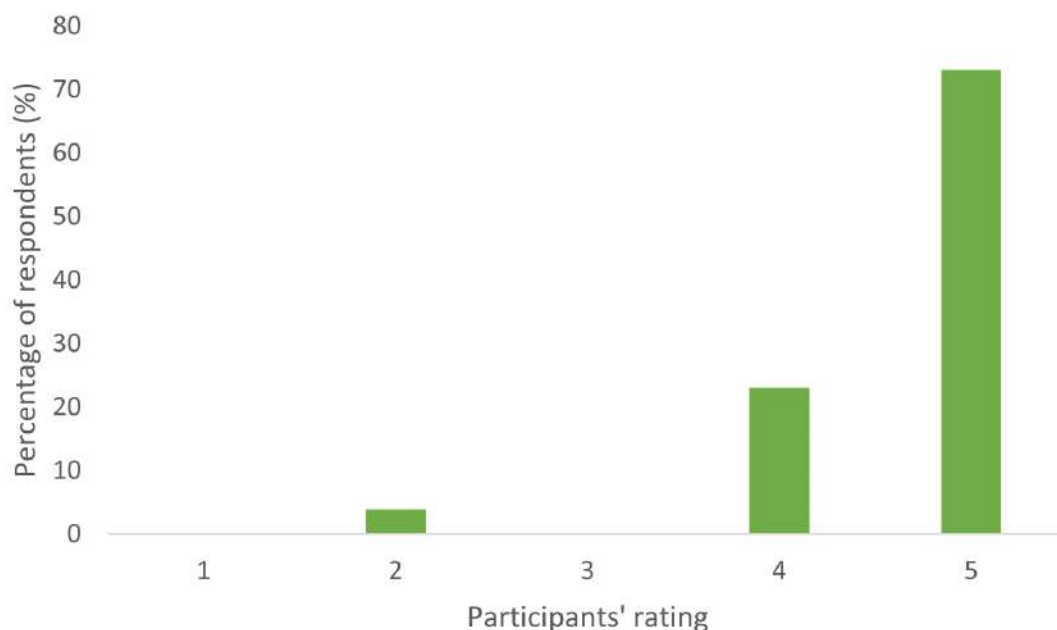


Figure 1 | Responses from participants on how important they perceived the role of science advice and diplomacy in managing global health crises. Note: Scale ranges from (1) Not important to (5) Very important.

The second question, “Based on your knowledge and experience, how well do you think science advice is incorporated into policy discussions and decisions in your country or region?”, received mixed responses that ranged from “Not well” to “Very well”. These varying responses could be indicative of the participants’ differing knowledge and involvement in their respective countries’ or regions’ policy making.

Nevertheless, by encouraging participants to think about the use of science advice in policy making, regardless of their role or involvement in the actual process, the webinar has taken an important step in building thought leadership among the participants regarding the value and importance of considering and incorporating science advice into policy decisions.

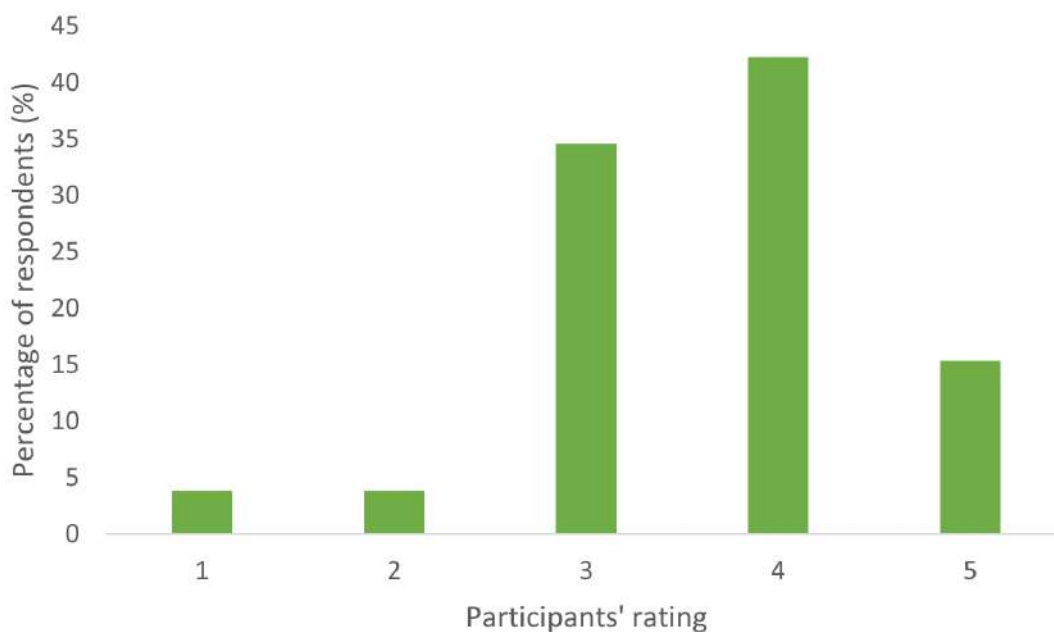


Figure 2 | Responses from participants on how well they perceived science advice is incorporated into policy discussions and decisions in their respective countries or regions. Note: Scale ranges from (1) Not well to (5) Very well.

For the third survey question, “Moving forward, how interested would you be in initiating or participating in conversations surrounding the use of science advice in policy making in your country or region?”, nearly all respondents (96.2%) indicated that they would be highly keen on engaging in these conversations. While the generation of this interest cannot be attributed to the webinar alone, the session does seem to have had a positive influence on the participants’ will to partake in critical discourse surrounding the use of science advice in policy making, which is key in fostering the science advice capacity in a given country or region.

The fourth survey question, “What are your suggestions or feedback regarding this webinar?”, generated many different responses that ranged from congratulatory comments to insightful recommendations for future improvement. The most common suggestion from the participants was to include a question and answer (Q&A) session with the panelists, which would allow the audience to share their thoughts and concerns, and be directly involved in the discussion. This is certainly something for the organisers to consider and improve for future webinars.

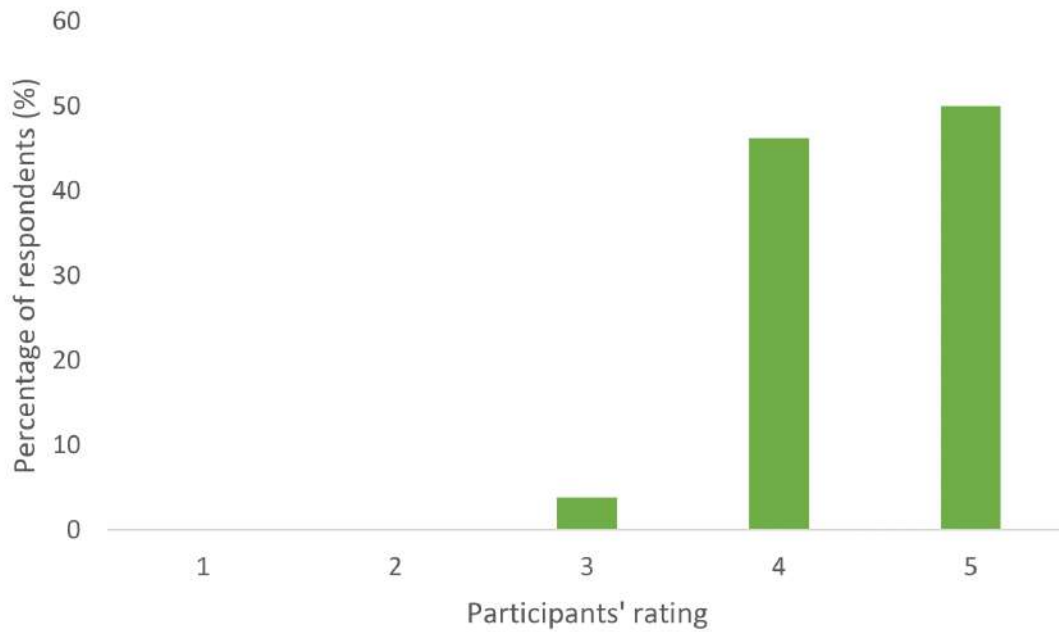


Figure 3 | Responses from participants on how interested they would be to initiate or participate in conversations surrounding science advice in policy making in their respective countries or regions. Note: Scale ranges from (1) Not interested to (5) Very interested.

Percentage of respondents interested in joining the INGSA-Asia network

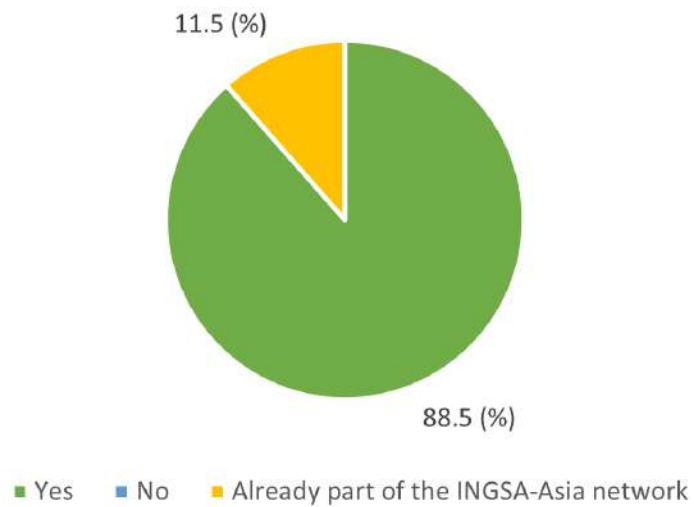


Figure 4 | Responses from participants on whether they would be interested in joining the INGSA-Asia network after the webinar concluded.

For the final survey question, “Would you like to join the INGSA-Asia network and receive future newsletters, updates, and invitations to events?”, 88.5% of the respondents indicated that they would like to join the network, while the remaining 11.5% were already part of the network. This incredible finding suggests that the webinar was utterly successful in strengthening and expanding INGSA’s role and reputation as an internationally recognised and globally inclusive organisation leading the movement for evidence-informed policy making.

Overall, the post-event survey found that the webinar had certainly achieved its objectives and expected outcomes, and provided insightful suggestions for improvement for future webinars.

XI. LESSONS LEARNED

There are several important lessons that can be learned from the webinar’s discussions, which can then be used to inform actionable plans for the future to effectuate real and meaningful change in the field of science advice and diplomacy in Nepal and the larger South Asian region.

Some of the key take-home points include:

- Pre-preparedness is pivotal in managing and overcoming emergencies

Having the necessary structures for science advice already in place before emergencies occur can expedite the process of connecting scientists with the relevant decision-makers to develop and implement evidence-informed policies to mitigating arising crises and limit their potential impacts on our health, economy, and society. Therefore, each country should ensure that they have the necessary science advice structures (e.g., advisory councils, national academies, etc.) established, so that they can be rapidly engaged if and when needed.

Another important component in pre-preparedness is having national and global risk registers that can provide countries and regions with the relevant information to prepare for and manage disasters even before they happen. Accordingly, the scientific community should work closely with governments around the world to develop and implement appropriate risk registers that can increase our preparedness to manage various emergencies.

- Academic and research institutions play an important role in providing science advice

Academic and research institutions are important components in any efficient science advisory system, as they ensure that policy makers have constant and convenient access to credible science advice. These institutions may be involved in the provision of science advice itself, or take part in developing and conducting research, as well as developing diagnostic, treatment, and public health guidelines to manage various crises. Therefore, moving forward, academic and research institutions must take responsibility and play their part in ensuring that policy makers are provided with good science advice to ensure that all policies being developed and implemented are supported by sufficient evidence.

- Vaccines will not be a miracle cure for the ongoing COVID-19 pandemic

The COVID-19 vaccines do not promise an end to the pandemic, or at least, not immediately. There is still much to be done before the virus is truly eradicated from society. As such, in the meantime, it is important that we do not let our guards down and instead, continue to practice preventive measures such as social distancing, wearing face masks, and washing hands or using hand sanitisers frequently to contain the spread of the COVID-19 pandemic.

- Misinformation is a serious issue that must be actively addressed

Rampant misinformation and fake news about the COVID-19 vaccines is a serious problem, as it may increase vaccine hesitancy in the population. With the existence of social media, where inaccurate information can be spread widely and unchecked, it is difficult to control what the public sees and hears. Therefore, the way to combat the spread of inaccurate information is to ensure the constant sharing of accurate information from credible and authentic sources. For example, producing and broadcasting evidence-based information on COVID-19 via radio, television, social media, or any platform that can rapidly reach the general public. Furthermore, scientists and researchers should be proactive in engaging with the public to share their expert knowledge on important science-related issues.

- Scientific advisors are vital in policy making

It is imperative that all policies being developed and implemented are informed by sufficient scientific evidence. To ensure this, policy makers must have trusted scientific advisors with the necessary expertise to provide evidence-based advice or recommendations during the policy making process. These scientific advisors are responsible

responsible to ensure that the policy makers understand what the science is saying, and how this knowledge can be applied to the policies being made. Furthermore, scientific advisors may sometimes consider a certain crisis situation from a broader perspective, which can help them identify and point out ideas or solutions that emergency managers (whose responsibility is to control the immediate situation) may not see.

- International scientific partnerships are crucial in overcoming global issues

Nepal's major acquisition of COVID-19 vaccines from India is one great example of a successful scientific partnership that benefits both countries. Though the value and importance of such partnerships are well-known, there are still significant gaps in rapid cross-border cooperation across the globe. Therefore, governments should actively build and participate in international scientific partnerships, particularly those involving low- and middle-income countries. One way to achieve this is by consistently engaging collaborative science-policy platforms such as INGSA that connect the science advisory mechanisms in countries around the world to facilitate global knowledge- and data-sharing.

APPENDIX 1: PROGRAMME

Webinar on

"Science Advice and Diplomacy in the Battle against COVID-19"

Co-organised by

Young Scientist Forum Nepal (YSFN),
Nepal Academy of Science and Technology (NAST), Lalitpur, Nepal,
Nepal Health Research Council (NHRC), Government of Nepal,
International Network of Government Science Advice (INGSA), Asia.

Date: 21 January 2021

Time: 10:15-12:30 (NPT) / 12:30-14:45 (MYT) / 17:30-19:45 (NZST)

Registration Emcee Er. Sudarshan Sharma from NHRC
Dr. Prativa Pandey from YSFN

Items	Resource person	Time (NPT)
Registration	Er. Sudarshan Sharma	10:15-10:30
Welcome Address	Dr. Meghnath Dhimal, <i>Steering Committee Member, INGSA-Asia & Coordinator, Young Scientists Forum Nepal</i>	10:30-10:35
Welcome Address	Prof. Abhi Veerakumarasivam, <i>Chair, INGSA-Asia</i>	10:35-10:40
Opening Remarks from Special Guest	Er. Mr. Ganesh Shah, <i>Former Minister for Environment, Science and Technology, Government of Nepal, & Good Will Ambassador of NAST</i>	10:40-10:50
Opening Remarks from Chief Guest	Hon. Dr. Usha Jha, <i>Member, National Planning Commission, Government of Nepal</i>	10:50-11:00
Keynote Presentation	<i>'Science advice and diplomacy at the time of emergencies and pandemics'</i> Sir Peter Gluckman, <i>Chair, INGSA</i>	11:00-11:20
Panel Discussion (Moderator: Prof. Sir Peter Gluckman)	Prof. Dr. Ramesh Kant Adhikari, <i>Academician, NAST</i> Prof. Dr. Dibya Singh Shah, <i>Dean, IOM, TU</i> Prof. Dr. Anjana Singh, <i>Academician, NAST</i> Dr Khem B Karki, <i>Former Health Advisor of Ministry of Health and Population, Government of Nepal</i> Prof. Dr. Zakri Abdul Hamid, <i>Patron, INGSA-Asia & Chair, SEA SAN</i>	11:20-12:10
Closing Remarks	Dr. Pradip Gyanwali, <i>Executive Chief, NHRC</i>	12:10-12:20
Closing Remarks from Session Chair	Dr. Sunil Babu Shrestha, <i>Vice-Chancellor, NAST</i>	12:20-12:30

APPENDIX 2: FEEDBACK FORM

INGSA-Asia Nepal Workshop Feedback Form

Thank you for attending our webinar titled "Science Advice and Diplomacy in the Battle against COVID-19" on the 21st of January 2021! To help us continue making our programmes better, please take a few minutes to provide us with your valuable feedback by filling out this short questionnaire.

* Required

1. How important do you think science advice and diplomacy are in managing global health crises such as the COVID-19 pandemic? *

Mark only one oval.

	1	2	3	4	5	
Not important	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Very important

2. Based on your knowledge and experience, how well do you think science advice is incorporated into policy discussions and decisions in your country or region? *

Mark only one oval.

	1	2	3	4	5	
Not well	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Very well

3. Moving forward, how interested would you be in initiating or participating in conversations surrounding the use of science advice in policy making in your country or region? *

Mark only one oval.

	1	2	3	4	5	
Not interested	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Very interested

4. What are your suggestions or feedback regarding this webinar? *

5. Would you like to join the INGSA-Asia network and receive future newsletters, updates, and invitations to events? *

Mark only one oval.

- Yes
- No
- I'm already part of the INGSA-Asia network

6. If yes, please provide your e-mail address below:
