NUCLEAR SCIENCE AND TECHNOLOGY FOR PEACE AND DEVELOPMENT

Commemoration Ceremony of Hiroshima Day, August 6, 2025

EVENT REPORT

Prepared by

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LIST OF ABBREVIATIONS

HiUSAN	Hiroshima University Scholars Alumni Nepal
NDRI	Nepal Development Research Institute
IFA	Institute of Foreign Affairs
WHO	World Health Organization
FAO	Food and Agriculture Organization
NAST	Nepal Academy of Science and Technology
MoEST	Ministry of Education, Science and Technology
MOALD	Ministry of Agriculture and Livestock Development
MOHP	Ministry of Health and Population
NARC	National Agriculture Research Centre
DFTQC	Department of Food Technology and Quality Control
PQPMC	Plant Quarantine and Pesticide Management Centre
CDES	Central Department of Environment
SDPU	Sustained Dialogue on Peaceful Uses
NPT	Non-Proliferation Treaty
IAEA	International Atomic Energy Agency
MOFA	Ministry of Foreign Affairs
MOACD	Ministry of Agriculture and Cooperatives Development
MOHA	Ministry of Home Affairs
DFTQC	Department of Food Technology and Quality Control
NARC	National Agriculture Research Centre
CDCPDS	Tribhuvan University's Central Department of Population and Development Studies
FNCCI	Federation of Nepalese Chambers of Commerce and Industry
JAAN	JICA Alumni Association of Nepal
CDD	Center for Diplomacy and Development
AFCAN	Agriculture and Food Consumer Association Nepal
APF	Armed Police Force
OCO	Outreach and Communication Officer
GON	Government of Nepal
SDG	Sustainable Development Goals
UNRCPD	United Nations Regional Centre for Peace and Disarmament in Asia and the Pacific
TPNW	Treaty on the Prohibition of nuclear weapons
CSA	Comprehensive Safeguards Agreement
DIRD	Central Department of International Relations and Diplomacy
NPHF	Nepal Public Health Foundation
CDMI, TU	Central Department of Microbiology, Tribhuvan University
CNI	Confederation of Nepalese Industries
FES	Friedrich Ebert Stiftung Nepal

Background

The Hiroshima Day Commemoration program, themed *"Nuclear Science and Technology for Peace and Development,"* was organized to reflect on the dual-use nature of nuclear science, its potential for both destruction and peaceful applications that benefit society. The event began by revisiting the tragic history of Hiroshima, underscoring the immense loss of life and devastation caused by the atomic bombing. This reflection provided a solemn foundation to emphasize the vital objective of harnessing nuclear science and technology for peaceful purposes.

This year, Hiroshima Day was commemorated collaboratively by Hiroshima University Scholars Alumni Nepal (HiUSAN), Nepal Development Research Institute (NDRI), and the Institute of Foreign Affairs (IFA), a catalyst body responsible for generating national consensus on foreign policy issues. The workshop under the Ministry of Foreign Affairs, GON, aimed to review the various initiatives being taken in Nepal, discuss science diplomacy for international cooperation, and reiterate Nepal's stance on non-proliferation and disarmament, inviting a critical mass of stakeholders. The program aimed to raise awareness of the transformative potential of nuclear technology in promoting peace, sustainable development, and public welfare. It highlighted how nuclear science, when responsibly managed, offers tremendous opportunities in medical advancements, agricultural development, food security, and environmental protection.

By situating Nepal within the global context of nuclear diplomacy and non-proliferation treaties, the event underscored the nation's commitment to disarmament while exploring pathways to leverage nuclear technology as a catalyst for development. The focus on peaceful nuclear applications included discussions on food irradiation technology as a viable solution to address post-harvest losses in Nepal, a significant challenge affecting farmer incomes and food security. The event also aimed to foster collaborations among academia, government, researchers, and policymakers to bridge knowledge gaps and build a shared vision for the peaceful and sustainable integration of nuclear science in Nepal's development agenda.

Ionization radiation technology employs a focused beam of electrons or X-rays to alter material properties. This method effectively eliminates bacteria, viruses, and pathogens without relying on chemicals or heat, making it a safe, efficient, and environmentally friendly sterilization alternative. It finds applications in sterilizing medical devices, developing pharmaceuticals, treating food products, and enhancing industrial processes without producing harmful by-products. Recently, this technology has gained significant global traction. Since the 1980s, global authorities, including the World Health Organization (WHO) and Food and Agriculture Organization (FAO), have endorsed food irradiation as a reliable technology for enhancing food safety, maintaining quality, and extending shelf life, while meeting international phytosanitary standards.

In Nepal, ionization radiation technology holds significant promise to tackle critical issues such as high post-harvest losses, which can reach up to 40% in both quantity and quality, severely impacting food security, farmer income, and public health. Current preservation methods like cold chain management face challenges such as infrastructure disruptions and environmental impacts from refrigerants, while chemical treatments carry risks of toxicity and residual contamination. E-

beam technology offers a transformative solution by reducing spoilage, controlling pests and pathogens, and enabling compliance with export biosafety requirements, thus improving competitiveness in international markets.

Strong government support in Nepal is evident through the ratification of the Nuclear Science and Technology Act 2078 (2020) and subsequent directives guiding development. Nepal's collaboration with the International Atomic Energy Agency since 2008 has facilitated phased progress in awareness, capacity building, and pilot projects, with continued emphasis on peaceful applications of nuclear science and technology in healthcare, agriculture, environment, and industry. Key institutions such as the Ministry of Education, Science and Technology (MoEST) and the Nepal Academy of Science and Technology (NAST) oversee and promote safe, innovative use of nuclear technologies, alongside other governmental agencies related to agriculture, health, and environment.

Unlike many countries, Nepal does not have a dedicated nuclear regulatory authority; however, MoEST acts as the focal ministry for nuclear science and technology oversight. Its specialized division manages nuclear materials to ensure their safe and effective use in line with international standards. NAST plays a crucial role in fostering innovation, research, education, and international collaboration. Additional stakeholders include the Ministry of Agriculture and Livestock Development (MOALD), the Ministry of Health and Population (MOHP), the National Agriculture Research Centre (NARC), the Department of Food Technology and Quality Control (DFTQC), the Plant Quarantine and Pesticide Management Centre (PQPMC), and the Central Department of Environment (CDES).

Nepal is uniquely positioned to leverage nuclear science and technology to address pressing challenges in agriculture, food security, healthcare, energy, and environmental management. Growing interest in peaceful applications of ionization radiation technology is reinforced by findings from stakeholder workshops in Sustained Dialogue on Peaceful Uses (SDPU) Episodes I (2023), II (2024), and III (2025). This momentum underscores Nepal's strong commitment to utilizing nuclear technology for sustainable development and societal benefit. The ongoing "Nuclear Science and Technology for Peace and Development" workshop series, held in collaboration with international partners like Hiroshima University, fosters multi-sectoral collaboration, raises public awareness, and promotes a unified vision of nuclear technology as a pivotal tool in Nepal's sustainable development strategy.

Rationale of the program

Nepal, as a signatory to the three pillars of the Non-Proliferation Treaty (NPT), complies perfectly with non-proliferation and disarmament, demonstrating a strong commitment to these principles. It actively participates in international treaties and diplomatic advocacy, aligning its national efforts with global initiatives. However, Nepal is yet to leverage the third pillar, the peaceful use of nuclear energy.

To explore peaceful nuclear applications, HiUSAN and the NDRI have organized annual Hiroshima Day workshops focusing on how Nepal can harness nuclear technology for development, including discussions on food irradiation to improve safety and shelf life. Given global concerns over the risks posed by some countries' nuclear programs, Nepal maintains a firm commitment to disarmament and non-proliferation advocacy. This year's Hiroshima Day commemoration, held jointly by HiUSAN, NDRI, and IFA, aims to review national initiatives, promote science diplomacy, and reaffirm Nepal's stance.

The peaceful use of nuclear science has significantly for the use of nuclear technology while Promoting peace and economic growth to modern development in many countries, while a few countries have lagged. In Nepal, although the use of nuclear science and technology is advancing gradually, especially in the medical sector, its application in other sectors is very limited. In this context, HiUSAN and NDRI have been organizing workshops on the occasion of the commemoration of Hiroshima Day, on the 6th of August, regarding how Nepal could leverage the third pillar for peaceful development. In the past two years, the workshop discussed food irradiation technology, its viability to improve food safety, and extend shelf life.

On top of that, regionally and globally, there is growing concern over the risk of nuclear plants of some countries for destructive purposes, in which Nepal is committed to its advocacy for disarmament and its stance on non-proliferation. Ambassador Suvedi highlighted the dual mandate of peaceful nuclear applications: advancing beneficial uses in agriculture, medicine, and research while preventing military diversion. This balance is protected under the NPT with strict oversight by the International Atomic Energy Agency (IAEA). Dr. Gurung emphasized electron beam (e-beam) technology as a game-changing, cost-effective solution enabling in-country treatments compliant with international phytosanitary standards. He cited "Mango Diplomacy" as an example of nuclear technology's role in enhancing trade.

This workshop contributes to a deeper understanding of modern nuclear science, advancing science diplomacy, fostering international collaboration for peaceful purposes, and discouraging destructive uses.

Participants

Episode III of the workshop drew an enthusiastic gathering of approximately sixty-seven (67) participants representing a wide range of key stakeholders across government, academia, the private sector, and civil society. Attendees included representatives from several ministries such as the Ministry of Foreign Affairs (MOFA), Ministry of Agriculture and Cooperatives Development (MOACD), Ministry of Home Affairs (MOHA), Ministry of Education, Science and Technology (MoEST), Ministry of Agriculture and Livestock Development (MoALD), the Department of Food Technology and Quality Control (DFTQC), and the National Agriculture Research Centre (NARC).

The academic community was well represented by participants from Tribhuvan University's Central Department of Population and Development Studies (CDCPDS), Central Department of Conflict, Peace and Development (CPDS) and Central Department of Chemistry. Notably, Dr. Suman Shrestha, a nuclear medicine physician, also contributed to the program. The private sector and various relevant agencies participated actively.

The workshop was honored by the presence of distinguished dignitaries, including former Ambassador Kailash Raj Pokhrel, Poshraj Suvedi, Madhuban Pandey, Durga Prasad Bhandari, and Ms. Tanka Takeda from the Embassy of Japan. Scientists and experts from the organizing institutions, Nepal Academy of Science and Technology (NAST), Hiroshima University Scholars' Alumni Nepal (HiUSAN, first Secretary), the Biomedical Engineering and Experimental Nuclear Technology (BEEN), Policy Research Institute (PRI), JICA Alumni Association of Nepal (JAAN), Federation of Nepalese Chambers of Commerce and Industry (FNCCI) and the organizer Nepal Development Research Institute (NDRI) also attended. Media coverage was provided by prominent outlets such as Setopati.com, ensuring broad public engagement.

The event was graced by key officials, including Diplomat and Guest of Honor Mr. Gyan Bahadur Magar, Joint Secretary at the Ministry of Foreign Affairs, and Mr. Gokarna Mani Duwadi, Chief Guest and Secretary to the Ministry of Home Affairs, Government of Nepal. The workshop proceedings were chaired by Dr. Jaya Kumar Gurung, Senior Research Specialist at NDRI.

Ambassador Prakash Kumar Suvedi, Executive Director at the IFA, delivered the welcome remarks, followed by a special video message from Prof. Dr. Shinji Kaneko, Executive Vice President of Hiroshima University, Japan. Further remarks were presented by Mr. Arun Shrestha, Senior Program Officer at the Federation of Nepalese Chambers of Commerce and Industry (FNCCI), Dr. Ram Chandra Bhusal of the JICA Alumni Association of Nepal (JAAN), and Mr. Kamal K. Shrestha, representative of the NAST.

The program concluded with closing remarks by Dr. Ranjan Prakash Shrestha, Senior Scientist and Chairperson of HiUSAN. Other participating organizations included Munaa Krishi Limited, JAAN, Centre for Development Dialogue (CDD), Plant Quarantine and Pesticide Management Centre (PQPMC), Agriculture and Food Consumer Association Nepal (AFCAN), Armed Police Force (APF), and management experts from New York.

Program Modality

Ms. Ashma Aryal, Outreach and Communication Officer (OCO) at the Nepal Research Development Institute (NDRI), served as the Master of the Ceremonies (MC) for this event. The program commenced with a brief introduction highlighting the event's purpose: to commemorate the tragic anniversary of the Hiroshima atomic bombing and to highlight the global imperative of harnessing nuclear energy solely for peaceful purposes. This occasion provided a valuable opportunity to reflect on historical lessons while discussing Nepal's current status, recent initiatives, and future directions in promoting the responsible and beneficial use of nuclear science for peace and development". The formal proceedings began with the arrival of the Chief Guest, Mr. Gokarna Mani Dawadi, Secretary at the Ministry of Home Affairs, Government of Nepal (MOHA). The program was officially chaired by Dr. Ranjan Prakash Shrestha, Chairperson of HiUSAN.

At a program on *"Peace and Development through the Use of Nuclear Energy in the Field of Science and Technology,"* Mr. Sanu Raja Puri of the Institute of Foreign Affairs (IFA) delivered the welcome remarks. He warmly greeted the chief guest, Home Secretary Mr. Gokarnamani Dawadi, the Executive Director of IFA Mr. Prakash Subedi, other dignitaries, and members of the press, extending appreciation for their presence.

In his address, Mr. Puri reflected on the tragic bombing of Hiroshima eighty years ago, which caused massive loss of life and long-term suffering due to radiation. He emphasized that while nuclear energy was once known only as a destructive force, it has now become an important resource for peaceful purposes. Used responsibly, it can contribute to energy production, health care, agriculture, industry, environmental protection, and scientific research, though misuse continues to carry the risk of devastation. Speaking about Nepal's position, he noted that while the country lacks the infrastructure for large-scale nuclear power generation, it has already begun applying nuclear technology in fields such as health, agriculture, and environmental protection. As a peace-loving nation situated between two nuclear powers, Nepal has consistently advocated for the peaceful use of nuclear energy in line with its foreign policy of friendship with all countries. He concluded by reaffirming Nepal's commitment to promoting peace, prosperity, and human welfare through the responsible use of nuclear technology

The program was then officially inaugurated by the Chief Guest, Mr. Dawadi, who performed the traditional lighting of the Panas (furnace). During the inauguration, greetings were extended to Mr. Tanka Takeda from the Embassy of Japan. Following the inauguration, attendees were welcomed with a video message from Professor Dr. Shinji Kaneko, Executive Vice President of Hiroshima University, Japan. The workshop then progressed to the technical sessions, chaired by Dr. Jaya Kumar Gurung, Senior Research Scientist at NDRI. Dr. Gurung delivered the first technical presentation titled "Background of the Workshop and Food Irradiation Initiatives in Nepal." This was followed by a presentation from Ambassador Mr. Prakash Kumar Suvedi, Executive Director at IFA, on "Promoting the Peaceful Use of Nuclear Energy through Diplomacy: Post-Hiroshima Perspective."

A question and answer (Q&A) session followed, during which dignitaries from various institutions posed questions to the speakers. The discussion then transitioned to a series of brief remarks from key stakeholders representing the Federation of Nepalese Chambers of Commerce and Industry (FNCII), the JAAN, senior scientists and academicians from NAST, representatives from the MOEST, and other government officials. The program concluded with feedback and reflections from the participating dignitaries, summarizing the key points and emphasizing the shared commitment to advancing the peaceful and responsible use of nuclear science and technology in Nepal.

Chief Guest of the Ceremony: Mr. Gokarna Mani Duwadi, Secretary at the Ministry of Home Affairs

VIDEO MESSAGE FROM HIROSHIMA UNIVERSITY

Professor Dr. Shinji Kaneko, Executive Vice President at Hiroshima University, extended his warmest congratulations on the successful organization of the workshop commemorating Hiroshima Day. He expressed heartfelt admiration for this meaningful initiative, which was made possible through the collaborative efforts of the Hiroshima University Scholars Alumni Nepal, Nepal Research Development Institute, and the Institute of Foreign Affairs

He commended all those involved for their dedication to fostering dialogue and reflection on peace in today's complex global landscape. Highlighting this year's theme, *The Peaceful Use of Nuclear Science*, he noted its vital connection to one of the three fundamental pillars of the Treaty on the NPT. In an era where the impacts of climate change intensify, the challenge of harnessing nuclear science for peaceful and sustainable development is both technically and politically complex. This intersection of science, policy, and human values is central to global efforts towards peace. Mr. Kaneko praised the Nepalese alumni's engagement with such a multifaceted issue, describing their work as both encouraging and inspiring. He offered sincere respect for their courage, insight, and sense of responsibility.

He also celebrated a recent milestone: the formal recognition, in June this year, of the Nepal chapter as an official overseas branch of the Hiroshima University Alumni Association, the second such chapter after Indonesia. This recognition goes beyond to the HiUSAN as a partnership built on shared values and a common vision.

Hiroshima University places great importance on this collaboration and looks forward to working closely with the Nepal chapter to advance the mission of peace, knowledge, and global engagement. Together, they aim to continue amplifying Hiroshima University's identity and message on the global stage.

Concluding with best wishes, Dr. Kaneko hoped the workshop would be fruitful and inspiring, and that the Nepal chapter would thrive as a beacon of peace, knowledge, and international friendship.

Technical Session

1. Background of the Workshop & Food Irradiation Initiatives in Nepal

The technical session of the workshop opened with an insightful presentation by Dr. Jaya Kumar Gurung, Senior Research Scientist at the NDRI. He began by revisiting last year's discussions, framing the current workshop as a continuation of the Sustained Dialogue for the Peaceful Use (SDPU) of Nuclear Science and Technology initiative. Dr. Gurung highlighted the workshop's specific focus on advancing food irradiation technology in Nepal.

Dr. Gurung elaborated on the core principles of food irradiation technology, spotlighting its significant potential within the Nepalese context. He highlighted electron beam (e-beam) technology as a standout innovation, known for its environmental safety, absence of radioactive waste, and capability to extend the shelf life of perishable goods. By effectively neutralizing pests, pathogens, and spoilage agents, e-beam technology provides a scientifically validated and internationally endorsed approach to enhancing food safety and quality.

Further, Dr. Gurung's presentation on Hiroshima Day 2025 reflected Nepal's steadfast commitment to nuclear non-proliferation and disarmament through active participation in international treaties and the alignment of national policies with global frameworks. He underscored the peaceful applications of nuclear technology across diverse sectors, including medicine, agriculture, environmental monitoring, industry, and research.

A major focus was on addressing Nepal's critical post-harvest food losses, which significantly impact national food security, a priority closely aligned with Sustainable Development Goal 2: Zero Hunger by 2030. He pointed out the limitations of current preservation methods, such as cold chain management and chemical fumigation, which suffer from environmental, health, and operational challenges. This made a strong case for adopting food irradiation as a safer, more effective alternative.

Dr. Gurung also discussed Nepal's challenges in maintaining export competitiveness due to stringent phytosanitary requirements imposed by importing countries. These regulations often necessitate costly fumigation and inspection processes performed outside Nepal, incurring additional transportation and handling expenses that undermine the competitiveness of Nepalese agricultural exports. He advocated e-beam technology as a game-changing solution that could enable in-country treatment compliant with international phytosanitary standards, thereby reducing costs and enhancing market access.

Highlighting Nepal's active engagement on the international stage, Dr. Gurung referenced NDRI's presentation at the Non-Proliferation Treaty Preparatory Meeting in Geneva on 25 July 2024, noting the strong support from the Ministry of Foreign Affairs, the Government of Nepal, and the Nepalese Embassy in Geneva. He acknowledged key collaborators involved in the SDPU initiative, including the US Department of State, Department of Energy, National Nuclear Security Administration, USAID, USDA's Office of Global Food Security, CRDF Global, UK Department of Energy Security & Net Zero, and vital Nepali stakeholders.

Concluding his presentation, Dr. Gurung expressed optimism about the future of ionizing radiation technology as a valuable tool for enhancing food security in Nepal. He noted that a comprehensive feasibility study is underway, with completion anticipated by 2025. Dr. Gurung emphasized the crucial role of continued collaboration and active participation from all national stakeholders to ensure the success of this initiative. He closed by inviting feedback, key takeaways, and institutional commitments from workshop participants toward advancing food irradiation technology in Nepal.

2. Promoting Peaceful Use of Nuclear Energy through Diplomacy: Post Hiroshima Perspective

The next technical session, 2 chaired by Ambassador Prakash Kumar Suvedi, Executive Director of the Institute of Foreign Affairs (IFA), offered a compelling diplomatic perspective on promoting the peaceful use of nuclear energy in the post-Hiroshima era. Ambassador Suvedi began by highlighting the historic origins of peaceful nuclear energy use, tracing back to President Eisenhower's landmark *"Atoms for Peace"* speech at the United Nations in 1953. He underscored how the early Geneva conferences in 1955 and 1958 fostered unprecedented scientific cooperation between East and West during the Cold War, setting a precedent for international collaboration in nuclear science.

Delving into the institutional framework, Ambassador Suvedi explained the dual mandates shaping peaceful nuclear applications: on one hand, accelerating and expanding beneficial atomic energy uses; on the other, vigilantly preventing diversion toward military purposes. This delicate balance is codified and safeguarded through the Treaty on the Non-Proliferation of Nuclear Weapons (NPT), which came into force in 1970 based on its three foundational pillars: non-proliferation, disarmament, and the inalienable right to peaceful nuclear technology. Ambassador Suvedi stressed the polyvalent nature of "peaceful use," encompassing applications from agriculture and medicine to research reactors, while cautioning that these peaceful programs require strict oversight by the International Atomic Energy Agency (IAEA) to avoid misuse for weaponization.

Turning to Nepal's specific journey, he noted that Nepal signed and ratified the NPT shortly after its inception, as well as signing the comprehensive safeguard agreement (CSA) in 1972 and later cementing its nuclear diplomacy framework by joining the IAEA in 2008 and engaging in its Technical Cooperation Programme from 2011 onwards. This institutional engagement marked a significant step for Nepal in integrating peaceful nuclear technology into its development agenda.

Ambassador Suvedi candidly addressed Nepal's strengths and challenges in disarmament diplomacy. The strengths include Nepal's unwavering principled stance supporting complete global disarmament and embedding this ethos deeply into its national values and policies. However, Nepal faces persistent hurdles such as a hesitancy to sign or ratify certain international treaties and a lag in enacting comprehensive domestic legislation tailored to nuclear and disarmament obligations. Although Nepal has enacted laws like the Radioactive Substances (Utilization and Regulation) Act 2020 and incorporated relevant provisions in the National Penal Code, there remains room for greater legislative advancement and enforcement.

A particularly nuanced issue Ambassador Suvedi highlighted was the challenge of *"dual-use"* technologies, those that offer valuable peaceful scientific applications but could also be repurposed for military use. Nepal's current limitations in fully harnessing dual-use nuclear, chemical, and biological technologies underscore a broader gap between its diplomatic commitments to non-proliferation and the practical leveraging of science and technology for national development. This disconnect calls for deliberate alignment between Nepal's foreign policy goals and its science and technology capacities.

Drawing from Nepal's Foreign Policy 2019, Ambassador Suvedi outlined strategic objectives that reinforce Nepal's unwavering dedication to global disarmament and non-proliferation. These strategies emphasize continuous advocacy against arms races, promotion of peace zones, reinvestment of disarmament benefits into social and economic development, and robust participation in multilateral forums. Nepal also prioritizes strengthening national institutions involved in disarmament, supporting international initiatives toward the elimination of weapons of mass destruction, and fostering regional collaboration, such as through the Kathmandu Process facilitated by the United Nations Regional Centre for Peace and Disarmament in Asia and the Pacific (UNRCPD).

In closing, Ambassador Suvedi's insights paint a picture of a committed Nepal, firm in its values, actively engaged in diplomatic frameworks, yet facing practical challenges that require cohesive policy, legislation, and capacity building to fully realize the peaceful potential of nuclear science in service of national development and global security.

Question and Answer Session

Following the technical presentations, the session proceeded to a dynamic Question and Answer (Q&A) segment moderated jointly by Dr. Jaya Kumar Gurung and Ambassador Prakash Kumar Suvedi. Key stakeholders engaged actively, raising critical questions aimed at clarifying various aspects of nuclear technology applications, diplomatic commitments, and the pathway forward for Nepal's peaceful nuclear initiatives.

Participants sought deeper insights into the practical implementation of food irradiation technology, its regulatory frameworks, and public acceptance challenges. Questions also touched on Nepal's ongoing feasibility studies and international collaborations, probing how these efforts might overcome current infrastructural and legislative gaps. Furthermore, stakeholders inquired about Nepal's role and strategy in disarmament diplomacy and how the country balances its commitments under the Non-Proliferation Treaty with its developmental goals in nuclear science.

Both moderators provided comprehensive responses emphasizing the importance of multi-sectoral cooperation, continuous awareness programs, and policy harmonization. They reiterated Nepal's steadfast commitment to nuclear non-proliferation while underscoring the transformative potential of peaceful nuclear technology for food security, health, and environmental sustainability. The Q&A session underscored a shared resolve among all attendees to collaboratively address challenges and accelerate the adoption of nuclear science innovations in Nepal.

The detailed Q & A from the program is highlighted below: -

S. N	Representative Information	Questions Raised	Response from Speakers
1.	Prof. Deba Bahadur Khadka (Central Department of Chemistry, TU)	This kind of talk program has been going on for decades. Since 2009, many research and development works have been conducted, but numerous hurdles remain. What are your suggestions on this? How can we improve the education system related to this? Why is there no scientific treatment? What is the role of academia and government? How can we develop such improvements?	Experts highlighted the education gap and emphasized that knowledge should be generated by academia and scientific agencies. There is a need for ongoing public dialogue, though this forum is not meant to provide resolution plans.
2.	Dr. Nawaraj Khatiwada (Nepal Development Research Institute, NDRI)	Why is Nepal reluctant to enter bilateral treaties? Is this due to research gaps, lack of rational opinion-building, or political will? How do you suggest educating political leaders?	It was noted that Nepal has ratified some treaties to date, but nuclear issues remain taboo. The understanding is hindered by misinformation, as nuclear is often equated only with weapons. Political dialogue often suffers from a lack of knowledgeable discourse.
3.	Dr. Kamal Krishna Shrestha (National Academy of Science and Technology, NAST)	Suggestion Regarding the Treaty on the Prohibition of nuclear weapons (TPNW): Nepal signed the treaty in 2017 but has not yet ratified it. Nepal drafted a nuclear policy in 2008. In the presentation, NPT's three pillars were mentioned, but disarmament is non-negotiable. Also addressed was the radioactive substances bill and the lack of transparent political disclosure.	
4.	Mr. Subash Adhikari (Policy Research Institute, PRI)	Nuclear technology is multidimensional, both high-tech and cost-effective. What is the way forward, especially considering revised policies like the National Atomic Policy?	Policy frameworks are in place, but need protocols and standards. Diplomacy and the health community must collaborate for the peaceful use of nuclear technology. It is suggested to sign and comply with international conventions on dual-use technology and develop enabling domestic laws.
5.	Dr. Dinesh Nepal (Management Expert, New York)	Is disarmament possible?	In an ideal world, maybe. Currently, there is no clear answer; it is considered unlikely.

Remarks from Experts

Mr. Arun Shrestha, Senior Program Officer (Federation of Nepalese chambers of commerce and industry)

Mr. Arun Shrestha, Senior Program Officer at the FNCCI, provided valuable insights into the crucial role of private sector investment in Nepal's agro-business sector. He briefly outlined the establishment of the Federation in September 1991, highlighting its vision to foster a private sector-led economy. Mr. Shrestha emphasized the Federation's proactive approach in policy advocacy, entrepreneurship development, and collaboration with government and donor agencies to drive growth in agro-business. He underscored the importance of enabling business environments through sustained research and development, bilateral cooperation, active trade fair participation, and thorough market and demand analysis. His remarks reinforced the critical partnership between the public and private sectors in advancing Nepal's agricultural economy and trade.

Dr. Ram Chandra Bhusal, President [JICA Alumni Association of Nepal (JAAN)]

Dr. Ram Chandra Bhusal, President of the JAAN, shared a rich historical perspective and his reflections on the Hiroshima Day event. JAAN, established in 1973 as a non-profit, non-political organization, currently comprises approximately 1,100 members, including 600 life members, who are mostly bureaucrats. Dr. Bhusal, who has been serving as JAAN's president for the fourth consecutive term over the past ten years, has been conferred the Foreign Minister's Commendation Award by the Ministry of Foreign Affairs of Japan. He has also received recognition from the President of Nepal, along with awards recommended by Nepal's Ministry of Foreign Affairs (MOFA). Reflecting on the tragic legacy of Hiroshima, Dr. Bhusal recounted that over 70,000 lives were lost in the catastrophic atomic bombing, including 38,000 children, with ground temperatures soaring beyond 400 degrees Celsius within a 2 km radius. During his stay in Japan, he had the rare opportunity to interview survivors of the bombing, an experience that deeply influenced his advocacy work.

Dr. Bhusal emphasized the critical role of scientific organizations such as the NAST in promoting the prudent use of science and technology. From JAAN's perspective, acknowledging the horrors of Hiroshima is vital to inspiring responsible scientific advancement and to ensuring that nuclear technology is used solely for peaceful and developmental purposes.

Dr. Kamal Krishna Shrestha, National Academy of Science and Technology, NAST

Dr. Kamal Krishna Shrestha of the NAST expressed his optimism about the growing roots of nuclear science in Nepal, marking the third consecutive year of Nepal's active engagement in nuclear science and technology for peace and development. Representing NAST, he highlighted the institute's initiatives, particularly in applying nuclear science for food irradiation to extend food shelf life and reduce waste. Reflecting on Nepal's milestones in nuclear diplomacy, he noted Nepal's participation in important treaties such as the NPT, the Comprehensive Safeguards

Agreement (CSA), and the Treaty on the Prohibition of Nuclear Weapons (TPNW), of which Nepal is a signatory. He recalled the proactive role of organizations like ICAN, which campaigns for nuclear disarmament and was awarded the Nobel Peace Prize. Dr. Shrestha drew attention to Nepal's precarious geopolitical position, sandwiched between nuclear powers India, Pakistan, and China, and neighboring Bangladesh's emerging nuclear program, which heightens Nepal's vulnerability to nuclear fallout in the event of an accident. He mentioned the critical 2004 fire incident at twin reactors in Narora, India, classified as Level 3 by the IAEA, underscoring the need for Nepal to develop preparedness and mitigation capacities to protect its population from potential nuclear incidents.

Remarks from Guest of Honor – Mr. Gyan Bahadur Magar, Joint Secretary, MOFA, GON

Mr. Gyan Bahadur Magar, Joint Secretary of the MOFA, Government of Nepal, delivered an enlightening message addressing national and regional initiatives toward the peaceful use of science and technology. He highlighted the necessity of innovative approaches and strategic pathways, aligning Nepal's efforts with global commitments to harness nuclear technology responsibly. Mr. Magar stressed that pursuing sustainable development requires both unleashing the benefits of peaceful nuclear applications and steadfastly preventing nuclear destruction. He underscored the importance of informed policy dialogue, collective efforts, and implementing comprehensive, time-bound measures with strong solidarity. He called for enhancing nuclear science literacy across stakeholders and proposed initiating nuclear-free zones as part of Nepal's peaceful nuclear agenda. Strengthening safeguard mechanisms is critical to ensuring the peaceful use of nuclear energy, a principle that must be communicated effectively to empower policymakers, practitioners, and the public alike. Concluding with a shared vision, Mr. Magar articulated a hopeful outlook toward a world free of nuclear weapons and full of peace, reinforcing Nepal's commitment to the SDGs through constructive nuclear diplomacy and science-based development initiatives.

Remarks from Chief Guest – Gokarna Mani Duwadi (Ministry of Home Affairs, MOHA, GON)

Mr. Gokarna Mani Duwadi, Joint Secretary of the MOHA, Government of Nepal, in his remarks for the Hiroshima Day commemoration, reflected deeply on the solemn memory of the Hiroshima tragedy 80 years ago and thanked NDRI and HiUSAN for organizing the event. He emphasized Nepal's sensitive geopolitical position, situated between two nuclear-armed giants, India and China, where the threat of nuclear incidents remains a daily concern. Mr. Duwadi raised critical questions about Nepal's current nuclear policy and legal framework, stressing the urgent need for amendments and enhancements to ensure robust nuclear science education and public literacy across the population. Highlighting the vital importance of disaster preparedness, he called for the establishment and discussion of effective mechanisms for immediate nuclear disaster management. He stressed that forums and policy dialogues must include this critical topic to safeguard the population in the event of a nuclear incident. He advocated for Nepal to adopt international standards and protocols within its national policies to ensure effective prevention, response, and safety measures.

He also expressed his appreciation for the opportunity to engage with eminent speakers and the audience, noting that the session was enlightening and timely in examining both the lessons from history and the current status of Nepal's peaceful nuclear initiatives. He underscored the importance of responsible applications of nuclear science and technology in promoting peace and development, reinforcing Nepal's commitment to harness nuclear science safely while preventing the devastation witnessed in Hiroshima.

Closing Remarks from Organizers

Dr. Ranjan Prakash Shrestha expressed his gratitude to everyone for making the Hiroshima Day event a success for the third consecutive year. He highlighted the importance of promoting the peaceful use of nuclear energy in Nepal, particularly through technologies like food irradiation, to advance socio-economic development. He urged all stakeholders to actively participate in raising awareness and fostering continuous dialogue. Dr. Shrestha emphasized the need of shift the narrative from fearing nuclear risks to embracing nuclear science as a tool for peace and progress.

He concluded by reaffirming his belief in cooperation and encouraging everyone to contribute to advancing Nepal's journey toward a future where nuclear technology catalyzes positive and peaceful socio-economic transformation.

Feedback and Reflection from Participants

Summary: Participants emphasized nuclear technology, especially food irradiation, as key to improving food safety and security in Nepal. Support for peaceful nuclear use and non-proliferation remains strong, with calls for better policies, awareness, research, and national standards. Challenges like costly export fumigation highlight the need for local irradiation facilities. Media and education are vital to promoting understanding and acceptance of nuclear technology. Some of these reflections are:

- ***Dr. Pradyumna Raj Pandey (MOALD)*:** Emphasized the transformative potential of nuclear technology for food security and noted the urgent need for Nepal to explore it, citing the role of the fruit and vegetable market sector in catalyzing adoption to reduce food losses.
- ***Chandra Dev Bhatta (FES Nepal)***: Highlighted the program's importance in raising awareness, particularly on the misuse of nuclear technology and expressed willingness to engage in related efforts.
- ***Govinda Luitel (setopati.com)***: Recognized nuclear energy's use in food safety and medical fields and saw vast potential for peaceful and creative applications in development sectors in Nepal.
- ***Bhoj Raj Sapkota (PQPMC)***: Stressed the high potential of nuclear technology in enhancing food safety, security, and market access, while acknowledging Nepal's infancy stage and the necessity of technical cooperation and validation.

- ***Dr. Mahesh Maskey (Nepal Public Health Foundation)***: Voiced concerns about financial, environmental, and health risks associated with nuclear reactors, advocating for safer alternatives like cyclotrons over uranium enrichment.
- ***Subash Adhikari (Policy Research Institute, PRI)***: Noted Nepal's lack of diplomatic engagement on peaceful nuclear technology uses and affirmed PRI's role in revising the national atomic policy to include food irradiation for food safety.
- ***Dr. Bhim Bahadur Khatri (IAAS, TU)***: Reflected on changing perceptions of nuclear technology from destructive to beneficial when used rationally, especially for peace and agricultural development.
- ***Kailash Raj Pokharel (Former Ambassador)***: Called for sectoral presentations and increased education and advocacy by think tanks to advance nuclear technology in Nepal.
- ***Sita Pandey/Divya (Munaa Krishi Ltd)***: Pointed to e-beam technology as a safer, scalable alternative for food production and marketing, with readiness from the private sector to adopt if laws permit.
- ***Amb. Madan Kumar Bhattarai (Former Foreign Secretary)***: As a retired diplomat, he offered limited direct involvement but expressed readiness to help raise awareness and engage relevant stakeholders.
- ***Hiroshima University Scholar Alumni Nepal***: Encouraged research to explore beneficial uses of nuclear science for peace and development.
- ***Rajaram Bartaula***: Focused on the developmental and peaceful use of nuclear energy for health, agriculture, water, and power; advocated policy revision and diplomacy to integrate atomic benefits.
- ***Ishwar Bahadur Gurung (NEFFA)***: Supported the integration of nuclear technology to boost Nepalese agricultural exports and improve food safety, addressing packaging and fumigation challenges.
- ***MOFA Contributor (unnamed participant)***: Advocated for Nepal's foreign policy to leverage dual-use nuclear technology while promoting non-proliferation treaties, committing MOFA to collaboration towards food irradiation initiatives.
- ***Information and Broadcasting Sector***: Highlighted the importance of bio-safety standards and public sensitization through media to promote food irradiation.
- ***Educational Sector Contributor***: Suggested school and college-level awareness programs with collaboration between agricultural universities and research centers.

- ***General Participants***: Recognized nuclear science as a branch of science with necessary safeguards for human and environmental health; stressed the importance of policy development and research to harness nuclear technology positively.
- ***Business Sector View***: Acknowledged technology's importance and expressed willingness to adopt nuclear-related food technologies if led by business organizations.
- ***Think Tank Perspective***: Urged government and think tanks to initiate feasibility studies focusing on agriculture, food preservation, opportunities, and threats specific to Nepal's context.

For full feedback from participants, please click on the text: Hiroshima Day Feedback Form

Key Takeaways

- Nepal is exploring food irradiation to improve food safety and reduce post-harvest losses.
- Strong commitment to nuclear non-proliferation and peaceful use of nuclear technology.
- Electron beam (e-beam) technology is safe, effective, and internationally endorsed.
- Challenges include costly fumigation and cold chain limits; in-country irradiation is needed.
- Multi-sector collaboration is essential among government, academia, the private sector, and international partners.
- Increased public awareness and policy engagement are critical for technology acceptance.
- Nuclear technology supports Sustainable Development Goals, especially SDG 2 (Zero Hunger).
- Regional cooperation and "mango diplomacy" demonstrate positive diplomatic ties.
- Ongoing feasibility study to assess the adoption of food irradiation in Nepal.
- Continuous dialogue, education, and institutional support are needed to promote peaceful nuclear applications.

About the Organizers:

Nepal Development Research Institute (NDRI)

Nepal Development Research Institute (NDRI), established in 2004, is an independent, non-profit think tank dedicated to evidence-based policy and programming. With over two decades of interdisciplinary research and collaboration with policymakers, academia, and national and international organizations, NDRI has emerged as one of Nepal's leading research institutes. Recognizing its significant contribution to policy research and advocacy, NDRI received the prestigious *'Niti Samman 2081'* (Policy Award 2024) from the Policy Research Institute (PRI).

Hiroshima University Scholars' Alumni Nepal (HiUSAN)

The Hiroshima University Scholars' Alumni Nepal (HiUSAN) is the official Nepal chapter of the Hiroshima University Alumni Association. It is a non-profit, non-political association of active alumni who have graduated from Hiroshima University, Japan. HiUSAN is engaged in research, policy dialogue, and advocacy on contemporary development and public interest issues in Nepal. The organization has been contributing to knowledge generation through the publication of scientific articles and remains committed to fostering academic exchange and collaboration between Nepal and Japan.

Institute of Foreign Affairs (IFA)

The Institute of Foreign Affairs (IFA), Nepal, under the Ministry of Foreign Affairs, is a leading institute for research and dialogue on diplomacy and international relations. Marking Hiroshima Day resonates with IFA's mission of promoting peace and global cooperation. As one of the co-organizers, IFA provided its seminar hall for the event, where the program was successfully conducted, fostering reflection on peace and a nuclear-free world.

ANNEXES

Annex I: Photographs covering the Event

Photo 1: Participants actively listening to the event

Photo 2: Welcome remarks being delivered by Mr. Sanuraja Puri, IFA

Photo 3: Keynote Presentation being delivered by Dr. Jaya Kumar Gurung, NDRI

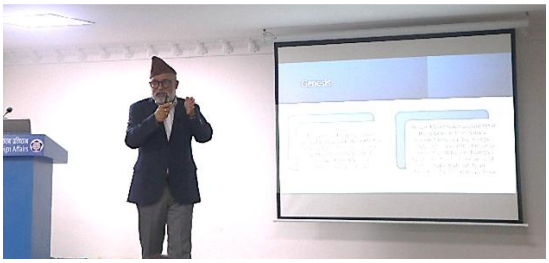

Photo 4: Amb. Prakash Kumar Suvedi, IFA, delivering his presentation

Photo 5: Mr. Arun Shrestha, FNCCI

Photo 6: Dr. Ram Chandra Bhusal, JAAN

Photo 7: Dr. Kamal Krishna Shrestha, Senior Scientist, NAST

Photo 8: Guest of Honor – Mr. Gyan Bahadur Magar, Joint Secretary, MOFA,

Photo 9: Chief Guest, Mr. Gokarna Mani Duwadi, Secretary, Ministry of Home Affairs

Photo 10: Dr. Ranjan Prakash Shrestha, Chairperson, HiUSAN

Photo 11: Group photograph from the event

Photo 12: Delivering Video Message by Prof. Dr. Shinji Kaneko, Executive Vice President, Hiroshima University

Photo 13: Audience attentively listening to the presentation by Dr. Jaya

Photo 14: Ms. Ashma Aryal as the Master of the Ceremonies (MC) for the event

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