KATHMANDU UNIVERSITY

OFFICE OF THE VICE CHANCELLOR

COMMUNITY ENGAGEMENT DIVISION

"Making University-Community Partnership Productive and Visible"

Book of Abstracts

Webinar on "Making University-Community Partnership Productive and Visible"

15 - 17 September **2021**

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Welcome to CED Webinar 2021

Dear colleagues, Dear friends,

We cordially welcome you to our 1st edition of Webinar on Making University-Community Partnership Productive and Visible", Kathmandu University, Community Engagement Division, 2021.

First and foremost, we'd like to thank everyone who took part in the webinar.In the current edition of the webinar we are proud to have an outstanding response to the call. We are aware that many of you may have found it difficult to join us due to the hectic schedule in the midst of the Covid Situation, we appreciate your presence.

Thank you very much

We hope you have a wonderful time at the Webinar!

Prof. Dr. Bal Chandra Luitel- Advisor CED

SCHEDULE

Day-1 (15 Sep, 2021)

Time	Moderator A	Moderator B
10:00am-10:40am	Opening keynote address by **Prof. Dr. Bhola Thapa**	
10:40am-11:00am	Abstract 1 Yadu Ram Upreti **Developing a school-based nutrition education intervention framework for basic schoolchildren in Nepal through participatory action research**	Abstract 1 Sanjaya Kumar Pant **Community-University Partnership in School Gardening: An Opportunity for All**
11:00am-11:20am	Abstract 2 Ritika Shrestha **Social Interaction and Communication Barriers in children with Autism**	Abstract 2 Sampriti Risal **Gender Gap in STEAM Education:Employability, Opportunities and Challenges**
11:20am-11:40:am	Abstract 3 Prajwal Badal **Community Engagement in Higher Education Institutions: A case from Kathmandu University**	Abstract 3 Uma Shankar Panday **Fusing UAV and Terrestrial Imageries for Digital Documentation of Heritage Structures: A case of Dhulikhel Municipality, Nepal**
11:40am-12:00pm	Abstract 4 Binod Prasad Pant **Teachers' Professional Development through STEAM-based projects - A participatory Action Research**	Abstract 4 Pratit Raj Giri **Effective Implementation and Training Program on Computer Hardware, Software and General Course of Office Packages in Dolakha**

SCHEDULE

12:00pm-12:20pm	Abstract 5 **Binod Krishna Shrestha** **Promoting Socially Responsible Business Practices**	Abstract 5 **Hem Raj Kafle** **Friendship-Induced Collaboration between University and Community-Based Institutions**
12:20pm-12:40pm	Abstract 6 **Meena Maiya Suwal** **Micro and Macro-propagation of Three Bamboo Species and Its Implementation in Chure Regions**	Abstract 6 **Buddha Shrestha** **Documentation of Heritage Building, Case of Historic Settlement of Dhulikhel**
12:40pm-1:00pm	Abstract 7 **Sabita Aryal Khanna** **University-Community Partnership: Experiences and Expectations**	Abstract 7 **Niroj Dahal** **Proposal for Community Engagement: A Role of Transformative STEAM Educators**
1:00pm-1:20pm	Abstract 8 **Biswa Kumar Balla**	Abstract 8 **Netra Kumar Manandhar**
	Seismic Design of Bridges as per IRC Codal Provisions	**ICT for Community Development**
1:20pm-1:40pm	Abstract 9 **Nani Raut, Madan Subedi, Sindhu Karki & Bed Mani Dahal** **Long-Term Tea and Coffee Cultivation as Cash Crop in hills of Nepal: Implications on soil quality and livelihood**	Abstract 9 **PhD/DLitt. Madan Kumar Bhattarai** **Relation between University and Foreign Affair**

SCHEDULE

Day-2 (16 Sep, 2021)

Time	Moderator A	Moderator B
10:20am-11:00am	Opening keynote address by Jonathan London **Dilemmas and strategies in linking communities and universities for social change**	
11:00am-11:20am	Presentation **Dr. Sushil Shrestha** **Community Education Project (CEP) and its impact in the community**	Abstract 1 **Sharmila Shrestha** **Comparative Study of Conventional and Porous Media Model on Temperature Variation in Breast Tumor**
11:20am-11:40am	Abstract 1 Nimesh Shestha **Extension of tourism around Kathmandu University, Dhulikhel**	Abstract 2 Shalina Rai **Access to Inclusive Education: A case study of underprivileged children and their access to inclusive education**
11:40am-12:00pm	Abstract 2 Nita Thapa **Plantation of Multipurpose Tree for the Commercialization and Utilization in Salambu,**	Abstract 3 Bishnu Maya K.C. **Bamboo propagation and plantation: An eco-rehabilitation of degraded land of riverine areas of Lakhandehi and Banke of Central Siwalik region, Nepal**
12:00pm-12:20pm	Abstract 3 Gauri Bhuju	Abstract 4 Tara Shrestha **Population Structure, Habitat Study and Conservation of Taxus wallichiana at Community Level.**

SCHEDULE

12:20pm-12:40pm	Abstract 4 **Inisa Shrestha** **Training for farmers and students on Enriched Farm Yard Manure in Manthali, Ramechhap.**	Abstract 5 **Binita Bhattarai** **A study on the status of wash service in rural and urban Surkhet**
12:40pm-1:00pm	Abstract 5 **Subash Ghimire** **Geomatics Engineering in Community Development: A Case of Department of Geomatics Engineering, Kathmandu University**	Abstract 6 **Pratham Kharel** **Understanding Sustainable Agriculture and the barriers to wide scale manufacturing of compost in Nepal**
1:00pm-1:20pm	Abstract 6 **Bina Gupta** **Impact Assessment of Kathmandu University, Dhulikhel Hospital for the last 25 years.**	Abstract 7 **Purna Nepali** **KUSOM policy lab and policy outreach centre: critical public policy policy education for state transformation**
1:20pm--1:40pm	Abstract 7 **Nashla Shakya** **Design, Fabrication and Analysis of Hand Mold Multi Briquette Key**	Abstract 8 **Parbati Dhungana & Bal Chandra Luitel** **Context-responsive methods of interaction with community school teachers for transformative professional development**
1:40pm-2:00pm	Abstract 8 **Roshani Rajbanshi** **Rupantaran's Community Engagement through Action School**	Abstract 9 **Dr. Jiwak Raj Bajracharya** **Technology Integration for School Improvement**

SCHEDULE

Day-3 (17 Sep, 2021)

Time	Moderator A	Moderator B
10:00am-10:30m	Presentation by **Mrs. Mandira Neupane**	
10:30am-11:00am	Presentation by **Ms. Aabhiya karki**	
11:00am-11:20am	Abstract 1 **Subash Shrestha** **Perception of head teacher on school community partnership**	Abstract 1 **Dr. Hari C. Kamali** **Connecting Higher Education to Communities: Some Personal Reflections and Prospects**
11:20am-11:40am	Abstract 2 **Vivek Ranjan Paudel** **Phytochemistry and medicinal properties of some high valued medicinal plants, mostly utilized for their underground parts, from Nepal Himalayas.**	Abstract 2 **Narayan Niroula** **Expression of Interest to work Kathmandu University on Education and Literacy**
11:40am-12:00pm	Abstract 3 **Mr. Prateet Baskota** **Combining dynamism of English Literature and Education: Centers on discourse, ex-centricity and history through archiving in reading**	Abstract 3 **Nisha Rana Magar , Nandita Shrestha And Prasamsa Pokharel** **Architectural Documentation for Community Development**
12:00pm-12:20pm	Abstract 4 **Mahesh banskota, Uddhab Pyakurel** **University-Community Engagement : Voices of the Youth, Guide for University Action?**	Abstract 4 **Eak Prasad Duwadi** **Kathmandu University's Challenges and Opportunities of Community Engagement**

SCHEDULE

12:20pm-12:40pm	Abstract 5 **Jyoti U Devkota** **Experience sharing of community work on microcredit and renewable energy with the inhabitants of Danda Gaun Besi, Kavre district**	Abstract 5 **Ozal Pradhan, Smriti Gurung, Sushma Manandhar and Bed Mani Dahal** **Climate change vulnerability and irrigation water quality in Nilbarahi sub-watershed, Bhaktapur**
12:40pm-1:00pm	Abstract 6 **Pratiksha Koirala, Smriti Gurung, Bed Mani Dahal, Kumar Khatri and Bibhuti Ranjan Jha** **Macroinvertebrate assemblages in Bheri and Babai rivers of western Nepal**	Abstract 6 **Jhuna Kattel, Nani Raut, Smriti Gurung and Bed Mani Dahal** **Water quality, climate resiliency and woman empowerment associated with the multiple use water system in Surkhet, Nepal**
1:00pm-1:20pm	Abstract 7 **Pratima Gurung** **Menstrual Hygiene Among Adolescent School Girls in Rural Nepal**	Abstract 7 **Ashim Joshi & Anup Chettri** **Making Kathmandu University Visible to Communities via 'acKUaint'**
1:20pm-1:30pm	**Thank you note from CED**	

"Making University-Community Partnership Productive and Visible"

POSTER

KATHMANDU UNIVERSITY

"Making University-Community Partnership Productive and Visible"

CALL FOR ABSTRACTS

SUB-THEMES

- Agriculture
- Artificial Intelligence in Community Development
- Community Development
- Community Health
- Education and Literacy
- Environment Sustainability
- Equipment and Machinery for community development
- ICT for Development
- Infrastructure Development
- Innovation and Science in Rural setting
- Rural Enterprise
- School Improvement

The abstract should contain 400-500 words on how you are engaged in community-based activities

Register at: http://community.ku.edu.np/registration
Submit the papers at: http://community.ku.edu.np/call-for-papers

Schedule
Registration by 07 Sept and Submit abstracts by 31 Aug

Webinar
Sept 15-17, 2021

Community Engagement Division, Office of the Vice-Chancellor, Kathmandu University

community@ku.edu.np community.ku.edu.np +977-11-415100

"Making University-Community Partnership Productive and Visible"

The Community Engagement Division

The Community Engagement Division (CED), established under the Office of the Vice-chancellor, Kathmandu University, is a Division committed to working with various groups of peoples and communities of Nepal. The main objective of the Division is to improve Community-University Partnership -- a unique collaboration -- for building an enabling environment for joint community research, co-production of knowledge and co-implementation of pilots to benefit local communities and for social change. The Division has been working with local communities inclusive of community representatives, local agencies in collaboration with faculty members and students of Kathmandu University to contribute to improving educational outcomes and significant social and environmental benefits in the community, thereby, to achieve multiple goals of sustainable development. The CED produces an in-depth understanding of context and issue specific data, analysis and knowledge of the communities it works with and assists with highly skilled human resources and technologies to address the challenges of communities in partnership with the communities.

Modality of the Community Engagement

Kathmandu University is committed to quality education and research. One of the main mottos of KU is to actualize the practice of 'Campus to Community and Community to Campus' and the CED works in the intersection of this vision. In other words, the University's engagement with the communities has threefold effects: a scholarly activity -- research, theory and practice; knowledge transfer and exchange and address problems and aspirations of communities. KU has always sought to respond to the real community needs through its intellectual leadership in the areas of community interests and concerns. In this context, the CED follows a four-step community engagement policy:

1. Communities approach the University with their interests and concerns;
2. A partnership is materialized between the University and the community;
3. University identifies problems and offers solutions;
4. Solutions can be implemented by the KU team or a third-party involvement can be sought as appropriate.

As communities can gain an extensive range of benefits from such interactions and exchanges with the University, the University also benefits from its effective engagement with local communities, suggesting that there are win-win situations for both parties, the CED plans to hold a 3-day webinar on "Enhancing Community-University Partnership" to expand its outreach with many more communities of Nepal as well as to explore the potentials of how the university-community win-win situations can be further maximized.

The Three-Day Webinar

The three-day webinar highlights why university-community engagement matters. KU believes that community engagement is a unique 'new paradigm' and an 'inalienable component' of the institutional growth and the social responsibility aspect of a university. And as the campuses of the University are located in the communities, the University has a strong sense of community belonging and contentedness, and each intellectual mind of the University feels like s/he is a part of something bigger (community) than an individual self. In this context, the webinar serves as an excellent opportunity to all stakeholders who have an interest in 'Campus to Community and Community to Campus' philosophy and practice -- connecting with the dots of community needs with campus intellectual minds, productivity and skills.

The webinar focuses on the productivity and visibility of university-community partnership. It is the platform to share the experiences of the intellectuals and practitioners who come from different fields and have been engaging in community work either directly or indirectly. The organizers believe that the webinar will help bring together and highlight the community engagement, development actions and social change activities being carried out by various actors in the sector of, inter alia, health, education, environment, agriculture, gender, information systems, disaster management and overall community development. The webinar will also showcase how universities are actively working with various communities of Nepal in order to build resilient communities and their sustained development outcomes. The webinar also intends to identify how schools/faculties and departments are working with communities and what impacts they have been able to generate so far to make the university-community partnership sustainable.

The webinar is all about sharing the experiences gained by university academics and students while working with different communities. Specifically, the webinar is about sharing the findings they have generated, the responses of common people after they have worked with the communities, the problems and the probable solutions they came up with, and the impact of their work in the community, to name but a few. This webinar will provide a platform to share these experiences, benefits and visibility that the community will be getting in the coming days. Even though the theme for the webinar is about making university-community partnership productive and visible, the abstracts can cover the following sub-themes:

- **Educational transformation**
- **Community development**
- **Rural enterprise**
- **Innovation and science in rural setting**
- **Environmental sustainability**
- **Agriculture**
- **ICT for development**
- **Artificial intelligence in community development**
- **Infrastructure development**
- **Equipment and machinery for community development**

etc

Intended participants

The call is particularly for researchers, university faculties, and PhD, Master and Bachelor students who think they have made a contribution to the enhancement of the community-university partnership through their universities and want to share experiences which can motivate others in the society. The main objective of this webinar is to enhance university and community partnership.

Developing a school-based nutrition education intervention framework for basic schoolchildren in Nepal through participatory action research

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Nutrition education at school can play a pivotal role in developing healthy food choices and behaviour in schoolchildren. This paper describes and reflects on the process of developing a school-based nutrition education (SBNE) intervention framework to promote healthy food choices and behaviour in schoolchildren with joint efforts between the university researchers and school stakeholders. We used participatory action research (PAR) as a methodological approach, where researchers worked collaboratively with school stakeholders called 'co-researchers'. This study took place in a community-based school located in the Chitwan district of Nepal from June 2018 to May 2021. The study involved basic school teachers, fourth to eighth grade students, school leaders, child clubs, and PAR committee members as the research participants and the co-researchers. This study utilised multiple methods for data collection; questionnaire, in-depth interview, focus group, field notes and journal writings, and audio-visual data such as photographs and audio-video recordings. The study's results reveal that the PAR methodology empowers both researcher(s) and co-researchers to co-construct a culturally responsive SBNE intervention framework. The study incorporated three interconnected components of SBNE, 'sensitisation and motivation', 'nutrition education pedagogy', and 'supportive environment for sustainability'; with promising results with respect to promoting healthy food choices and behaviour in schoolchildren.

Community-University Partnership in School Gardening: An Opportunity for All

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Nepal has invited the entire stakeholders in taking joint action towards its strategic plan of zero hunger challenge (ZHC) by the year 2025. However, if we look into the current rate of vegetable consumption per person per year, it has gone from 60 kg two decades ago to 105 kg of vegetables. Thus, to create an equitable food system in the community, I argue that universities should take the opportunity to review public policies in order to build the capacity of their community. This paper documents the main findings of community-university partnership in ecological sanitation (eco-san) based school gardening work in one of the community schools in rural Nepal. With the support from the NORHED Rupantaran project run under Kathmandu University, School of Education, this participatory action research (PAR) explores the opportunities as well as challenges encountered by stakeholders such as community practitioners, faculty and researchers / students in the "real world" settings. Active participation of major stakeholders were observed during land labelling, construction of poly-tunnels, fixing of eco-san units from the urinary of community school to the garden, plantation, fertigation and harvesting. During my year-long engagement in school gardening, it can be said that building relationships from both community partners and university is a time consuming process and demands genuine reflection of loyalty from both. It is equally important to appreciate and acknowledge the expertise and time offered by community partners. Also, community partners and practitioners should share their strengths as well as limitations with their university partners. Besides community practitioners, faculty should be clear in their role and goal during the partnership by formulating standard guidelines or protocols for community-university cooperation and interaction. The strength of university-community partnership could be determined by the importance or value allotted by faculty for the farm visit to their students or integrating field-based activities in curriculum. To this, one more recommendation for the faculty is to provide ample opportunity for the researchers / students to share their findings or reflection through the journal. During my field engagement, I realise that the promise or commitment made with community partners or farmers are pivotal in shaping the future community-university partnerships. And, every researcher / student should discern that you depict the values of the university being its representative in the community, thus should exercise and reflect participatory approaches and attitudes to the highest level.

Keywords: participatory action research, school gardening, community-university partnership, eco-san

Social Interaction and Communication Barriers in children with Autism

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This research report is entitled ``Social Interactions and Communication Barriers in Children with Autism". The main objective of this research is to identify the symptoms. It analyzes how communication and social barriers play a role in children with autism. The details regarding the communication and social barriers were taken from the various literature reviews and case studies.

This study recommends knowing more about the social interactions and communication barriers of children with autism. The importance of this research study is to identify and analyse how communication and social barriers play an important role in children with autism. These social barriers play an important role in children with autism and communication barriers also play a vital role in children with autism.

Gender Gap in STEAM Education: Employability, Opportunities, and Challenges

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This report describes the work that I found in my literature review and during my three-month internship at Women in STEAM Nepal as a part of my University course. Though the concept of STEAM is not new in developed countries, in Nepal it is a relatively new term. As we are moving towards the fourth industrial revolution, new technology, skills, jobs will be needed to compete in the global market. In order to do that, we need to produce a generation that can cope with future challenges and STEAM education helps one to achieve that. But due to Nepal's traditional teaching methodology and the existing gender stereotype about one's career, students especially females are not into technology and science mainstream.

The study found that females have low representation in engineering, science and technology as compared to men. The number of men who intended to study engineering was almost seven times higher than the number of women. Men largely dominate the engineering sector and male enrollment is almost double in number than females in science and technology but there is a high number of girls in medical sciences. It is particularly because of the general stereotype of our society that engineering and tech fields are still considered men's jobs. A similar situation can be seen in the employment sector. Male highly dominate the technical field and there is less representation of females and females who are working in the technical field often face discrimination, isolation, gender pay-gap. STEAM jobs are increasing and in the future, the number of STEM jobs will grow by 8 percent which is a higher rate than non-STEM jobs. So, the STEAM career has higher demand than other careers.

Community Engagement in Higher Education Instructions : A case from Kathmandu University

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Institutions of higher education hold resources that are critical to bringing the aimed social changes. Communities' engagement during the process provides local expertise and experiences that are vital in solving those issues in the field. Together, educational institutions and communities collaborate in an effort to influence the public good and bring long-term change. Drawing upon the global and national literature of community engagement practices by universities, this research highlights community engagement practices by universities in western countries and in Nepal. This research explores various types of community projects along with common strategies used for such interventions initiated by Kathmandu University (KU) faculties within the past five years. This study adopts the mixed method of research in which primary data were collected using qualitative methods such as informal discussions with three key professors in three months of internship time and quantitative method which includes a survey that 21 faculties across five schools of KU and secondary data were collected by referring to several academic papers, reports, and journals. The result of this research demonstrates how community engagement takes place in the university along with KU's tireless efforts for community engagement through various field studies, projects, activities, or service-learning. The study also shows how institutional involvement in the community is beneficial to primary stakeholders i.e., the community, community members, and the university. Moreover, the findings reveal the common procedures and modalities behind the process of undertaking community engagement projects.

Fusing UAV and Terrestrial Imageries for Digital Documentation of Heritage Structures: A case of Dhulikhel Municipality, Nepal

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Heritage structures are at high risk of environmental disasters such as earthquakes, floods, climate change, pollution (air pollution, birds, etc.), and local conflicts. Nepal is famous for its tangible and intangible heritage such as Temples, *Paaties*, and Traditional houses. Dhulikhel is an ancient town on the outskirts of Kathmandu valley that is rich in cultural and heritage importance encompassing ancient ethnic settlements (Newari community), some of which have aged over more than 100 years. Dhulikhel, like many traditional towns of Nepal, has been severely affected by the Mega Earthquake. Additionally, the rapid urbanization of the town has taken a toll on its physical and cultural heritage. Furthermore, concerned with the safety of their homes after the earthquake, many residents have started to dismantle their heritage buildings and reconstruct those using modern reinforced cement concrete (RCC) buildings. Destruction of such structures has not only ruined the beauty of traditional towns but also is going to cause irreversible loss of cultural heritage. With no record and documentation did to prove their historic presence, they will soon be forgotten and ultimately will be erased from history. Thus, the documentation of these buildings is necessary to spread awareness about their values and their need for restoration. As digital survey techniques have surfaced, they present a new hope in the restoration of such traditionally important structures. The techniques help capture detailed information quickly, effectively, and efficiently, and stores the information in digital forms that are vital not only for restoration activities but can also be used for virtual city tours. Digital prototypes in the form of 3D models can be used for the reconstruction of the buildings using suitable construction materials that can last longer yet retaining their heritage values. Furthermore, documentation of buildings with high heritage values is necessary so that they are inherited by future generations. A 3D digital catalog can be prepared by fusing ultra-high-resolution images from Unmanned Aerial Vehicles (UAV) and terrestrial platforms. The technique is highly suitable for heritage preservation in low-income countries as it is capable of providing very detailed 3D models at a significantly lower cost, whose accuracy is comparable with that obtainable with expensive technologies like that of a LiDAR.

As a pilot study, detailed 3D models of two deteriorating buildings with high heritage values were prepared by fusing images from Mavic Pro 2 UAV and terrestrial platforms. The results were matched with architectural CAD drawings that were manually prepared by professional architects. The resulting 3D models and inventory data can be used for digital documentation and analysis involved with measurements, feature extractions, and restoration. The models obtained using these images are cost-effective yet visually appealing as hand-drawn architectural drawings. The preservation of historically and culturally significant buildings is essential for the sustainable development of society as well as the preservation of the local community which is key in fostering tourism in the area.

Architechical Documentation for Community Development

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Architectural academic education creates and provides opportunities of engagement with communities- to learn about the culture, population, education, and economy.

The study included measurement and documentation of the vernacular in specific communities of Nepal. Vernacular architecture, by definition, is the local style of construction developed by incorporating local materials, traditional and cultural values. It is a climate responsive, energy efficient, and culturally suitable architecture, unique to a community and a region. The diverse vernacular aspect of the nearest neighborhoods of the authors' respective hometowns were explored. Then, a vernacular building was measured in detail, noting the building characteristics.

As per the needs of the community, new proposals for infrastructure development were provided, considering local construction techniques and culture, incorporating innovation in existing buildings.

Effective Implementation and Training Program on Computer Hardware, Software and General Course of Office Packages in Dolakha

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Dolakha district has been one of the most affected areas due to the earthquake. The technology sector also suffered a lot due to it. Hence we decided to visit Dolakha to conduct Information Technology (IT) activities. The main purpose of the training package was to give short but effective knowledge on computer hardware, software, and Microsoft Office Packages. This study includes the status of the peoples knowledge towards Information Communication and Technology (ICT). The main target of our project was to help the people around the respective areas to at least design a document, prepare a presentation and prepare a mark sheet for the students. Our goal was to bring some changes in people's minds about computing knowledge. This study was conducted after the earthquake.This package was targeted at government school teachers and students, especially female participants. The project had several impacts on the community, students, and teachers. This study was very helpful for enhancing the use of ICT in that community.

Promoting Socially Responsible Business Practices

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One of the community engagement initiatives of KU School of Management has been working with business communities in Nepal to promote socially responsible business practices. KUSOM has been engaged in these initiatives for more than seven years. The host organization is National Business Initiative (NBI) represented by prominent business associations and individual companies. KUSOM contributed academically in running three responsible business summits from 2014 to 2019. During this period, KUSOM is able to generate different ideas on how to make private businesses socially responsible in Nepal with the support of different stakeholders. Knowledge generated through these engagements and disseminating them to the numerous business organizations to improve their business practices is an insightful discourse and knowledge generation useful for sustainable development.

Friendship-Induced Collaboration between University and Community-Based Institutions

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This paper hypothesizes the concept of friendship-Induced collaboration between university and community-based institutions. The idea stems from two successful initiatives by Kathmandu University (KU), Dhulikhel, in 2019 and 2020 through its Department of Management Informatics and Communication. The 2019 initiative in Siddhartha Vanasthali Institute (SVI) of Panauti, a school development package guided by friendship and volunteerism and implemented with nominal financial liability, resulted in visible quality upgrade in the beneficiary institute with evidence of increased student intake in the succeeding academic session. The 2020 school support program in Vijaya Samudayik Siksha Sadan under Vijaya Parivar in Gaidakot, Nawalparasi, which was meant to be implemented in the SVI model with enhanced onsite and online activities, waits to be operationalized in full fledge due to COVID-induced hurdles but continues to hold the feasibility of a friendship-based initiative. With evidence from the experiences of working in the two institutions, the paper argues for and recommends that a university-community collaboration based on trust, friendship and volunteerism is a sustainable model of collaboration in the days ahead.

Micro and Macro-propagation of Three Bamboo Species and Its Implementation in Chure Regions

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Bamboo has high economic potential with multi-propose plants. The tropical and clumping bamboo species namely Bambusa balloon (Haroth or Dhanu bans), Bambusa nutans subspecies cupulate (Maal or Mallo or Taru bans), and Bambusa tulda (Kande or Chab bans) were selected for study in four districts namely, Udaypur, Saptari, Siraha and Sindhuli because these bamboos are strong, durable, flexible, tall, fast-growing plants, widely distributed in Chure region, famous among local people and widely used in various field. The bamboos were used to make furniture like chairs, stulls, fans, naglo, theki, dhaki, sickle's bead, beads of other agricultural utensils, fisher's catching items, scaffoldings, construction for bamboo houses, bamboo cottages, agarbatti (incense) sticks, fodders for cattle's, pipes for supply water, and young shoots as vegetables and pickles in local communities. Due to the long life cycle of bamboo, naturally, the propagation process is hardly met so the alternative method vegetative and biotechnology tools were applied to achieve large mass production and fulfill the demands.

The plant tissue culture protocols were successfully optimized to propagate a large scale of bamboo plants of Haroth, Maal, and Chab bans applying tissue culture technique through the nodal section of secondary branches. Firstly, the in vitro plants were hardening in a greenhouse and after acclimatization, these were transferred into fields. The tissue culture-raised plants were small initially but these plants were grown rapidly after being transferred into fields. The tissue culture-raised plants were planted in the selected districts.

Farmers were practiced for planting bamboo through offsets and rhizomes which is a very slow process, produces only limited numbers, and is difficult to handle. Hence, the two days of training "preparation of bamboo seedlings, management of nursery and plantation of bamboo" was conducted in four districts separately. The training was organized by the Department of Biotechnology in collaboration with local communities.

The trainees got the knowledge and capability to do the selection of place for a nursery, preparation of nursery beds, preparation of soil mixture, selection of mother plants, nodal cutting procedures, branch cutting, preparation of seedlings, the technique of seedlings plantation, nursery management, plantation and management of bamboo saplings in riverine areas of selected sites. The planted bamboos have well grown in four districts namely Udaipur (Hadiya, riverbank of Trijuga river), Saptari (Tikuliya, riverbank of Lakhan River), Siraha (Naudega, riverbank of Lakhan River), and Sindhuli (Mathilo Ranibas, riverbank of Kamala River). The planted bamboo controlled soil erosion due to flood and helped to protect arable land. Also, it helped for the establishment of the land pattern.

Documentation of Heritage Building, Case of Historic Settlement of Dhulikhel

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Dhulikhel is a Historic Newari town located 30 km east of Kathmandu and situated 1,625 m above sea level along the Araniko Highway. The town is situated on an ancient trade route to Tibet, which has been long considered the gateway to Tibet. In particular, it was the traditional domestic dwelling of the ethnic Newars- groomed to practical and symbolic unity of purposes over the centuries. Like many traditional towns of Nepal, Dhulikhel has been severely affected by the April-May 2015 earthquake. Additionally, the rapid urbanization of the town has also started replacing the cultural heritage. Concerned with the safety of their home after the earthquake, many local residents have started to dismantle their heritage homes and reconstruct those using modern R.C.C. Construction methods. Unlike the temples, local dwelling does not fall under the existing government legislation on the preservation of monuments. Thus, no attempts have been made to preserve these heritage homes. Destruction of such structures due to lack of awareness is going to cause an irreversible loss on our cultural heritage and with no documentation done to prove their historic presence, they will soon be forgotten. This paper overview the initial effort and results of documenting few buildings with high heritage values, it describes the process followed during the heritage, mapping, field survey, and preparation of inventories and the final result. The prepared documents will be able to create awareness in the community for the need for conservation and be a basis for future conservational works. Moreover, it also highlights the challenges detected for the conservation of heritage buildings.

Rupantaran's Community Engagement through Action School

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The community has a wealth of knowledge that has been carried on for generations. A community can play a considerable role in the knowledge production process. Working in the community brings a sense of belonging in the community, which is an important aspect that Rupantaran envisions. Rupantaran, a project funded by NORHED at Kathmandu University School of Education, aims to contribute to new knowledge concerning innovative approaches to improve the quality of teaching and learning in a resource-constrained setting. For this, Rupantaran has been working with five community schools, primarily focusing on one action school to bring change in pedagogy, health, and livelihood. There have been remarkable changes in the action school as well as in the community due to Rupantaran. First, through professional development, there has been a change in teachers' pedagogy. Many teachers implemented project-based learning in the classroom, and the students gained knowledge through the community. Second, teachers of the action school not only teach in the school but also show concerns towards the community, which was initiated by research through Rupantaran. Some teachers were able to bring a dropout student back to school, which is a huge success of the school and Rupantaran project. This also shows teachers' commitment towards the school and the community. Third, the school penetrated into the community through teachers' involvement in information and community technology (ICT). The school, one of the public schools in a remote area, is conducting online classes to grade nine and ten. Besides that, teachers are also teaching via CUG (Closed User Group). Furthermore, the school has initiated the Ecosan toilet in the school. The urine is used in the garden to grow vegetables, which is expected to disperse in the community in near future.

Comparative Study of Conventional and Porous Media Model on Temperature Variation in Breast Tumor

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The human body is made by 200 different types of cells, which are separated by voids. Blood supplies the nutrients and minerals to all cells within the tissue through these voids. The present work deals with the comparative study of conventional and porous media models on temperature variation in breast tumors.

The finite element method is used to solve the two-dimensional bio-heat equation. The results show that the temperature profile of normal breast tissue in the porous media model is almost identical with the conventional bio-heat model. The temperature of the tumor region in the porous media model is slightly lower than the conventional bio-heat model. When the porosity is increased, the temperature of normal breast tissue is increased. But in tumorous breast tissue, the temperature is slightly increased in the skin surface to the anterior part of the tumor and slightly decreased in the tumor region. The temperature of normal and tumorous breast tissue is increased when metabolism, blood velocity, and room temperature are increased in the porous media model.

Extension of Tourism around Kathmandu University, Dhulikhel

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On the basis of a scoping review of the literature about educational tourism, a type of tourism which the traveler's primary or secondary objective is learning. This study summarizes views on how Kathmandu University can foster local development through educational tourism. The university can actively facilitate relationships between tourists and local stakeholders to foster learning at the destination and improve the sustainability of the local economy.

The success of the program is essential to educational tourism however there has not been a critical look into the project areas. In this regard, the study attempts to find out the status of educational tourism and influence of Kathmandu University while looking critically into the impact and evaluating social and economic changes brought by ward no. 4, Dhulikhel. The study uses observation, schedule interview and survey as the method to collect primary data which has been used to evaluate the findings.

The study found out that the educational tourism in ward no.4, Dhulikhel can be better and needs to follow up the program regularly to ensure that the implementation has been smooth. The study found out that only a handful of businesses in the area are benefiting from the Kathmandu University. The study also helps to allocate the major tourism attraction places around Kathmandu University including natural, cultural heritages and archeology. The study focuses on the extension of tourism and prospects of expanding tourism around Kathmandu University, Dhulikhel. The study finds out how laboratories can be the main source for the educational tourism in Kathmandu University and interlink between community, local market and KU.

Access to Inclusive Education: A case study of underprivileged children and their access to inclusive education

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Everyone's right to education is the primary issue of accessibility and compulsory enjoyment of education, especially in the elementary, general technical, professional and higher stages. Inclusive education is to provide free, high-quality universal education for all children. These children include children considered marginalized and oppressed, ethnic minorities, and differently-abled children. Similarly, with respect to accessibility features, educational institutions and programs must be open to all within the jurisdiction of the State party without discrimination. In recent years, research has focused on innovations, such as political campaigns that challenge different ways in which children are excluded and silenced. Inclusive education is a real and urgent need of all education systems in the world. However, a large proportion of marginalized and disabled students have not yet received education in Nepal. In addition, many children who go to school do not receive quality education and have not completed elementary education. This research reports the study about the situation of inclusive education of less privileged children in public schools of Nepal. It also provides insights regarding the challenges for children from less privileged backgrounds in access to education and the importance of educational scholarship programs for such children. In addition, the research results show that as disadvantaged children increasingly enter educational facilities, inclusive education in Nepal's public schools is gradually making progress. Various factors such as economic instability, parental guidance and self-awareness have been identified as obstacles to the implementation of inclusive teaching methods in Nepal's public secondary schools. With these findings, this research has concluded that the importance of educational scholarship is understood as one of the main requirements for disadvantaged children to have equal access to educational facilities. However, in the context of Nepal's education system and its progress, public schools play an important role in promoting inclusive education and increasing the chances of enrolling poor children.

Plantation of Multipurpose Tree for the Commercialization and Utilization in Salambu

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Plantation of Multipurpose Tree for the Commercialization and Utilization in Salambu, Kavre
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Salambu Outreach Center, Majhipheda, Kavre was our proposed site for the community development work which was carried out under the Community Education Project. The area which we selected was the rural part of Kavre where the benefits of the plants could be fully utilized. The idea of choosing this site was primarily to educate the local people about the benefits of the Paulownia tree as an economical plant. This project aimed to promote Paulownia plantation and commercialization among the farmers of Salambu for their economic development. The main targeted area Salambu Outreach Center, Majhipheda VDC, and the Microfinance Pvt. Ltd.'s members benefited from the project. This project could lead to an increase in the economic level of the people residing there compared to the traditional crops they usually grow. The plantlets for the plantation program were generated in Kathmandu University premises, under the Ficus Biotech Pvt. Ltd. from which we bought 400 paulownia plants. A demonstration plot was established by planting 151 plants in the Salambu Outreach Center's periphery and the rest of the plants were distributed among the members of Micro Finance Pvt. Ltd. as our community donation. Besides, a short briefing program was organized for the members to educate them about the Paulownia plant. Since we conducted the program in Salambu Outreach Center, the outreach center and general farmers of that area directly benefited from this project. Through this community education project, we got an opportunity to get closely involved in the upliftment of one of the rural communities of Nepal. Organizing the plantation and awareness program was a great experience and we got an opportunity to develop their better future by providing them with knowledge about the benefits of the Paulownia tree. Thus, through the Community Education Project, Kathmandu University, a community-based project was carried out at Salambu where awareness, plantation, and establishment of demonstration plots about the Paulownia plant were carried out successfully.

Bamboo propagation and plantation: An eco-rehabilitation of degraded land of riverine areas of Lakhandehi and Banke of Central Siwalik region, Nepal

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Bamboos have emerged as an interesting plant for rehabilitation of highly vulnerable land through the redevelopment of soil nutrients owing to their easy and rapid adaptability in wide varieties of climatic and edaphic conditions. Bambusa tulda, B. balcooa and B. nutans subsp. cupulata are very fast-growing, highly productive and most prioritized species in Mahottari and Sarlahi districts. Plantation of bamboos using Eco-Rehabilitation Technology (ERT) in the areas prone to landslides, riverine and ravines areas can contribute to the mitigation of soil erosion, nutrient retrieval, raised groundwater level, increased land productivity and enhance the economic status of the community people. As the extremely long vegetative period before flowering in bamboo limits seed supplies, it is vital to develop effective methods for mass propagation of bamboo to enable their widespread adoption by subsistence farmers. Three potentially important bamboo species (B. tulda, B. balcooa and B. nutans subsp. cupulata) were used in this study to develop suitable macro propagation by single nodal culm cuttings treated with different phytohormones (IAA, IBA and NAA) to develop the farmer-friendly protocol for mass propagation of bamboos through ex vitro methods. According to ERT, physico-chemical and biological properties of soil of riverine areas of Banke and Lakhandehi were analyzed before bamboo plantation and six month old B. tulda saplings were planted in degraded land where forest topsoil (FTS) containing more organic amendments was applied. After one year, the growth performance of transplanted B.tulda saplings of both plantation sites was analyzed by nondestructive and destructive growth analysis method, soil nutrients and carbon sequestration of both bamboo planted areas were also determined.

The rooting response of single nodal culm cuttings of B. tulda and B. balcooa in the nursery was found encouraging. Each treatment had a significant effect in three species of bamboos (P < 0.05) on the mean number of roots. Maximum numbers of roots (12.34±1.08) were recorded in the cuttings of B. tulda with the treatment of IAA propagated in Mahottari nursery beds followed by the cuttings propagated in Sarlahi (10.21±1.02), while the cuttings in the same treatment showed 14.31±1.29 and 6.18±0.07 roots per cutting of B. balcooa, and 4.19±0.08 and 6.12±0.06 roots per cutting of B. nutans subsp. cupulata in Mahottari and Sarlahi respectively.

B. tulda saplings planted at riverine areas had varying success in their survival rate of 59.20 % in Lakhandehi of Sarlahi and 50.56 % in Banke of Mahottari within one year. The mean survival rate and growth traits of B. tulda saplings were recorded more satisfactory in Lakhandehi where superior plant growth performance in terms of higher survival rate with the average culm length (1105.17±70.18cm) and culm diameter (3.26±0.17cm) was witnessed than in Banke of Mahottari (989.05±3.17cm culm length with 2.64±0.21cm culm diameter) but a fewer number of culms were produced (4.23±1.15 per clumps) than in Banke riverine areas (6.17±0.81).

Rehabilitation of degraded riverine land through B. tulda plantation showed 47.12% improvement in soil quality. In general, this study supported the hypothesis that bamboo plantation in degraded land strongly influences the rehabilitation of soil nutrients by increasing microbial and soil enzymatic activities. This finding concludes that expansion of bamboo plantation at degraded areas using ERT can potentially contribute to soil nutrients retrieval. Considering the wider aspect of overall uses of bamboo in the study area, it is worthwhile to encourage local people to plant bamboo which would contribute to uplift their livelihood.

The mathematical study of the transmission dynamics of COVID-19 in Nepal

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COVID-19 is an infectious viral disease caused by SARS-CoV-2 and it is classified as the human to human communicable disease. It has been a pandemic in the world since December 2019. The first case of COVID-19 was found in Nepal on January 23, 2019. Now, it has become a major public health concern. Currently, Nepal is facing the challenge to prevent the spread of the infection of COVID-19. In this study, we develop a compartmental model to analyze the transmission dynamics of the COVID-19 pandemic in Nepal. In this model, we use a control parameter for control measures such as using a face mask, maintaining the social distance, vaccination, etc to prevent the transmission of the disease. There are four compartments in the model, such as susceptible, infectious, hospitalized, and recovered. We assume that the whole population of Nepal is susceptible. From this compartment, the infected individuals are moved to the infectious compartment. Asymptomatic and symptomatic both infected individuals are in the infectious compartment. When they get serious symptoms of the disease, they move to the hospitalized compartment. The recovered individuals from Infectious and hospitalized compartments are moved to the recovered compartment. Some seriously infected individuals die from the disease from the compartment and the entire compartment has the same natural mortality rate. We define the positivity and boundedness of the solution of the model.

Also, the model is validated with the recorded actual data of COVID-19 infectious individuals in Nepal from March to August 2021. The basic reproduction number of the model is computed using Next Generation Matrix Method. We obtained the disease-free equilibrium and endemic equilibrium of the model and discussed the stability of these equilibriums. The result shows that the disease-free equilibrium is asymptotically stable if $R0 < 1$. The endemic equilibrium point exists and is asymptotically stable if $R0 > 1$. The numerical simulations support the mathematical analysis of the model.

Population Structure, Habitat Study, and Conservation of Taxus wallichiana at Community Level.

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Taxus wallichiana, also commonly known as Himalayan Yew, is an evergreen tree species belonging to the Taxaceae family. The plant is renowned to contain Taxol, which is considered the anticancer agent being studied and used to cure breast and ovarian cancer. This has not only increased its economic value but researchers have been flooding in to inquire more about this prominent medicinal plant. Due to its high medicinal properties, T. wallichiana is being over-exploited. Hence, it is becoming rare and even under threat of extinction. All the merchantable size forest trees have been logged illegally. In this study, T. Wallichiana samples were collected from 10 different districts of Nepal. The presence of phytochemicals was analyzed in the laboratory. The experiment showed the sample from Taglung Mustang includes a high concentration of phytochemicals. So, we established a greenhouse for vegetative propagation of plants near the forest location by involving the community. The training to the community people was provided for vegetative propagation of T. wallichiana using different phytohormones to improve the plant propagation. The establishment of a greenhouse helps in mass propagation as well as conservation of plants. The main purpose of this research was the identification of phytochemicals present in the plants and the preservation of this species at the community level.

Training for Farmers and Students on Enriched Farm Yard Manure in Manthali, Ramechhap

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Training on Enriched Farm Yard Manure in Manthali, RamechhapFarmers in Manthali, our community education project site primarily uses either the traditional method of decomposition of leaf litters, cow-dung, organic matters, etc. or chemical fertilizers rampantly as plant nutrients in agriculture. The traditional method of composting takes a longer period for full decomposition of organic wastes into available nutrients to the plants. Also, important plant nutrients like Nitrogen and other essential plant nutrients are eroded during the traditional process of decomposition as it is practiced haphazardly in an open area. That is why we conducted a community education program at Manthali with the motive of training farmers and students of the community via a participatory approach and aware them of proper composting of farmyard manure with the addition of effective microorganisms and the significance of its use in organic agriculture. The addition of effective microorganisms under well-managed sheds can be a resolution and alternative to the traditional form of decomposition leading to prompt decomposition along with enriched plant nutrients. Preparation of enriched farmyard manure is helpful in reducing the consumption of chemical fertilizer by replacing the aforementioned fertilizer with enriched farmyard manure. In addition, we interacted with active agriculturists of the community and conducted key informant interviews with the farmers to record the practice of the traditional method of preparation of compost, track loopholes in the practice and inquire about major obstacles of local farmers in shifting from conventional to organic farming. Next local, agriculturists and students were acquainted with soil nutrient management, enriched farmyard management, and the importance of it in organic farming via paper presentation followed by a demonstration of enriched farmyard manure preparation accompanied by the participation of the target group. The participants also interacted well, discussed, and presented their ideas and perspective with regard to the issue of fortifying soil with chemical and organic manure after the presentation. The participation of active farmers and students of the community in the demonstration of the preparation of enriched manure has been fruitful in encouraging farmers of Manthali to progress towards the use of enriched farmyard manure by gradually replacing the hazardous chemical fertilizer.

A Study on the Status of Wash Services in Rural and Urban Surkhet

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Everyone has the right to grow up and live in a clean and safe environment. People who have access to clean water, basic toilets, and excellent hygiene habits not only thrive but also have a healthier start in life. The most susceptible and affected in having less access to WASH facilities include those who live in rural areas, urban slums, disaster-prone locations, and low-income countries like Nepal.

Previous empirical studies are based on the general status of WASH. Similarly, governmental reports focus on Periodical reports on the expansion of WASH facilities, reports on the current condition of WASH programs and capacity evaluations. The majority of the literature available on online portals focuses on water and sanitation, with hygiene receiving less attention (except for hand-washing and menstrual hygiene practices). This research aims to understand the overall status of wash, status of access to WASH services in Rural and Urban Surkhet and also to explore the major differences between these two areas. The pandemic caused by the corona virus created a major obstruction in the data collection process, but enough data was collected for this study.

Since the research is qualitative, data was collected using various research tools and participatory methods like Focused group discussion, community workshops, community mapping, transect walk and Key informant interview. People believe that urban places receive developmental projects, ranging from infrastructural development to upliftment of people's lives and have been helping the community to thrive. Contrary to what has been assumed WASH services in both rural and urban Surkhet lacks focus on waste management whereas appreciable efforts have been made in water and hygiene sector. Purity of water seemed to be another major challenge for people from both rural and urban Surkhet, even though water coverage was good, quality of drinking water was not up to the standards set by the government.

The main distinction between Rural and Urban Surkhet was that project locations were largely based on Urban Surkhet. In Urban Surkhet, sanitation amenities such as public toilets, sanitary pads, and water facilities such as public taps and personal taps were more prominent.

Rural Surkhet, on the other hand, seems to be focused on keeping the village clean with less access to health, sanitation, and water amenities.

Geomatics Engineering in Community Development: A Case of Department of Geomatics Engineering, Kathmandu University

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Geomatics engineering is an information technology discipline that deals with the acquisition, modelling, analysis, management and dissemination of spatial data. Kathmandu University has started a Geomatics Engineering program from 2007. The program is of four years and consists of basic science courses, core and elective courses of surveying and mapping, engineering projects, field survey and internship in its course syllabus. The field survey is carried out in various communities every year. The main aim of this paper is to highlight activities of the Department of Geomatics Engineering for community development. The paper is based on desk study by reviewing literature and secondary data. The field survey provides the students to use their theoretical knowledge gained in the classroom, practically in a community and to serve the community. Geomatics Engineering Society, Departmental club of Geomatics Engineering has also carried out the awareness program on surveying, mapping and land issues in various communities. During the earthquake in 2015, preliminary damage assessment was carried out by drone survey at Dhulikhel. The result has been used to provide the relief material based on the study. Similarly, as part of the internship and service to the community, the Department of Geomatics Engineering is closely working for surveying and mapping in various projects of Dhulikhel municipality. Therefore, to make land administration and geoinformatics education a leader course in Nepal and also within the region in the future, Kathmandu University, Department of Geomatics Engineering has to collaborate with various communities to strengthen Geomatics Engineering education and research activities in Nepal.

Understanding Sustainable Agriculture and the Barriers to Wide-scale Manufacturing of Compost in Nepal

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The contents of this research are essential for those intending to understand the state of sustainable agricultural practices in Nepal. Along with this, the research also provides information on the manufacturing processes involved during the production of organic composts. Studies carried out during analysis were done primarily with Kisan Agro Mart Private Limited, based in Nepal. The company was able to provide the researcher with barriers faced by new and coming organic compost production lines such as itself.
As approximately more than 70% of Nepal's Fruits and vegetables are imported from foreign countries such as India, of which the levels of organic protocols adopted during its production are unknown, building a sustainable agricultural value chain within Nepal that prioritizes chemical free produce is an absolute necessity. Doing this from the ground up will first and foremost require Nepalese farmers to adopt organic composts over uncontrolled use of chemical fertilizers. The report thus provides guidelines on current scenario, production details and complications faced by successful companies in the country such as Kisan Agro Mart as they work with wide scale production of organic composts.Methods used for data extraction during the course of this research consisted of Primary and Secondary sources. Under Primary data, physical questionnaire distributions were carried out among vegetable wholesalers in the Kalimati vegetable market. Along with this, informal open-ended interviews were carried out with the Founders of Kisan Agro Mart and the manager of Namuna Av-Tech compost production line in Biratnagar. As for secondary data, news articles, published books and research works, along with national and international government documents were sought after. Major findings from the research gave way to data on how only 5.6% of vegetable wholesalers in Kalimati admitted to selling organic produce, while the remaining 94.4% were either unsure of or denied organic origins. Simple and effective steps for industrial preparation of organic composts, along with obstacles faced, such as advertisement barriers, innovational requirements, price adjustment barriers, barriers of adjusting social entrepreneurship, financial barriers, political barriers, institutional and social barriers were made.

Findings made from this research can be used by future organizers, developers and entrepreneurs in Nepal, as they seek to study, prepare and work on building, as well as improving a sustainable and viable agricultural value chain in the country. In addition to this, data available in the research on unforeseen complications faced by compost manufacturing companies like Kisan Agro Mart will enable readers better prepare themselves for what they will be up against as they enter the agro-based compost production market of Nepal.

Perception of Headteacher on School Community Partnership

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With reference to the Nepalese context, we still lag far behind in practicing partnership among schools, parents and communities. This paper tries to explore how the principal perceives school community partnership. I have purposely chosen one of the principles of institutional schools and studied it from the perspective of the framework of Epstein. The first main finding presented in this research is that the parents are not involved because of lack of time, past negative experiences, and differences in languages. The second set of findings presented include that they are not aware of key frameworks of Epstein like parenting, communicating, volunteering, learning at home, decision making, and working with the community. So, the purpose of my research was first, to explore school parents' partnership in institutional school and to know the reason behind less involvement of parents in the school.

Connecting Higher Education to Communities: Some Personal Reflections and Prospects

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As learning is associated with the transformation of behavior in a positive sense, teaching and learning in higher education have no meaning if they are not pertinent to positive changes in the behavior of the learners. With this acceptance, this presentation illustrates, guided by my personal practices to link the campus to the communities, how the university can link its academic practices to the communities to enhance learning. In this respect, my first endeavor, which ran only for a few months, concerned the involvement of university students in the publication of a bi-monthly magazine, The Nation Builders, which targeted the enhancement of school students' creativity through the inclusion of their creations in the magazine. Then my next effort concerned the cultural and artistic practices. For this, I conceived a project named Creative Artists' Network (CrANe) and registered it at the campus where I have been teaching. There I myself worked as Director while all the other posts and responsibilities were designated to the campus students. The students as the project leaders would plan and perform the events on Saturdays which included cultural and artistic performance along with the respective guests from the communities. This project was so successful that it gave a platform to many students who employed their learning with some creativity and collaborated with the community leaders from different sectors. For example, some students would sing their folk songs; some gave speeches on current issues; others recited poems; some others presented their drawings and explained divergent forms of nature and culture, others developed social networking and got involved in social campaigns, etc. This project, which ran for about 3 years, was strong evidence for the way the campus/university can collaborate with the community to strengthen learning further. Even at present, as Country Director of Nepal for 3Q Institute, UK, I have been running some Zoom webinars where school/university teachers and students share their learning in context along with the community representatives. I have found such webinars fruitful for enhancing learning as boosted up by the communities. Apart from these reflections in support for collaboration between academic institutions and the communities, I am thinking of strengthening the university-community relationships through a project founded on my Ph.D. dissertation that concerns the study of the Gita from the educational and philosophical perspective. I realize the teachings of the Gita have wider significance and they need to be recontextualized to the present global context so that university education can be plausible.

For this, I shall be organizing the events in collaboration between the educational institutions/universities and communities to contribute to the quality of education. With this, this presentation makes a recommendation that universities collaborate with the communities so as to ascertain the quality of higher education.

Phytochemistry and Medicinal properties of some high valued medicinal plants, mostly utilized for their underground parts, from Nepal Himalayas.

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Nepal has a rich diversity of highly valued medicinal plants distributed from tropical to subalpine zones. The Himalayan region around and above 3000 m altitude from sea level is flourished with many unique medicinal floras that have been used in traditional medicines since time immemorial whose records are also listed in many ancient literatures of Ayurveda. Among these, Neopicrorhiza scrophulariiflora (Kutki), Valeriana jatamansi (Sugandhawaal) and Nardostachys grandiflora (Jatamansi) are some of the rhizomatous medicinal herbs which are being used for the treatment of number of diseases by the local peoples. Researches and studies have sown the presence of some active phytochemicals in them (Picrosides in Neopicrorhiza, valerenic acid and valtrate in Valeriana jatamansi and Jatamansic acid, Jatamansi One and Nardol in Nardostachys grandiflora) which are responsible for their medicinal properties. N. scrophulariiflora is mainly used for its antidiabetic, antiviral and hepatoprotective activities with innumerable other diseases and also has a great anticancer potential. Similarly, Valeriana jatamansi is reported to have a lot of medicinal values including Nutraceutical properties, Neuroprotective effect, anti-cancer potential as a main. The herb has been used as an antidepressant, treating stress, anxiety, Insomnia, gastrointestinal disorders, cardiovascular disorders and many others. Moreover, Nardostachys grandiflora is a medicinal herb reported to have anti-hysteric, anti-diabetic, anticancer, anti-microbial and anti-neuroinflammatory, anti- Parkinson's, anti-Alzheimer's properties.

Expression of Interest to Work with Kathmandu University on Education and Literacy

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Parents of school children complain at Siddhartha Vanasthali Institute, Panauti, about their children engaging in ICT tools such as cell phones and laptops at their home while they were supposed to open the books and read them aloud. Some of the parents do not know what they are engaged in. The children might engage in taking help from the internet to complete homework or playing games. This skepticism seems natural when the parents do not have knowledge about the usefulness and abuse of cell phones in education.

Siddhartha Vanasthali Institute, Panauti management team have put effort to educate parents about the usefulness of ICT tools and misuse of it frequently. However, our-only effort to educate parents did not suffice due to various reasons. At times, the parents cannot buy time to be educated because of their household work. In many cases, they do not know how to operate the necessary apps. Therefore, they cannot monitor what their children are using the device for. SVIP wants to work on the community's interest to bring their children on the right path by educating parents about how ICT tools function and what is to monitor when their children use such devices. To address the issue, the parents of the school children in the Panauti area need to be educated on the usefulness and abuses of ICT devices. Second, they must know how to use the devices. Their augmentation in learning such tools makes them aware of harmful and good apps. This awareness of utilization of ICT tools helps them to identify the real situation of the children's education activities.

SVIP offers the candidacy to work with Kathmandu University to outreach the community and work with them. Such work should certainly make an impact on the community. SVIP is ready to discuss further to value the situation and make the community as assets along with Kathmandu University.

Working with Kathmandu University does not only uplift the community alone, this certainly helps the nation to flourish in the long run.

Combining Dynamism of English Literature and Education: Centers on Discourse, Ex-centricity and History Through Archiving in Reading

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This paper is written through the lenses of discourse in search of the connection between ex-centricity in English history. I chose this topic for adding discourse which may mean that the invisibility or detachable in the discourse blocks the direct expressions. So, writing those papers means the practices and knowledge are studied by readers through observation, imitation, and trial and error passed down from one generation to the next and shared behavior patterns characteristic of a group. I followed the patterns of text analysis taking support from Professors, visiting some institutions, research centers, and universities library to collect data for proper connections. I collect multiple data from combining the different sources which rely upon archives. In contrast, I use the data for qualitative surveys and also find the problems of what the main cause was, and doing research this technique supports me for getting the solutions that I was searching for. Similarly, the studies like Taylor and Bain's talked about the constructions life can be revealed and in other sense, they added about the collective action which efforts to reframe dominant meanings and discursively articulate alternatives and subversive-worldviews which truly matched with the academic level "processual-colonialism " (Zepetnek & Mukherjee 2013) and also in academic contents seen in past and present when pandemic started. Thus, these kinds of studies talked about discursive but construct alternative workplace identities for themselves. When the movements are seen in "History of English ", grammars and conversation analysis are crucial structures and consist of hierarchies; those kinds of hierarchies create the interactions and are examined in dynamic terms that create the case of discourse.

University-Community Engagement: Voices of the Youth, Guide for University Action?

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A federal system of political governance was widely supported by the Youth of Nepal as this system came closest to their universal desire for a political system that was inclusive, participatory, protected the rights of all, and provided decent work opportunities. Barely three years old, it is managed and operated largely by a youthful group of women and men across Nepal in all the States. Nepal's federal experience is still in its early stages of implementation and learning by doing.

While the needs and aspirations are numerous, the resources and competence is very limited. How are the newly formed States and local level governments coping in the face of many different challenges and constraints? What are the different setbacks they have experienced and how can these be fully addressed in the future? How are the States and local level governments coping with the difficult reality of delivering development goods and services?

The overall objective was to understand the experience and challenges of planners of state and local government with planning in newly restructured Nepal and the status of participation of youth in the planning process.

Kathmandu University School of Arts mobilized 18 MDEVS students to undertake week-long field work focusing on extensive interaction in state headquarters in each of the seven different states. In this first part of the field program, each student in the course has undertaken week-long field visits in groups of two and three students to the assigned States (Provinces) for interaction with the respective State policymakers and other state and local officials. The faculty supervisor visited some of the states and reviewed the progress of the work by the students. There were both group (focused group discussion) and individual interviews. Based on interviews, discussions, and observations, each student has submitted an end-of-the-course paper and has been reviewed by the concerned faculty. Write-ups have been thoroughly reviewed and the present report is a compilation of the major findings from the fieldwork of the students.

A short version of the main findings will be presented for discussion

Kathmandu University's Challenges and Opportunities of Community Engagement

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Located at Bakundol Dhulikhel Ward No. 7, in Kavrepalanchok district, Kathmandu University (KU) is an independent, not-for-profit, self-funding open institution set up by a Parliament Act of Nepal in December 1991. It is the third university of higher learning devoted to keeping up the standard of scholastic brilliance in different exemplary standards and proficient disciplines. The mission statement of KU is to give quality education for leadership. The vision is to be a world-class university given to bringing information and innovation to the benefit of mankind. KU tries to serve the specific community, and the country in general by satisfying the requirements of the society through the witticism of taking information and abilities from the institution to the community. Making community-university partnerships productive and visible should be the motto of KU. In KU, internal staff and community residents can work as equal partners to develop and tailor programs and services for that community. As a matter of fact, both challenges and opportunities envelop this endeavor like elsewhere. Providing scholarships and jobs to the local residents besides reserved seats is an example of giving opportunities. On the other hand, when the residents sometimes protest to fulfill their vested interest, that is one of the challenges that KU has been facing since its inception in 1992. Such protests often disturb the calendar of teaching and learning for a certain time. Therefore this presentation seeks some of the key remedies to keep the relation of community and Kathmandu University intact. Following up on the activities is the most important remedy of this stalemate. In characterizing a commonly advantageous extent, it is vital to set learning and community objectives that are sensible for your understanding inside the time outline of your course. When planning an extent with a community accomplice, it is vital to adjust both community engagement and understudy learning objectives impartially. To guarantee a venture has a critical effect on a community, it is imperative to address a community's most critical needs. Subsequently, it is imperative to depend upon well-respected community pioneers and KU for an appraisal of its needs and for a more noteworthy foundation on the issues the community faces. It is supportive to be mindful of these histories and the problems they pose for unused campus-community resources as you enter into an exchange with community members. Community needs regularly surpass the confinements to one extent and the semester time outline in which most teachers instruct. Subsequently, it is accommodating for the community and teachers to create enduring relationships.

In case these associations can be built up between the community and KU, programs, or education, community needs can be tended to over different teachers and courses in the course of time.

Experience sharing of community work on microcredit and renewable energy with the inhabitants of Danda Gaun Besi, Kavre district

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Community work as a part of the Renewable Nepal project was conducted from 9 March to 8 November 2015. This project interlinked the promotion of the use of renewable energy (biogas) with income-generating activities supported by a microcredit society. An Energy Consumption Profile Database was constructed and the data collected from the sample survey of 300 households were entered into this database. During the process of data collection, a switch over to a renewable energy source was popularized in each household. Further two households were selected for the project support for the construction of a biogas plant. These households needed special mobilization as the entire payment for the construction of the biogas plant had to be made by them. The local microcredit society Sri Gantabya Sahakari Sanstha Limited will be paid a sum of 45,000/- per household amounting to Rs. 90, 000/- for two households. This sum would come back to the owners after a period of six months. During these six months, this sum could be revolved among the members of the microcredit society on small loans. These small loans can be mobilised for various income-generating activities. For this purpose, a four hours training program on Livestock rearing and Vegetable farming was conducted as a part of project activity on 5 th June 2015. It was attended by 40 inhabitants of Dandagaunbesi village. Mr. Prakash Chandra Tara from the Department of Livestock Services had a four hours interaction with the locals from 12:00 – 16:00 hours on efficient ways of livestock rearing and fodder plants/ vegetable farming. Seeds of vegetables and medicines for common ailments of goats and cattle were also distributed. On this day, I had talked about the utilisation of time saved from the installation of biogas in various income-generating activities. And, Mrs. Parvati Maya Lama Tamang, research assistant, oriented the project to the local inhabitants. A Memorandum of understanding was also signed with the local microcredit society. Sri Gantabya Sahakari Sanstha Limited located at Kanpur, Dandagaun, Kavre is the local microcredit society. Due to the massive earthquake of 25 April 2015, the house belonging to one household selected for this program was severely damaged.

The owner couldn't live in that house and had to make a temporary shelter in the site initially allocated for the biogas plant. So due to the earthquake, this project could be implemented in only one household. Mr. Bhim Bahadur Tamang got a biogas plant installed in his garden and a sum of Rs. 45, 000/- was deposited in a local microcredit society –Sri Gantabya Sahakari Sanstha Limited on 23 July 2015. This sum was on a fixed deposit for 6 months on 23 July 2015 in the name of Mr. Bhim Bahadur Tamang. This sum was used as a revolving fund (for a period of six months) for giving small credits to other members of the microcredit society.

Climate Change Vulnerability and Irrigation Water Quality in Nilbarahi Sub-Watershed ,Bhaktapur

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The climatic alterations coupled with natural system degradation and the vulnerability of humans are emerging issues in many parts of the world including Nepal. However, studies to understand the alterations and vulnerabilities are not in priority especially in developing countries although vulnerability assessment is crucial in developing effective climate change mitigation and adaptation strategies. Agricultural intensification, considered as an agriculture-based adaptation to climatic vulnerability often depends on irrigation water quality which affects not only crop yield and productivity but also can impact soil quality. Therefore, this study was conducted to assess climatic vulnerability and irrigation water quality of the Manohara River in an agriculturally intensified Nilbarahi sub-watershed of Bhaktapur, Nepal which is known to have ecological, economic, historical, and socio-cultural significance. A total of 190 structured questionnaires (TU-CDES, 2016) were surveyed, along with Focus Group Discussions and Key Informant Interviews in the study area for the vulnerability evaluation. Furthermore, eight water samples were collected from different stretches of the river to assess the irrigation water quality so that alterations due to settlements and intensive agriculture could be observed. The samples were analyzed following standard procedures and the Sodium Adsorption Ratio (SAR) value was estimated. The vulnerability index score of 2.1 indicated a slightly high overall vulnerability of the community, which means the farmers are facing higher vulnerability in the area. The SAR values were within the permissible limits and ranged from 0.75 to 4.23.

However, higher SAR values observed in the lower part of the watershed clearly show the impacts of agricultural runoff and human settlements in the watershed. Replications of such studies along longer temporal and larger spatial scales, along with evaluation of relation of ions and temperature; and the effects of SAR on soil are recommended.

Macroinvertebrate assemblages in Bheri and Babai rivers of western Nepal

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Inter-basin water transfer (IBWT) is a new water activity in Nepal, the transfer of water from a donor basin to a recipient basin, and such transfers have beneficial as well as adverse environmental and socio-economic impacts. This study attempts to generate baseline information on macroinvertebrate assemblages in glacial-fed (Bheri) and rain-fed (Babai) rivers of west Nepal, where inter-basin water transfer is in progress. A total of eight sites viz. upstream and downstream of water diversion and water release in Bheri and Babai, respectively; and two tributaries of both rivers were selected for the study. Qualitative samples of macroinvertebrates were collected following the standard microhabitat approach during post-monsoon (October 2018) and pre-monsoon (May 2019). Water physico-chemical parameters like pH, temperature, dissolved oxygen (DO), Electrical Conductivity (EC), and Total dissolved solids (TDS) were recorded on-site; water samples of each site were collected and analyzed following standard methods for major ions. Shannon-Wiener Diversity index, Evenness, Sorenson's diversity index, %EPT was calculated and macroinvertebrates were also categorized into different functional feeding groups. Statistical analyses such as the Chi-square test, independent t-test, one-way ANOVA, and two-way ANOVA were performed to assess significant variation between the rivers and seasons. Redundancy analysis was performed to identify the relationship between macroinvertebrates and environmental variables. A total of 8487 macroinvertebrates belonging to 58 Families and 10 Orders were recorded indicating rich macroinvertebrate diversity. Macroinvertebrate abundance and %EPT showed significant variation between Bheri and Babai systems as well as between seasons. Baetidae was the most dominant taxon in the Bheri system in both seasons whereas Hydropsychidae and Physidae were dominant respectively in the post-monsoon and pre-monsoon period. In Bheri, pH ranged from (7.45±0.04 - 8.55±0.04); DO (7.33±0.41- 10.17±0.01mg/l); temperature (19.70±0.17-30.60±1.63 ºC); EC (235.67±11.85-347.33±20.2 µs/cm) and TDS (155.67±11.85-236.67±3.21 ppm).

In Babai, pH ranged from (7.08±0.06-7.86±0.05); DO (3.87±0.3-9.47±0.11 mg/l); temperature (22.5±0.1-31.43±0.4 ºC); EC (273.66±16.25-553.66±55.04 µS/cm) and TDS (192.33±4.72-370±36 ppm). The most dominant cation and anion in Bheri and Babai were Ca2+ and HCO3 -, respectively. Two way ANOVA revealed a significant variation in temperature, EC, TDS, Hardness, Ca2+, Mg2+, Na+, and K+ ($p<0.05$) in post-monsoon whereas significant variation in pH, DO, EC, TDS, alkalinity, hardness, HCO3-, Cl- and Mg2+ ($p<0.05$) was observed in pre-monsoon between the rivers. Redundancy analysis revealed pH, temperature, EC, Cl-, Mg2+, and K+ in the Bheri system and pH, DO, Na+, Ca2+, NO3- and Mg2+ in the Babai system as significant parameters governing macroinvertebrate distribution. Macroinvertebrate assemblages and physico-chemical parameters reflected different environmental conditions of glacial-fed (Bheri) and rain-fed (Babai) river systems and their respective catchments.

Water Quality, Climate Resiliency and Woman Empowerment Associated with the Multiple-Use Water System in Surkhet, Nepal

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Multiple Use Water System (MUWS) is an option to fulfil people's multiple water needs as a starting point for providing integrated services through participatory, integrated and poverty-reduction focused approach in poor rural and peri-urban areas. This study aims to assess quality of water supplied by MUWS systems and climate resiliency of MUWS in the hill community of Surkhet district. The study was conducted in two MUWS systems and one Single Use Water System (SUWS), which are located in Barahatal Rural Municipality of Surkhet district. Climate resilient data were obtained through focused group discussions (FGDs). A total of 30 water samples were collected from the source, drinking (Reservoir Tank), irrigation tank and tap stands of MUWS during pre-monsoon and post-monsoon season and were assessed for physico-chemical and microbial quality following standard procedure as recommended by APHA, (1998). The result obtained from FGDs revealed that MUWS has marked a positive impact on people's livelihood, water use, water availability and agricultural production. Communities perceived that MUWS technology has moderately helped them to cope with increasing temperature and decreasing rainfall and drought impact has significantly decreased after the implementation of MUWS system. Communities cultivate 2-3 annual crops and few cash crops, which has helped locals to enhance their economy.

Thus, MUWS technology has promoted local communities to cope with climatic changes. The women were the ones who went to the responsible authorities, governmental and non-governmental organizations to collect the funds and technical expertise necessary for the construction of MUWS technology. Women are responsible for vegetable production and they generate income from farming of seasonal and off-seasonal vegetables in tunnels. Thus, MUWS has contributed to women empowerment. The values from physico-chemical analysis of water samples are within national standards and WHO standards except ammonia and calcium. The paired t-test revealed there is significant difference in Temperature, Fluoride, Chloride, Total hardness, Arsenic, Sodium Adsorption Ratio (SAR) between pre and post monsoon ($p<0.05$). Based on the SAR value, it can be concluded that water supplied by MUWS can be used for irrigation purposes though the presence of faecal coliforms suggests unsuitability for drinking without treatment.

Technology Integration for School Improvement

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School Improvement could be measured in various dimensions. Among these instructors' competencies in the field of technology integration for purposeful learning outcomes and learners' competencies regarding Collaboration, Communication, Critical thinking, and Creativity (4Cs) are major indicators for school improvement as also highlighted by Sustainable Development Goals. Today's world which is majorly consisting of digital citizens, where the application of technological resources can be found in every sector. Similarly, education is also not apart from multifarious technological resources. Thus this paper aimed to analyze and then also explore the effects of technology integration in teaching and learning. To achieve the goal of this paper, a reflection of the researcher's own community engagement in various districts of Nepal from 2018 AD to 2021 AD (till the date) has been analyzed based on two major components as teacher training for ICT competencies and its impact on learners' 4Cs.

Regarding teacher training for ICT competencies, training was provided based on the Technological Pedagogical and Content Knowledge (TPACK) framework and Instructional Design (ID) model for the development of lesson plans for teaching and learning. Most of the training are content-free (any subject teachers can join), however, some were content-specific such as technology integration training for English or Science or Math.

To compare pieces of training among content-free and content-specific, it was found that content-specific was much more effective comparing to content-free because of: (i) High-level of cognitive engagement for developing a technology-integrated lesson plan; (ii) Rigorous discussions about the hurdle they have been facing in their teaching and learning because of the same subject; and (iii) Ease understand of the similar pedagogies. In addition to this, various technological resources with innovative pedagogical strategies were also found in such training.

Similarly, the impact of trained teachers on learners' 4Cs, was also explored because of ongoing training for the same participants (school teachers). Because of the lack of specific measurement tools, it was also quite challenging to measure specific effects. However, based on open discussions with trained teachers, it was found that learners' 4Cs have been improved because of their tendency to use various technological resources based on the available resources and also pedagogical strategies. Such as: Using a magnifier screen for mobile phones enhances the competency level of learners to be creative to use the local resources for teaching and learning. Similarly, exploring various pedagogical strategies such as problem-based, project-based helps learners to be communicative and collaborative. Likely, exploration of technological resources assists learners to be critical thinkers because they prefer not to accept as it is from digital media.

Even though this is ongoing research, there are some recommendations based on the findings of the study as technology integration assists learners to enhance a cognitive engagement; however, at the same time there need to be relevant strategies to address the instructors' anxiety toward technology integration.

Long-Term Tea and Coffee Cultivation as Cash Crop in hills of Nepal: Implications on soil quality and livelihood

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Land-use type and farming practices affect soil carbon pools that has a significant impact on the global carbon cycle. A larger area of tea-estate managed perennial monoculture cash crop is intensively cultivated in the mid-hills of Eastern Nepal. Likewise, farmers are increasingly adopting coffee agroforestry mainly in the mid-hill region. This study aimed to quantify and compare soil organic carbon (SOC) stock and to assess the variation of soil physico-chemical properties due to increasing tea-estate and coffee agroforestry.

The study was conducted in two sites, namely, Kanyam, Illam district (Site 1) and Dadathar, Kaski district of Nepal (Site 2). Soil samples from Site 1 were collected from four land use systems, namely privately owned tea estates, forest land, traditional agricultural land and governmental owned tea estates. Likewise, whereas samples from Site 2 were collected from coffee agroforestry and traditional agricultural systems. A semi-structured questionnaire survey was also conducted in Site 2. Four replicate samples were taken in each land use system at four different depths (0-15cm, 15-30cm, 30-60cm and >60cm). The collected soil samples were analyzed for SOC & soil physico-chemical parameters. Two way ANOVA and correlation was used to analyze the data. The result showed that the SOC decreased with soil depth in all land use types. SOC was highest in the depth of 0 to 15 cm and it was significantly different from the other three depth levels ($p < 0.01$). Soil under agricultural land had higher values of SOC stock (449.475 t/ha), while the lowest value of SOC stock was (434.421 t/ha) for governmental owned tea estates. Likewise, the results showed that the total SOC stock is comparatively higher in traditional agricultural land (431 t C/ha) than in coffee agroforestry system (407 t C/ha). However, there was no significant effect of land use on SOC, while land use has significant effect on soil moisture, pH, phosphorus, potassium ($p < 0.01$). Tea estate soil has a significantly lower amount of potassium ($p < 0.01$) while agricultural soil has significantly higher amount of phosphorus ($p < 0.01$). Soil pH was found to be significantly lower in coffee agroforestry systems. This implies land use change will have implications on soil quality. It is also found that the coffee yields are 2 to 3 times profitable than other common crops. Farmers appeared to be most interested in gaining short-term economic benefits and seemed to be positive over the income generated by coffee cultivation.

Farmers accepted that coffee agroforestry practice in sloppy areas can also reduce landslides and erosion. The number of coffee plants, available cultivated land area, and number of years of cultivation have a significant influence with 85% of variation in the extent of coffee farming. This further needs rigorous study with appropriate management strategies.

University-Community Partnership: Experiences and Expectations

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The University- Community Partnership supports and encourages the students and faculty to experience and learn common interests. Individual members or community organizations can be partners in this learning and helping mechanism of mutual exchange. Either in course work,voluntary or research partners our students help in various fields non limiting to charities, social enterprises, environmental conservation, soil and forest restoration, water resource development, information management of community interest and sharing with them, road and infrastructure development, integrated planning, technology transfer, education support in community, women development, among others. Service-Learning Projects can be implemented in a small pocket of the nation, to create trusting and useful research collaborations with communities. Most of the works done in communities are long-term practiced with rapport build up, expected, and demanded by the community.

Students involved in such activities and exercises are found to have developed critical thinking, which comes with problem solving decisions, learn to better understand the problems and present it at community and university level, have developed analytics and skills to work in teams having people from diverse backgrounds, i.e. limited academic experience, different aged people in a team work, and honing interpersonal skills. They can experience what it is like to work on real problems relevant to their discipline.

On establishment of University-Community Partnership in Kathmandu University, it is happy moment to share our experiences in community engagement of the student under our course work, research work or voluntary and charitable work facilitated by our faculties. This will be a good platform to present the ongoing program and some expectation of communities for future community engagement through faculties and departments, in the point of further support mechanism from the University-Community Partnership division.

Proposal for Community Engagement: A Role of Transformative STEAM Educators

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The purpose of this presentation is to share an ongoing debate and action of the community engagements. The presentation highlights the role of the transformative STEAM educator for engaged educational processes for the community's overall development. In general tenets, community engagements are processes as well as products. These processes and products help identify and take collective action to transform the existing practices within the STEAM discipline but not limited. In doing so, community development ultimately considers being the experts in STEAM discipline by empowering the community members (e.g., school teachers, university faculties, and other stakeholders). Likewise, the role of the STEAM educator is vital for community engagement, thereby development.

Further, within the principles of empowerment, human rights, inclusion, social justice, self-determination, and collective action as a holistic approach to community development (Kenny, 2007), this presentation offers the platform to the audience to be experts in their communities and values the community's knowledge and wisdom. More so, STEAM educators always seek support from the communities of the practices—from a decision, selection, and implementation for engaging the stakeholders. Delving into the agendas of community engagement, as a STEAM educator, the presentation focuses on the power relations as to whose interests are being served while engaging communities? To the end, the presentation landed by highlighting the need for training or experiences, theory, practices, and principles of community development, and the role of STEAM educators for community engagement.

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Impact Assessment of Kathmandu University and Dhulikhel Hospital for Last 25 Years

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For more than 25 years, Kathmandu University and Dhulikhel Hospital have been contributing to two major sectors, Education and Health. The study “Impact Assessment of Kathmandu University and Dhulikhel Hospital for the last 25 years” is the initiative taken to measure the socio-economic impact on the community where two of these major institutions are situated. The study conducted is a cross-sectional study and uses a descriptive method because with changes in characteristics of respondents, in the future, there is a high probability to get different results. In addition, primary data questionnaires, and interviews were major tools to collect the information. Similarly, to gather secondary data sources referred included the published papers and documents of local authorities and relevant bodies. For sample size, around 10% of the population size i.e. employees and students were identified. The further assessment also comprised the study of local respondents living within the periphery of 500 meters of both organizations. The study was conducted on a very surface level whose findings indicated that both institutions have positively improved the quality of life in terms of education and health at an affordable cost. With the establishment of the University and Hospital, local people have got employment opportunities. However, there were few downsides identified during the assessment like, people in the community were found complaining about the behavior of hospital staff that seemed to be demotivating to patients. In the end, the suggestions were also made from the community, like action from two huge organizations mainly for locals would be appreciative.

Kusom Policy Lab and Policy Outreach Centre: Critical Public Policy Education For State Transformation

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Kathmandu University is implementing Public Policy and Management (PPM) Education with critical pedagogy and critical perspective. Unlike the taught courses, practicum, policy seminar, and policy capstone provide very insightful professional and experiential learning opportunities to synthesize theories, knowledge, and practices for an impactful professional career in the public domain. Based on the critical perspective and pedagogy of the insights and thoughts of John Dewey and Paulo Freire, the PPM firstly identifies the issues and challenges of public policy, governance, and management for exploring the ways and possibilities of informed and evidence-based analysis and solutions. It would be helpful to think out of the box and be engaged in these issues, prioritizing/employing various methods like critical thinking, reflection, arguing 'help us not only for memorizing, but also for creative and cooperative inquiry' and scientific investigations. Discouraging 'ready-made knowledge,' the policy lab encourages 'active laboratories of knowledge making'.

The critical pedagogy equips students to comprehend and analyze how this academic program can contribute to address the aforesaid issues and challenges for societal transformation. Critical pedagogy encourages students to think differently; not only to memorize (what to do) but also solve problems (how to do/act) themselves. As an outreach, it also employs the globally recognized human-centric design thinking and innovative tool/approach for the 'Policy Lab' to 'Discover, Design and Evaluate (DDE)' the ways and possibilities of informed and evidence-based policy analysis and solutions, decision making and implementation for ensuring effective public service delivery. The lab attempts to bridge the gap between academia and public policy mainstream and provides opportunities for students, professors, scholars of each university and college/campus to undertake research on peoples' concerns and their livelihood considering Policy Avenue. And, the lab motivates student-led policy engagement in the public domain and thus, this is key for preparing students, who would be tomorrow's policy leaders and managers in the professional settings.

Taking all these together, KUSOM Policy Lab and Policy Outreach Centre would provide an ample democratic space with the well-defined path and roadmap to engage with policy ecosystems and stakeholders to understand, design, analyse, evaluate for promising and convincing solutions. The lab and outreach center provides an opportunity for the campus family and community to deal with the complex public policy, governance and management issues for informed and evidence based decision making.

Hence, it would contribute to connection between University and State Institutions based on the analogy of 'University for State and Societal Transformation' at federal, provincial and local levels.

Thus, all these consolidated efforts ultimately are anticipated to contribute (through informed and critical analysis of issues and challenges, creating program, public policy analysis, and management) for transformation of state and society through different levels of University-Community partnership.

Finally, critical pedagogy is a dialectic thought that has challenged issues of public policy, governance to think about all aspects to pursue a transdisciplinary education for inclusive transformation. With the aforesaid innovative actions and results, this paper proposes collaborative solutions between campus and community through evidence-based innovative perspective for larger societal transformation.

Menstrual Hygiene Among Adolescent School Girls in Rural Nepal

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Menstruation is a normal part of life, yet many adolescent girls and women face significant obstacles to healthy menstrual hygiene practices in Nepal. Poor menstrual hygiene management creates an uncomfortable environment for menstruating girls, especially in rural schools. More than a quarter of the whole world's population constitutes females of reproductive age. Most of these women and girls will menstruate each month for between two and seven days. However, in most of the communities, menstruation remains a taboo and is rarely talked about. This study applied a participatory action research approach to explore the experience of female students on menstrual hygiene management in Janpriya Secondary School, a community school in rural Nepal.

During the action phase, twenty-eight female students from grades six to eight participated in an intervention in making reusable fabric sanitary pads. The intervention helped the participants to learn the skill of making a reusable fabric sanitary pad. Later, the female students took the lead and established a pad bank in school which reflected their empowerment. The qualitative information was collected through focus group discussion, with seven members of the pad bank management committee to discuss their menstrual hygiene practice in school. Female students establishing the pad bank in the school on their initiative represents the empowerment within them.

Establishing the pad bank in school helped the female students to get sanitary pads as per their needs in the situations like when they had menstruation in school and do not have a sanitary pad. Having access to a sanitary pad in school helped the participants to manage their menstruation in school, so they did not have to leave school just because they forgot to bring a pad with them.

However, adequate menstrual hygiene management facilities in school can help female students to participate in learning in an environment with comfort and dignity, not with fear or shame. To make the action like Pad Bank in school sustainable, along with female students, the school administration should also support it. Also, the intervention focusing on both software (knowledge) and hardware (adequate toilet facilities, as well as a place to dispose of) factors should be implemented to enhance the proper menstrual hygiene management in school. The participants were able to develop a sense of ownership and empowerment through teamwork and creativity to contribute to the world of knowledge. The participants constructed the knowledge on menstrual hygiene as they participate and try to make sense of things around them in the light of their own experience during the learning process.

Making Kathmandu University Visible to Communities via 'acKUaint'

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The publication, 'acKUaint,' is a quarterly, semi-scholarly, trans-disciplinary journal. Published by Green Club of Thoughts, it provides a strong platform for multidisciplinary cooperation, study, and community engagement. As acKUaint covers pertinent issues from within and outside University and has a wide domain of study, it engages people of various fields and interests and is a great platform for them to share their studies and interests. It provides a platform for its alumni to share their research and studies. It focuses on mutually beneficial partnership between organizations and enterprises.

acKUaint has helped make the university visible to communities with around 500 copies in each of its issues which are distributed to all the schools of KU, other university campuses, schools, public libraries, officials of the governmental organizations, research centers and student clubs. Alongside its hard copies, it is also released as an e-paper. The soft copy reaches approximately 22,000 readers and a similar number of traffic is seen on the website. In its first and second publication, it has included 18 KU-related issues whereas it has covered 10 issues of communities, 8 national and 5 international issues. Students from other institutions have contributed more than 5 words to acKUaint, and its presence in those institutions has helped advertise KU to some extent.

acKUaint has included one issue each of LGBTQ community and differently abled people; and by such means, it has also managed to present a positive image of the university to such communities. A number of social media reviews, email correspondences, and person-to-person feedback received by the club have shown the growing visibility of the works and programs of the university.

According to the White Paper released by KU in 2021, only 4.15 % of the total university students in Nepal are enrolled in KU. During the GCT's outreaches in Ilam, Chitwan, and Kailali, it was observed that relatively very few people are aware of KU. So, acKUaint being a semi-scholarly journal plays a prominent role in the visibility of the university, welcoming students to the university. GCT has set the following visibility outcomes: (a) it is promoting a positive university culture by encouraging students to engage in reading and writing; (b) acKUaint has evolved as a medium to disseminate national and international issues, and information and issues of the university, and (c) as a pathway for potential collaborators to collaborate with the university.

acKUaint has also sustainability challenges. The challenges faced are: (a) lack of reliable sources of funding for the publication; (b) a single team has to do a variety of tasks, including managing things, editing, publishing, and distributing the journal; hence the need for work division and collaboration; (c) unavailability of the workplace.

For its long-term viability and solid funding sources, acKUaint needs to expand its partnership with other organizations. Since acKUaint takes the university issues, programs, and projects to different communities, the most prominent partner must be the university itself, to ensure acKUaint’s sustainability, so that both parties will be benefited in the long run.

Design, Fabrication and Analysis of Hand Mold Multi Briquette Key

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For a country like Nepal, where biomass is a dominant source of energy responsible for 73% of the total primary energy supply in form of firewood, agricultural waste and animal dung creating a dense energy alternative such as briquettes can be an excellent source of convenient energy for domestic and industrial applications. The energy value of firewood is 18 MJ/kg whereas a compressed briquette made of charcoal can have energy density up to 29 MJ/Kg and besides this, briquettes have better combustion properties when compared to raw charcoal, pine sawdust and cassava peel. Most briquette compressors available in Nepal that are used in local communities are manual and can only produce one briquette at a time. To address this problem, a Hand Mold Multi Briquette Key was fabricated as a first year project which was funded by a Community education program and donated to a community in Manthali. It gives an output of three briquettes of diameter of 130 millimeters and the height according to the requirement. This paper will calculate the pressure applied to the briquettes, the energy density of briquettes and provide a comparative study of properties of a compre
ssed briquette and raw firewood.

Seismic Design of Bridges as per IRC Codal Provisions

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Nepal lies on the high seismic risk zone and is prone to major earthquakes. Bridges are lifeline facilities that must remain functional even after a major earthquake. The design and construction of earthquake resistant bridges are vital for protection of economic and life safety. Failure of bridges also hampers post-earthquake relief and restoration activities.

It is uneconomical to design bridges to withstand the strongest possible earthquake in the elastic range. The approach is to design such that they can resist small to moderate earthquakes without damage and resist strong earthquakes without collapse. The damage during strong winds should be visible and accessible for inspection and repair; so that at least some temporary measure can be taken to ensure a bridge is usable for light traffic soon after the design earthquake has occurred.

The bridge structures have little or no redundancy, unlike RC framed building structures. Redundancy is defined as the ability of the structure to sustain damage without collapse. In a non-redundant structure, the failure of any one critical member may result in the collapse of all or a portion of the structure. A non-redundant bridge is more susceptible to a failure since it is more likely to have a reduced number of members or no alternate load path.

Past earthquakes have demonstrated that bridges are one of the most vulnerable components of highways. In major earthquakes, bridges have suffered damages and/or collapsed due to failure of foundation, substructure, superstructure, and superstructure-substructure and substructure-foundation connections. Investigations indicated that the bridge designed and constructed prior to the development of modern seismic design guidelines are vulnerable to severe damage due to many potential structural problems.

The IRC guidelines, IRC:6-2017, are still being used in Nepal which have limited seismic design provision. The guidelines for seismic design of bridges (IRC SP:114-2018) incorporates advances made in the earthquake engineering field. The seismic provisions in the limit state method are based on “actual” behavior of structure and earthquake.

Bridges have two main structural elements: “Superstructure” which consists of a deck and supporting girder system below deck. The substructure is the only component where inelasticity can be allowed to dissipate the input seismic energy. Bridge superstructure and foundation is not easily accessible for inspection and retrofitting after an earthquake.

Any inelastic action or failure of the superstructure or foundation renders the bridge dysfunctional for a long period. The prevalent design philosophy allows structures to undergo inelastic deformations during strong earthquakes. Bridges often rely on the capacity of the piers to sustain large displacement without collapse. Failure of bridge piers causes collapse of the bridge; hence, bridge piers should be designed as the first structural element to dissipate seismic energy well beyond their elastic limit.

ICT for Community Development

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We are at the continuous and rapid development of science and technology. At the speed of light, digital technology has advanced and new tools have been developed. In this 21st century, we are in the industrial revolution 4.0 with the development of digital technologies, AI, robotics, DNA mapping, nanotechnologies, biotechnologies, the IOT (Internet of Things), and 3D printing. In this next generation age, the internet and computers have become facts for anyone. These have been in the human ecosystem because we/they are an integral part of this interdependent or connected world as far as holistic and ecological perspectives are concerned. ICT literacy was/is also included in 21st century skills and people in the world have to develop it for their easy survival. UNESCO (2016) has also included this skill in transversal skill. Therefore, this is the context in which people need information communication and technology to adjust ourselves in this complex world.

With the rapid digitization, various services provided by different ISP (Internet Service Providers), access to computers and other devices, etc., people are in digital and ICT's world. More so, the Covid-19 pandemic forced us to use various technological platforms to conduct our daily activities, education, and organizational and industrial works. In Nepal, every one of us might have experienced how people were/are valuing the usage of technology to continue activities. Most importantly, the education system of Nepal and beyond recognized the value of technology in these hard times. As a result, educators, teachers, parents, students, other stakeholders, etc. tried their best to be familiar with ICT and developed skills to use them. Finally, there is a positive side that the education system continues growing via the online model of education. In this entire context, who helped the teachers and educators to develop these skills? Who facilitates them to teach the value of technologies to ease daily life and day-to-day activities? What is/were the role of this person to work in community engagement? Why did/do a mediator or a person to transfer knowledge and skills of ICT have a great importance?

Before Covid-19 pandemic, during pandemic, and after pandemic, I as a facilitator and mediator helped teachers, students, principals, parents, schools, and other stakeholders to facilitate various training sessions, workshops, and online webinars with the major purpose of enhancing knowledge and skills of ICT for the effective conduction of educational activities. From my personal level, my departmental level at KUSOED, and a team level, I have tried my best to work with a community of people by providing skill and knowledge-based sessions for the development of education. With this community engagement, there was/is a strong bonding between people who work in the universities and people in the community. The transfer of knowledge and skills is another finding of this engagement. The sharing of ideas and support in skills development had become effective that helped them to continue educational activities and keep themselves up to date with the technology development. So, these sessions were successful in terms of community engagement and development.

Relation between University and Foreign Affair

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We are very enthused by the most timely and pertinent initiative undertaken by the Community Engagement Division of the reputed Kathmandu University and thank the organization for its endeavours and wish it all success in its mission.

In our context, foreign affairs is one area that has seen possibly the least interactions of universities and academic institutions with the principal agency, the Ministry of Foreign Affairs (MOFA). Apart from the core domain of policy formulation, implementation and stocktaking of the accomplishments of the objectives of Nepal's foreign relations, MOFA has a lot to do with community development, augmentation of health facilities and enhancement of education in terms of interface with Kathmandu-based diplomatic missions. There is a feeling that the MOFA needs to be streamlined and focused to bring matters being directly dealt with diplomatic missions right now, under the ambit of the line agency of the government to make them more productive and geared towards fulfilment of our emphasis on expeditious development of the country on an overall basis.

Against this background, there is an urgent need to adopt some measures to take advantage of trained manpower, skill, and aptitude so readily available in topmost academic and research institutions like Kathmandu University (KU) with a view to giving the MOFA expert professional advice in a win-win manner. Some of these steps may be as follows:

- Need for direct interactions between MOFA and KU on core aspects of foreign policy through conduction of joint seminars, lectures and colloquia with a view to enriching both theoretical and practical aspects of diplomacy including latest innovations as reflected by changing world order, the rise of China, India and other emerging economies as the global powerhouses and engines of growth.
- Suggest ways and measures to bring scholarships, projects, and other schemes being conducted by Embassies and Missions in Nepal under the direct jurisdiction of the MOFA with a view to according maximum benefits to the community through judicious scrutiny of local needs and aspirations of the people.
- MOFA may launch some suitable programs with a view to better coordinating such activities through some workshops involving itself, diplomatic missions, academic and research institutions like KU, civil society, Ministry of Federal Affairs and General Administration, Finance Ministry, Ministry of Education, Science and Technology, Ministry of Health and Population Control, National Planning Commission and other stakeholders.
- MOFA may also apprise diplomatic missions of critical focal areas identified by the government in respect of service delivery in core sectors like health, education and community development and seek their feedback with a view to assessing potential roles of development partners, INGOs and other organizations. This can avoid duplication and ensure better utilization of resources in a sustained manner.

Academic institutions can engage in conducting surveys for identifying the basic needs in terms of education, health, and community development taking districts and municipalities as the bases for such assessments so as to familiarize the concerned departments and institutions with the actual situation prevailing in the country in these sectors.

Community Education Project of Kathmandu University and its Impact on the Community

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The Community Education Project was initiated by Kathmandu University with the mission to contribute to the community. This was a three-legged program: community service, community education and business incubation. Through this project, students were mobilized to different communities for several community-related activities. They were encouraged to work in communities by providing logistic and travel support through this project. Students from different schools of Kathmandu University were mobilized to different regions. The main aim of this project was to improve the quality of life of rural people. This project created a platform for knowledge sharing of students and faculties to the community. The knowledge and skills gained at the university were disseminated to the community in the form of training, workshops and projects. This project became very popular among students and faculties in a short time where more than 1000 students were mobilized through more than 50 different activities in a year. The project was funded by Himal Partner, Norway. Overall, this project was able to create a platform, where students and faculties can actively participate in working in/for/with the community.

Context-responsive methods of interaction with community school teachers for transformative professional development

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The purpose of this presentation is to question the existing methods (e.g. in-depth interview, focus group discussion) of interaction introducing context-responsive methods to explore and thereby address disharmonious learning environments in the context of a community school teachers' professional development in Kavre, a rural part of Nepal.

Based on the lived experiences of a tripartite collaboration between school, university and community in initiating a school improvement program (Dhungana et al., 2019) through this paper we argue that integration of Nepali-ways of interaction with the conventional or established methods contributes to the harmonious learning environment as/for transformative professional development of teachers.

Inspired by the study (Taylor, Taylor, & Luitel, 2012) we developed an integral perspective and thereby integrated multiple methods for transformative professional development of teachers. Adapting multiple methodologies such as emancipatory participatory action research (Kemmis, 2008) and autoethnographic soulful inquiry (Quotoshi, 2016) we explored dis/harmony within (e.g. thoughts, feelings) and out (e.g. in teaching and learning activities) and thereby explored the five context-responsive methods such as kurakaani (means informal discussion e.g. tea time talk, talking while walking talk, padheri guff, and/or chautari guff), chalphal (e.g. discussion, interview), workshop, shadowing, and performance emerged one after another (but not necessarily in a linear way). Here, padheri guff means a traditional Nepali way of women interacting or talking informally about personal and family matters while fetching water from the pond or well and chautari guff is a traditional Nepali way of men discussing social and political issues by sitting under the shade of a big (peeple) tree.

Adapting kurakani method, first, I (the first author) developed a rapport and then to built mutual relationships and thereby explored a disharmonious learning environment as a research issue. Then I adapted chalphal method to explore collaboration as a way out of disharmony that followed the workshop method. Kurakaani, chalphal, and workshop methods supported teachers to raise (critical) questions and thereby enhanced teacher-teacher collaboration; shadowing methods enhance teacher-students collaboration and thereby developed context-responsive approaches of/for teachers' professional development (Dhungana et al., 2021); performance method enhanced attained harmony.

Through this presentation, we also share the two challenges of adapting context-responsive methods. They are: (1) to collect, store, manage, and analyze oceans of data, and (2) to sustain harmony.

Finally, we share our vision of integrating padheri guff and chautari ko kurakani with other conventional methods as context-responsive methods and thereby initiating tripartite collaboration (Dhungana et al., 2019) and community-university partnership for whole school improvement programs. We think university education can be a role model in the Nepali context by developing a collaborative culture and mutual relationships and thereby enhancing harmony in a sustainable way by taking social responsibility of cross-professional, cross-sectoral, and university-university collaboration to address teachers' issues. Further, for global collaboration, universities can develop mutual relationships within university members and can sustain and thereby satisfy the stakeholders (e.g. teachers) for the long run (Gaskins-Scott, 2020).

Teachers' Professional Development Through STEAM-Based Projects - A Participatory Action Research

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In Nepal, since the beginning of early grades, the emphasis has been given to subject-centric teaching. The procedural ways of teaching and learning in almost all subjects (mostly in mathematics and science) have been practiced for several decades. In recent years, the voices for incorporating integrated teaching and learning methods at the school level have been getting louder in academia. In the same line, the Nepal government has also developed an integrated curriculum for grades 1-3. In this context, as a university faculty, I have been collaborating with several Nepali teachers to incorporate arts in STEM disciplines and the use of STEAM projects in school education. For the last two years, I collaborated with about 20 teachers who have been developing and implementing STEAM projects from the perspectives of integrated teaching and learning. In this presentation, I argue the need for community engagement for developing STEAM projects, and teachers' professional development. While doing so, I focus on how I collaborated with communities (teachers and parents) to build TPD activities and support teachers to become more critical and creative.

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KATHMANDU UNIVERSITY

OFFICE OF THE VICE-CHANCELLOR
COMMUNITY ENGAGEMENT DIVISION

Through community engagement division, KU strives to be a good neighbor as well as a respectable member of the communities where it has its venues. With a pious aim to be responsive to its neighbors and to reciprocate with the local community's efforts to create an education-friendly, healthy atmosphere in the vicinity, the University has established the Community Engagement Division within its central administration with units/desks in other venues.

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