

Association of Nepalese Agricultural Professionals of Americas (NAPA)

Quarterly Newsletter

AGRI-CONNECTION

DECEMBER 2020 | VOL. 5 ISSUE 4



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Message from the President

Dr. Megha Nath Parajulee
NAPA President

Dear members and NAPA global friends, Happy New Year 2021!

Welcome to the NAPA flagship newsletter, Agri-Connection, as we highlight our activities of the last trimester of a tumultuous 2020 and eagerly look forward to welcoming a more hopeful and favorable 2021! I begin my short message by congratulating our outgoing AC Editor-In-Chief Dr. Nityananda Khanal and his team for an extraordinary service to bring this newsletter to its current height. I also express my heartfelt thanks to incoming Editor-In-Chief Dr. Sushil Thapa and his team for accepting this enormous responsibility. The Agri-Connection has effectively served NAPA members and beyond as our organizational mouthpiece since its inception. We continue to make timely communication with membership our top priority. My previous column highlighted numerous historical achievements and success stories of NAPA, but each new trimester awes me by what our members accomplish collectively to heighten the stature of NAPA.

We began this quarter with NAPA's Second Biennial Scientific Conference during September 25-28. Conference Organizing Committee, led by Immediate Past President Dr. Lila Karki, showcased a highly stimulating conference virtually (see pages 1-3). The enormous success of this conference, albeit virtually, propelled NAPA to international notoriety. In early October, NAPA presented an invited lecture about its vision and program activities at NRNA's Global Knowledge Convention in Nepal. Three international webinar sessions (September 6, November 1, and December 13), one Career Enhancement forum, a comprehensive distance teaching course on Survey Data Analysis, and two doctoral dissertation evaluation services for Tribhuvan University were other noteworthy highlights of this quarter. These activities continue to help bring NAPA into global prominence as a leading professional organization for championing agriculture and food security issues.

As you read this newsletter, NAPA would be closing the application deadline for the second phase of research mini-grant (RMG). This program began in 2018 and funded 18 collaborative research projects. We expect to evaluate these proposals and begin the second phase of funded research in March 2021. I gratefully acknowledge the dedicated service of the Resource and Capacity Building Committee (RCBC) for setting the bar high for this flagship research program. I request all to continue support and sponsorship for the continuation of RMG efforts. I am very grateful for the service and dedication of the Executive Committee (EC) team, all the committees, and most importantly the members to push our limit to what we can collectively offer towards agricultural transformation in Nepal. We are always in need of volunteers and financial support to carry out our diverse activities.

In closing, I would like to invite you to our historic NAPA Day Celebration event on January 3, 2021 which will showcase what we have accomplished in 2020 and what great things are forthcoming. In addition, I would like to borrow a statement from my previous column that the EC is effective only when membership is active and engaging. Therefore, I urge all of you to connect, advocate, engage, and contribute to move NAPA forward. Thank you, Agri-Connection editorial team, for your hard work to reach out to our valued members in a timely manner.

Again, Happy New Year 2021 and Be Safe!



Editorial

We begin this issue with a vote of thanks and gratitude to the outgoing Editor-in-Chief Dr. Nityananda Khanal for doing an outstanding job leading the Agri-Connection Newsletter Editorial Board for more than two years. Our special appreciation for past editors, Dr. Romy Das and Mr. Shailes Bhattarai, whose role was vital in ensuring that the newsletter maintains its standard and rigor.

The editorial board has recently undergone some changes, and we would like to welcome our new editors, Dr. Prakriti Bista and Dr. Sita Thapa, to join our team. As the incoming Editor-in-Chief, I am very excited and also honored by the trust that the NAPA leadership has placed in me to lead the Agri-Connection Editorial Board. Our team is committed to the ethos of the newsletter and will strive to maintain and build on the social as well as scientific standing that it has achieved.

The current issue is mostly focused on highlighting the NAPA Conference 2020, organized virtually from September 25 to 28, 2020, with the theme “Global Food Security through Agricultural Transformation.” This issue also summarizes NAPA’s initiatives and achievements on organizational development, networking, publications, webinars, scholarships, distance learning, and charitable activities. As our new effort, Agri-Connection will continue to feature an article published in the NAPA book - Principles and Practices of Food Security or NAPA journal – the Global Journal of Agricultural and Allied Sciences (GJAAS), and a prudent agri-entrepreneur in Nepal from this issue onward.

The newsletter relies on its readers to write articles for publication. Therefore, we invite and encourage you to send us your articles, intellectual ideas, opinions, thoughts, perspectives, memoirs, and literary creations. Agri-Connection is an effort of connection - a means of linkage among Nepali hearts worldwide. Please share the learning, experience, and ideas to cherish our linkage, and work together to foster our knowledge, heritage, and identity in the global market.

May you be filled with the joy and excitement of the season, and the hope of a new year 2021.

Dr. Sushil Thapa

AGRI-CONNECTION Editorial Board



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<http://napaamericas.org/agri-connection.php>

NAPA 2nd Biennial International Scientific Conference 2020 Was a Grand Success

Nepalese Agricultural Professionals of Americas (NAPA) held its 2nd Biennial International Scientific Conference virtually from September 25 to 28, 2020, with the theme “Global Food Security through Agricultural Transformation.” The conference was initially scheduled for May 22 to 25, 2020, in Atlanta, Georgia, USA. Due to the COVID-19 pandemic, NAPA had to postpone this conference and reconvened in remote-only mode four months later.

Speaking at the opening ceremony on September 25, Nepalese Ambassador to the USA, Dr. Arjun Kumar Karki, appreciated NAPA's contribution in agricultural development and food security in Nepal. He said that NAPA's have energized the entire agriculture sector and heightened enthusiasm among agricultural scientists in Nepal and beyond. He added that NAPA has contributed to connecting agricultural professionals and stakeholders in Nepal and abroad. NAPA President Dr. Megha N. Parajulee delivered welcome remarks in this ceremony. The program was moderated by the Conference Secretary Dr. Santosh Dhakal and chaired by the Conference Organizing Committee Chair and NAPA Immediate Past President Dr. Lila Bahadur Karki.

The keynote speaker Dr. Srinivas Rao Mentreddy, Professor at Alabama Agriculture and Mechanical University, USA, highlighted the importance and scope of medicinal herbs and plants in the economic transformation of Nepal. Another keynote speaker Dr. Ram Kumar Phuyal, a member of the National Planning Commission, Nepal, shed light on the mission and the country's strategy to attain progress and prosperity. Invited speaker Mr. Kiran Ojha, Country Director for Lutheran World Relief, Nepal, highlighted opportunities and challenges posed by the exodus of unemployed youth to foreign countries seeking jobs. Dr. Manoj Karkee, Scientific Committee Chair for the Conference, informed about the modalities of the scientific presentations for the conference. Dr. Ananta Acharya, Information and Communication Chair, explained IT management, particularly the use of Zoom Technology. NAPA General Secretary Dr. Ramjee Ghimire delivered closing re-

marks and adjourned the opening ceremony.

The Virtual Conference Expediting Committee (VCEC) and Conference Organizing Committee (COC) provided oversight to the conference management, which was supported by various subcommittees (Scientific Program, Student Essay, Agri-Poem/Literary), Fundraising, Information Technology, and others). The conference was uniquely structured to provide opportunity and access to many emerging and young scholars by including numerous technical sessions, student competitive oral and poster presentations, student essay writing contest, agri-poem competition, student rapid-fire presentations, panel discussions, round table sessions, and sociocultural and professional networking. The conference also included a fun-filled cultural event from popular Nepali folk singers.



The conference drew 162 scientific presentations (professional oral 50, professional poster 14, student competitive oral 36, student competitive poster 45, and student competitive rapid-fire 17) along with literary event, book authors' platform, NAPA strategic visioning, entrepreneurial roundtable, women in agricultural and allied professions roundtable, and cultural event. Moreover, this conference brought together over 358 scientific scholars to the common platform as authors and co-authors. Scientists from seven countries (USA, Nepal, Nigeria, Australia, Canada, Benin Republic, and Morocco) representing 83 institutions attended the conference.

It was delightful to witness the invaluable, diverse, and multidisciplinary scientific contributions focused on the conference theme “Global Food Security through Agricultural Transformation.” Also, an interaction was held among chapter authors of NAPA's maiden book on Food Security.

The students' essay writing contest was yet another appealing opportunity for talented students, where 14 essays from several universities were received. The literary Agri-Poem event attracted 67 artistic poets demonstrating their passions and dream of ideal agricultural systems in Nepal. The virtual conference greatly energized the NAPA family in accelerating strategic efforts and achieving NAPA's mission and vision.



The conference ended on September 28, 2020, with several fun-filled events. Poets recited their agri-poems followed by socio-cultural events with musical amusements. Nepalese folk singers Mr. Prem Raj Mahat, Mr. Birahi Karki, Ms. Narbada Kharel, and NAPA members Dr. Manoj Karkee and Mr. Saaru Khadka sang melodious songs. Winners of competitive events were awarded, and volunteers and generous donors were felicitated. Delivering his closing remarks, NAPA Advisor Dr. Nanda Joshi said that

he was proud to see NAPA having over 400 members and reaching this height within a short span of four years. He added that NAPA is now a global organization, and it should also start organizing its events outside the USA. In the closing ceremony moderated by Dr. Lila Bahadur Karki, Conference Secretary and NAPA Treasurer Dr. Santosh Dhakal, explained the process of distributing award amount to the winners. NAPA Vice President and Fund Collection Committee Chair, Dr. Pradeep Wagle shared the status of the donations/sponsorships/funds collected, thanked donors for their generous contributions, and requested to continue similar support in the future. Session chairs/coordinators/moderators, Dr. Aditya Khanal, Dr. Rajan Ghimire, Dr. Omkar



Joshi, Dr. Bharat Pokharel, and Ms. Ambika Adhikari of various competitive events announced the names of the winners and congratulated them. In total, \$2,150 of the prize amount was distributed. Delivering his closing remarks, NAPA President Dr. Megha N. Parajulee recalled the conference's objectives and expressed happiness for achieving them. He thanked everyone for making this conference a grand success and adjourned the conference.

[CLICK HERE FOR
NAPA 2nd Biennial Conference 2020](#)

PROCEEDINGS



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Global Journal of Agricultural and Allied Sciences](#)



GJAAS
Global Journal of Agricultural and Allied Sciences





NAPA 2nd Biennial International Scientific Conference 2020

Session Highlights

Professional Oral Session (Session Chair: Dr. Manoj Karkee)

There were eight professional oral sessions in which researchers from the USA, Nepal, Canada, and Australia shared their novel research findings. These sessions organized on September 26 and 27 covered areas including Agricultural/Applied Economics, Agricultural Education, Extension and Outreach, Agriculture Policy and Planning, Crop and Soil Sciences, Animal Science and Veterinary Medicine, Agribusiness, Plant Protection/Diseases and Pests, Seeds, Germplasms and Food Security, and Hydrology, Environment, and Climate. More than 32 papers on past accomplishments, current trends, and future directions of agriculture and allied science disciplines stimulated discussions among the participants. Sessions also provided a platform for strengthening the existing network of scientists, students, and scholars working in this area worldwide and fostering new networks and collaboration moving forward. All the professional oral sessions were very well attended (often more than 40 attendees joining these virtual sessions via Zoom). Participants played a key role in the overall success of the NAPA 2nd Biennial Scientific Conference 2020.

Student Poster Competitive Session (Session Chair: Dr. Rajan Ghimire)

The student poster competition was one of the featured events at the NAPA conference. Students from various institutions in USA and Nepal presented posters on Saturday, September 26, and Sunday, September 27, 2020. The session were moderated by Dr. Rajan Ghimire (Chair), Dr. Kripa Dhakal Parajuli, and Ms. Ranjana Rawal. Five expert judges (Dr. Prem P. Kandel, Dr. Ram N. Acharya, Dr. Krishna D. Puri, Dr. Dhruba Dhakal, and Dr. Mahesh KC) independently evaluated the posters. They finalized the first, second, third, and honorable mention award winners. There were 29 excellent posters in the competition and it was a tough job to select a winning poster. Within the little margin of difference, the following students won the poster competition awards: Mr. Bikash Ghimire, University of Georgia (first place), Mr. Nabin Prasad Sedhain, University of Georgia (second place), Mr. Pradip Poudel, Kentucky State University (third place), and Mr. Santosh Pathak, Louisiana State University (honorable mention). **Congratulations to all award winners!**

Entrepreneur Roundtable (Session Chair: Dr. Purna Kandel)

Nepal is struggling in the export market as import outweighs export. Nepal exports food crops, lentils, tea, coffee, herbs, botanicals, and edible oils. At the same time, large array of food and feed commodities are imported, such as rice, wheat, maize, cooking oils, pulses, lentils, vegetables, live animals, and milk and meat products. Imported foods contribute to curbing food insecurity, but a major chunk of return in such an approach goes abroad. To offset this, Nepal must encourage agricultural graduates to get involved in agri-enterprises, including production, processing, and distribution. NAPA organized an entrepreneur roundtable moderated by Dr. Purna Kandel from Liam International Canada, and Mr. Rajendrajung Raymajhy, Ms. Rita Bastakoti, Mr. Raj Shahi, Ms. Dibya Pandey and Ms. Rashmi Pandit from Nepal, and Mr. Balkrishna Regmi from the USA served as the panelists.

Panelist Raj Shahi is a farmer and business person working along the agri value chain from collection, processing, and marketing of perishable foods from inland and remote regions of Nepal. Sharing his experiences as an agri-entrepreneur, panelist Rajendrajung Raymajhy encouraged young ag-entrepreneurs to test their business acumen in the market. Rita Bastakoti, a farmer and secretary-general of a farmer group, emphasized a need for farm-level technical and public support. Rashmi Pandit, from Likhu Bazaar, is working on brand development and chain marketing of agri-foods business. She shared her experiences on the financial management and value addition of agri-food products. She highlighted opportunities for women entrepreneurs and suggested to follow a holistic market development approach.

“Muna Bazar” being managed by Dibya Pandey is an example of sustainable business model for marketing agri-foods in Nepal and abroad. Bal Krishna Regmi suggested mitigating the risk in agriculture through insurance. NAPA Vice-President, Dr. Pradeep Wagle debriefed the panelists and audience about NAPA and its news outlets such as Agri-Connection, policy brief, and other interventions such as networking and research support to members and beyond.

Student Oral Competitive Session (Session Chair: Dr. Aditya Khanal)

Students from different institutions in the USA and Nepal presented their research results on five sessions held on Saturday and Sunday (September 26 and September 27, 2020). Virtually via Zoom, presenters discussed and answered questions about their presentations in real-time. A student oral committee led by Dr. Aditya Khanal (chair) and four members (Dr. Bhim Chaulagain, Dr. Shiva Om Makaju, Dr. Sushil Paudyal, and Dr. Keshav Timilsina) coordinated the evaluation and judgment of these competitive presentations and finalized first, second, third, and honorable mention award winners. The committee chair announced the winners during NAPA conference closing ceremony on Monday, September 28. Among 19 competitive presenters from diverse disciplines of agricultural sciences, the following students won the oral competition awards: Ms. Ranjana Rawal, the Ohio State University (first place); Mr. Bikash Poudel, North Dakota State University (second place), Mr. Ram B. Khadka, The Ohio State University (second place); Ms. Bimala Acharya, Tennessee State University (third place); Mr. Bikash Ghimire, University of Georgia-Griffin (honorable mention); Ms. Shristi Upadhyaya, Agricultural and Forestry University, Nepal (honorable mention). **Congratulations to all award winners!**

Women in Agriculture and Allied Professions (WAAP) (Session Chair: Ms. Gita Koirala Bhandari)

Women in Agriculture and Allied Professions (WAAP) roundtable discussion held on September 27, 2020, was moderated by Ms. Gita Koirala Bhandari, WAAP Chair and NAPA EC member. Panelists representing diverse fields were the following: Dr. Jinita Sthapit Kandel, Research Geneticist, USDA-ARS, Mississippi; Dr. Kalpana Khanal, Assistant Professor, Nichols College; Dr. Monika Ghimire, Tax Economist, Oklahoma Tax Commission; Dr. Pragyan Gautam Burlakoti, Plant Health Diagnostician, British Columbia Ministry of Agriculture in Canada; Dr. Prakriti Bista, WAAP Coordinator (2018-2020)/Freelance Editor; Ms. Ranjana Rawal, Ph.D. student at Ohio State University; and Dr. Sonisa Sharma, Research Associate, Noble Research Institute.

Highlights from discussions:

- Time management and family life balance are the key parts. The husband and wife should share household responsibilities and work with the synergy principle.
- NAPA/WAAP can utilize women expertise and increase support. Coordination and networking with the Government of Nepal, researchers, and extension professionals in different parts of the world is important.
- A great number of women should come to play leadership roles in different professional organizations.
- The young women scientists were encouraged to keep up the hard work and seek help from WAAP/NAPA to develop their successful careers.



Strategic Visioning Roundtable (Session Chairs: Dr. Lila B. Karki and Dr. Megha N. Parajulee)

The Strategic Visioning Roundtable was organized to discuss NAPA's accomplishments, expectations, networking, contributions, and future strategies for institutional growth and service to its members. Conference Organizing Committee Chair Dr. Lila B. Karki and NAPA President Dr. Megha N. Parajulee moderated the session with speakers representing senior NAPA members from Nepal and the U.S., NAPA advisors, and NAPA executive members. Discussion centered around the incredible progress NAPA has made during the last four years since its establishment and strategies to maintain its upward trajectory of continuing positive impact on Nepal's agricultural research, teaching, outreach, and policy development. Current NAPA activities, especially Research Mini-Grant Program, publications, and webinars, were considered highly impactful activities and urged NAPA leadership to continue these activities. Strategic fundraising for a strong endowment fund was suggested for program sustainability. The Roundtable also suggested expanding NAPA's outreach activities to farmers and practitioners. Expanding sources of revenues such as competitive grants, honoring dedicated and hardworking members as NAPA ambassadors, expanding members across the globe as NAPA has emerged as an international organization, and offering comprehensive expertise toward agricultural transformation in all areas of agricultural and allied sectors in Nepal were highlighted.

Rapid Fire Session (Session Chair: Dr. Omkar Joshi)

The rapid-fire oral student session on September 27 was moderated by Dr. Omkar Joshi. It gauged presenters' ability to highlight the research project to a non-specialist audience. Presentations were evaluated based on clarity, organization, content delivery, and time. Six students, representing various academic institutions from Nepal and the United States participated in this event. About 35 conference attendees from different parts of the world actively participated in this event.

Mr. Sachin Regmi from Agricultural and Forestry University Nepal presenting his work on ethnoveterinary practices among small scale goat farmers of Nepal, won the first prize. Ms. Manisha Hamal from Kentucky State University and Mr. Santosh Pathak from Louisiana State University secured the second and third prizes, respectively. Ms. Hamal presented her work on the efficacy of sulfur and copper as fungicides to control pawpaw leaf and fruit spot, whereas Mr. Pathak provided insights on the factors that determine adaptation to flooding in eastern Nepal. The awards were announced at the closing ceremony. **Congratulations to all award winners!**

Student Essay Competition (Session Chair: Dr. Bharat Pokharel)

Students' Essay Writing Contest was a center of attention in NAPA's 2nd Biennial Conference. A total of 14 essays were received from undergraduate and graduate contestants majoring in agriculture and allied sciences. Among them, ten essays were from Nepal and four were from the USA. Students were asked to write an essay on the topic "Making the Choice: Feeding the World through Agricultural Innovation and Transformation in 21st Century". To evaluate these essays, NAPA put together a committee chaired by Dr. Bharat Pokharel, Associate Professor at Tennessee State University. Other committee members included Dr. Shyam Adhikari, Dr. Gandhi Bhattarai, Dr. Lila Khatiwada, Dr. Mukti Ghimire, and Mr. Shaligram Aryal. The committee developed rubrics that would help them to evaluate each essay. The criteria of the rubric were organized around the realm of the thesis statement(s) along with a logically organized body of supporting arguments using headings/sub-headings that led to a conclusion(s) and future prospective.

The committee paid special attention to whether the structure, flow, and rhythm of information were compelling and helped readers to understand and navigate easily through the essay. At first, each essay was checked for any evidence of plagiarism using Turnitin software (www.turnitin.com). Each reviewer evaluated the essay independently, and scores were tallied, standardized, ranked by the chair, and revealed the aggregated scores at the reviewers' meeting. All essays were good, and reviewers were thorough and consistent in their scores with no issues rewarding the best essays. The winners were; Mr. Laxmi Narayan Ojha, first place (B.Sc. student from Agriculture and Forestry University, Nepal), Mr. Santosh Pathak, second place (Ph.D. student from Louisiana State University, USA), Mr. Madhav Koirala, third place (B.Sc. student from Agriculture and Forestry University, Nepal), and Mr. Sachin Regmi, honorable (student from Tennessee State University, USA). **Congratulations to all award winners!**

Agri-poem (Session Chair: Ms. Ambika Adhikari Tiwari)

NAPA organized an Agri-poetry competition program during its second biennial conference on September 25-28, 2020. Chaired by Ms. Ambika Adhikari Tiwari, this program was launched on all three days, September 26-28. Enthusiastic poets showered with wonderful poems with heart-touching sentiments towards Nepali agriculture, the love of our motherland, and the need for agricultural education to help in all areas of agricultural development. Poets via poems portray eye-opening remarks sharing the role of agricultural research and extension programs for nations' overall prosperity. The poets delivered the message that grassroots development is only possible with hard-working farming communities and youth involvement.

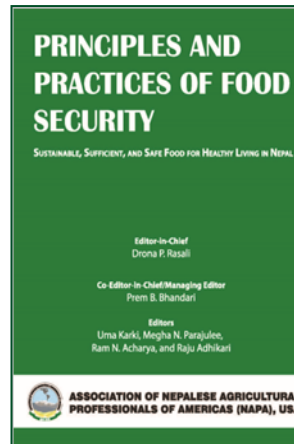
Presenters represented diverse groups from Nepal, Australia, Canada, and the USA, both NAPA members and non-members, male and female, and youngsters to retired professionals. Out of 70 poems submitted NAPA, 67 poems were for competition, which were judged by a four member panel of Dr. Nityananda Khanal, Dr. Buddhi Gyawali, Dr. Manoj Karkee, and Ms. Ambika Adhikari Tiwari. The three best poems written by Ms. Garima Updhyaya, Mr. Bilochan Pokhrel, and Mr. Bashudev Bhattarai were awarded first, second, and third awards, respectively. **Congratulations to all award winners!**

We invite and encourage you to send us your articles, intellectual ideas, opinions, thoughts, perspectives, memoirs, and literary creations.

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Book Chapter Author Forum (Session Chair: Dr. Prem B. Bhandari)

NAPA recently published its maiden book "Principles and Practices of Food Security: Sustainable, Sufficient, and Safe Food for Healthy Living in Nepal." On September 28, 2020, a "Book Journey: Author's Platform" was organized. During the program, chapter authors/co-authors shared key points of their chapters to the larger audience, acknowledged their scientific contributions to the mother nation, and shared their experiences in the Book Journey. Kicking off the session, session moderator Dr. Prem B. Bhandari gave a brief overview of the book journey from its conception on October 16, 2016, to the release of book on August 1, 2020. The book has four major sections. The first section, "General and Socio-economic Issues of Food Security," has seven chapters covering socio-economic issues of food security in Nepal. The second section, "Sustainable Agricultural Production for Food Security," has five chapters covering various aspects of agriculture for food production. The third section focuses on "Food Safety Regulations, Healthy Eating and Climate Change Impacts" with three topically dedicated chapters". Finally, the fourth section was on "Two Technologies of Specialty" with two chapters of futuristic technologies of specialty.



A BOOK PUBLISHED BY
ASSOCIATION OF NEPALESE AGRICULTURAL
PROFESSIONALS OF AMERICAS (NAPA)



BOOK JOURNEY: AUTHORS' PLATFORM

Presented by: Prem B. Bhandari
(on behalf of Drona P. Rasali, Prem B. Bhandari, Uma Karki, Megha N. Parajulee,
Ram Acharya, Raju Adhikari)
NAPA 2nd BIENNIAL INTERNATIONAL SCIENTIFIC CONFERENCE 2020
(Virtual)
September 28, 2020

Dr. Bhandari added that several people contributed to make this book possible. They include 49 expert authors/co-authors from across continents (USA, Nepal, Canada, Australia & Japan), 20 chapter reviewers, six editorial team members, four testimonial writers, three plagiarism reviewers, three forewords/preface writers, and two English language copy editors along with Dr. Shanthi Johnson, School of Public Health, University of Alberta, Canada; NAPA Executive Team led by Dr. Lila Bahadur Karki throughout the process and now led by Dr. Megha Nath Parajulee; many families, friends, and well-wishers. Sixteen-chapter authors gave a two-minute presentation highlighting the salient features, key points of the chapters, and their writing experiences. Overall, the book chapter author forum was a success, and all the participants appreciated this event for providing opportunities to meet fellow authors, reflect on their memorable moments of book writing and explore the prospects of future projects. NAPA has realized that chapter authors would share and participate more actively if they were given additional time.

Heartfelt Condolence!



We express our heartfelt condolence to our bereaved NAPA life member, Mr. Dhananjaya Dhakal for the loss of his beloved mother, Bishnumaya Dhakal (B.S. 1988/04/15–2077/08/16). May the departed soul rest in peace!



We express our heartfelt condolence to our bereaved NAPA life member, Dr. Bharat Pokharel for the loss of his beloved father, Thamalal Pokharel (A.D. 04/07/2035–12/17/2020). May the departed soul rest in peace!

Student Oral : First Place

Potential of Beneficial Trichoderma Isolates in Alleviating Drought Stress in Tomato

Ranjana Rawal, Joseph Scheerens, Maria S. B. Ponce

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Drought stress (DS) is the most destructive abiotic stress responsible for limiting global food production. The use of rhizosphere-symbiotic fungi of the genus *Trichoderma* has been established as a sustainable tool for inducing stress tolerance in crops. However, the beneficial effects of growth promoting *Trichoderma* on DS are poorly understood and may be isolate-specific. The overall goal of this study was to evaluate the ability of novel *Trichoderma* isolates, primarily native to Nepal, to improve growth in tomato genotypes that are exposed to DS. Forty-five *Trichoderma* isolates were collected (from Nepal; N=21, Ohio; N=24), and 24 isolates were selected based on their growth performance under osmotic stress in plate assays. These 24 isolates were evaluated in the greenhouse and we found that the plants treated with *T. viride* (T3), *T. asperellum* (T16), and *T. asperellum* (T33) had higher shoot biomass compared to the non-inoculated control (T0). Similarly, tomato plants inoculated with these isolates showed reduced wilting symptoms and faster recovery upon irrigation. A second greenhouse experiment was conducted to identify the response of different tomato genotypes inoculated with these three *Trichoderma* isolates under DS conditions. The result showed that all the genotypes of tomato tested (Jaune Flamme, Roma, Punta Banda) inoculated with T33 had a significantly higher shoot and root biomass, chlorophyll content, and lower wilting symptoms compared to the plants treated with other isolates. Additionally, these isolates changed the root architecture of tomato seedlings in plate assays, which could result in an increased root surface as a potential adaptation strategy. Collectively, results showed a positive impact of T33, an isolate collected from the arid region of Nepal, on the morphology and physiology of tomato plants under DS.

Student Oral : Second Place

Molecular Mapping of Quantitative Trait Loci for Fusarium Head Blight Resistance in the Brazilian Spring Wheat Cultivar 'Surpresa'

Bikash Poudel, Krishna D. Puri, Yueqiang Leng, Joseph Mullins, Anil Karmacharya, Yuan Liu, Justin Hegstad, Xuehui Li, Kishore Chittem, Shaobin Zhong

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Fusarium head blight (FHB) is a devastating disease in wheat around the globe, and use of resistant cultivars is significant in minimizing losses associated with the disease. No immunity to FHB has been discovered so far, although sources with partial resistance have been identified through extensive germplasm evaluations. 'Surpresa' is a Brazilian spring wheat cultivar with moderate FHB resistance and with no known sources of resistance in its pedigree. Surpresa may carry a new set of genes for resistance to FHB. To identify quantitative trait loci (QTLs) for resistance to FHB in Surpresa, 187 recombinant inbred lines (RILs) were developed from the cross between Surpresa and a susceptible wheat cultivar 'Wheaton'. The population was evaluated by point-inoculation method in three field and greenhouse experiments. Mean disease severity for Surpresa and Wheaton were 41.2% and 84.9%, while mean FHB severity in the population was 57.0% with an overall range between 7.0-100.0% suggesting transgressive segregation among individuals. The population was genotyped using two-enzyme genotyping-by-sequencing, and a genetic map was constructed with 5431 single nucleotide polymorphisms (SNPs). Four QTLs for type II resistance were detected on chromosomes 2A (2 loci), 3B, and 4D, respectively, explaining 11.0-15.8% of phenotypic variation. The largest effect QTL was mapped in chromosome 4D, and this QTL also coincided with QTL determining plant height. QTL detected on chromosome 3B is different from FHBL and may be novel. These results indicate that FHB resistance identified in Surpresa can diversify the FHB gene pool and can be used to increase resistance against FHB.

Combined Effects of Inundative Biocontrol and Anaerobic Soil Disinfestation Using Non-Host Cover Crops as Carbon Sources for Clubroot Management in Mustard Greens

Ram B. Khadka, Sally A. Miller

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Clubroot, caused by *Plasmodiophora brassicae*, is a major production threat to cruciferous crops worldwide and is becoming increasingly challenging due to the lack of available management options. Experiments were designed to evaluate the combination of commercially available biocontrol agents and cover crops that could be used as carbon sources in anaerobic soil disinfestation (ASD-carbon source) for clubroot disease management. Experiments were conducted utilizing a factorial randomized complete block design with three replications, in which the first factor was ASD amendment (winter rye, ryegrass, sudangrass or leek cover crop, wheat bran (standard), covered with no amendment (anaerobic), and uncovered with no amendment (aerobic). The second factor was biocontrol treatment [Prestop (*Gliocladium catenulatum*), Actinovate (*Streptomyces lydicus*), Serenade (*Bacillus subtilis*) or no biocontrol product]. Cover crops were grown in 350-ml pots containing muck soil, inoculated with the pathogen (*P. brassicae*) and incubated for 45 days in growth chambers. Then cover crops were uprooted, chopped into small pieces, and mixed with soil in the same pot. Wheat bran was mixed with soil at 10 g kg⁻¹ soil before filling the pots. Each pot was saturated with tap water before inoculation of biocontrol products and sealing in Ziploc[®] plastic bags. After three weeks, bags were removed, soil aired for one week, and mustard greens 'Green Wave' seeded. Prestop and Serenade consistently reduced the clubroot index alone and in combination with wheat bran, and sudangrass-amended ASD treatment. Furthermore, ASD with winter rye consistently showed synergy with Serenade and Actinovate, and ASD with sudangrass showed synergy with Actinovate, Prestop and Serenade in reducing clubroot indices. Therefore, cover crops such as ryegrass, sudangrass and winter rye could be utilized as ASD carbon sources and their combination with Serenade, Actinovate or Prestop could enhance the efficacy of ASD for clubroot management in organic and conventional farming systems.

Student Oral: Third Place

Characterization of Hypervirulent Mutants of Soft Rot Pathogen, *Pectobacterium carotovorum*

Bimala Acharya, Korsi Dumenyo

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The production of plant cell wall-degrading enzymes (PCWDEs) is an important determinant of virulence in soft rot pathogens. Comparison of enzyme levels in the parent and mutants indicates whether the mutant is hypervirulent, hypovirulent or not affected in virulence. The main objective of this research was to isolate and characterize hypervirulent mutants of *Pectobacterium carotovorum* (soft rot pathogen). We constructed a saturated GFP-tagged transposon Tn5 insertion mutant library by the process of transposon mutagenesis, where the transposon randomly is inserted in the target DNA by a “cut and paste” through the action of transposase enzyme. We selected and isolated extracellular protease (Prt) over-producing mutants. The mutants also had increased levels of other PCWDEs, including extra-cellular enzymes - cellulase, polygalacturonase, and pectate-lyase production as measured by qualitative, quantitative, and semi-quantitative enzyme assays. The mutants and parental strains were inoculated on celery petioles, potato tubers and carrot root discs for pathogenicity test. With increased PCWDEs, the mutants were also hypervirulent as they macerated more host tissues than the parental strains. We are currently using multiple approaches to determine the mutant gene in each mutant and characterize them and their roles on controlling the soft rot disease. An understanding of the role of these genes can be used in designing effective management strategies for the soft rot disease.

Rapid Fire : First Place

Ethnoveterinary Practices Among Small-scale Goat Farmers of Nawalpur, Nepal

Sachin Regmi, Mohan Sharma, Santosh Dhakal, Bal K. Pandey

Correspondence Email: thesachinregmi@gmail.com

This survey intended to document different ethnoveterinary practices used by small-scale goat farmers of Nawalpur district of Nepal. Altogether 45 small-scale goat farmers, 71.11% female and 28.89% male, were enrolled in this study. The average age of the respondents was 44.67 ± 2.41 years. The average flock size of goat was 13.93 ± 2.91 heads. Information was gathered through in-person interviews using a pre-structured questionnaire. Among the respondents, 91.11% of the farmers used ethnoveterinary practices. Informant Consensus Factor (Fic), Fidelity Level (FL), and Direct Matrix Ranking (DMR) were used as statistical tools for the study. Altogether 9 different plants, 1 acid, 1 chemical compound, and 1 food by-product were noted to be used as ethnoveterinary medication. Among these plant species, 22.22% were herbs, 33.33% were shrubs, and 44.44% were trees. Fic revealed that ethnoveterinary practices are used mostly for gastrointestinal disorders (75.56%, 34 of 45) such as helminths 47.05% (16 of 34), bloat 23.52% (8 of 34) and diarrhea 29.41% (10 of 34) followed by respiratory disorder (40.00%, 18 of 45) including cough 44.44% (8 of 18) and pneumonia 33.33% (6 of 18), trauma 22.22% (10 of 45), and stomatitis 11.11% (5 of 45). The category that had the highest FL value was *Cannabis sativa* (80%) followed by *Alium sativum* (45%) and *Pisidium guajava* (25%). Additionally, parts used were leaves, buds, whole seed, flowers, and root, either in water solvent or oil adjuvant. DMR showed the highest value for *Cannabis sativa* which has multiple uses. Leaves, buds, flowers, and roots of *Cannabis sativa* were used by different farmers for different purposes. This study shows that ethnoveterinary practice is common among small-scale goat farmers of Nawalpur district. Considering the historical use of such practices in other parts of the country as well, exploring pros and cons of ethnoveterinary medicine would benefit in their rational uses.

Rapid Fire: Second Place

Efficacy of Sulfur and Copper as Fungicides to Control Pawpaw Leaf and Fruit Spot

Manisha Hamal, Sijan Pandit, Jeremy Lowe, Sheri Crabtree, Kirk W. Pomper

Correspondence Email: manisha.hamal@kysu.edu

The North American pawpaw (*Asimina triloba*) is a native tree fruit of the Eastern United States. It has a smooth custard-like texture and has a flavor which is a combination of mango, banana, and pineapple. Pawpaw leaf and fruit spot caused by *Asperisporium caricae* is the major disease, among the few diseases, that can result in crop losses in pawpaw. Most of the pawpaw growers prefer organic and sustainable control methods to synthetic chemical controls. The purpose of this research is to study the efficacy of sulfur and organic-certified, copper-based fungicide for the management of pawpaw leaf and fruit spot disease, and to investigate if any of the sulfur and copper fungicide treatments has a negative effect on the fruit weight and fruit retention of Sunflower and Susquehanna cultivars of pawpaw. The research was conducted at Kentucky State University Harold R. Benson Research and Demonstration Farm in Franklin County, Kentucky in 2018. Fruit clusters were treated with two levels of each fungicide (sulfur at 25 or 50 ml/800 ml of water or copper at 3.12 or 12.5 ml/800 ml of water) and water without any fungicides was used as control. Insecticidal soap was used as an adjuvant in all treatments, including control, at 155 µl per 800 ml of water. Cultivar had a significant effect on fruit weight, disease prevalence on fruits, and disease prevalence on leaves. On leaves, all treatments had significantly less disease prevalence compared to control and alternative control in Sunflower cultivar and the same was the case in Susquehanna, except for high copper. However, on fruits, only the alternative control, but not the water control, had significantly higher levels of fungal prevalence in comparison to other treatments. Single-year data is not enough to draw a conclusion about the effectiveness of these fungicides; therefore, this study would be replicated for further validation of the results.

Rapid Fire: Third Place

Analyzing Determinants of Adaptation to Flood in Eastern Nepal Using Parametric and Semiparametric Approach.

Santosh Pathak

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Flood remains the most catastrophic disaster in Nepal historically. Flood is a common issue during monsoon season, especially in the valleys and the Terai plains. The damage from flood extends beyond assets and infrastructures to economic ripple effects. This study was conducted with the objective of identifying the existing adaptation practices and assessing the determinants of adaptation to flood. Both parametric and semiparametric estimators were used to identify the factors influencing the adaptation process. The results are based on a questionnaire survey of randomly selected 217 households in the Saptari district of eastern Nepal. Most of the adaptation practices were conventional types. Access to a relief program, provision of irrigation, and membership of social groups significantly affected the farmers' adaptation to flood hazards. This study cautions the use of parametric estimator with distributional assumptions like logit and probit model to identify the determinants of adaptation and make inferences. Inferences from semiparametric estimation approach provide a more reliable estimate. Existing adaptation measures need strengthening with scientific measures to mitigate the effects from flood.

Student Poster Session: First Place

Exploring Hidden Root Traits for Improving Spring Wheat in the Pacific Northwest

Bikash Ghimire, Scott H. Hulbert, Camille M. Steber, Kim Garland-Campbell, Karen A. Sanguinet

Correspondence Email: bikash.ghimire@uga.edu

Understanding the genetic basis of root traits and overall root physiology provides essential information on a largely untapped resource for crop improvement as roots are instrumental for the uptake of water and nutrients. However, breeding for improved root traits is challenging due to laborious and time-consuming root phenotyping in soil. Our studies sought to uncover spatiotemporal root growth dynamics of mature plant root systems in five spring wheat (*Triticum aestivum* L.) cultivars, Louise, Alpowa, Hollis, Drysdale, and Dharwar Dry, and a facultative spring landrace, AUS28451, using the *in situ* minirhizotron technique. A two-year greenhouse study revealed that the root system grows rapidly after early node elongation to gain maximum size during anthesis, after which root growth slows and transitions to senescence. We were able to detect quantifiable differences among wheat cultivars in root traits in both 5-day-old seedlings and root systems at anthesis. Furthermore, the positive correlation of the observed root traits with grain yield and the consistency in root traits observed using minirhizotrons and through the extraction of young and mature root systems has reinforced the experimental results. A negative correlation was found between root number, area, and length, and root diameter. We found that the spring wheat cultivars-AUS28451, Dharwar Dry, and Alpowa had increased root density, area, and length, but also increased time to heading. The results from this study can be further leveraged to screen breeding lines for root traits of interest as well as assess the heritability of root traits for dryland farming in the inland Pacific Northwest.

Student Poster Session: Second Place

Identification of Potential Overwintering Host of Cotton Leafroll Dwarf Virus in Georgia

Nabin P. Sedhain, Sudeep Bag, Jared Whitaker, Ping Chee, Phillip Roberts, Robert Kemerait

Correspondence Email: sudeepbag@uga.edu

During 2018-2019, cotton leafroll dwarf virus (CLRDV) was reported from the southern United States in Alabama, Florida, Georgia, Mississippi, South Carolina, and Texas. This phloem-restricted virus is transmitted by aphids in a persistent, circulative and non-propagative manner. Since January 2019, in coordination with UGA-Extension, an extensive survey was initiated in Georgia to investigate the alternate hosts that could potentially act as a green bridge. Different weeds commonly found in Georgia including henbit deadnettle (*Lamium amplexicaule*), mouse-ear chickweed (*Cerastium vulgatum*), purple cudweed (*Gnaphalium purpureum*), curly dock (*Rumex crispus*), Carolina geranium (*Geranium carolinianum*), perennial peanut (*Arachis glabrata*), and wild radish (*Rhaphanus raphanistrum*) were collected from commercial cotton fields. In addition, cotton stalks and leaf regrowth from the remains of the previous year crop were also sampled. The samples were analyzed using reverse transcription polymerase chain reaction (RT-PCR) to detect the presence of the virus. Among the weeds tested, CLRDV was detected from henbit and perennial peanut collected from a cotton field in Tift County. The virus was detected from the ratoon cotton stalk, suggesting cotton stalks as its potential overwintering habitat. This report suggests that henbit deadnettle, perennial peanut, and ratoon cotton are potential host habitats to serve as the green bridge for the virus and the aphid vectors. In addition, this report warrants further study on the role of those specific weeds and the regrowth from the ratoon cotton stalks on the epidemiology of this emerging viral disease.

Student Poster Session: Third Place

Effects of Planting Depth and *Bacillus subtilis* Treatment on Saffron (*Crocus Sativa L.*) Production in Green Roof Production System

Pradip Poudel, Hideka Kobayashi, Shawn Lucas, Leigh Whittinghill

Correspondence Email: pradip.poudel@kysu.edu

Saffron (*Crocus sativa L.*) is a high-value crop with little information available on cultivation practices. This research is being conducted to evaluate the effect of planting depth and *Bacillus subtilis* treatments on flower growth and saffron production in an intensive green roof system. A completely randomized factorial design was used for this research with two planting depths (10 cm and 15 cm) and three *Bacillus subtilis* treatments (untreated control, 15.6 ml/L, and 31.2 ml/lit) as the independent variables. Corms receiving fungicide treatment were dipped in bio-fungicide concentrate solution for 30 minutes before planting. Completely opened flowers were picked daily and processed on the same day. During processing, fresh flower weight, fresh stigma weight, sepal length, sepal width, and stigma length were measured. Dried stigma weight was determined after drying stigma in the dehydrator at 135⁰F for 30 minutes. Data were analyzed using analysis of variance (ANOVA) with planting depth and bio-fungicide treatments as fixed effects using R (the R Project for Statistical Computing). We expect that *Bacillus subtilis* treatment with the 10-cm planting depth will have the greatest effect in increasing flower growth (sepal length, sepal width, and stigma length) and saffron yield (fresh flower weight, fresh stigma weight, and dried stigma weight). The information obtained from this research will help in the development of best management practices for high-quality saffron production in Kentucky.

List of Sponsors for NAPA Conference 2020

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16	Ramesh Khanal	103	33	Bhawani Mishra	15
17	Ambika Tiwari	101	34	Nabin Sedhain	5
				Total	6,462

Your Contribution to NAPA is Tax Deductible

Effective January 6, 2016, Internal Revenue Service of the United States government has determined NAPA as an entity exempt from federal income tax under Internal Revenue Code (IRC) Section 501(c)(3). Now any contributions made to NAPA will be tax deductible under IRC Section 170.

Photographs in Action: NAPA Conference 2020



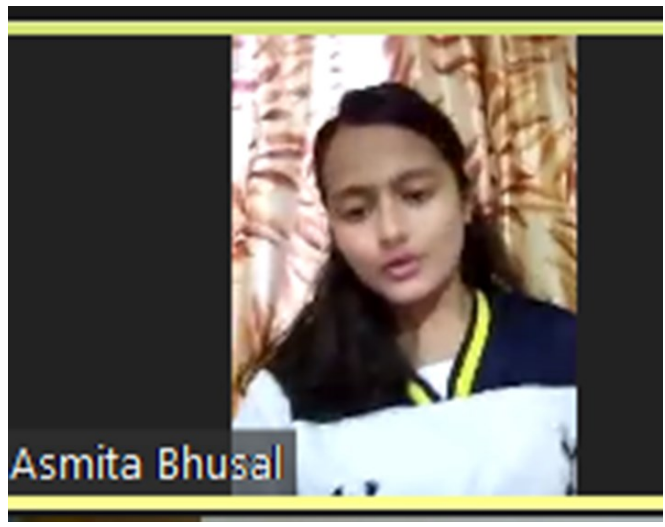
Nepalese Ambassador to the USA, Dr. Arjun Karki delivering his speech.



Nepalese folk singer, Mr. Prem Raja Mahat singing his popular song "Simsime Panima."



Nepalese folk singer, Mr. Birahi Karki singing his popular "Aama" song.



Poet, Ms. Asmita Bhusal reciting her agri-poem from Nepal.

Appeal to Sponsor Research Mini-Grants in Nepal

Research Mini-Grant (RMG) is one of the flagship programs contributing to NAPA's motto of "Agricultural Transformation for Food Security". With the sponsorship from generous donors, NAPA funded 15 collaborative small research projects in agricultural and allied disciplines led by Nepalese students and faculty in 2019. The final project review and stakeholders' feedback have indicated that the RMG program was a grand success (https://www.youtube.com/watch?v=Oy_i4JA_wAU&t=1360s). Every single penny received from our generous sponsors for this program was spent in a transparent and efficient manner. For its continuity, NAPA has recently announced a call for proposals for RMG projects to be implemented in collaboration with researchers/students of various academic institutions in Nepal. For details, please visit (<https://www.napaamericas.org/research-mini-grants.php>). The projects are expected to generate and promote innovations in agriculture and natural resources management contributing to sustainable food security in Nepal.

NAPA humbly appeals institutions and individuals from NAPA community and beyond to contribute to 2020 NAPA RMG pool funds and help undertake applied and impactful research in Nepal. Contributors with \geq \$300 can have privilege to supervise a project related to their area of expertise. However, donation of any amount is highly valued - *no amount is too small*.

NAPA assures that the RMG projects will be selected through a blind review process, and managed in a transparent and efficient manner. Your generous contribution is NAPA's inspiration to serve the community back in the motherland and beyond. **PLEASE DONATE** at <https://www.napaamericas.org/donate.php>.

Evaluation of NAPA Conference 2020

Ramjee Ghimire, Dev Paudel, Santosh Dhakal

On September 30, 2020, two days after NAPA Conference 2020, NAPA invited all 102 conference registrants to complete a post-conference feedback survey. The objective of the survey was to understand how the NAPA 2020 Conference went and to solicit suggestions to improve future conferences.

The survey generated in the Google Form consisted of 15 questions ranging from the day(s) participant attended the conference, keynote speeches they liked the most, experiences of using zoom, any new activities they would like to see in the next conference, and suggestions to improve future conferences. The survey also consisted of 14 statements seeking respondents' rating pertaining to various activities/aspects of conference, ranging from but not limited to, poster presentation, rapid fire session, registration fees, agri-poem competition, entrepreneur roundtable, oral/poster presentation, etc. The survey questions vary from dichotomous (yes, no), to multiple answer type, Likert-like to open-ended ones. Forty-seven registrants filled out the survey. A summary of the survey results is presented below.

- Emails sent from NAPA and information disseminated through word-of-mouth from NAPA members were the most mentioned source to hear/learn about the conference followed by social media and NAPA website (Figure 1).
- The amount of information received about the conference were about to be sufficient (Figure 2).
- Respondents rated the 14 activities/aspects as below in Table 1.

Table 1: Respondents' rating on conference activities.

Activities	N	Mean (SD)
Scheduling and timing	47	3.21 (±0.9)
Communication	47	3.21 (±0.7)
Zoom streaming	47	3.13 (±0.8)
Conference theme	47	3.36 (±0.7)
Registration fees	47	3.02 (±1.0)
Proceedings	39	3.21 (±0.8)
Choice of keynote speakers	38	2.95 (±0.9)
Oral presentations	40	3.25 (±0.8)
Poster sessions	34	3.26 (±0.7)
Rapid Fire presentations	28	3.25 (±0.9)
Agri-poem competition	30	3.27 (±0.9)
Book Journey: Author's Platform	34	3.12 (±0.6)
Social/Cultural event	38	2.95 (±0.6)
Awards ceremony	39	3.10 (±0.6)

Scale: 1 = poor, 2 = average, 3 = good, 4 = excellent

- Respondents indicated that the WAAP webinar was very effective. The majority indicated that the confer-

Figure 1: Heard about conference through:

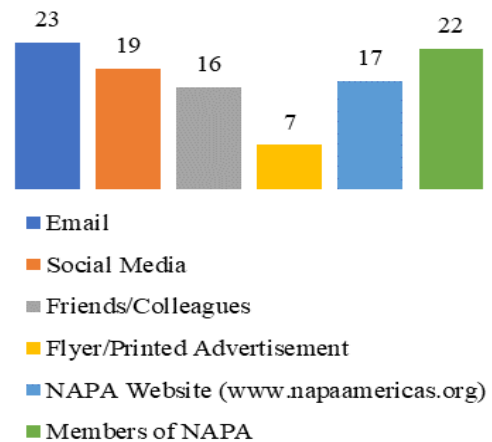
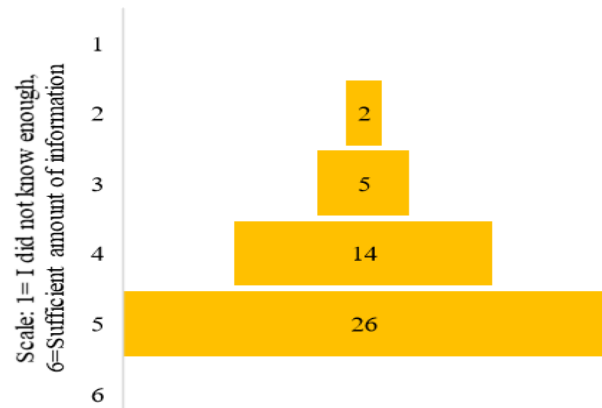


Figure 2: Amount of information received (N=47)



ence went very well, it was excellent, and well-designed.

- The majority felt that the events were appropriately scheduled, while some hinted to avoid lengthy discussion and respect the allocated time, provide access to recorded presentation after the conference, consider Nepal's time (it was late in night in Nepal) while scheduling the events, advertise only those cultural events performers of which have committed to be present.
- Roundtable discussion, agri-poem competition, and scientific presentations were most favorite events for respondents.
- Respondents highly rated (mean = 4.1; 1=poor, 2=fair, 3=good, 4=very good, 5-excellent) the 2nd Biennial International Scientific Conference 2020.

- Activities to be included in the future conference are: presentations from entrepreneurs; seminars on writing journal articles, how to use tools for data analysis, assessing research impact; more involvement of Nepalese students from Nepal; more scientific events; online training on CRISPR/Cas9 or NGS; preconference workshops/seminars; separate presentation categories and evaluation for bachelor, master's and doctoral students; professional development activities for students; senior/veteran roundtable; students interaction session; and young and women entrepreneurs' roundtable.

Conclusions: Among many suggestions respondents have provided, the following stood out and are very critical for successful hosting of future conferences.

- Thorough review, screening, and scrutiny of abstracts
- Providing conference schedule to conference registrants on time

- Better management of time, smooth transition from one session to next
- Organizing professional sessions (e.g., grant writing, scientific writing) for students
- Provide opportunity to expand abstracts to papers and submit to NAPA journal - GJAAS
- Holding separate competition for undergraduate and postgraduate students
- Providing more opportunities and events for female participation
- Hold separate roundtable for senior professionals

To conclude, barring a few hitches, the NAPA International Scientific Conference 2020 was a grand success. NAPA owes the entire Conference Organizing Committee along with all participants, volunteers, contributors, media people, speakers, and session chairs/moderators or event coordinators the deepest appreciation.

NAPA Webinar Series 19, 20, and 21

NAPA hosted three important webinars during the trimester. The 19th Webinar Session was held with Dr. Bed Prasad Khitawada, Fresh Produce Safety and Quality Controller at Brisbane Markets, Brisbane, Australia; 20th Webinar Session with Dr. Mahendra Lohani, Senior Vice-President of Programs at Heifer International, Little Rocks, Arkansas, USA; and 21st Webinar Session with Ms. Sabnam Shivakoti, Secretary, Ministry of Land Management, Agriculture and Cooperatives, Gandaki Province, Pokhara, Nepal. Dr. Khitawada talked about the agriculture in Nepal, especially fruits and vegetable production and how to prolong the self-life of those produces after harvesting. Dr. Lohani discussed about the livestock sector in Nepal focusing on past experiences and the way forward. Ms. Shivakoti highlighted the provincial and local agricultural services provided by the Nepal government. For each Webinar, about 100 people viewed the presentation that were live streamed in Zoom, and Facebook. Webinars were chaired by NAPA Webinar Committee Chair Dr. Khushi Ram Tiwari. NAPA President Dr. Megha N. Parajulee welcomed the speakers and participants, and NAPA Vice President Dr. Pradeep Wagle delivered the vote of thanks and closing remarks.

Association of Nepalese Agricultural Professionals of Americas (NAPA) presents

NAPA Webinar Series: 19

Postharvest Management & Quality Regulations of Fresh Agricultural Produce in Nepal





Bed Prasad Khitawada, PhD
Fresh Produce Safety and Quality Controller
Brisbane Markets, Brisbane, Australia

USA Time:
September 6, 2020 (Sunday)
8:00 PM CST

Nepal Time:
September 7, 2020 (Monday)
6:45 AM

Scan for ZOOM meeting

864 1610 5222 www.facebook.com/napa2072

Association of Nepalese Agricultural Professionals of Americas (NAPA) presents

NAPA Webinar Series: 20

Livestock Development in Nepal - What Have We Learned?




Mahendra Lohani, PhD
Senior Vice President of Programs
Heifer International, Little Rock, AR, USA

USA Time:
November 1, 2020 (Sunday)
8:00 PM CST

Nepal Time:
November 2, 2020 (Monday)
7:45 AM

897 2053 2745 www.facebook.com/napa2072

Association of Nepalese Agricultural Professionals of Americas (NAPA) presents

NAPA Webinar Series: 21

Provincial and Local Agricultural Services in Nepal: Collaboration for Effective Delivery




Sabnam Shivakoti
Secretary, Ministry of Land Management, Agriculture & Cooperatives
Gandaki Province, Pokhara, Nepal

USA Time:
December 13, 2020 (Sunday)
7:30 PM CST

Nepal Time:
December 14, 2020 (Monday)
7:15 AM

849 1432 4393 www.facebook.com/napa2072

Careers in Agriculture

Panel Discussion

Association of Nepalese Agricultural Professionals of Americas (NAPA) hosted an online panel discussion on Careers in Agriculture on August 29, 2020, via zoom. The objective of the event was to highlight various career paths, and eligibility, process, and preparation required for the career paths for graduate students and early career professionals of agricultural and allied fields.

Panelists represented employees from federal and state governments, academia (teaching, research, and extension), private industries, non-profit institutions, and postdoctoral researchers. Panelists shared their job experiences and highlighted career paths and opportunities, professional growth and development, pros and cons, and must-know points of each job sector.

Tips from the panelists:

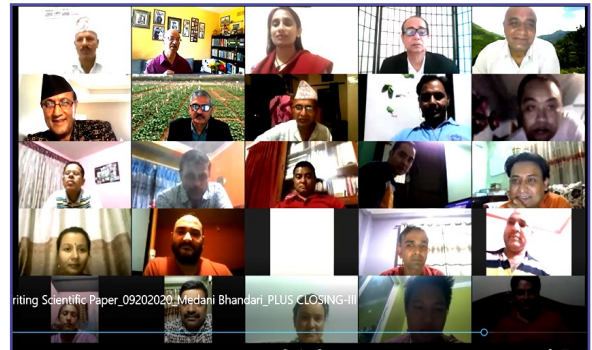
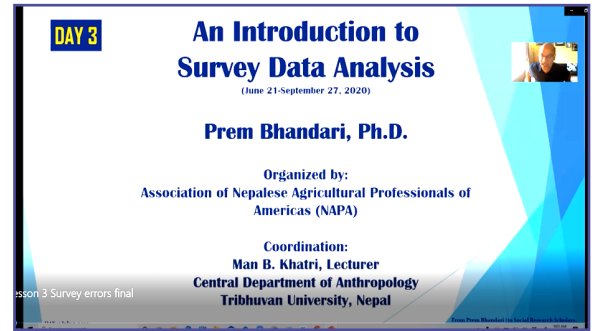
- Federal and state jobs are more secure, with lucrative benefits, research publications, and collaborative opportunities with other agencies.
- Federal jobs, unless contracted through third party contractors for temporary appointments, require green cards/ citizenship. The state government jobs mostly require green cards (though agencies in some states may sponsor visas), which is a key limitation for recent graduates and early career professionals.
- Small industries and small non-profit organizations may provide an opportunity to grow faster in a career and offer higher bargaining power. However, job security might be compromised depending upon the size and financial status of the organizations.
- International and multinational non-profit organizations such as International Maize and Wheat Improvement Center (CIMMYT) provide international travel and networking opportunities globally, but most of these positions are term-basis (no permanent appointments).
- Teaching experiences via Teaching Assistantship (TA) and research experiences via Research Assistantship (RA) and publications are vital for someone looking forward to developing a career related to teaching and research in academia as a faculty.
- Extension jobs require good communication skills, interpersonal and problem-solving skills, ability to get along with diverse ethnic and racial groups of farmers.
- Teaching and research faculty are usually tenure-track positions, whereas tenure track extension positions largely depend on universities.
- Postdoctoral jobs are temporary career enhancement positions for a smooth transition to permanent jobs. In general, postdoctoral job experience is more effective for those who want to pursue a career in academia.
- Developing networks, attending and presenting at conferences, and using networking platforms such as twitter and LinkedIn are important to connect with professionals in respective fields.



Training Program on Survey Data Analysis

As a part of its distance education initiative, NAPA organized a training program on “An Introduction to Survey Data Analysis” between June 21 and September 20, 2020 (every Sunday morning). The training was facilitated by Dr. Prem Bhandari (Social Researcher at the University of Michigan, USA and Founding General Secretary of NAPA) and Dr. Medani P. Bhandari (Prof. of Sustainability, Akamai University, Hawaii, USA and Professor of Innovation and Entrepreneurship, Sumy State University, Ukraine) in coordination with Mr. Man B. Khatri, Lecturer at Central Department of Anthropology, Tribhuvan University, Nepal (also, Editor-in-Chief of Dhawalagiri Journal of Sociology and Anthropology, <https://www.nepjol.info/index.php/DSAJ>). The goal of the course was to provide an introductory knowledge (and skills) on survey data analysis techniques. The expected outcomes were:

- Learn about survey data, data structure, data importation, and data management.
- Have knowledge on survey data analysis techniques (univariate, bi-variate, and multivariate techniques) using SPSS (but no practice session).
- Application of this knowledge in writing scientific papers (journal articles) and conference presentations.



Training participants included the faculty and students of Kailali Multiple Campus, Dhangadhi; Dhawalagiri Multiple Campus, Baglung; Kathmandu University, Kathmandu; Myagdi Multiple Campus, Myagdi; Central Department of Anthropology, Tribhuvan University, Kritipur; Ratna Rajya Campus, Kathmandu; Saraswati Multiple Campus, Kathmandu; Tri-Chandra Multiple Campus, Kathmandu; and Mechi Multiple Campus, Jhapa.

More than 100 participants directly benefited from the training. The training program included 14 lessons/lectures. The concluding session was attended by the current NAPA president, Prof. Dr. Megha N. Parajulee, immediate past president Dr. Lila B. Karki, Vice-Chancellor of Open University Prof. Dr. Lekh Nath Sharma, Dean of Humanities and Social Science, Prof. Dr. Binod Pokharel, Prof. Dr. Ram Chandra Poudel, Prof. Dr. Ram Prasad Upadhyaya, and Campus Chief of Dhawalagiri Multiple Campus, Baglung, other faculty members, research professionals, and students of various colleges. The program was highly successful in reaching out to a large number of professionals outside of agriculture and allied science field. Future collaboration opportunities and possibilities were discussed.

For interested scholars, lectures are available at:

Lesson 1: Introduction to Survey Data Analysis: <https://www.youtube.com/watch?v=7n2cqeyqXBw>

Lesson 2: Survey Research and Survey Cycle: <https://www.youtube.com/watch?v=11FAqNddeLM&t=45s>

Lesson 3: Survey Errors: <https://www.youtube.com/watch?v=cEHR8XCgBmQ>

Lesson 4: Research Question: <https://www.youtube.com/watch?v=c15-w6nPDFs&t=160s>

Lesson 5: Levels of Measurement: <https://www.youtube.com/watch?v=9Y1qp56BzNU&t=16s>

Lesson 6: Univariate Statistics: <https://www.youtube.com/watch?v=-7B4Klnzb1A&t=6s>

Lesson 7: Bivariate Analysis Part 1: <https://www.youtube.com/watch?v=5awN1GUonlQ&t=14s>

Lesson 8: Bivariate Analysis Part 2: <https://www.youtube.com/watch?v=15KI7MBbJS4>

Lesson 9: Bivariate Analysis Part 3: <https://www.youtube.com/watch?v=HjDStPKV6hY&t=2s>

Lesson 10: Bivariate Analysis Part 4: <https://www.youtube.com/watch?v=LZ7k6j-nEik>

Lesson 11: Multivariate Analysis Part 1: <https://www.youtube.com/watch?v=uVWccALOPEc>

Lesson 12: Multivariate Analysis Part 2: <https://www.youtube.com/watch?v=79b9hRKdLd4&t=122s>

Lesson 13: Multivariate Analysis Part 3: https://youtu.be/oI3I7_IFvSU

Lesson 14: Writing Scientific Paper and Research Ethics: <https://www.youtube.com/watch?v=IAvoBWRCV0U&t=1696s>

Concluding Session: <https://www.youtube.com/watch?v=9tx-QsJT-Ss&t=139s>

Featured NAPA Member of the Quarter (Oct - Dec)



Congratulations!



ANANTA ACHARYA, PHD



Dr. Ananta Acharya is a life member of NAPA. He served NAPA as a Joint Secretary and IT Coordinator in the 2018-2020 term. He also worked as the IT Coordinator for NAPA conference 2020. Dr. Acharya led a seminar on bioinformatics in Nepal (July 19 to 23, 2020). He also teaches bioinformatics to the M.S. students in AFU, Rampur.



NAPA

MEMBER OF THE QUARTER

NAPA is delighted to recognize Dr. Acharya as a featured Member of the Quarter for his valuable contribution to the organization.

Profile:

Dr. Ananta Acharya earned his Ph.D. in Genetics, Genomics, and Plant Breeding from the University of Georgia in 2014, M.S. in Agronomy from the University of Florida in 2008, and B.S. in Agriculture from IAAS/Tribhuvan University in 2005.

Dr. Acharya is a research scientist focusing on Genomics and Bioinformatics in Corteva AgriScience's Genomics Technology Department. As a bioinformatics scientist, Dr. Acharya helps analyze data, provide suggestions on genomic experiments, and also performs independent research. As a production analysis team lead, he also manages a group analyzing the high throughput qPCR data.

After the COVID-19 crisis, Corteva has been involved in providing PCR diagnostics to local agencies. Dr. Acharya helps design and implement new

assays and also leads the team analyzing the COVID-19 PCR data.

Dr. Acharya has coauthored many publications in genomics, gene editing and other bioinformatics research. He also has multiple granted patents. He has been recognized within department and company for his contributions in genomics and bioinformatics research.

Dr. Acharya has served many volunteer hours in service towards the community. He actively participates as science ambassador teaching and sharing knowledge to school kids. He participates in soup kitchen, food packaging and delivery to homeless, underserved, and elderly populations. He has served as president of Nepalese Student Society, UGA and Joint Secretary of Nepalese Association of Indiana.

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NAPA Membership Update

Member Categories	Members
Founding Life	5
Regular Life + Senior life	92
General/Regular	23
Student	120
Associate Life, International	2
Associate Life, Nepal	58
Associate, International	2
Joint Life	3
Family/Joint	14

Welcome New NAPA Members on Board!

Life Members

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Dr. Raj K. Adhikari, Nepal
 Dr. Bal Krishna Joshi, Nepal

**Please renew your membership (become life member if possible)
 if you have received renewal emails from NAPA before.
 - Dr. Pradeep Wagle, Membership Drive Committee Chair**

An Appeal To Join/Renew NAPA Membership

We would like to request potential members to join NAPA - **a common professional platform for all of us**. Meanwhile, we request all members who are not currently in good standing to renew their memberships. Members' contributions thus far to bring NAPA to the current level is greatly appreciated. We request our dedicated members and well-wishers to promote NAPA to the next level by recruiting eligible friends/colleagues/students in your network. New NAPA members must write the recruiter's name in the "referred by" row in the membership form. The highest three recruiters will be recognized at our Biennial Scientific Conference.

A few reasons to join/renew NAPA membership:

NAPA is a member-driven voluntary organization. Members can benefit from the association to advance their career growth, develop organizational practices and leadership skills at all stages. Some of the membership benefits include:

- Peer-to-peer networking and research collaboration opportunities
- Professional development and advancement
- Serving on various committees
- Opportunity to publish scientific works in NAPA's various outlets (Journal, Book, Research/Policy Brief, and Agri-Connection)
- Opportunity to sponsor scholarships and research mini-grants in preferred agricultural institutions and disciplines in Nepal through NAPA
- Eligibility for organizational awards, scholarships, and endowment funds
- Opportunity to share scientific works, experiences, and expertise via association's Talk Sessions (Webinars) and Online Teaching/Learning Programs
- Joining global expert repository to contribute to Nepalese Agriculture and beyond
- Keeping up-to-date on association's programs and activities
- Volunteering and charitable opportunities
- Discounted rates for registration and hotel reservation during scientific conferences organized by the association



The life membership fees have been adjusted from \$500.00 to \$200.00 (\$300.00 for eligible couples) to encourage eligible members to become life member of the organization. Please check for more details on Joining NAPA at <http://napaamericas.org/join-napa.php> and membership type and fees at <http://napaamericas.org/membership.php>. We look forward to welcoming you for a great cause. Please let us know if you have any questions and willingness to volunteer in various committees.



Thank you.

On behalf of NAPA Executive Committee,
Dr. Pradeep Wagle
Vice President

Chair, Membership Drive Committee



Featured Article

Can Market-Based Economy Compromise Food Security in the Chepang Communities?

The Chepangs are one of the highly marginalized indigenous nationalities in the remote mid Hills of central Nepal. They have unique food culture and history that often differs from the mainstream communities. Research conducted by L. Piya and N. P. Joshi provides evidences of the changing trends in the food basket composition of the Chepangs. Food consumption patterns are changing globally. Information about the changing food demands assists in the formulation of plans and policies related to food procurement. Moreover, the study of food habits is important from an epidemiological perspective.

“There is a dire shortage of literature on the dietary transition among the indigenous people in Asia, although the topic has been extensively researched in the developed countries,” says Dr. Piya. Previous studies have shown that similar factors causing dietary changes can have different impacts depending on the context. For instance, better access to market foods was found to deteriorate the nutritional quality among the Inuit people of Nunavut in Canada. However, trading improved the nutritional status among the Nankane community of Northern Ghana. The researchers have, therefore, highlighted the importance of context-specific researches. They examine the dynamics of the food basket composition of the Chepang communities and the factors responsible for those changes in the Chitwan and Makwanpur districts of Nepal. They discuss those factors

from a political economy perspective under five headings: increasing participation in the wage economy, adoption of cash crops, external markets impacting food choices, restrictive forestry policies/programs, and introduction of new crops through development programs.

To study the dynamics of the food basket composition, the researchers implemented household surveys among sixty randomly selected households of Kaule Village Development Committee (VDC) in Chitwan and Kankada VDC in Makwanpur. They conducted the first phase of the household survey in 2010 and a follow-up survey of the same households in 2015 to generate a panel dataset. The authors have quantified the consumption at the household level in terms of kilogram per adult equivalent (AE) per year (kg/AE/year) and categorized the results into three major food sources viz., own farms, wild/uncultivated sources, and markets. Paired sample t-tests (two-tailed) are performed to test the significance of the differences in the mean values between 2010 and 2015. The percentage of households who reported the consumption of the food items has also been reported in the chapter. According to the authors, it provides important information regarding how widespread the consumption practice is for the food item in question. The authors have reported the food consumption dynamics of each site separately to present a comparative analysis of the two villages based on their location specificities.

The study shows that in both the sites, maize sourced from the households’ own farms is the major staple crop. In Kaule, millet from the own farms is also consumed by the majority; however, in Kankada, millet consumption from own farms has declined over the study period. The decline in millet consumption is because millet farming has been replaced by blackgram and horsegram, which have emerged as the major cash crops in the area.



Picture 1. A typical meal

Can Market-Based Economy Compromise Food Security in the Chepang Communities? (cont..)

Following the maize crop, the households consume the market-purchased rice the second-highest, and the increase in consumption quantity is significant in Kankada. “The factors responsible for this increment are the increasing participation of the Chepangs in the wage market which provides them with disposable income for purchases; their exposure to external society leading to changing food choices, and the easier availability of rice imported from India,” says Dr. Piya. In addition to the market-purchased rice, the rice consumption from own farms is also rising significantly in Kankada. This is aided by the government promoted improved rice varieties suitable to the local condition. Despite the promotion, the proportion of rice consumed from the own farm is very low in terms of the total food basket.

The wild tubers, such as “*Gittha*”, are important food items for the Chepangs to supplement their insufficient farm produce during the dry season. However, the authors report a significantly declining trend of *gittha* consumption. According to the authors, changes in food choices, as previously discussed, combined with restrictive forestry policies, are responsible for this decline.

Similarly, the consumption trend for lentils, cooking oil, buffalo meat, chicken, eggs, ghee, and sugar indicates the increasing dependence on the market for food procurement. Improved affordability, market availability, and changing food choices are the factors responsible for these changes. Interestingly, the purchase of goat meat has declined significantly over the study period. This change in food choices is because commercial production of broiler and layer chicken has increased in the area, thereby increasing



Picture 2. *Gittha* (wild tuber)

the market supply of poultry products at a lower price.

The changing trends in the food basket composition of the Chepangs imply that such communities are increasingly dependent on the market for food procurement. The households are also increasingly adopting cash crops at the cost of traditional staple crops. The authors conclude that the Chepang communities are moving away from subsistence farming and forest-based livelihoods towards cash-income or market-based economies. These communities are thus exposed to possible market shocks like the failure of cash crops or the rapid rise in the prices of staples. “Even a minor shock is enough to seriously compromise the food security situation of such marginalized communities,” says Dr. Piya. The findings from this study are useful for line agencies to formulate necessary protective measures.

The authors provided a summary of the article. Dr. Prakriti Bista prepared it for this newsletter.

[Learn more about this research in:](#)

Piya, L. & Joshi, N.P. (2020). *The Dynamics of the food basket composition among the Chepangs*. In D. P. Rasali, P. B. Bhandari, U. Karki, M. N. Parajulee, R. Acharya & R. Adhikari (Eds.), *Principles and practices of food security: Sustainable, sufficient, and safe food for healthy living in Nepal* (pp. 9-35).

Feeding the World in the 21st Century

A concise version of the essay that won First Place Award in the Student Writing Contest organized by NAPA during the Second Biennial International Scientific Conference in 2020.

The famous “Green Revolution”, during the 1960s, resulted in significant rise in crop production. It yielded such results that it would make one of ‘the most talked-about’ innovation in agriculture even in the 21st century. True that, earlier, the yields were increasing, but so at a low rate – still not able to keep up with the surge in population – significant changes unfolded only when the revolution started. The enormous success of the ‘Green revolution’ was mostly attributed to an American agronomist, Dr. Norman Borlaug for his ground-breaking invention: disease resistant and dwarf high yielding wheat varieties – which still stand among the most important inventions from the last century. This novel invention, alongside other supportive technologies such as use of pesticides and fertilizers and agricultural mechanization, led to the most famous agricultural revolution in history.

1. The ‘Green revolution’ suffered criticisms during the turn of the century as the damages inflicted on the environment slowly started to unveil and only became more apparent. These consequences, coupled with population pressure, probably, engendered the popular view of ‘sustainability’. The United Nations predicts an increase of 2 billion in population by 2050, while standing at the current population growth trend (UN DESA, 2019). Unlike population growth, the proportionate increase in the agricultural land area seems largely unlikely. Of the food production that needs to increase over the next 30 years, most of the gains must come from the already farmed areas (FAO, 2015). So, sustainable agricultural transformation will, probably, be an important part of the bigger picture of the future production systems.
2. Most countries in Asia and Africa have deviated from the classic structural transformation en route to economic development, which sees a transfer of workforce from agriculture to industries. Industry in these regions never really took off, with no significant rises in agriculture either. Nevertheless, there is no denies that agriculture has a major role in the structural transformation of African and Asian economies. Further, some 500 million smallholder farms in the world which feed over 2 billion people, account for 80 percent of the food production in Asia and sub-Saharan Africa (Nwanze, 2017). Besides, smallholder farmers are believed to favor heterogeneous agricultural systems such as agroforestry and other integrated systems which not only helps in protecting biodiversity and ecosystem services but also diversifying incomes. Bage writes in Financial Times on July 7, 2008, that supporting smallholders is crucial towards achieving food security. Since most of the increase in food in the future must come from these small landholdings, strengthening the capacity of small farmers is a need of the moment.
3. Aside from policies, it is likely that the future food system will be underlined by innovations in biotechnology. Even if agriculture production plateaus, the food produced might not be able to suffice the world’s needs with existing technologies alone. The introduction of Bt corn (genes transferred from *Bacillus thuringiensis* that code for ‘endotoxin’- a biological pesticide against corn stem borer) resulted in a significant reduction in costs of production and a substantial increase in corn productivity. However, genetically modified organism (GMO) is still a debated in most countries. Some argue that GM crops appear dim in front of ethical considerations of not improving the lives of the poor (Chrispeels, 2015).
4. Not just biotechnology, the agricultural industry has experienced a huge lift in technology lately through a number of novel inventions. Efficient production systems such as vertical farms are increasingly becoming the subject of experiments in urban settings. Another promising innovative practice in modern agriculture is precision agriculture, which uses a range of smart technologies such as GPS, UAVs, sensors, and robotics. As the agriculture workforce moves out of agriculture,

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Feeding the World in the 21st Century (cont..)

commercial farmers can cash in on such technologies big time. The discovery of CRISPR technology has also opened new avenues for future innovations in crop/livestock development and improvement. The world might just be looking at a greener revolution, should these promising innovations come pervasive.

5. The next agricultural transformation will also require a widespread public attitude that pledges a minimum possible food wastage at the consumer level. According to FAO, about one-third of the food produced in the world gets lost or wasted every year. Forty percent of the food in developing countries gets lost during post-harvest storage and processing, while the same amount of food in developed countries is wasted or lost at the retail and consumer level. Not just attitude, novel technologies that help reduce the wastage will also be pivotal to achieving a hunger-free world.
6. Farm mechanization is another pillar of the foundation for a robust future food production system. Standing with the fact that mechanization has played a major role in agricultural transformation, the developed countries should come forth as 'generous' in helping build a much-needed foundation of mechanization. The common broader goal of feeding the hungry world can, perhaps, only be realized by bringing such masses of farmers into mainstream agriculture.

In summary, population predictions have engendered the need to restructure our agricultural system, production, value addition, marketing, and consumption. Sustainability asks people for judicious use of their resources (land, water, biodiver-

sity) such that the needs and privileges of future generations are not compromised. So, we have to make a choice now and walk that extra mile, in the direction of sustainability to make sure that the future generation does not go to bed hungry. Feeding a hungry world in the coming decades requires holistic efforts from all stakeholders. Innovations and inventions will be the drivers of further agricultural transformation, which will, hopefully, help humankind take a quantum leap towards feeding the world in the 21st century.

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With the donation received from sponsors, NAPA has established:

- ♦ **Scholarship Fund**
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(<http://napaamericas.org/endowment-fund-announcement.php>).

NAPA extends gratitude to its bountiful donors and appeals to the potential donors for their generosity.

Featured Agri-entrepreneur of the Quarter (Oct - Dec 2020)



कृषक आवाज: राजेन्द्रजंग रायमाझी

दश बिगाहामा तरकारी खेती, ६० जना नेपालीहरूलाई प्रत्यक्ष रोजगारी

मेरो नाम राजेन्द्रजंग रायमाझी हो । म चितवन जिल्लाको रत्ननगर नगरपालिका वडा नं. १६, पिठुवामा बसोबास गर्दछु । मैले मेरो विद्यालय स्तरको शिक्षा रत्ननगर नगरपालिका वडा नं. १६, पिठुवास्थित श्री जनजागृति माध्यमिक विद्यालयबाट लिएको हुँ । मैले कृषि विज्ञानमा स्नातकसम्मको शिक्षा चितवन रामपुरस्थित कृषि तथा पशु विज्ञान अध्ययन संस्थान रामपुरबाट पुरा गरेको हुँ ।

मैले अध्ययन पश्चात् संयुक्त राष्ट्रसंघीय जनसंख्या कोषको एक कार्यक्रममा करिब तीन वर्षसम्म काम गरें । कामको दौरानमा किसान साथीभाईहरूसँगको भेटमा उहाँहरूका समस्याहरूको बारेमा छलफल गर्दा आफूलाई व्यवहारिक ज्ञानको कमि भएको महशुस गरें । त्यसपश्चात् आफ्नै व्यवसाय सुरु गर्ने सोचका साथ २०६२ सालदेखि खाद्यान्न बालीहरूको बीउ उत्पादन, प्रशोधन तथा बजारीकरणको क्षेत्रमा काम सुरु गरें ।

हाल मेरो मुख्य पेशा ताजा तरकारीहरूको उत्पादन हो । म विगत १० वर्षदेखि प्रत्यक्ष रूपमा ताजा तरकारी उत्पादनमा संलग्न छु । हाल मैले करिब १० बिगाहामा तरकारी खेती गर्दै आइरहेको छु । साथै पशुपालन अन्तर्गत २२ वटा भैंसी र ३० वटा जति बाख्रा पनि पालेको छु । पशुपालनमा मेरो मुख्य लक्ष्य नश्ल सुधार रहिआएको छ । तरकारी तथा दूध तथा मासु उत्पादनको अलावा मैले नेपालको विभिन्न क्षेत्रहरूमा पुगेर कृषि प्रविधि सम्बन्धी सेवाहरू प्रदान गर्दै आइरहेको छु ।



फोटो १. तरकारी खेती

तरकारी खेतीमा सायद नेपालमै पहिलो पटक आधुनिक प्रविधिको प्रयोग (जस्तै: ग्रिन हाउस तथा थोपा सिंचाइ प्रविधि) गर्नुका साथै नेपालका विभिन्न ठाउँहरूका किसानहरूलाई यी प्रविधिहरूको सेवा दिन पाउँदा आत्मसन्तुष्टि पनि मिलेको छ । हाल करिब ६० जना नेपालीहरूलाई प्रत्यक्ष रूपमा रोजगारी पनि प्रदान गर्दै आइरहेको छु । सायद मैले गरेको कामप्रति चित्त बुझेर होला, नेपाल सरकारको विभिन्न निकायहरूबाट प्रशंसा पत्र पनि पाएको छु ।

तरकारी उत्पादनमा चुनौती भनेकै हाम्रो लागत मूल्यभन्दा सस्तो लागत मूल्यमा उत्पादित भारतीय तरकारीहरूको अन्धाधुन्ड आयात नै हो । जसले गर्दा हामीले उत्पादन गरेको तरकारीले



फोटो २. पशु पालन

भारतबाट आयातित तरकारीसँग अस्वस्थ प्रतिस्पर्धा गर्नुपर्ने हुन्छ । कृषिको अध्ययन पश्चात् छोटो समयको सेवा अवधिमा कृषिका विभिन्न व्यवसायमा संलग्न भएपनि जब तरकारी फार्मको सुरुवात गरें, त्यसपछि मलाई कहिल्यै पनि पछाडि फर्कन परेन ।

कुनैपनि व्यवसायको सुरुवाती दिनहरू संघर्षपूर्ण नै हुन्छ । मेरालागि पनि सुरुवाती दिनहरू संघर्षपूर्ण नै थिए । उत्पादन गर्ने व्यवहारिक ज्ञान-सीपको लागि भारतका विभिन्न फार्महरूको भ्रमण गरें । प्रविधि आयातका लागि कम्पनीहरूको खोजी आदि इत्यादिमा धेरै नै भौतारिनु पर्‍यो ।

आफूले जानेको सीप र ज्ञानलाई नेपालभरि छरिएर रहेका किसानहरूलाई सिकाउने उद्देश्यले आफ्नो फार्ममा एउटा तालिम केन्द्र बनाउने योजना छ । यसको लागि नेपाल सरकारसँग कुरा भएता पनि हालसम्ममा ठोस पारीणाम भने आइसकेको छैन ।

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नापा द्विबार्षिक अन्तरराष्ट्रिय बैज्ञानिक अधिबेशन २०२०

कृषि कविता प्रतियोगिता

प्रथम कविता

“कृषिमा समृद्धि”

- गरिमा उपाध्याय



माटाको, जलको र मेल मलको भूगोल नेपालको
खोज्दै जाउ जडीबुटी छ देशमा मोती यहाँ फल्ने भो
मेवा, आँप, अनाज, मासु घरमा स्वादिष्ट त्यो गोरस
खोजी गर्नु सधैं नयाँ प्रविधिको स्वाधीनतामा बस
(१)

गर्दै छौं कृषि क्रान्ति फुल्छ धरणी नेपालको उन्नति
कोदो, धान, मकै फले फल यही माछा र मौरी पनि
खेतीको अनुदानले त गरिबी हट्दै छ यो देशमा
आफ्नै कर्म र सीपले अघि बढौं रम्नु छ यै भेषमा
(२)

यो उत्पादन बढ्छ रे हरघडी गर्दै गए उद्यम
पैठारी अब घट्छ रे हरघडी पाखा र बेसी खन
माटो उर्वर यो सुँघौं कहरले दुखी हुँदैनौं कतै
आफ्नै कर्म र सीपले अघि बढौं फर्कर आऊ यतै
(३)

सानो काम नठान खेत पशुको गर्दै गरौं उद्यम
आफ्नै बाहु र पाउले अघि बढौं पूरा गरौं योजना
माछा, मासु, चिया, अलैंची, अदुवा आफैं बनाई मालिक
बीऊ, बीजन, गोठ उन्नत भए पैसा यही फल्दछ
(४)

पाखा यी हरिया पहाड वनका उद्योग धन्दा गरौं
बेसी, लेक घुमीघुमी प्रविधिको विस्तार आफैं गरौं
आस्थाका सपना बुनौं अब सधैं पर्देन प्रवासिन
बन्दै जाऊँ न व्यावसायिक सबै पर्देन हामी रून्
(५)

नारा मात्र जपेर हुन्न अब खै लागू गरौं वीरता
धर्तीमा सुन फल्न सक्छ सहजै टाढै रहोस् भ्रष्टता
आफ्नै देश बनाउने विधि बनोस् साझा रहोस् भावना
बाझा खेत कतै नराख जनले समृद्धिको कामना ॥
(६)

द्वितीय कविता

“नयाँ नेपालको उन्नति”

- विलोचन पोखरेल



मान्छे ऐच्छिकमार्ग खोज्छ विविध पेसा समाल्छन् तर
सारामा फल अन्नतत्व नभए बाँचिन्न बाँचिन्छ र?
खेतीवाल जहाँ पुजिन्न नबुझी हुन् अन्नदाता भनी
बोल्लान् मन्दिर भित्र बाहिर कहाँ हाँसेर देउता पनि
(१)

बेच्यौं अन्न विदेशसम्म पहिले पैसा कमायौं कति
किन्छौं खाना, खनिन्न खेत, बाँझिदै गो मति
सस्तोमा बहुमूल्य मातृघरको बेचेर सञ्जीवनी
किन्छौं औषधी हो कि रोग महँगो गर्ने कहाँ सोधनी?
(२)

खै भण्डारण, भाउ योग्य नहुँदा चिन्ता हतोत्साहमा
पोखे दूध किसानले सडकमा बेदाम बेचून् कहाँ?
मीठा स्याउ फले बिकेन कुहिए हुम्ला र जुम्लातिर
आशाको लहरो छिने कृषकले कैले उठाऊन् शिर?
(३)

खेतीयोग्य गरा मिची मनपरी बस्ती बसाल्ने स्थिति
हे सरकार हटाइदे मुलुकको बाधा दिने बेथिति
आमाझैं धर्तिभुली नवयुवा कोही नजाऊन् पर
नेपाली कृषिविज्ञ विश्वभरका समृद्धेर आऊन् घर
(४)

जे चाहिन्छ यहीं छ खोज नभए पाइन्न संसारमा
हो भण्डार जुहार हार सुनको के छैन नेपालमा?
रोज्यो विश्व बनाउँदा प्रकृतिले यो राजधानी घर
इच्छाशक्ति उचालिए मुलुकको समृद्धि टाढा छ र?
(५)

वैशाखी कति सम्म टेक्नु परको आफैं हिँडौं सारमा
खेती संस्कृतिमा परिष्कृत गरौं विज्ञान जोडौं नयाँ
खोसौं यी धर्ति टिपी नसकिने फल्नेछ मोती कति
देखाऔं कृषिबाट संभव नयाँ नेपालको उन्नति ॥
(६)

नापा द्विबार्षिक बैज्ञानिक अधिबेशन सेप्टेम्बर २५-२८, २०२०

कृषि कविता प्रतियोगिता

तृतीय कविता

“किसान दाई”

- वाशुदेव भट्टराई



(आफनी श्रीमतीको सिँऊदो बेरङ्ग छ,)२
पराई नारीको भकारी,
सप्तरंगले रङ्ग्याएर,
के पायौ र किसान दाई?

(तिमि बुढि आमालाई दम लागेको छ रे)२
तर देशको श्रमको झोलि भर्ने तिमिसँग,
आफनी आमालाई खुवाउन दमको गोलि छैन,
आफनै आमाको पेट भर्न नसकेपछि,
नेपाल आमाको पेट हलोले चिरेर,
के पायौ र किसान दाई?

(सामान पनि तिमै, मूल्य पनि तिमिनै देऊ)२
तर भाऊ ग्राहकको, अनि ब्यापार अपरिहार्य!
तेही ब्यापारको बजारमा आफनै छोरीको,
गोडा धोएको तिर्न नसकेपछि,
छोरीका हातका बाला बेची-बेची,
धानका बाला फलाएर,
के पायौ र किसान दाई?

बर्खाका उराठ दिनमा,
मेलापातबाट फर्केकी श्रीमती, तिम्री।
गोठमा बाँधेको लैनो भैंसी, तिम्रो।
आँत नै सुकाएको तिर्खा, तिम्री श्रीमतीको।
(तर गाबुको दै र ठेकिको मोइ, साऊको!)२
अभाव र अनिकालमा पल-पल श्रीमती मरेपछि,
बिहेको मण्डपमा सातैजन्म,
सँगै बाँच्ने कसम खाएर,
के पायौ र किसान दाई?

आफना घरमा पाहुना आउँदा,
खानाखाने थाली माग्न,

छिमेकीको घर जान्छौ।
काजीबाका फुलबुटे थालमा,
चौरासी व्यंजन पस्किएर,
के पायौ र किसान दाई?

बिहान छोरालाई एउटा वाक्य सुनायौ,
"ए लाटा, आज खेतमा पानी काट्न तँ जा है,
म कृषि कार्यालयमा ऋण स्वीकृत गराउन जान्छु",
साँझ छोराको वाक्य बसायौ,
खेतबाट घर फर्किरहेको छोरो,
छोराको अगाडि गाउँलेको भिड,
भिडको बिचमा बढो रुख,
रुखको हाँगामा बाँधेको नाम्लो,
नाम्लोमा बाँधेको किसानको घाँटि,
घाँटीको तल जमिन,
जमिनको तल पाताल,
(अनि पातालमा, छोराको मुटु!)२

कूलको तारा बनाउन जन्माएको छोरालाई,
बालकमै बेसाहारा बनाएपछि,
"आफना सपना अधुरै राखी,
मेरो छोराका सपना पूरा गर्छु"
चाहेर मात्रै, के पायौ र किसान दाई?

किसान दाई,
(तिमि छौ, म छु।
तिमी छैनौ, म छैन!)३
अनि,
तिमै चरित्रमा प्रश्न गर्ने,
म को हुँ?

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