



Agri-Connection

Vol 4, Issue 1, April 2019

A quarterly newsletter of the Association of Nepalese Agricultural Professionals of Americas (NAPA)



Happy Nepali New Year 2076 !

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President's Corner



Greetings, NAPA community and beyond: We salute all those committed and hardworking members whose tireless contributions have made NAPA a growing professional organization in the Americas and beyond. The executive committee along with the Advisory Council and various committees have been putting collective energy into expanding its services for the community. Some of the major highlights in this quarter include: 1) The Community and Resource Building Committee (CRBC) released a request for applications (RFA) for research mini-grants and received 32 research proposals, 2) NAPA provided experts' inputs to the 15th five-year agriculture sector plan document of Nepal as requested by the National Planning Commission (NPC), 3) Experts were identified for Postgraduate (PG) curriculum development as requested by Tribhuvan University Institute of Agriculture and Animal Science (TU IAAS), Nepal, 4) We organized the first NAPA Day celebration, 5) NAPA has 293 members joined in its third year of professional journey, 6) We organized 4 Zoom conferences/webinars, 7) Thirty three NAPA Scholarships for academic excellence 2018 were distributed, 8) *Global Journal of Agriculture and Allied Sciences (GJAAS)* has initiated an online portal for paper submission and applied for DOI, 9) Agri-Connection online newsletter added a featured member's corner, and 10) We are preparing an experts' roster as per disciplines.

We thank all self-motivated volunteers for their great enthusiasm, dedication, and willingness in serving the NAPA community and its stakeholders through webinars, donations to initiate collaborative research, contributing precious time, writing paper/articles/book chapter/agri-poem, sharing valuable ideas/thoughts, serving on various committees and projects as reviewers, editors, members, and co-chairs/ and chairs/coordinators. Likewise, we extend our great appreciation and sincere thanks to all generous donors and sponsors of 'Research Mini-Grant Pool Funds.'

Membership in NAPA is steadily increasing; we warmly and gracefully welcome all new NAPA members on-board. We feel honored having all of you 'distinguished professional' members from agriculture and allied disciplines as one NAPA family. NAPA will keep fueling momentum and climbing its professional ladder with your collective expertise and energy. Please join us to share your expertise, time, energy, money, creative thoughts and ideas to serve the community at the highest possible level. We greatly appreciate all volunteer contributors to the Agri-Connection (AC) online newsletter. Last but not least, sincere appreciation and thanks to the AC editorial team, especially Dr. Nityananda Khanal, Editor-in-Chief, for his outstanding leadership and hard work to bring this issue to fruition on time.

We wish NAPA community and beyond a very Happy and Prosperous Nepali New Year 2076.

Together, we can make a difference.

Lila B. Karki, Ph.D.

Editorial



Local action through global connection !

This is the way to go ! That is what NAPA has been doing. That's how NAPA Day 2019 was celebrated - online live poetry, community level blood donation charity, and energizing jovialities, all coordinated globally ! That is how NAPA is reaching out to the original abode by way of granting scholarships, funding projects, providing inputs for developmental planning & graduate curriculum development, online teaching on demand, visits to and interactions with the local stakeholders in Nepal.

NAPA Webinars have been another means of sharing individual's professional expertise to transfer novel innovations and developmental approaches. NAPA Biennial Conferences are effective forums for networking, sharing innovations, inspiring discussions and triggering collective actions.

The Agri-Connection presents these testimonies of NAPA's local actions through global connections. Please read, provide your feedbacks and contribute with your articles, essays, professional reflections and literary creations. Let's strengthen our bonding of common heritage - with local action through global connection !

Nityananda Khanal, Ph.D., P.Ag.

Editor-in-Chief

नव
वर्ष
२०७६ को
मंगलमय शुभकामना
Happy New Year 2076

For past issues of Agri-Connection, please visit the link below:

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

NAPA Day 2019: Humanity, joviality and poetry !

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NAPA celebrated first-ever NAPA Day on its 3rd Anniversary on January 6, 2019. Mrs. Ambika Tiwari, former treasurer of NAPA coordinated the event, in which more than 50 NAPA members and well-wishers participated in various activities such as community blood donation drive, wellness walk-and-run, soccer tournament, social discussions and poetry competition. While the poetry competition was hosted online in the evening of the NAPA day celebration, the rest of the activities took place in various local communities throughout the United States surrounding the NAPA.

While opening the NAPA Day agri-poem program, the event coordinator Mrs. Tiwari highlighted the evolution and history of NAPA, the President Dr. Lila Karki extended welcome and vote of thanks to the participants, and Dr. Nityananda Khanal conducted the agri-poem session. The online poetry session was vibrant and sensational. Thanks to the benevolent blood donors, enthusiastic poets, players, athletes, coordinators, leading organizers and supporters of various NAPA Day activities, thereby making the historic NAPA Day celebration a great success. A very warm congratulations to winners of the competitive events!

Blood donation drives

As a part of NAPA Day celebration, NAPA & Blood Donors of America (BDA) jointly hosted community blood donation drives to celebrate NAPA Day on December 26 in Opelika, Alabama and Lubbock, Texas. Yubaraj Karki in Opelika and Resham Gharti, BDA Executive Vice President and NAPA member, and Dr. Megha Parajulee, BDA Life Member and NAPA Vice President in Lubbock coordinated the blood donation drives. Collectively in two locations, 21 generous people donated blood, potentially saving 63 lives in need of blood. Great applause of honor to the blood donors, coordinators, and dedicated volunteers contributing to the great human cause with the “gift of life.”

Agri-poem competition

An agri-poem competition was held to complement the NAPA Day celebration in the evening of January 6, 2019. Altogether twelve competitive and non-competitive agri-poets chanted sensational poems pertaining to Nepalese agriculture. The poets who participated in the competition included Mr. Keshab Subedi, Dr. Santosh Dhakal, Mr. Govinda Baral, Dr. Indira Paudel, Mr. Krishna Poudel, Dr. Lekha Nath Paudel, Dr. Peetambar Dahal, and Mr. Shailes Bhattarai. Additionally, non-competitive participant poets were Mr. Salam Sing Lama, Dr. Nityananda Khanal, Dr. Laxman Adhikari, and Dr. Niranjana Aryal. A three-member judging committee chaired by Dr. Nityananda Khanal with Dr. Laxman Adhikari and Mr. Tikaram Wagle assessed the poems to declare the winners based on multiple criteria. First place winner was Mr. Keshab Subedi for his poem entitled *Kisan Dai*; Dr. Santosh Dhakal secured second place for his poem entitled *Malai matra ho ki yaad aauchha timilai pani*, and Mr. Govinda Baral achieved third place for his poem entitled *Yatra ko kram ma*. Congratulations to Agri-poem winners!



Blood Drive in Opelika, Alabama



Blood Drive in Lubbock, Texas

NAPA Day 2019: Humanity, joviality and poetry ! (contd.)

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Wellness walk-and-run

In view of health awareness among NAPA members, wellness, walk-and-run programs were performed at Hefner Lake, Oklahoma City and in Auburn, Alabama on January 5 and 6, 2019, respectively. The events were coordinated separately by Dr. Pradeep Wagle, NAPA General Secretary in Hefner Lake and Shailes Bhattra in Auburn, and were participated by students, university staff and community residents. The participants from Tuskegee and Auburn jollied up the competitive race in which Bidur Paneru won the first place NAPA Wellness, Walk-and-Run Cup. Thanks to the coordinators and all participants for their enthusiastic performance.



Wellness walk-and-run held at Hefner Lake, OK



Wellness walk-and-run held in Auburn, AL



Friendly soccer match held in Auburn, Alabama

Friendly soccer match

A friendly soccer match was organized between students from Auburn University and Tuskegee University, Alabama to celebrate the NAPA Day on December 26, 2018. Auburn won the match and Ritesh (black t-shirt) receiving the NAPA Day soccer trophy and Yubaraj receiving the runner-up trophy from President Dr. Lila Karki. As a part of NAPA Day celebration, a friendly soccer match was also played at the University of Georgia, Athens on January 7, 2019.

Congratulations to the winners and a round of applause to all participants for their enthusiastic participation.



First (left) and second (right) place winners of friendly soccer match

Community and Charitable Services Committee (CCSC)

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Scholarships, Grants, Distance Education and Outreach

An update on NAPA Scholarships for Academic Excellence

NAPA, the organization of Nepalese Scientists across various disciplines of Agricultural and Allied Sciences, established a scholarship program in 2016 with a goal of supporting diligent and qualified students from several academic institutions in Nepal that offer courses in Agricultural and Allied Sciences. In year 2017/18, NAPA provided thirty-three scholarships amounting to \$2510.00 (Nepalese Rupees 2,88,650.00) at different institutions in Nepal. A big chunk of the scholarship money went to the Agriculture and Forestry University (AFU), Rampur, Chitwan and its branch campuses. NAPA awarded 22 scholarships totaling \$1865.00 (Nepalese Rupees of 2,14,475.00) to the graduate and under-graduate students of AFU alone. The scholarships were provided to the top-ranked students in the diverse categories as set by the sponsors. More details on scholarships and eligibility criteria are available at <http://www.napaamericas.org/napa-scholarships-sponsors.php>. Students at AFU were selected by AFU Scholarship Committee chaired by the Associate Dean of Academics, Dr. Kalyani Mishra Tripathi, in collaboration with NAPA Scholarship Committee. NAPA also provided scholarships to Tribhuvan University Institute of Agriculture and Animal Sciences (TU IAAS), Chautara High School and Prabuddha High School (agriculture track) in Okhaldhunga, Nepal.



Scholarship recipients at Puranchaur Campus, Pokhara (top), AFU, Rampur, Chitwan (middle), and Prabuddha High School, Okhaldhunga (bottom)

- Rajan Ghimire, Ph.D., Chair, Scholarship Management Committee

Table 1. NAPA scholarship summary

Institutions	Number of scholarships	Amount (\$)
Chautara High School, Okhaldhunga	3	170
Prabuddha High School (10 +2; ISc Ag) Okhaldhunga	2	100
AFU, Chitwan	16	1,365
AFU branch campuses	6	500
Campus of Live Sciences, Dang	2	150
TU IAAS campuses	4	225
Total	33	2,510

(Contd. next page)

Scholarships, Grants, Distance Education and Outreach (Contd.)



Students from Chautara High School Mulkharka, Okhaldhunga, Nepal receiving scholarships

Table 2. List of scholarships and their recipients at AFU Rampur and its branch campuses

SN	Scholarship Name	No.	Total Amount (\$)	Distribution Criteria	Name of the Recipient Students
1	Gopi Upreti Horticulture Excellence Award	2	125	Top two female students (M.Sc.) in Horticulture third semester Rampur (Based on 1 st semester final score)	Suruchi Tripathi Swastika Chauhan
2	Bibek Memorial Scholarship	2	120	Top male and female (M.Sc.) in Plant Breeding third semester (based on 1 st semester final score)	Subash Oliya Pratisha Shrestha
3	Pradeep-Monika Scholarship	2	100	Top male and female (B.Sc. Ag.) 2 nd semester Kapilakot, Sindhuli (based on 1 st Semester quiz)	Pappu Kumar Sah Sharwari Bhattarai
4	Balaram-Nanda Kumari Paudel Scholarship	2	125	Two top UG 2 nd semester student Brahmin Family (Based on 1 st semester quiz)	Sagar Kafle Anusya Aaradhana Panthee
5	Kemika Bhandari Needy Student Scholarship	3	200	Two females and one male graduate from public high school given to 3 rd semester students	Soniya Bashyal Rubisha Banstola Aakash Gupta
6	Megha-Sharmila Parajulee Scholarship of Excellence	2	100	Top male and female (B.Sc.Ag.) admission merit list Dhankuta, Pakhribas	Riya Pradhan Suraj K.C.
7	Sadhuram & Lila Paudel Scholarship	2	120	Outstanding students (UG 5 th semester result) (According to 3 rd semester result)	Kiran Parajuli Rakshya Aryal
8	Sujeet-Shrijana Sah Scholarship	3	180	Top rank student from Dhanusa district and top ranking a male and a female from Gorkha (B.Sc. Ag.) admission merit list	Bidhan Bagale Sangita Karki Ankit Sah
9	Bharat Mani & Sarala Risal Outstanding Scholarship	2	120	Merit list topper female and male (B. Sc. Ag.) 3 rd semester (According to 1 st semester final result)	Pallavi Shrestha Nabin Poudel
10	Surendra Osti Poor & Intelligent Student Scholarship	1	60	Top female (B.Sc.Ag.) admission merit list Tikapur, Kailali	Daxina Chand
11	Binita Tiwari Academic Scholarship	1	60	Top female UG starting from 2 nd semester Puranchaur, Pokhara (admission merit list)	Grishma Duwadi

Scholarships, Grants, Distance Education and Outreach (Contd.)

Megha and Sharmila Parajulee Academic Excellence Scholarships & Interactions

NAPA Vice President, Dr. Megha Parajulee, accompanied by other NAPA members had an interaction program with Institute of Agriculture and Animal Sciences (IAAS) Paklihawa Campus Chief, faculty, and staff on future collaborative research programs and scholarship distribution. Paklihawa Campus received two Megha and Sharmila Parajulee Academic Excellence Scholarship awards on December 23, 2018.

In another occasion on December 24, 2018, Dr. Parajulee, and Associate member, Dr. Narahari Ghimire facilitated an interaction program with local agricultural entrepreneurs, producers, and civic leaders on NAPA’s possible areas of collaboration in support of entrepreneurship promotion in the future in Ridi Bazaar, Gulmi.

Jit-Shavitra Research Mini-grant Projects and Interactions

On March 18, 2019, an interaction program was held



Interaction in Ridi Bazar, Gulmi

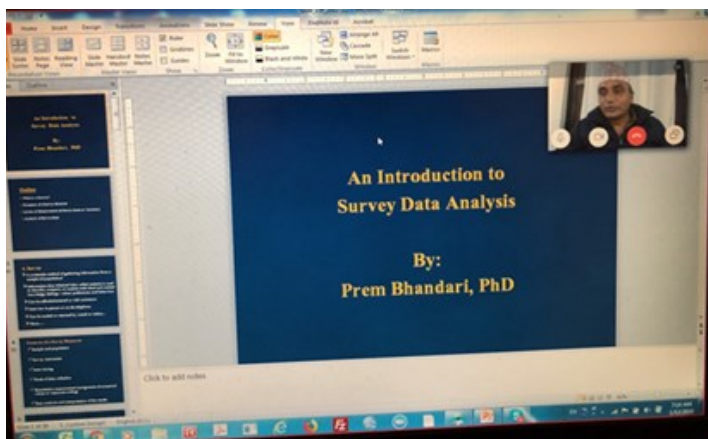


Interaction at IAAS Paklihawa Campus

educational quality of institutions of rural areas in Nepal. Summarized results of the Jit-Shavitra Research Mini-Grant projects are presented below.

Distance Teaching on Introductory Survey Data Analysis

Dr. Prem Bhandari, former NAPA General Secretary, taught a section on ‘An Introduction to Survey Data Analysis’ to the participants of a Research Methods training course via Skype on January 12, 2019. The participants were the faculty members of various campuses of the Mid-hills of Nepal. The training was held at the Myagdi Multiple Campus located in Phulbari, Beni, Myagdi district of Nepal. (contd. next page)



with the recipients of the **Jit-Shavitra Research Mini-Grant** at the Mid-West Academy and Research Institute, Campus of Live Sciences, Tulsipur, Dang. Three groups of students who received the grant to conduct field research on (a) Marigold, (b) Cauliflower, and (c) Cowpea presented their research findings. In this interaction program, former NAPA General Secretary Dr. Prem Bhandari shared the goals and progress of NAPA and presented his study on “Agricultural Change and Migration in Nepal.” The interaction program was very fruitful towards strengthening cooperation and NAPA outreach activities. Students were very enthusiastic about the research and mini-grant. The interaction program was attended by Dr. Sah Deo Sah, Campus Chief, Mr. Manoj Basnet (Assistant Professor), other faculty members and undergraduate students of the campus. The **Jit-Shavitra Research Mini-grant** is sponsored by Dr. Prem and Mrs. Usha Bhandari of Michigan, USA. Interested donors /sponsors are requested to join hands to improve the

Scholarships, Grants, Distance Education and Outreach (contd.)



The Research Methods training program was supported by University Grant Commission, Nepal. Coordinated by Mr. Man Bahadur Khattri, other faculty members facilitating the training were Prof. Dr. Binod Pokharel, Dr. Rishi Kesh Pandey, Dr. Ishori Bhattarai, and Dr. Mahesh Raj Maharjan. It is learned that the distance teach-

ing trial was very successful and the participants appreciated this effort. This is one of the goals of NAPA and it should be further explored to enhance the quality of education in Nepal.

NAPA meetup at Plant and Animal Genome Conference, San Diego, CA



On January 13, 2019, NAPA Joint Secretary Dr. Ananta Acharya hosted a NAPA meetup at Plant and Animal Genome Conference in San Diego on Jan 13, 2019. Participants had discussions about career and higher study opportunities and approaches. They also discussed about NAPA's goal, initiatives, activities, and benefits of being a member.

NAPA Webinars

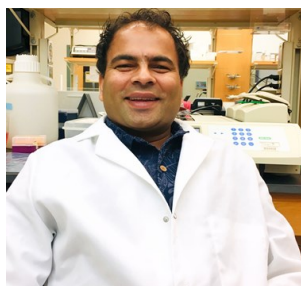
Could agricultural transformation integrated with tourism help to achieve Inclusive Economic Growth in Nepal?

On February 9, 2019, Dr. Satis Devkota, Asst. Professor of Economics and Management at University of Minnesota, Morris, discussed how Nepal can achieve the inclusive high growth in current situation and how agricultural transformation can be integrated with tourism to achieve the sustainable development.



A synopsis of quantitative trait loci (QTL) mapping in alfalfa: A step to breed the forage species for off-season production

Dr. Laxman Adhikari delivered a talk on March 9, 2019. He discussed about QTL mapping of alfalfa adaptation traits, fall dormancy and winter-hardiness in a pseudo-testcross F1 mapping population using genotyping-by-sequencing techniques. The work is published on <https://www.frontiersin.org/articles/10.3389/fpls.2018.00934/full>. Dr. Adhikari also highlighted the possibility of alfalfa (*Medicago sativa* L.) cultivation in mid-hills of Nepal to provide a nutritive forage that can be supplemented



with rice straw and wheat straw for animal feed.

Sprayable biodegradable polymer platform technology for agricultural applications

Dr. Raju Adhikari, principal scientist in Bio Ra Co Ltd and former principal scientist of Commonwealth Scientific and Industrial Research Organization, Australia discussed the innovations in sprayable biodegradable polymer platform technology (SBPPT), as an environmentally friendly substitute for low density polyethylene and oxy-biodegradable plastics. He discussed the wide use of performed plastics as a mulch to conserve soil water, enhance seed germination, suppress weeds and plant pathogens, reduce the loss of nitrogen and thereby increasing crop yield. However, the non-degradability and associated environmental effects of the performed plastics engendered societal pressure to phase-out those technologies. Exemplifying the merits and promise of SBPPT in improving input-use efficiency and crop productivity, Dr. Adhikari also recognized higher cost of this new technology as a major bottleneck for its widespread adoption by the farmers and horticultural industries. Dr. Adhikari encouraged discussion about the adaptability of the SBPPT and opined that establishment of domestic fertilizer industry and use of polymer-coated fertilizer as a promising avenue.



NAPA Publications Updates

Upcoming NAPA Book Publication

Sustainable, Sufficient, Safe and Healthy Food in Nepal: Principles and Practices of Food Security

NAPA Book Publication Committee (BPC) is actively working on reviewing the revised chapters received from the authors for the above-noted book. The six-member editorial board has been shouldering this voluntary mission to bring the book out by December, 2019. BPC thanks all the authors for their strong support and seeks continued and timely support from them for its timely publication.



Dr. Drona P. Rasali, Editor-in-Chief



Dr. Prem B. Bhandari, Managing Editor

Global Journal of Agricultural and Allied Sciences (GJAAS)

Global Journal of Agricultural and Allied Sciences (GJAAS) is a multi-disciplinary, peer-reviewed (double-blind) international journal published by the Association of Nepalese Agricultural Professionals of Americas (NAPA). The editorial board is requesting all researchers to submit research or review manuscripts on various aspects of Agricultural Sciences, including but not limited to Agricultural Ecology; Agricultural Economics; Agricultural Engineering; Agricultural Extension; Agroclimatology; Agronomy/Crop Science; Animal Science and Veterinary Medicine; Applications of Remote Sensing, Geographic Information System (GIS), and Crop Modeling in Agriculture; Climate Change; Environmental Science; Entomology/Plant Protection; Farming Systems and Sustainable Agriculture; Forestry/Agro-forestry; Horticulture; Natural Resources; Plant Breeding/Applied Genetics/Bio-technology; Plant Pathology; Soil Science; Weed Science, and closely related disciplines.

We have already created and deployed new journal management system, which may be operational soon. Until we have this system operational, you may continue to submit the paper(s) via email (gjassjournal@gmail.com). We accept research articles as well as review papers, and the submission is accepted year-round. We expect to get our first issue published in late May. If you wish to have your paper(s) published in a historic inaugural issue, please submit your paper as soon as possible. Our review, production, and publication processes will follow a standard journal management procedure as summarized in the next page.



Kind regards,

Megha N. Parajulee, PhD
Editor-in-Chief, GJAAS

Vice President, NAPA

<http://napaamericas.org/index.php>

<http://napaamericas.org/journal-editorial-board.php>

Agri-Connection Newsletter is an excellent medium to reach out to the world through your articles, essays, informative collections and literary creativities. Send them by email at napa2072@gmail.com anytime !

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Research/Policy Brief (RPB)

Editor-in-Chief

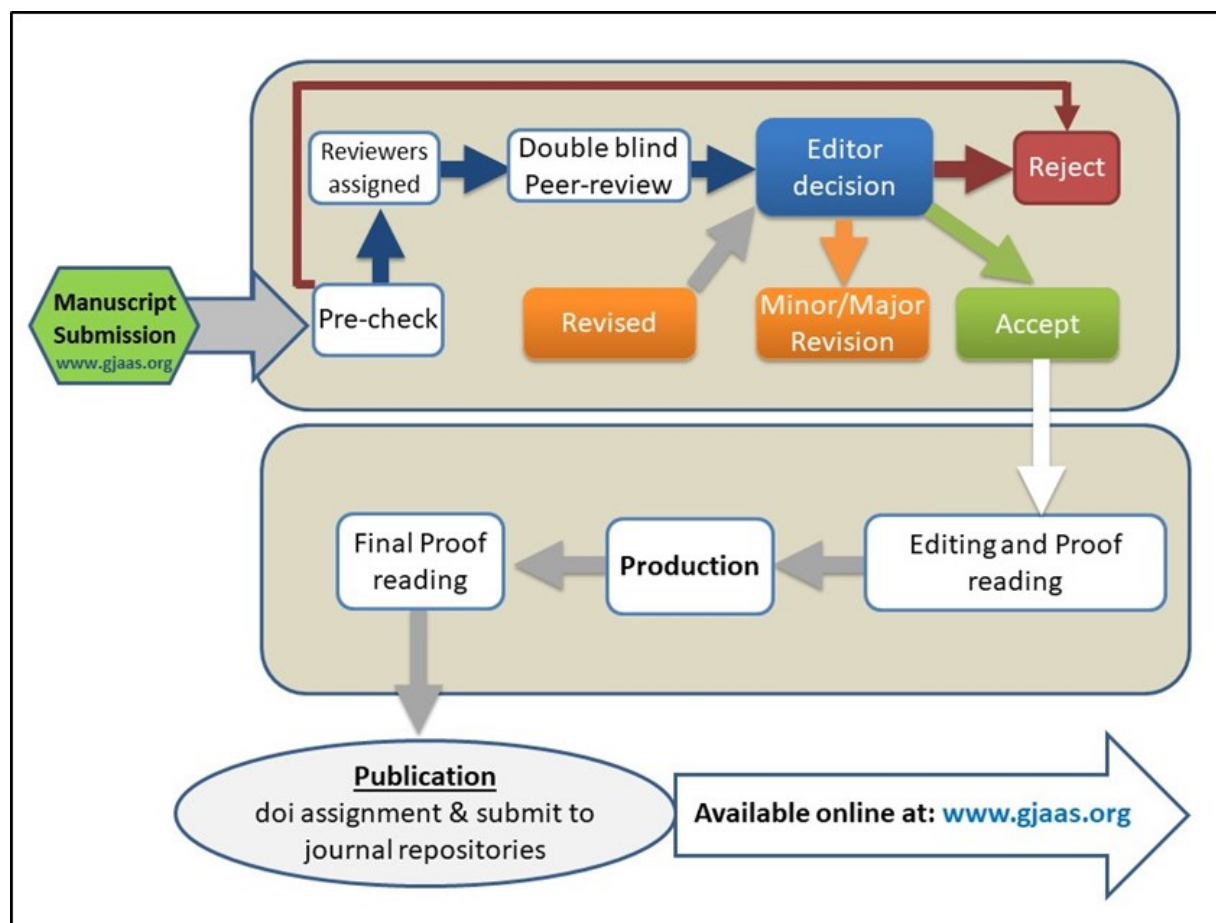
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Dr. Suman Rimal

Gautam

Dr. Lila K. Khatiwada



Publication flow-diagram of Global Journal of Agricultural and Allied Sciences

Policy/Research Brief series publication: Appeal for your contribution

Dear valued NAPA members,

NAPA publishes Research/Policy Brief (RPB) as a concise summary of original research or literature review pertaining to various aspects of agriculture and related areas in Nepal. This publication is intended to articulate evidential issues, and suggest policy alternatives and/or practical options for improving the situation. Previous issues of RPBs are available online at <http://www.napaamericas.org/research-and-policy-briefs.php>.

Here is a brief guideline on how to write RPB for your kind reference:

Title must be engaging and brief and of not more than **10 words**.

Abstract should have succinct statements of aim, problem, summary of research, and policy implications / recommendations - maximum of **100 words**.

The Body of the brief should consist of aim, problem, methods, research findings, conclusion/discussion with main takeaway messages, policy implications, actionable recommendations and references. The brief should be written in plain language with broad range of audience in mind, such as agricultural professionals, stakeholders,

and policy makers in Nepal.

Use American English with active voice.

The content should preferably be less than six pages.

Use figures and graphs to illustrate the facts and demonstrate patterns. Use 12-point Times New Roman font. Margins should be 2.5 cm (1 inch) on all sides.

Indent the first line of paragraphs by 0.5”.

Do not annex any appendices.

Limit references to 10. Format references in accordance with the American Psychological Association (APA), 6th edition. Submit the manuscript as a Microsoft Word document to:



Dr. Ramjee Ghimire
Editor-in-Chief, Policy and Research Brief
Association of Nepalese Agricultural Professionals of Americas (NAPA)
E-mail: ramghi@gmail.com
<http://www.napaamericas.org/research-policy-brief-editorial-committee.php>

News & Announcements

NAPA 2nd Biennial International Scientific Conference 2020 !

Plan Early to Attend NAPA 2nd Biennial International Scientific Conference 2020!

Please mark on your Calendar!

When: May 23-25, 2020

(Memorial Weekend),

Friday-Saturday-Sunday



CROWNE PLAZA®
ATLANTA - AIRPORT

Where: Atlanta, Georgia, USA

Venue: 1325 Virginia Avenue
Atlanta, GA 30344, USA



Hotel bookings and other details will follow soon.

NAPA Research Mini-Grants: An Overview

NAPA Resource and Capacity Building Committee (RCBC) is organizing a competitive Research Mini-Grants (RMG) program for the first time to fund applied research projects in Nepal. Specifically, through this grant, NAPA seeks to support Nepal-based educational and non-profit research organizations to conduct small-scale high-impact research in the fields of Agriculture and Allied Sciences. Overarching goal of this program is to help conduct utility focused research on education, and extension projects for productive, economically viable, and environmentally sustainable plant and animal based agricultural systems.

Responding to the RCBC's Request for Application (RFA) dated March 1, 2019, thirty-two professionals have submitted their research proposals. A large majority of the applicants are undergraduate students (n=20) followed by master's (n=7) and doctoral (n=3) students, and university faculty (n=2).

The applicants represent Agriculture and Forestry University (n=17), Tribhuvan University (n=13), and Kathmandu University (n=2). The proposals are in the field of horticulture, animal health, and cereal production, among others. NAPA is looking forward to selecting funding the worthy competitive proposals.

Finally, NAPA RCBC would like to extend a big thank you to participating professionals in Nepal as well as diaspora in the U.S. and beyond for their enthusiasm, interest and support to conceive and implement the Research Mini-Grants program.



Contact information:

Dr. Buddhi Lamsal
Chair, RCBC Committee

Email: naparcbc2019@gmail.com

News & Announcements

NAPA Sought for Contribution in Graduate Curriculum Development in Nepal

NAPA was requested from the Institute of Agriculture and Animal Sciences (IAAS) to recommend a team of experts for improving post-graduate (PG) program curricula to respond to the existing and upcoming challenges in the agricultural sector of Nepal and elsewhere. The request was made for one expert in each of the following disciplines:

- i) Crop science
- ii) Biotechnology
- iii) Animal husbandry
- iv) Veterinary science, and
- v) Agri-economics/Agri-extension

For this purpose, the IAAS team is working with CRS (<https://www.crs.org/our-work-overseas/where-we-work/nepal>) who will help liaise with academician familiar with Nepalese context. In this regard, IAAS has chosen Nepalese agricultural diaspora in the USA to seek external experts for their curriculum improvement project. NAPA requested its members to submit their

interests and biographies to napa2072@gmail.com for consideration. NAPA Executive Officers compiled the qualified volunteers' names and forwarded to IAAS for their submission to CRS. NAPA hopes that our experts will be selected and requested for their service. CRS will send an official request on behalf of IAAS to the proposed candidates (us) if they find the candidates as per their expectation. The PG curricula-reviewing workshop will occur in Kathmandu during the upcoming summer.

Your willingness to provide your expertise to serve the motherland is much appreciated. This type of request from our colleagues and agricultural administrators in Nepal is a strong testament of NAPA's value and scope in agricultural development in Nepal. NAPA is always ready and eager to provide such services to any institutions of agricultural and allied sciences in Nepal upon request.

Feedback to Nepal's Agricultural Development Framework - Vote of Thanks

NAPA is honored to be requested by National Planning Commission (NPC) of Nepal to provide feedback and expert opinion on the draft outline of Agriculture, Forestry and Land Management Sector in the 15th Five-Year Plan. NAPA provided the opportunity to its entire membership to participate in

this process and the comments received from its members were submitted to NPC. NAPA will continue collaboration with NPC in the future. We would like to thank the following individuals who sacrificed their precious time from their busy schedules to provide inputs to improve the Plan:

Kalidas Subedi, PhD
 D.P. Dhakal, M.Sc.
 Shyam Kandel, PhD
 Peetambar Dahal, PhD
 Nityananda Khanal, PhD
 Uma Karki, PhD
 Maha Prasad Gelal, B.Sc.Ag.
 Pradeep Wagle, PhD
 Megha N. Parajulee, PhD
 Lila B. Karki, PhD

Join NAPA: Blend your professionalism with philanthropy

Visit <http://napaamericas.org/join-napa.php> for membership information. Here are NAPA membership categories and fee schedules:

Life membership (One-time payment)

Life: US\$200 - Bachelor degree or equivalent qualifications in agriculture or related field

Eligible spouse: US\$100

Senior (65 years or more): US\$100

Joint/family: US\$50

Associate (outside Nepal): US\$100

Associate (Nepal): US\$50 (NRs. 5,000)

General membership (For 2 Years)

Regular: US\$50

Student: US\$25

Associate (outside Nepal): US\$25

Joint/family: US\$15

Appeal for donation/sponsor for Research Mini-Grant Pool Funds

We are encouraged to have so many proactive donors and sponsors contributing to **Research Mini-Grant Pool Funds (RMG)** in a short period. NAPA respectfully requests all generous donors to spare a few dollars by sacrificing small expenses (such as coffee/tea/drinks/movie/dining out etc.) for the next few months in order to generate a mini-grant pool money for collaborative research in Nepal. More importantly, we seek RMG sponsors to support collaborative research for developing capacity of undergraduate/graduate students, local faculty, and post graduate professionals. You may donate \$300 and up to establish the research mini-grant on your own name or the name you would like to recognize. Alternatively, you have been invited to make a difference in research-based agricultural education in Nepal by

sponsoring at least one mini-grant (\$100) for an impactful scientific investigation. However, anyone willing to contribute to RMG for collaborative research may donate any amount to the RMG pool funds and the amount will be disbursed to support selected small-scale projects. Such pool-funded projects will be solicited, evaluated, selected, supported, and managed by Executive Committee in consultation and as per the recommendation by **Resource and Capacity Building Committee (RCBC)** depending on the amount of funds in the RMG pool fund. Your generosity is NAPA's inspiration to serve the community back in the motherland and beyond. Donors of RMG thus far are listed below.

SN	Contributors	Amount (\$)	SN	Contributors	Amount (\$)
1	Dr. Nitya Nand Khanal	55	11	Dr. Buddhi Gyawali	51
2	Dr. Bhawani Mishra	50	12	Dr. Megha N. Parajulee and Ms. Sharmila Parajulee	300
3	Dr. Lila Karki and Dr. Uma Karki	400	13	Dr. Toya Baral	50
4	Dr. Aditya Khanal	50	14	Mr. Bikash Poudel	10
5	Dr. Tilak B. Shrestha	50	15	Dr. Ram Acharya	100
6	Dr. Manoj Karkee	100	16	Dr. Thakur Karkee	50
7	Dr. Pradeep Wagle and Dr. Monika Ghimire	300	17	Dr. Buddhi Lamsal	100
8	Dr. Prem Bhandari	286	18	Ms. Kemika Bhandari	105
9	Dr. Lekhanath Paudel	50	19	Dr. Ananata Acharya	100
10	Mr. Sanjok Poudel	20	19	Dr. Ramjee Ghimire	50
Total					2,277

Donation Appeal for Scholarships and Endowment Funds

With the donation received from sponsors, NAPA has established:

- ♦ *A Scholarship Fund for awarding meritorious students in Nepal*
<http://napaamericas.org/napa-scholarships-sponsors.php>
- ♦ *An Endowment Fund for awarding emergency relief and charitable support*
<http://napaamericas.org/endowment-fund-announcement.php>

DONATE



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

Welcome New NAPA Members on Board

We are growing ! Our total NAPA membership is at 293 that includes 50 Life Members, 68 General/Regular Members, 125 Student Members, 37 Associate Members and 13 Family/Joint Members.

Senior Life Members

- ◆ Prof. Gopi Upreti, VA
- ◆ Dr. Peetambar Dahal, CA
- ◆ Dr. Nanda Joshi, MI

Associate Members

- ◆ Mr. Babu R Khanal, Nepal
- ◆ Dr. Lal P. Amgain, Nepal

General/Regular Members

- ◆ Dr. Indira Paudel, IN
- ◆ Mr. Maha Prasad Gelal, GA
- ◆ Dr. Satis Devkota, MN
- ◆ Dr. Niranjana Aryal, CA
- ◆ Dr. Subodh Acharya, MA

Life Members

- ◆ Dr. Ramjee Ghimire, Michigan
- ◆ Dr. Basu Deb Bhandari, Texas
- ◆ Dr. Lekha Nath Paudel, Delaware
- ◆ Dr. Bharat Pokharel, Tennessee
- ◆ Dr. Omkar Joshi, Oklahoma
- ◆ Dr. Aditya Khanal, Tennessee
- ◆ Dr. Ram N. Acharya, New Mexico
- ◆ Dr. Ramesh Khanal, Pennsylvania
- ◆ Dr. Shyam Kandel, California
- ◆ Dr. Jinita Sthapit Kandel, California
- ◆ Mr. Dol P. Dhakal, Texas
- ◆ Dr. Dilip Panthee, North Carolina
- ◆ Dr. Suman Rimal Gautam, Maryland
- ◆ Dr. Dinesh Gautam, Maryland
- ◆ Dr. Dhruva Dhakal, Missouri
- ◆ Dr. Dev Paudel, Florida
- ◆ Dr. Sushil Thapa, Texas
- ◆ Dr. Ramesh Raj Pokharel, Maryland
- ◆ Dr. Prem Bhandari, Michigan
- ◆ Dr. Toya N. Baral, California
- ◆ Dr. Kalidas Subedi, Canada
- ◆ Dr. Shyam Adhikari, Illinois
- ◆ Dr. Rishi Burlakoti, Canada
- ◆ Dr. Pragyana Burlakoti, Canada
- ◆ Ms. Usha Bhandari, Michigan (Joint Life)

Enjoy privileges with your NAPA membership: Just a few examples

- Peer-to-peer networking and research collaboration opportunities
- 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 NAPA awards, scholarships, and endowment funds
- Share expertise via NAPA's Talk Sessions (Webinars) and Online Teaching/Learning Programs
- Discounted rates for registration and hotel reservation during scientific conferences organized by NAPA; and many more !

Student Members

- Madhav Parajuli, Tennessee State University, Tennessee
- Mahesh K C, Ohio State University, Ohio
- Sabal Chaulagain, University of Illinois at Urbana-Champaign, Illinois
- Piush Khanal, North Carolina State University, North Carolina
- Sudikshya Paudel, North Carolina State University, North Carolina
- Milan Pantha, Tennessee State University, Tennessee
- Asmita Paudel, Utah State University, Utah
- Manoj Pandey, Louisiana State University, Louisiana
- Kripa Dhakal, Tennessee State University, Tennessee
- Lok Raj Joshi, South Dakota State University, South Dakota
- Narayan Acharya, Texas Tech University, Texas
- Subash Acharya, University of Missouri, Missouri
- Nirajan Bhandari, University of Delaware, Delaware
- Rekha Bhandari, Montana State University, Montana
- Sandhya Bista, University of Maryland, Maryland
- Keshab Subedi, Delaware
- Shubhechha Sharma, Michigan State University, Michigan
- Hem Chandra Sharma, University of Arkansas at Pine Bluff, Arkansas
- Sijan Pandit, Kentucky State University, Kentucky
- Bhagarathi Shahi, West Virginia State University, West Virginia
- Sandhya Gautam, West Virginia State University, West Virginia
- Kumar Shrestha, Oklahoma State University, Oklahoma
- Santosh Pathak, Louisiana State University, Louisiana
- Saroj Adhikari, University of Arkansas at Pine Bluff, Arkansas

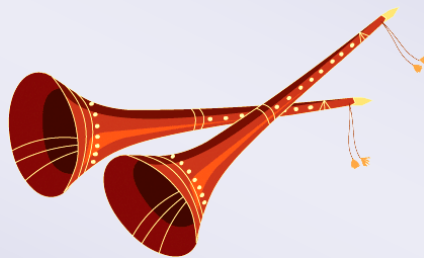
Agri-Connection Newsletter is an excellent medium to reach out to the world through your articles, essays, informative collections and literary creativities. Send them by email at napa2072@gmail.com anytime !

NEWLYWEDS

Congratulations to our NAPA Member Gautam Kumar Joshi and Deepa Joshi on their marriage !



Congratulations to our NAPA Member Yogendra Upadhaya and Mounata Dahal on their marriage !



May this beautiful couples have happy, healthy, and fortunate family life !

Featured NAPA Member of the Quarter (January-March 2019)

From this edition, we begin featuring one NAPA member in each issue. In consultation with NAPA executive Officers, Agri-Connection Editorial Committee identifies a member who is highly active in various NAPA roles and can be seen as a rising star in NAPA Community.



Santosh Dhakal, PhD

Current affiliation:

Postdoctoral Fellow, Johns Hopkins University, Baltimore, Maryland, USA

Education:

BVSc&AH (2011), IAAS, Tribhuvan University, Nepal

PhD (2018), Comparative and Veterinary Medicine, The Ohio State University, USA

Achievements:

PhD work on ‘Swine influenza vaccine’ resulted in patented products with commercial feasibility.

Published seven first authored and 24 co-authored articles so far.

- Delivered 16 oral and poster presentations in scientific conferences.
- Received multiple awards including the ‘Presidential Fellowship’ from The Ohio State University.
- Received Center for Excellence in Influenza Research and Surveillance (CEIRS).
- Training Award (\$7,000.00) to visit influenza research lab at Icahn School of Medicine, Mount Sinai New York and learn latest laboratory techniques.

- Work as editorial board member of Nepalese Veterinary Journal (NVJ)
- Reviewer for several peer-reviewed journals, including PLoSOne, mSphere, and Frontiers in Microbiology.
- Mentored a dozen of laboratory technicians, and undergraduate and graduate students.
- Mentoring International Student One Health Association (ISOHA) Pilot Mentorship Program-2019.
- Appointed as a Scientific Committee Member for ‘Conference on Sustainable Animal Agriculture for Developing Countries (SAADC-2019)’ to be organized in Pokhara, Nepal during November 8-11, 2019.

Dr. Dhakal, a NAPA life member, is a highly influential, emerging scientist with enormous potential and a proactive community leader. He is serving the NAPA Membership Drive Committee as a Co-chair. He recruited ten members within the past quarters. He is a highly committed individual willing to extend his expertise to serve the academic institutions and professional societies in Nepal and beyond through NAPA. NAPA welcomes him very warmly and congratulates on his outstanding accomplishments in his early professional career.

Charity Work by NAPA Members

NAPA Associate Life Member, Dr. Dainik B. Karki/Nepali (Source: Facebook status)

“This year came out to be the lucky year for us and our family. I donated Rs. 1,01,111.00 & handed over a cheque to the chairman and founder member of Paropakar Organizations Mr. Hitkar Bir Kansakar on general assembly of the organization. Thanks to Dayabir Singh. And today, we offered one non-veg lunch to elderly mothers in *Matatirtha Bridhashram* and donated Rs. 10,000 to the *ashram* on behalf of our granddaughters *Anusuya and Aavana Karki* which they got as *Dakshina* during *Dashain Tika 2075*. Thanks to both grandchildren.”



Blood donation by NAPA Associate Member

Dr. Lal Prasad Amgain, NAPA Associate Member donating blood at Ratnanagar Rotary Tandhi, Chitwan on April 6, 2019.

Thanks a bunch to Dr. Amgain!



Membership Expansion and Outreach

Recruit More Members – Win Prizes!

NAPA is devoted to inviting students, professionals, and practitioners from all agricultural and allied disciplines to this scientific platform. NAPA is a member-driven organization where everyone takes the ownership and put collective energy as one team for its growth and advancement. NAPA is fortunate to have 293 self-motivated, hardworking, and dedicated members thus far. We are working relentlessly to continue the momentum built by the NAPA's Inaugural Executive Team and the First Biennial Conference.

Each member irrespective of their geographic location and profession brings insight, creative ideas, and willingness to serve the community to accomplish the long-term goal of **“Global Food Security through Agricultural Transformation.”** The more members we bring into the community, the stronger NAPA becomes and quicker it expands services to achieve the set objectives. In addition to an aggressive agenda to further NAPA activities to its stakeholders, this two-year tenure (2018-2020) is earmarked for Membership Expansion and Outreach. Therefore, we want to encourage our dedicated members and well-wishers to promote NAPA to the next level by recruiting eligible friends/colleagues/students in your network. In addition to numerous professional benefits and networking, we have created the following incentives to recognize your hard work and dedication for Membership Expansion and Outreach. The highest three recruiters will be recognized at the 2020 Biennial Conference.

Member Benefits:

- Peer-to-peer networking and research collaboration opportunities as well as professional development and advancement.
- Opportunity of publishing scientific works in NAPA's various outlets (GJAAS Journal, Book, Research/Policy Brief, and Agri-Connection).
- E-subscriptions to the NAPA publications and Monthly/Bimonthly webinars.

- Opportunity to sponsor scholarships and research mini-grants in preferred agricultural institutions and disciplines in Nepal through NAPA.
- Free/reduced registration (75-100%) costs to the biennial scientific conference and educational tours. Discounted rates for hotel reservations during NAPA conferences.
- Eligibility for conference travel awards, NAPA awards, and professional development opportunities (speaker, moderator, judge, and outstanding service/performance awards). NAPA distributed more than \$10,000 monetary awards and bestowed many recognitions in the 2018 scientific conference.
- Opportunities to serve in leadership roles on the executive committees, various professional committees, and advisory councils.
- Access to job opportunities, extensive networking (government, university, INGOs, NGOs, industries), and graduate and post-graduate opportunities.
- Opportunity to share scientific works, experiences, and expertise via NAPA's Talk Sessions (Webinars) and Online Teaching/Learning Programs.
- Joining global expert repository to contribute to Nepalese Agriculture and beyond.

Member Recruiting Benefits:

To be eligible to win any of the following prizes, your recruited NAPA members must write your name in the “referred by” row on the membership form. Each member you recruit will add up points in your account as specified below.

One life member = 10 points, One member in any other category = 5 points

Those willing to win the prizes should accumulate 75, 50, and 25 points. The winners may receive a complementary room for three nights, conference registration fee waiver, and complementary lunch coupon or equivalent scholarship in 2020 Biennial Conference, respectively.

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.

Please renew your membership (become life member if possible) if you have received renewal emails from NAPA before.

Celebrating the Success: Members' Achievements

Employment/Fellowship

Dr. Shristi Ghimire on her **new job** at Johns Hopkins Bloomberg School of Public Health as Senior Research Specialist effective March 2019.

Dr. Laxman Adhikari on a new **post-doctoral position** at Kansas State University.

Graduate Assistantship

Mr. Tej Prasad Acharya, PhD assistantship in Horticulture at Department of Horticulture Science, University of Georgia, Athens. Best of luck on your career!

Mr. Kshitiz Dhakal, PhD assistantship in Crop and Soil Environmental Sciences at School of Plant and Environment Science, Virginia Tech, Virginia starting Summer 2019. Best of luck on your career!

Mr. Nabin Sedhain, PhD assistantship in Plant Pathology at College of Agriculture and Environmental Sciences, University of Georgia, Athens. Best of luck on your career!

Ms. Ambika Pokhrel, PhD assistantship in Plant Pathology at Department of Entomology and Plant Pathology, Auburn University, Auburn, Alabama. Best of luck on your career!

Mr. Aman Bhatta, PhD assistantship in Environmental Science at Ohio State University, Ohio starting Fall 2019. Best of luck on your career!

Student Competition Award

Sangita Karki achieved **Third Position in 2019 National Ag Day Essay Contest** with theme "Agriculture: Food for Life. How Does Our Nation Lead the Way?" held in Tuskegee University, Tuskegee, Alabama! Congratulations Ms. Karki!!!

Menuka Bhandari, Master's in Biotechnology at West Virginia State University received **Second Place prize for poster presentation** on in "Elucidation of genetic component responsible for acidity tolerance in Arabidopsis by using genome wide association studies" under poster category - Renewable Energy Natural Resources



and environment. Congratulations Ms. Bhandari!!!



Saaruj Khadka, Master's in Environmental Studies at Kentucky State University received **Third Place Prize in oral presentation** on "Exploring changes in Landscape diversity, Landowner-ship size, and Agroecosystems in Kentucky", under poster category - Family, Youth, Community, and Economic Development. Congratulations Mr. Khadka!!!



Bidur Paneru, Master's in Animal Science at Tuskegee University received **Third Place Prize for poster presentation** on "Availability of the browse vegetation during fall for grazing small ruminants" under poster category - Animal health and production and animal products. Congratulations Mr. Paneru!!!

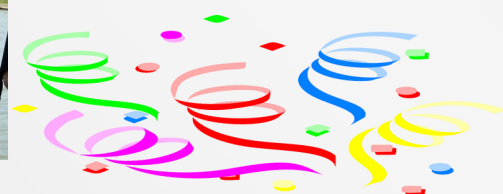
Mr. Sanjok Poudel received **Outstanding Master's Thesis Award 2018-2019 Academic Year** - Department of Agricultural and Environmental Sciences, College of Agriculture, Environment, and Nutritional Sciences, Tuskegee University. Congratulations Mr. Poudel!!!



Mr. Shailes Bhattarai received **Outstanding Graduate Student 2018-2019 Academic Year** - Master's Level awarded by Department of Agricultural and Environmental Sciences, College of Agriculture, Environment, and Nutritional Sciences, Tuskegee University. Congratulations Mr. Bhattarai!!!



Mr. Amit Sharma received **Outstanding Graduate Student 2019 Award** in the Division of Aquaculture, Kentucky State University. Congratulations Mr. Sharma!!!



Celebrating the Success: Members' Achievements

Professional Award

NAPA General Secretary **Dr. Pradeep Wagle** was awarded "Certificate of Merit" for FY 2018 by the United States Department of Agriculture (USDA) for his outstanding performance. Dr. Wagle had received Certificate of Merit for FY 2017 as well. Congratulations Dr. Wagle!



Dr. Bharat Pokharel, NAPA Life Member. The College of Agriculture at Tennessee State University honored Dr. Bharat Pokharel with an outstanding teaching award for his innovation, excellence and creativity in teaching. Congratulations Dr. Pokharel!



Honors

NAPA President **Dr. Lila B. Karki** elected as President of The Honor Society of Agriculture, Gamma Sigma Delta Tuskegee University Chapter for 2019-2020. Congratulations Dr. Karki on receiving such an honor!



NAPA

Association of Nepalese Agricultural Professionals of Americas



नव वर्ष २०७६ को उपलक्ष्यमा हार्दिक मंगलमय शुभकामना !



Dr. Lila B. Karki Dr. Megha Parajulee Dr. Pradeep Wagle Dr. Ananta Acharya Dr. Nirmala Adhikari Ms. Kemika Bhandari Dr. Romy Das Karna Dr. Lila Khatiwada Dr. Manoj Karkee Mr. Sanjok Poudel Mr. Bijesh Mishra

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napa2072@gmail.com

[@napa2072](https://www.instagram.com/napa2072)

www.facebook.com/napa2072

Member's Publications and Presentations

Journal Articles

- ***Acharya, N.**, Gautam, B., Subbiah, S., Rogge, M. M., Anderson, T. A., & Gao, W. (2019). Polycyclic aromatic hydrocarbons in breast milk of obese vs normal women: Infant exposure and risk assessment. *Science of the Total Environment*, 668: 658-667.
- ***Bhandari, P.** (2019). Regional variation in food security in Nepal. *Dhulagiri Journal of Sociology and Anthropology*, 12: 1-10. <https://doi.org/10.3126/dsaj.v12i0.22174>
- Dai, Y., Wang, M. F., Jiang, S. L., Zhang, Y. F., ***Parajulee, M. N.**, & Chen, F. J. (2018). Host-selection behavior and physiological mechanisms of the cotton aphid, *Aphis gossypii*, in response to rising atmospheric carbon dioxide levels. *Journal of insect physiology*, 109, 149-156.
- ***Dhakal, S.**, Lu, F., ***Ghimire, S.**, Renu, S., Lakshmanappa, Y.S., Hogshead, B., Ragland, D., Hogenesch, H., & Renukaradhya G. J. (2019). Corn-derived alpha-D-glucan nanoparticles as adjuvant for intramuscular and intranasal immunization in pigs. Accepted in *Nanomedicine: Nanotechnology, Biology, and Medicine*, 16:226-235.
- Fleming, D., Musser, F., Reisig, D., Greene, J., Taylor, S., ***Parajulee, M.**, Lorenz, G., Catchot, A., Gore, J., Kerns, D. and Stewart, S. (2018). Effects of transgenic *Bacillus thuringiensis* cotton on insecticide use, heliothine counts, plant damage, and cotton yield: A metaanalysis, 1996-2015. *PLoS ONE* 13: e0200131. <https://doi.org/10.1371/journal.pone.0200131>.
- Ghorbani, A., Ngunjiri, J. M., Xia, M., Elaish, M., Jang, H., ***K.C. M.**, & Lee, C. W. (2019). Heterosubtypic protection against avian influenza virus by live attenuated & chimeric norovirus P-particle-M2e vaccines in chickens. *Vaccine*, 37(10):1356-1364.
- Goli, S., Maurya, N.K., Moradhvaj, ***Bhandari, P.** (2019). Regional differentials in multidimensional poverty in Nepal: Rethinking dimensions and method of computation. *Sage Open*, 1-18. <https://doi.org/10.1177/2158244019837458>.
- Jiang, S., Dai, Y., Lu, Y., Fan, S., Liu, Y., Bodlah, M.A., ***Parajulee, M.N.** and Chen, F. (2018). Molecular evidence for the fitness of cotton aphid, *Aphis gossypii*, in response to elevated CO₂ from the perspective of feeding behavior analysis. *Frontiers in Physiology* 9: 1444. <https://doi.org/10.3389/fphys.2018.01444>.
- Li, Z., ***M. N. Parajulee**, and F. Chen. (2018). Influence of elevated CO₂ on development and food utilization of armyworm *Mythimna separata* fed on transgenic Bt maize infected by nitrogen-fixing bacteria. *PeerJ* 6:e5138; DOI 10.7717/peerj.5138.
- ***Karki, L. B.**, Baharanyi, N. and ***Karki U.** (2018). Impact of Tuskegee Money Smart on Bridging the Financial Knowledge Gap of Collegiate Youths. *The Journal of the National Extension Association of Family and Consumer Sciences (NEAFCS)*. Volume 13.
- ***Karki, L. B.**, ***Karki, U.**, Mentreddy, S. R., Christian, C. S. and Bambo, S. K. (2018). Impact of Agroforestry Educational Program: A Case of Small-Scale Holders. *European-American Journals (EAJ). International Journal of Agricultural Extension and Rural Development Studies (IJAERDS)*. Volume 5, Issue 4, October.
- ***Karki, U.**, ***Karki, Y.**, ***Khatari, R.**, Tillman, A., ***Poudel, S.**, Gurung, N., & Kumi, A. (2018b). Raising goats in the southern-pine silvopasture system: challenges & opportunities. *Agrofor. Systems*. 1-11 <https://doi.org/10.1007/s10457-018-0271-1>.
- ***Khatiwada, B. P.**, & Mitcham, E. (2018). Postharvest Physiological disorders of Cherry. In Suneel Pareek and Sergio de Freitas (eds.). *Postharvest Physiological Disorders of Fruit and Vegetables*. CRC Press, Taylor and Francis Group, United Kingdom: Pp 223-233.
- ***Poudel, S.**, ***Karki, U.**, ***Karki, Y.**, & Tillman, A. (2019). Confinement influenced the diurnal behavior of Katahdin rams and Kiko wethers in southern-pine silvopastures. *Agrofor. Systems*. 1-12. <https://doi.org/10.1007/s10457-019-00359-7>.
- ***Poudel, S.**, ***Karki, U.**, ***Karki, Y.**, & Tillman, A. (2019). Diurnal behavior of Kiko wethers in southern-pine silvopastures planted with warm-season forages. *Small Ruminant Research*. <https://doi.org/10.1016/j.smallrumres.2019.03.005>.
- ***Thapa, S.**, Stewart, B. A., Xue, Q., Rhoades, M. B., Angira, B., & Reznik, J. (2018). Canopy temperature, yield, and harvest index of corn as affected by planting geometry in a semi-arid environment. *Field crops research*, 227, 110-118. <https://doi.org/10.1016/j.fcr.2018.08.009>.
- ***Thapa, S.**, Xue, Q., Jessup, K.E., Rudd, J.C., Liu, S., Marek, T.H., Devkota, R.N., Baker, J.A. and Baker, S., (2019). Yield determination in winter wheat under different water regimes. *Field Crops Research*. 233: 80-87. <https://doi.org/10.1016/j.fcr.2018.12.018>.
- ***Wagle, P.**, & Gowda, P. H. (2018). Tallgrass Prairie Responses to Management Practices and Disturbances: A Review. *Agronomy* 8: 300. <https://doi.org/10.3390/agronomy8120300>.
- ***Wagle, P.**, Gowda, P. H., & Northup, B. K. (2019). Annual Dynamics of Carbon Dioxide Fluxes over a Rainfed Alfalfa Field in the U.S. Southern Great Plains. *Agricultural and Forest Meteorology* 265: 208-217. <https://doi.org/10.1016/j.agrformet.2018.11.022>.
- Thornton, A., Williams, N.E., ***Bhandari, P.**, Young-Demarco, L., Sun, C., Swindle, J., Hughes, C., & Xie, Y. (2019). Influences of material aspirations on migration. *Demography*, 56: 75. <https://doi.org/10.1007/s13524-018-0751-y>
- ***Bold** =NAPA member.

Member's Publications and Presentations (Cont.)

Oral Presentations

- ***Bhattra**, S., ***Karki**, U., & ***Karki**, L. (2019). Efficient Utilization of Woodlands to Produce Desirable Trees and Small Ruminants. *Agroforestry and Woodland Grazing: Potential Benefits and Applications*. 127th Annual Farmers Conference, February 18-22, 2019, Montgomery, AL.
- ***Bhattra**, S., ***Karki**, U., & ***Poudel**, S. (2018). Vegetation Characteristics and Diurnal Periods Influenced the Landscape-Use Pattern of Goats and Sheep in Woodlands. *ASAS Southern Section Meeting*, January 26-29, 2019, Oklahoma City, OK.
- ***Bhattra**, S., ***Karki**, U., ***Poudel**, S., McElhenney, W., & ***Paneru**, B. (2018). Cutting Non-Target Vegetation Improved Solar Radiation Influx and Biomass Production in Woodlands. In proceedings of 76th Professional Agricultural Workers Conference (PAWC), December 2-4, 2018, Tuskegee University, Tuskegee, AL.
- ***Karki**, U. (2019). Agroforestry Introduction and Pine Silvopasture System for Multiple Benefit. *Agroforestry and Woodland Grazing: Potential Benefits and Applications*. 127th Annual Farmers Conference, February 18-22, 2019, Montgomery, AL.
- Kumar, G., Li, M., Wise, D., Mischke, C., Rutland, B., ***Tiwari**, A., Aarattuthodiyil, S., Griffin, M., Khoo, L., Ott, B., Torrans, L., & Tucker, C. (2019). Performance of Channel Catfish in Single Batch intensively Aerated Ponds. *World Aquaculture Society Conference held on March 7-11, 2019 in New Orleans, LA*.
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***Bold** =NAPA Member

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***Bold** =NAPA member.

साहित्यिक कुना

कृषि कविता

नापा दिवसको कवि गोष्ठीमा प्रथम कविता

किसान दाइ

-केशब सुबेदी

लामटारीका फाँटहरुमा
आकाश, धर्ती, वर्षा र बादलसँगका अनेकन युद्ध जितेर
टुसाए एक पाखा गहुँका मुनाहरु
र सँगै टुसाए किसान दाईका सपना, आशा र भरोसाहरु
कठ्याँग्रिने रातहरुमा उनी आफै पोखिए पाखाहरुमा ममताको
राप बनेर
प्रचन्ड रापिला दिनहरुमा आफै पोखिए बारीहरुमा पसिनाका
थोपा बनेर
सुम्सुमाए तृषारोका घाउहरु पातहरुमा मलम बनेर
र अन्ततः भित्राए आफ्नै पसिनाको मूल्य एक जीवन चक्रको
साक्षी बनेर
सांसारिक भोगमा रूमल्लिएको मेरो मनले सोध्यो,
किसान दाई आखिर यो सब के का लागि?"
र उन्को आत्मा बोल्थ्यो,
"स्पेश-एक्स" का संसार हल्लाउने बैज्ञानीकहरुको भोकका
लागि
ता कि तिनले फेरी उडाउन सकुन अर्को सन्तुष्टीको रकेट
र मेरो नातिले टुसाउन सकोस गहुँका मुनाहरु "मार्स"मा पनि
र बगिरहोस् मेरो पुर्खाको रगत यो अनन्तको लागि
हाय !
किसान दाइको जीवन बोधको त्यो गहिराइ र गम्भिरता
यता मेरो जीवन र उद्देश्यप्रतिको यो उच्छृङ्खलता
उता बारीहरुमा किसान दाइको लगाब, समर्पण र त्यागको
असिमितता
यता भोग, बिलास र मादकताको सांसारिक रमिता
उता किसान दाइको रगत पसिना र दुखै दुख बीचको
स्वच्छन्दता
यता मेरो जितैजित र सुखै सुख बीचको बैराग्यता

हे किसान दाइ,
यसपाली म पनि जोल्छु वर्षे देखिको मेरो बाँझो बारी
र फलाउछु आफ्नै जीवन को अर्थ !

नापा दिवसको कवि गोष्ठीमा द्वितीय कविता

मलाई मात्र हो कि याद आउँछ तिमीलाई पनि?

- सन्तोष ढकाल

झिसमिसे बिहानीमा
घाँस काट्न जानु
हतार हतार फर्केर
काखीमा किताब च्यापेर
स्कूलतिर दगुर्नु
अनि
फर्कने बित्तिकै
वस्तु चराउन जानु
नढाँटी भन त
मलाई मात्र हो कि
याद आउँछ तिमीलाई पनि?

टन्टलापुर घाममा
हातमा फोका उठाउँदै
डल्ला फुटाउनु
बाले बारीको गह्रा जोतिरहदा
हलोको डोबमा
एउटा एउटा गरेर
मकैका दाना खसाल्नु
झमझम पानी परिरहदा
घुम ओढेर
खेतमा लिडको लगाउनु
आलीमा कुटोले खोपेर
मास, मस्याङ्ग लगाउनु
अर्म, पर्म गरेर
बाली भित्र्याउनु
तीन हल गोरु नारेर
दाइं हाल्नु
अनि
परालमुनी लुकामारी खेल्नु
नढाँटी भन त
मलाई मात्र हो कि
याद आउँछ तिमीलाई पनि? (क्रमशः)

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साहित्यिक कुना

कृषि कविता

अहिले त
पानीका मुहान पनि सुके अरे
खेतका गह्राहरुमा धाँजा फाटे अरे
हाम्रा बीउबिजनहरु मासिए अरे
रोपार अनि बाउसेहरु विदेश भासिए अरे
कहिलेकाहिँ
यी यावत कुरा सम्झेर
आँखा रसाउँछन् कि कुत्रि?
नढाँटी भन त
मलाई मात्र हो कि
याद आउँछ तिमिलार्इ पनि?

ती हिमचुचुराको फेदीमा
भेडीगोठ जगाउने
स्याउको जङ्गल बढाउने
ती पहाडका डाँडाहरुमा
उन्नत जातका गाई बाख्रा हुर्काउने
फलफूलका बाँगेचा सजाउने
अनि
तराइका मलिला फाँटहरुमा
धानको बाला झुलाउने
माटो सुहाउने बाली लगाउने
उन्नत प्रबिधि नेपालमा भित्र्याउने
अनि
बस्तीनै उजाड पारेर विदेशियेका
किसानहरुलाई देश फिर्ता बोलाउने
कहिलेकाहिँ
यस्तै मिठा मिठा सपनाहरु
देख्ने गछौँ कि कुत्रि?
नढाँटी भन त
देशको
मलाई मात्र हो कि
याद आउँछ तिमिलार्इ पनि?

नापा दिवसको कवि गोष्ठीमा तृतीय कविता

यात्राको क्रममा

- गोबिन्द बराल

म बिकासे कर्मचारी बनेर
सुदूरपश्चिम जाँदा
दार्चुलाको गोकुलेश्वर फाँट मसित रोयो
भन्यो
मसित क्षमता अनुसारको साधन भएन

लेऊ न नयाँ नयाँ प्रबिधि
म एक हातका मकैका घोगा पल्टाईदिउँला
म एक बित्ताका गहुँका बाला उफारिदिउँला
तर मैले भनें
हेर मसित पनि सीमित स्रोत छ
तोकिएकै स्थानमा मात्र काम गर्नुपर्छ
ठीकै छ
तिम्रो यो गुनासो योजना शाखामा सुनाईदिउँला
लेखेर सबलाई झक्झक्याईदिउँला

अगाडि बढ्दै जाँदा
केराको पातले च्याँठिएर बोलायो
बजार खोज्दैऊ न
म सम्पूर्ण किसानहरुलाई समृद्ध बनाईदिनेछु
पैसाले डकार्ने अबस्थामा पुर्याईदिनेछु

छलेर हाईटेक जुत्ता र कालो चश्मामा सजिएको म
तुम्लेट भिरेर हिमाली क्षेत्रमा पुग्दा
आलुले त झण्डै खप्परमा हानेन
उसले भन्यो
थईक्क नामर्द, म जस्तोलाई हिमालमै कुहाएर
भारतबाट आयातित कुहिएका आलु चिप्स खान्छौ
निरिह प्राणी मसित आलुलाई दिने जवाफ थिएन

किनभने
आफ्नै दाजुभाई बीच खिचातानी छ
यसबारे सोच्ने कसैलाई फर्सद नै छैन
योजनाकारलाई त यहाँ आउने फुर्सद नै हुन्न
गोष्ठी र सेमिनार नभएको त कुनै दिन नै हुन्न
म यसो गर्छु' र उसो गर्छु' भन्दै
गफ नचुटेको कुनै कार्यक्रम नै हुन्न
म के गरुं?
स्रोतहरुको परिचालन नगरी दीगो बिकास हुन्न
राजनैतिक प्रतिबद्धता नभई यो सब सम्भव हुन्न

त्यसैले
निर्णय दिन नसके पनि जरुर म यो सुनाईदिउँला
गर्ने नगर्ने तिनकै हातमा,
सिंहदरबारमा छिर्न पाएँ भने
यो गुनासोको पोको तिनीहरुको टेबुलनैरे फुकाईदिउँला

Findings of Jit-Shavitra Research Mini-grant Projects

Effect of different types of fertilizers on vitamin C content of cauliflower (*Brassica oleraceae* var. *botrytis*) in Dang District of Nepal

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This study was conducted at horticulture farm of Mid-Western Academy and Research Institute Campus of Live Sciences, Tulsipur, Dang in 2018 to determine the response of different types of fertilizers on vitamin C (Ascorbic acid) content and yield of cauliflower. The experiment consisted of seven treatments with three replications, laid out in factorial randomized complete block design. The effect of compost (14 ton ha⁻¹), vermi-compost (11.4 ton/ha), farm yard manure (18 ton ha⁻¹), mustard oil cake (8 ton ha⁻¹), normal NPK (120:60:60 kg ha⁻¹), control and poultry manure (14.4 ton ha⁻¹) were evaluated. The vitamin C content was found to be highest in vermi-compost (13.29 mg /100 gm), while the lowest was found in the control treatment (10.17 mg /100 gm). Similarly, mustard oil cake produced highest yield of 16.04 ton ha⁻¹, while the control produced the lowest yield at 5.02 ton ha⁻¹. Moreover, mustard oil cake had significantly higher curd diameter of 15.6 cm, while the control had the lowest diameter of 5.3 cm. This study concludes that vermi-compost was effective in increasing vitamin C content and mustard oil cake in increasing curd diameter and yield of cauliflower in Tulsipur condition.

Key words : vitamin C, yield, cauliflower, fertilizers.

Germplasm evaluation of cowpea (*Vigna unguiculata* (L.) Walp.) in Dang District of Nepal

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A trial on cowpea genotypes received from the Horticulture Research Division, Pokhara was carried out at horticulture farm of Mid-Western Academy and Research Institute Campus of Live Sciences in 2018 summer season to evaluate their adaptability in Dang area of Nepal. Three different cowpea genotypes with four checks were tested on randomized complete block design with three replications. Data were recorded as a number of days to 50% emergence, number of days to 50% flowering, plant height, number of branches, number of leaves per plant, pod length, individual pod weight, number of green pod per plant, number of seeds per pod, yield per plant and yield per plot. Tested genotypes differed significantly for vegetative as well as yield parameters. The highest pod length was obtained from Long Yard Bean (57.54 cm) followed by Malepatan-1 (25.11 cm),

Prakash (22.78 cm), Gajale-Bodi (18.36 cm), IT04K-227-4 (17.65 cm), IT86F-2062-5 (16.42 cm), IT07-298-15 (14.34 cm). Similarly, the highest pod weight was found in Long Yard Bean (19.80g), while it was lowest in IT07-298-15 (3.52g). The highest yield (4.90 ton ha⁻¹) was recorded from Long Yard Bean followed by Gajale-Bodi (4.79 ton ha⁻¹), Malepatan-1 (4.77ton ha⁻¹), IT04-227-4 (3.89 ton ha⁻¹), Prakash (3.88t/ha), IT86F-2062-5 (3.58 ton ha⁻¹) and the lowest (2.88ton ha⁻¹) from IT07K-298-15. Economic analysis revealed that Long Yard Bean had significantly higher benefit-to-cost ratio of 1.91 and IT07K-298-15 had the lowest ratio of 1.09. Long Yard Bean showed promising adaptation to Dang's condition.

Keyword: genotype, evaluation, vegetable, cowpea.

Study on effect of phosphorus on growth and flowering of marigold (*Tagetes erecta*) in Dang area of Nepal

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A field experiment was conducted to study the effect of phosphorus (P) on growth and flowering of marigold (*Tagetes erecta*) at Mid-Western Academy and Research Institute Campus of Live Sciences, Tulsipur, Dang in 2018. The treatments comprised of seven different rates of P (0, 20, 40, 60, 80, 100, 120 kg ha⁻¹) which were laid out in randomized complete block design (RCBD) with three replications. Rates of nitrogen (200 kg ha⁻¹) and potassium (90 kg ha⁻¹) were constant across the treatments. The variety used in this experiment was Sun Orange. Data were collected using simple random sampling without replacement. Application of P significantly affected the various yield governing parameters such as number of branches, number of flowers per plant, flower diameter and flower weight. However, effect of P on plant height, days to first bud appearance, and days to flowering were non-significant. Notable observations included: maximum plant height (54.06 cm) in the treatment containing 20 kg P ha⁻¹, maximum number of branches in 100 kg ha⁻¹, maximum number of flowers per plant at peak bloom stage was 42 at 80 kg ha⁻¹, maximum fresh flower diameter (7.55cm) in 100 kg P ha⁻¹ and maximum fresh flower weight (15.96 gm) in 100 kg P ha⁻¹. Likewise maximum yield obtained in three successive harvesting (622.39 gm plant⁻¹) was in the treatment with 100 kg P ha⁻¹ and the minimum yield (349.43 gm plant⁻¹) was in the control treatment. From this experiment, we conclude that the application of P at 80 to 100 kg ha⁻¹ is optimum to maximize marigold production at Tulsipur, Dang condition.

Key words: phosphorous, marigold, yield, flower.

Global Food Security through Agricultural Transformation

Concise version of the article that won 2nd Place Award in the Student Writing Contest organized by NAPA in 201

By Santosh Pathak, Email: santoshpathak153@gmail.com



In this first quarter of 21st century, world agriculture witnessed tremendous development ranging from widespread farm mechanization, development of vigorous seeds, and incorporation of information and communication technology (ICT) to extensively linked-up product marketing. As a result, food production and productivity are boosted and farming activity is not as onerous as it used to be in its traditional form. Farms have not transformed over time, but the ways of farming have. Thanks to hybrids seeds, tractors, and cell phones for not only enabling the farmers to have enough food — a state of food security— but also to all those people involved in off-farm and non-farm activities.

Food is the basic and foremost necessity of our life; therefore, it is our fundamental right to have food for living. As per World Food Summit 1996 report, availability of food merely does not ensure food security; it also incorporates food access, utilization and stability. Food is vital and no other rights can be cherished until right to it is guaranteed. In 1948, United Nations recognized this right in the Declaration of Human Rights whose violation leads to a situation called food insecurity, wherein, there is limited or uncertain availability of nutritious food in safe and sufficient manner. One out of nine, i.e., 815 million people around the globe do not have enough food to eat. Asia is the home to most of the hungry people followed by Africa. FAO claims hunger taking lives of approximately 795 million people, more lives than fatal diseases like AIDS, malaria, and tuberculosis. Through the use of cutting-edge technology, the people of northern hemisphere have leaped much ahead in terms of food production while those of the south being always reliant on traditional farming are still far behind; therefore, the focus now on should be redirected to that part of world where agriculture is the prime occupation and whose topographical and climatological features favor variety of food production.

The global population has reached the figure of 7.6 billion and is projected to rise annually by 1.1%. By 2050, the world must feed more than 9 billion people and the food that is being produced now will be enough to feed only about half of the total population. Alexandratos and Bruinsma (2012) have asserted that farming communities will be pressurized to boost up the production by 60% in coming 35 years. Given these challenges, there is no other option than transforming our agrarian system to augment both the food produc-

tion and productivity. As have been previously thought, agricultural transformation can't take place simply with the sole attempt of the farming communities. Instead, it should be so holistic that government, business stakes, farmers, consumers and every other individual should have their hands joined with each other to achieve a fruitful result. Food security won't be a distant goal if agricultural system in developing parts of the world is well-incorporated with technology, policy intervention and concerted efforts. Global thoughts and local actions can be equally helpful in attaining acclaimed mission of food security.

Human muscles are still the greatest source (60%) of farm power in African and Asian sub-continent where engine power contributes less than 20% to the total farm power. The scenario of agriculture in these regions can never be uplifted to newer height unless muscle power is replaced with efficient machinery. North America engages about 2% population in farming to feed its population and has 700-1850 tractors per 1000 farmers, while Asian countries have majority of the population in farming with only 3-6 tractors per 1000 farmers. This exemplifies how machines can be boon for farm work efficiency, productivity and profitability. Mechanization is equally indispensable for timeliness and quality of work relieving the farm owner from labor shortage issues and making farmers able to harness much from their existing level of land.

Biotechnological products like *Bt* cotton, golden rice, genetically engineered meat and *Holstein* cow have been acclaimed worldwide. The developed countries have advanced much ahead in the use of biotechnology. If this knowledge and technology could be transferred to wider part of the globe, then new avenues will be opened both in terms of production and consumption pattern. Intervening genes will have huge impact in raising production and productivity, thus contributing to feeding more individuals.

There is a trend worldwide that both the farming population and the enrollment of student in agricultural program is declining (Garwe 2015). At the same time, many people of developing countries are abandoning farming considering it to be profession of laggards and illiterates only. Such values must be changed to appreciate that there can be no profession laudable than feeding lives. Efforts are anticipated in every way to make agricultural sector a pool of energetic and enthusiastic young minds for bringing out real transformation.

Global Food Security through Agricultural Transformation (Cont..)

People in developing parts of the globe are dying for want of food, whereas in the developed countries, there is growing proportion of obese population and more than 70 billion pounds food is wasted annually as per reports of Global Food Forum (2016). Besides, developed countries have been using large amount of grains to produce bio-fuel. These activities are against the norm of living and letting others live. There is a dire need to minimize food wastage and use of food as bio-fuel with strict legislation, awareness, lobbying and enforcement.

ICT has been integral part of human life at present. At times when every sector is taking undue benefit from it, agricultural system should not be deprived of its use. Integration of ICT with production and marketing process can serve to increase efficiency and productivity. The gains of ICT enabled FruTIC in Argentina; iCow in Kenya; OPPAZ in Zambia; Nano Ganesh in India; and Smart Krishi in Nepal have been promising. If ICT is further amalgamated in our farming system, then crops and livestock sector will advance more rapidly. Without qualms, smart agriculture will play smart role in achieving the target set by Sustainable Development Goals and Millennium Development Goals regarding food security.

The world is continuously being alarmed by the whims of increasing global temperature and climate change. Global warming may have slightly positive impact initially, especially in the temperate regions; but risks and uncertainties with harmful consequences may prevail in the long run, as climate change literature suggests. Many developing countries have introduced the concept of climate smart village. This concept has potential merits in developing local adaptation practices against global headache. Hydroponics, aeroponics, aquaponics are emerging and they must be spread out to greater share of community. Equal emphasis to small scale farmers, securing their access to factors of production, package of practices, financial services and market is required. Now we should extend the agricultural systems to embrace the value-chain from production, through processing, value addition to marketing components. Strengthening local value-chain system on these issues can be pivotal in ensuring food security.

Our forefathers enjoyed diverse recipe of products from different wild and domesticated crops. Crop diversity led to nutritious diet, while reinforcing sustainability and resilience. As time advanced, the diversity is eroding at greater pace. Less than 10 crop species dominate production and consumption pattern. In this regard, seeking alternative foods for sustained supply of nutrition can be remarkable. For example, humans have already realized the nutritive advantage of algae.

And, only nominal investment is required to harness the

benefits of this super food. Redirecting research in similar other alternative foods, like *Nori* (seaweed) in Japan, will also prove to be crucial in getting rid of food insecurity.

Food insecurity can't be combated only by agro-technical solutions unless backed up by political resolution. This can be proved by the fact that, in actual, food supply on the globe is abundant. It is reported that worldwide production is enough to supply minimum of 4.3 pounds of food per capita per day. But, due to poverty, people are not able to afford even the minimum price tag. Right policy, adequate resources and unwavering commitment will help in reducing the food disparity among individuals within the nation and around the globe.

Furthermore, food security is threatened not only by the reduced production, but also attenuated by the changing taste of consumers. The consumption pattern is shifting to processed food, meat and dairy products. Becoming conscious in what we eat and how we eat can also mean a lot in ensuring right to food of more number of people. The changeover in agriculture for food security doesn't only mean reshaping production system. Instead, our efforts should also be equally aimed to transform the way of processing, value creation, storage, marketing, and ultimately the consumption behavior.

Henceforth, prioritizing vertical expansion, mainstreaming gender issues in our action plan, prioritizing capacity building of small holder farmers, extending linkage and cooperation, increasing existing level of investment in research and technology, and uplifting rural infrastructures and extension facility can be boon in attaining our ultimate goal. Formulation of policy against land fragmentation and unplanned urbanization is also equally necessary. Gene intervention and farm mechanization are unseen heroes in fighting against food insecurity. Agriculture will be transformed and food security will be ensured in the day when farms become not only the place of congregation of uneducated farmers, but also of young minds, smart farmers, entrepreneurs and scientists.

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An Appeal To Join/Renew NAPA Membership

NAPA would like to remind all members other than Life Members and Associate Members from Nepal to renew membership for another term (2018-2020) that started from the Oklahoma Conference (May 26-27, 2018). If you are not sure of your renewal date, please contact us at napa2072@gmail.com. Your contributions thus far to bring NAPA to the current level is greatly appreciated. Meanwhile, we would like to request potential members to join NAPA. We look forward to receiving your continued support and contribution (time, money, expertise, and creative ideas/thoughts) to advance NAPA to the next level - *'a common professional platform -for all of us.'*

A few reasons to join/renew NAPA membership:

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- Opportunity to sponsor scholarships and research mini-grants in preferred agricultural institutions and disciplines in Nepal through NAPA
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- Opportunity to share scientific works, experiences, and expertise via NAPA's Talk Sessions (Webinars) and Online Teaching/Learning Programs
- Joining global expert repository to contribute to Nepalese Agriculture and beyond
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Thank you.

On behalf of NAPA Executive Committee

Dr. Pradeep Wagle, General Secretary and Chair Membership Drive Committee

Renew now



Rambling about agricultural development planning in Nepal



Some 40 years ago in our elementary course, we were introduced about the comparative advantage of agricultural commercialization and rural development in Nepal. Courses like Social Studies and Pre-vocational Education had touched upon aspects of diverse

climatic conditions, trove of natural beauty and wealth of natural resources offering plenty of potentials, while shedding light on the fragile landscape to be farmed through conservation technology, and poor accessibility to be opened up through north-south highways as a trade and growth axes.

It was an era of top-down transfer of technology and centralized development planning. High mountain, mid hills and Terai were identified as three agro-ecological zones with different comparative advantages. High mountains had been characterized to have higher potential for tourism, livestock herding and potatoes production, middle hills for terraced conservation farming of staple crops, vegetables and sub-tropical fruits, and Terai for staple food and industrial crops with potential for mechanized farming. The lands were classified into four capability classes - *Abbal*, *Doyam*, *Seem*, *Chaar* based on productivity and fragility factors. Several north-south highways were conceptualized as growth axes to promote the domestic marketing and cross-border trades. Several agricultural research centers and extension network were established to foster innovations of relative advantage across the country. Nepal would export rice, pulses, ghee, raw medicinal products and timbers. Poverty and illiteracy prevailed among people, but there were more hopes than despairs.

As we grew up and went through post-secondary education and professional pursuits, the country witnessed launching of numerous rural development projects, commissioning of Agricultural Perspective Plans and spurts of non-governmental organizations as complementary developmental actors. Investment intensity increased tremendously on research, development, technology transfer, awareness raising and social mobilization. The country also witnessed a rapid growth in educated and professionally trained manpower. However, the pace of development lagged far behind the growing needs and aspirations of people. The political change in 1990 eased the access to international job market. Then, Nepal changed from food exporter to food importer and manpower exporter country. Ultimately, the economy of the

country has become largely dependent on remittance.

I still believe that the developmental framework conceptualized several decades ago was visionary and realistic. However, the efforts in pursuit of the vision have been lacking. The country is now entering into 15th Development Plan. Hopefully, the plan will come out in more refined shape including the income stability and risk abatement measures in the agricultural production and marketing systems.

There is much scope to promote agri-industry based on comparative advantage along the rural to urban and productivity gradients, which I call generation-smart agriculture as outlined below:

- Peri-urban perishable cash crop industry producing seasonal fruits and green vegetables
- Peri-urban advance floriculture industry producing orchids, gladiolus, homestead ornamentals and various flowers targeted for hotels, temples, festivals and ceremonies
- Peri-urban dairy and poultry industry with proper waste management to abate downstream water pollution
- Rural non-perishable cash crop industry producing high value seed crops, non-perishable vegetables and spices such as ginger, turmeric, coriander, dry chillies, garlic, cinnamon, taro, pumpkin, potatoes; high value minor crops such as amaranths, quinoa, pulses; nuts such as walnut, almond, peanuts; citrus fruits, apples, dry fruits and dry vegetables processing plants; and medicinal plants such as *harro*, *barro*, *amala*, *jatamashi*, *chiraito* etc.
- Resource augmentation support systems such as large hydro-electricity for fertilizer industry, small hydro units for agricultural product processing and refrigeration, water harvesting reservoirs, rustic/cellar cold storage.
- Rural goat and sheep farming with proper watershed management plan
- Income stability and risk abatement support mechanism such as insurance for crop, livestock and agro-industry

What is essential is **credible** leadership with **clarity** of vision, **creative** plan, **collective** efforts, **committed** workforce and **credit** for contributions – the 6 Cs.

Thank you

Nityananda Khanal, Ph.D., P.Ag.

Editor-in-Chief

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