Greetings from the President

Happy New Year 2075 to you all,

I feel honored to update some of the accomplishments of this first EC that started its journey on May 27, 2016. Within this short period, NAPA has made remarkable progress through the collective efforts of our dedicated members and volunteers. With immense pleasure, I would like to share with all of you that NAPA has evolved from scratch to a rapidly growing vibrant professional association that now has 242 members from 39 states in the US, Canada, Nepal, Mexico, and Australia. The EC has 14 functioning committees: Advisory Council, Agri-Connection, Scientific Talks/Web Conferencing, Book, Research/Policy Brief, Journal, Membership Drive, Student Coordination, Scholarship, IT Support, Working Papers, Conference Organizing, Local Management, and Election Commission. Our dedicated committee members and volunteers have invested countless hours to accomplish the achievements we have made thus far, offered various services to the community and addressed many issues and expectations of the members. Some of our accomplishments are: collaboration with several individuals and institutions/organizations in various countries but not limited to Australia, Canada, Japan, Mexico, Thailand, and Nepal. Additionally, we organized 11 scientific talk sessions/web conferences, initiated database of Nepalese women professionals in agriculture, established endowment funds amounting over $800, launched distance teaching/learning in Nepal, published eight issues of Agri-Connection (an online quarterly newsletter), and published two issues of Research/Policy Brief (online). Moreover, we raised funds and donated to flood victim ($4,428), and victim of a fatal car/vehicular accident ($1,260), established 33 scholarships amounting more than $2,510 with the support of generous donors.
Furthermore, a book entitled ‘Food Sustainability, Food Sufficiency, Food Safety, and Healthy Food in Nepal: Principles and Practices of Food Security’ and an inaugural issue of the NAPA’s flagship journal ‘Global Journal of Agriculture and Allied Sciences’ (GJAAS) publication are in progress.

Similarly, the first ever NAPA Biennial Conference is underway. We have received over 125 scientific submissions (98 abstracts for scientific oral and poster presentations, 17 essays for the competitive students’ writing contest, and nearly 15 agri-poems so far). This conference is convening over 210 scientists, professionals, and students from 71 institutions to one platform as authors and co-authors, who are working and/or collaborating in ten countries around the globe. We are thrilled to welcome and witness the invaluable scientific contributions that encompass the conference theme ‘Global Food Security through Agricultural Transformation’. We have already over $3,000 support for the conference, and any one of you are more than welcome to chip in any amount online or by contacting our NAPA Treasurer. No amount is too small.

I salute all those hard working individuals for their unwavering commitment in this enduring journey of NAPA from day one. These accomplishments were possible because of your strong support and commitment. Finally, I sincerely thank and appreciate all dedicated volunteers (entire members, chairs, co-chairs, and members of various committees, subcommittees, and advisory council members) for their altruistic and enthusiastic contributions in expanding NAPA across the globe. Last but not the least; we highly appreciate all contributors and volunteers to bring this issue of Agri-Connection to fruition on time.

On behalf of the EC and COC, we are looking forward to welcoming you all to the historic first NAPA Biennial Conference in the beautiful Oklahoma City, Oklahoma, USA.

Together, we can make a difference.

Lila B. Karki, PhD
NAPA President and
Chair, Conference Organizing Committee

Keynote Speaker at the NAPA Conference:

Dr. Jean L. Steiner

Jean L. Steiner is the Director of the USDA Agricultural Research Service’s Grazing-lands Research Laboratory in El Reno, Oklahoma where she leads and conducts research on watersheds, climate, and sustainable forage-grazing systems. She obtained her B.A. from Cornell College, Mt. Vernon, Iowa and M.S. and PhD degrees in Agronomy from Kansas State University, Manhattan, Kansas. She has been employed by the Agricultural Research Service since 1983, first in the Texas Panhandle, focusing on water conservation, crop residue management, and energy balance research in dryland agricultural systems and then leading research in the Georgia Piedmont region focused on sustainability of agriculture at farm and watershed scales. She has been with the Grazinglands Research Laboratory in Oklahoma since 2001. Dr. Steiner is the Co-Director of the Grazing CAP project entitled Resilience and Vulnerability of Beef Cattle Production in the Southern Great Plains under Changing Climate, Land Use and Markets. Dr. Steiner has served on the Board of Directors and as President of the Soil and Water Conservation Society and was the 2015 President of the American Society of Agronomy.
GLOBAL FOOD SECURITY THROUGH AGRICULTURAL TRANSFORMATION

NAPA CONFERENCE 2018


Presenting Students only: Please let Dr. Pradeep Wagle or NAPA President Dr. Karki know for registration fee waiver if your employer/supervisor is not supporting for the registration.

Biltmore Hotel Oklahoma
401 S Meridian Ave, Oklahoma City, OK 73108, USA
Phone: (405) 947-7681

Agri-Connection, Volume 3, Issue 1, March 2018
Benefits of attending NAPA Biennial Conference:

**Educational Content:** Almost 100 professional scientific presentations from scholars of over 71 institutions from ten countries and thought-provoking keynotes.

**Networking:** Networking with over hundreds of new colleagues/professionals of a wide range of agricultural and allied disciplines as well as rekindling old friendships.

**Fun-filled Cultural Program:** Performances from Honorary Consulate General Prem Raja Mahat, Nepalese Student Association at Oklahoma State University, other local talents, and NAPA members.

**Pre-conference tour to USDA on Friday:** Please let Dr. Pradeep Wagle know if you are interested for a tour to USDA facility for collaboration or learning opportunities..........

**Many more Benefits...............**

Please contact Dr. Pradeep Wagle or others of the organizing committee if you have any further questions.

---

**Registration Deadline Extended for NAPA Biennial Conference**

Due to increasing requests from our members who missed early registration discount deadline, we are extending regular registration deadline for the conference with no extra fees until May 1.

All presenters must register by May 1 (11:59 pm US Central Time), otherwise the abstract or poster will be dropped from the program.

An extra $15 fee (no excuses) will be charged for registration after May 1 and for on-site registration.

**Presenters from USA:** Please let us know (if you have not already informed) if you will not be able to attend the conference even though you have submitted abstract for a poster/oral presentation.

**Student Presenters from USA:** We will be waiving your registration (no need to register) and offer free accommodation (shared room with other students) at the conference hotel for three nights (May 25, 26, and 27). The registration includes free four meals for May 26 and 27, and free pass for cultural night on May 27. In addition, you will have opportunity to win cash awards from oral and poster competitions. Since NAPA is not financially strong to support your travel costs (i.e., airfares) NAPA encourages you all to arrange travel on your own (car pooling if possible). Please let us know as soon as possible if you are planning to attend the conference and competing for oral or poster presentations.

**Presenters who have already received travel award letter from NAPA:** You do not need to register because your registration is waived by NAPA as a token of small financial support. However, we would appreciate if you could inform us of the possibility of your presence/absence in advance.


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**Interested Volunteers are Still Welcome to Join Us**

The NAPA Biennial Conference Organizing Committee would like to welcome all interested volunteers to join us and share your expertise to enhance the collective strength to make the event a grand success. Please let the committee know your willingness to serve on any of the committees/events or if you have any questions by emailing at napaconference2018@gmail.com and napa2072@gmail.com
NAPA Pre-Conference Tour

If you are attending NAPA Conference and interested for a tour to a nearby (~25 min driving distance) United States Department of Agriculture (USDA) office for collaboration/learning opportunities on Friday (May 25), please see below for the details and let Dr. Pradeep Wagle or NAPA know. We will arrange transportation from/to hotel. Please do not hesitate to contact if you have any questions.

NAPA Pre-conference Tour

USDA-Agricultural Research Service
Grazinglands Research Laboratory, El Reno, Oklahoma

When: May 25, Friday (Time: TBD)  
Contact Person: Pradeep Wagle (waglepradeep@gmail.com)

Home of:
- Forage and Livestock Production Research
- Great Plains Agroclimate and Natural Resources Research
- Water Availability and Watershed Management Research
- 6700 Acres Research Facility
- ~800 Cattle Herd
- USDA Long-term Agroecosystem Research
- GRL-FLUXNET (a network of integrated GHG flux measurement)
- USDA Southern Plains Climate Hub
- BlueSTEM AgriLearning Center
- 60+ Full-time Employees
- 10+ Student Employees and Interns

USDA-ARS GRL Mission:
To develop technologies and planning tools for integrated forage-livestock-bioenergy systems that help landowners and natural resource managers to manage economic and environmental risks under variable climate, energy and market conditions.

Local Management Committee at NAPA Conference in Oklahoma, USA
- Pradeep Wagle: Chair
- Omkar Joshi: Logistics, Advertising
- Rajen Bajgain: Registration
- Pratishtha Poudel: Door Prizes
- Monika Ghimire: Badges and Inauguration
- Manoj Chhetri: Sports
- Govinda Sapkota: Cultural Program
- Naba Raj Amgain: Sound System
- Dr. Tanka Kandel
- Dr. Pradip Adhikari
- Ms. Sulochana Paudel
- Kundan Dhakal
- Dr. Sonisa Sharma
- Dr. Girija Regmi
- Airport pickup and drop off: Girija/Pradeep/Rajen/Tanka
NAPA BIENNIAL CONFERENCE REGISTRATION


<table>
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<tr>
<th>Early Registration by May 1, 2018 Rates (US $)</th>
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<tr>
<td>Regular member</td>
<td>100.00</td>
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<tr>
<td>Student member</td>
<td>75.00</td>
</tr>
<tr>
<td>Spouse (Joint member)</td>
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<tr>
<td>Spouse (Non-member)</td>
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<tr>
<td>Professional (Non-member)</td>
<td>175.00</td>
</tr>
<tr>
<td>Guest</td>
<td>50.00</td>
</tr>
</tbody>
</table>

**Note:**
Registration fee includes four meals (lunch and dinner on May 26 and 27), cultural night ticket, and door prizes. An additional $15 fee will be charged for each category of membership after May 1, 2018 or for ONSITE registration.


Hotel Reservation


NAPA discounted room rates are **$55.00 per night for King and Double rooms, and $70 per night for Suite rooms**. These room rates include breakfast for two guests per room. A block of the hotel has been allocated for NAPA conference participants. Please tell the code **PM 9004** when you call hotel to get the allocated block for NAPA at discounted rates. The discounted room rates will be available on a first come first serve basis until **May 10, 2018**.
The 2018 NAPA Election Commission invites nominations from eligible members for all the executive positions for the 2018-2020 term. While only the current executive members are eligible for the position of president, all the General Members and Student Members are eligible for all other positions. Associate and Joint members are not eligible for any of the executive positions.

1. President: Only current Executive Committee members are eligible for this position.
2. Vice President
3. General Secretary
4. Joint secretary
5. Treasurer
6. Executive member #1
7. Executive member #2
8. Executive member #3
9. Executive member #4
10. Executive member #5
11. Executive member #6

Please obtain the nomination form from and email the filled form to the Election Commission at: napaelec2018@gmail.com

Nomination closing date and time: April 25, 2018 at 5:00 PM CST


Note to candidates: The Election Commission will request a vision statement (or statement of purpose) from the candidates regarding the position and their plans for NAPA, so the Election Commission can share that with all voters.

**2018 NAPA Election Commission**

Dr. Nanda P. Joshi, Chief Election Commissioner, Michigan State University, East Lansing, MI, USA
Dr. Ram Acharya, Commissioner, New Mexico State University, Las Cruces, New Mexico, USA
Dr. Buddhi Lamsal, Commissioner, Iowa State University, Ames, Iowa, USA

**NAPA Cultural Night**

Enjoy a fun filled cultural night led and presented by the most popular singer, Honorary Consular General of Pennsylvania and Maryland States of America [Mr. Prem Raja Mahat](#) and his talented team on the closing night of the conference. Some of his most famous folk songs include Simsime panima, Akasaima jooon, Banjho khetma, Hariyo dollar, etc. We can all sing and dance to his wonderful voice and rhythmic dance.
NAPA Scholarships for Academic Excellence Management Committee

Dr. Lila B. Karki, Chair
Ms. Ambika Tiwari, Treasurer
Dr. Prem B. Bhandari, Member
Dr. Megha N. Parajulee, Member
Dr. Pradeep Wagle, Member
Dr. Rajan Ghimire, NAPA Liaison
Dr. Kalyani Mishra Tripathi, AFU Liaison

NAPA Walk & Run

When: May 26, 2018
Where: Oklahoma City, Oklahoma, USA,
What Occasion: NAPA Biennial Conference

Dr. Khusi Ram Tiwari (# 531 on the picture), NAPA Member and AGM Chair at the OK Conference is also a Marathon runner. We are glad to announce that he is going to lead the NAPA ‘Walk & Run’ for fun and health at the conference. Details will follow soon.

Notice: Do not forget to attend the event!

NAPA Scholarships for Academic Excellence Management Committee

Dr. Lila B. Karki, Chair
Ms. Ambika Tiwari, Treasurer
Dr. Prem B. Bhandari, Member
Dr. Megha N. Parajulee, Member
Dr. Pradeep Wagle, Member
Dr. Rajan Ghimire, NAPA Liaison
Dr. Kalyani Mishra Tripathi, AFU Liaison

Abstract Submissions for Oral and Poster Presentations

<table>
<thead>
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<th>Countries</th>
<th>Total</th>
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<tbody>
<tr>
<td>Nepal</td>
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<tr>
<td>Australia</td>
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<tr>
<td>Benin</td>
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</tr>
<tr>
<td>Canada</td>
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<tr>
<td>Ethiopia</td>
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<td>China</td>
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<td>Vietnam</td>
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<tr>
<td>Tanzania</td>
<td>1</td>
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<tr>
<td>Nigeria</td>
<td>1</td>
</tr>
<tr>
<td>USA</td>
<td>62</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>98</strong></td>
</tr>
</tbody>
</table>

Note: Detail breakdown by type of presentations, areas of submission, session and further information will be posted on NAPA website and communicated to the corresponding authors by the Scientific Sub-Committee. Submissions by country implies either collaborative or independent submissions by authors.
Airport Connections:
Will Rogers World Airport (OKC), Oklahoma City (OKC)
Link for non-stop services from and to OKC: http://www.flyokc.com/Cities.aspx

Driving Distance/Time from Neighboring States, Universities or Major Cities

Dallas-OKC: 3 hours 20 min,  
Lubbock-OKC: 5 hours,  
Phoenix-OKC: 14 hours,  
Denver-OKC: 9 hours 30 min,  
Ames, IA-OKC: 8 hours,  
Kansas City-OKC: 5 hours,  
Athens (GA)-OKC: 14 hours,  
Auburn-OKC: 12 hours 17 min,  
Knoxville-OKC: 12 hours 15 min  
Houston-OKC: 7 hours  
Las Cruces-OKC: 10 hours  
Baton Rouge-OKC: 9 hours  
Lincoln, NE-OKC: 6 hours 20 min  
Manhattan (KS)-OKC: 4 hours 20 min  
Atlanta-OKC: 12 hours  
Tuscaloosa-OKC: 10 hours 20 min  
Starkville-OKC: 9 hours 15 min
Association of Nepalese Agricultural Professionals of Americas (NAPA) (www.napaamericas.org) announces a Call for Sponsors from interested individuals/families towards establishing NAPA Scholarships for Academic Excellence. This Scholarship is established with the goal of supporting diligent and qualified students from academic institutions that offer courses in agricultural sciences in Nepal. These institutions include but not limited to:
- Agriculture and Forestry University (AFU)
- Institute of Agriculture and Animal Science (IAAS, Tribhuvan University)
- Other universities, colleges, polytechnic institutions, and schools of agricultural sciences.

**Sponsorship**

Sponsors, in consultation with the NAPA Scholarship Committee, will have an opportunity to name the scholarship (e.g., sponsor’s name, beloved ones, or any other professionally appropriate names). For information to sponsors, current meritorious scholarship amount is NRs 6,000.00 (Six Thousand Nepali Rupees) per year and freeship amount is NRs 3,800.00 (Three Thousand and Eight Hundreds Nepali Rupees) per year at AFU. In addition, other scholarships of any amounts may be established as per the interest of sponsors.

**Criteria for Scholarship Recipients**

Scholarship recipients may be selected based on academic excellence (within specified caste/ethnicity, gender, and region or any other academic criteria envisaged by sponsors). Sponsors will have the opportunity to name of the scholarship and define selection criteria, in consultation with NAPA Scholarship Committee, or sponsors may grant the selection authority to NAPA. NAPA will select recipients in consultation with the recipient institutions as per the memorandum of understanding (MoU) between NAPA and the scholarship recipient institutions. NAPA will proudly coordinate with the target institutions to formalize the scholarship.

We request interested individuals/families and institutions to show your generosity by sponsoring at least one or more or any amount of scholarships for a cause. As of January, 2018, fifteen sponsors have pledged scholarships of a total of over 250,000.00 Nepali Rupees annually. Drop by drop fills a pot. Your generous donation is our inspiration to serve the community back home.

**Your Pledge and Required Information**

Interested sponsors are requested to pledge your scholarship by providing the following information to NAPA at: napa2072@gmail.com
- Name of sponsor(s):
- Contact information of sponsor(s)
- Name of scholarship(s)
- Amount of each scholarship(s)
- Number of scholarship(s)
- Desired institution(s) in Nepal for this scholarship
- Criteria for each scholarship recipient.

As always, NAPA appreciates your generosity and support.

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**NAPA Scholarship for Academic Excellence Sponsors**
- Ambika-Khusi Ram Tiwari
- Bharat Mani-Sarala Risal
- Bijay-Narendra Risal
- Binita Tiwari
- Gopi Upreti
- Kemika Bhandari
- Krishna Paudel
- Lekha Nath-Pratibha Paudel
- Ramesh-Mandira Khanal
- Megha-Sharmila Parajulee
- Monika-Pradeep Wagle
- Sujeet-Srijana Sah
- Surendra Osti
- Usha-Prem Bhandari
- Uma-Lila Karki
Remittance Received by Households Varies by Migrant’s Destination

Prem B. Bhandari, University of Michigan, Michigan, USA.

Summary: This study explored whether a household’s receipt of remittances as well as the amount of remittances received varies with country of work of the migrant member of the family. Using household level data from Chitwan Valley in Nepal, the study shows that both the receipt as well as the amount of remittances received by a household depends on the country of work of the migrant. Households received higher amount of remittances from countries with high earning potentials (such as the Middle East, East or Southeast Asia, United States, Australia and Europe), when compared to domestic migrants or those to India.


Call for Working Papers

This is an announcement for the publication of Working Paper Series on agricultural and related disciplines. NAPA members are requested to submit their relevant work to Dr. Panthee. You may submit it in a journal article format such that it helps you publish with minimal effort later. Publishing as a working paper will not hinder you from future publication in any peer reviewed journal in any way whatsoever. It will in fact help you streamline your manuscript such that you will receive fewer reviewer comments for improvement. Please contact Dr. Panthee, Editor-in-Chief, at drpanthee@yahoo.com for further details.
Talk Session Summary
Biotechnology in Agriculture
Dr. Khusi R. Tiwari
Plant Breeder, Monsanto Company
(NAPA Member and Forthcoming AGM Chair)

NAPA’s eighth Talk Session was held on March 24, 2018 by Dr. Khusi Ram Tiwari on a very relevant topic of Biotechnology in Agriculture. Dr. Tiwari is a Plant Breeder with several years of plant breeding expertise working with NARC, Nepal, and Pioneer Hi-Bred and Monsanto Company in the USA. Currently, he is a Senior Plant Breeder for Monsanto Company. He is also an adjunct faculty at Mississippi State University. Dr. Tiwari has published several research articles in peer reviewed journals and has been granted 51 patents from the US patent office. He is a member of Crop Science Society (CSSA) of America, American Society of Agronomy (ASA), National Association of Plant Breeders (NAPB) and Association of Nepalese Agricultural Professionals of Americas (NAPA) and Forthcoming AGM Chair.

NAPA President Dr. Lila B. Karki welcomed the participants and the speaker. The program was moderated and facilitated by NAPA General Secretary Dr. Prem Bhandari.

Dr. Tiwari pointed out Biotechnology or genetic engineering as the application of scientific techniques to modify and improve plants, animals, and microorganisms to enhance their value. Modern biotechnology represents a unique application of science and technology that can be used to feed the growing population and for the betterment of society through development of crops with improved nutritional quality, resistance to pests and diseases, and reduced cost of production.

Dr. Tiwari highlighted several crop species such as corn, soybean, cotton, canola, alfalfa, papaya, sugar beet, brinjal (egg plant), apple, and potato with biotech traits. Important biotech traits currently used were herbicide resistance, insect resistance, disease resistance and nutritional quality. These crops with biotech traits have been successfully grown in North America, South America, Africa and Asia for the last 20 years with major economic and environmental benefits. He also highlighted the scope and importance of biotech crops for Nepal’s agricultural development in terms of increasing productivity in Nepal. He emphasized the need of developing appropriate legal framework for testing biotech products such as golden rice, citrus greening resistant oranges, insect resistant brinjal and many more new products to come in the future. He requested policy makers and law makers in Nepal to develop a framework to evaluate new biotech products. This presentation was very well received by the participants and very relevant for the agricultural development of Nepal.

Dr. Dilip Panthi (NAPA EC member and Associate Professor at NC State University) as the Discussant summarized the presentation and emphasized the need of increasing food production in Nepal by utilizing biotechnology. He also emphasized the importance of educating public about the benefits of biotechnology through formal and informal education in Nepal. The seminar was well attended by a large number of scholars globally through NAPA’s Zoom as well as Facebook live sessions. Participants enthusiastically raised several concerns and the application of genetic engineering in Nepal. His presentation can be found at http://www.napaamericas.org/talk-session.php or by contacting Dr. Tiwari at tiwarikr@hotmail.com.
Global Journal of Agriculture and Allied Sciences (GJAAS)
A publication of the Association of Nepalese Agricultural Professionals of Americas

CALL for PAPERS!

We are pleased to announce the publication of Inaugural Issue of Global Journal of Agricultural and Allied Sciences (GJAAS) (Online ISSN 2575-1670 and Print ISSN 2575-1662), a flagship publication of the Association of Nepalese Agricultural Professionals of Americas. We cordially invite you to submit your original (not published, submitted or under consideration anywhere) research or review articles on any topic related to agricultural and allied sciences to the journal for publication consideration. Refer to http://napaamericas.org/journal-authors-guidelines.php for publication guidelines. All submitted papers are subject to double-blind peer review.

We would also like to request you to forward this notice to your colleagues/researchers. We look forward to receiving your submissions for the first issue and on-going issues, but the submissions are encouraged throughout the year for consideration in future issues.

Please contact at (gjaasjournal@gmail.com) or Editor-in-Chief, Dr. Megha N. Parajulee at: m-parajulee@tamu.edu for further details.

A Big Thank You from the Editorial Board

We would like to express our deepest gratitude and heartfelt appreciation to the NAPA Executive Committee for trusting us with this great responsibility in disseminating the society activities to you all through Agri-Connection in a timely manner. As we have said in the very first issue, newsletter quality is a reflection of the enthusiasm, dedication, and progress made by each and every member of the society, both collectively and individually. While we hope to have accomplished that, it is up to you all to judge and evaluate whether we were actually able to live up to that responsibility. Now that our term is drawing to a close, we certainly expect the newsletter to be taken to new heights by the next editorial board. A big thank you to all of you who have helped us in this regard. We wish NAPA and AC a great success.
**NAPA Endowment Fund**

It is our pleasure to see NAPA moving forward with many ongoing and exciting activities. Accordingly, our community is also growing steadily, with membership comprising from a wide range of agricultural and allied disciplines and geographical regions. Foreseeing NAPA’s further expansion over time, it is imperative that we have a system of regular funding sources to ensure continued NAPA activities including emergency funds to support unforeseen events, such as the recent Louisiana flooding and Georgia car crash that affected our members. Such financial safety can be achieved via a carefully managed fund. Therefore, we now announce to establish a NAPA Endowment Fund. The Fund will be utilized as per the decision of the NAPA executive committee. Any NAPA members and interested generous individuals may contribute to this fund. Regulatory mechanism of the Fund will be developed and adopted by the NAPA executive committee in consultation with Advisory Council. Contributions toward this endowment will be recognized as below:

1. **NAPA Contributor:** Any amount an individual or institution would like to contribute.
2. **NAPA Regular Contributor:** $1 daily, $5 weekly, $20 monthly, $100 bi-annually, $200 annually for a fixed term, or any amount an individual would like to contribute to this cause.
3. **Tiered recognition level donation for the NAPA Endowment Fund:**
   - $≥1,000: Platinum Sponsor
   - $700-$999: Gold Sponsor
   - $500-$699: Silver Sponsor
   - $300-$499: Bronze Sponsor
   - $100-$299: Green Sponsor
   - <$100: Supporter

4. A donor can make multiple donations over time & the tiered recognition level will be changed to reflect this. For example, a Bronze Sponsor (donation amount $300) can move to become a Silver Sponsor after making an additional donation of at least $200 in the future.
5. Anyone may also make a material donation and/or a fixed property donation.

Every dollar counts. You will be identified as a generous contributor to make this happen as per NAPA’s vision. We are sure everyone will make a generous contribution towards our common goal. Please do note that all such contributions would be tax exempt in the USA.

Thank you and congratulations to our generous **Green Sponsors** of the Endowment Fund thus far:
- Ambika Tiwari
- Megha N. Parajulee
- Prem/Usha Bhandari
- Pradeep Wagle
- Uma Karki
- Lila B. Karki
- Kemika Bhandari
- Ramesh Khanal
How to join NAPA?

We would like to invite all agricultural professionals around the globe to join NAPA and contribute to achieve its objectives. You may send an application to napagp2072@gmail.com or ambikaadhikari100@gmail.com. Required fee may be paid through PayPal, credit/debit card or by sending a check to the Treasurer, Ambika Tiwari. Make sure to specify the purpose of the payment (e.g., Membership Fee) in the “additional information” box when pay through PayPal.

Regular or General ($50.00 for two years): Individuals who hold at least an undergraduate or bachelors or equivalent degree in agriculture or allied areas shall meet the requirements of this category.

Student ($25.00 for two years): Current students of agricultural and allied areas of studies who are at good standing student's status.

Life Membership ($500.00 One time): Individuals having met regular/general member's category and pays defined dues at a time.

Joint/Family/Spouse Membership ($15.00 for two years): Spouse of a member of any of the five categories (regular/general, student, life, honorary, and associate), who is not eligible for other categories of membership. Family member shall not have a voting right.

Associate Membership ($50.00 for two years, $500 for Associate Life member): Interested individuals who do not qualify for membership types above. Associate member shall not have a voting right and shall not be eligible Executive Committee member. An Associate member may qualify for Associate Life member with the necessary payment. Associate Membership from Nepal: One-time membership fee (Life Associate Members) of NRs. 5000 for those who are serving in Nepal to join NAPA as Associate members.

Honorary (No fee, but free to contribute any): Individuals having outstanding achievement in academic and professional career and contribution to the field of agriculture and allied areas around the globe.

APPRECIATION

NAPA would like to extend its appreciation to the USDA-ARS, Grazinglands Research Laboratory, El Reno, Oklahoma for contributing $1,000 toward the successful completion of first NAPA conference.
Advice to Nepali agricultural policymakers: Why you should not blindly jump onto ‘organic’ bandwagon

Dr. Jagadish Timsina, University of Melbourne, Australia

It is a widely recognised fact in South Asia, particularly in Nepal, that small farmers do not have the resources to buy high-yielding inputs, such as fertilizers or other chemicals (pesticides, herbicides, etc.) and water. They rely on the inputs that they already have on their farm. One of the main inputs required for high-yield are the nutrients. They are either sourced from the locally-available organic materials, or applied externally. Small farmers usually aim at low yields and rely on locally-available organic materials such as farmyard manure (FYM), composts, or crop wastes and residues in whatever amounts available in their farm. But such materials will not be enough for farmers who want to maximise their yield. The reality is that such on-farm sources of organic materials have low nutrient content, which cannot support high yields. For farmers to transition from subsistence to commercial agriculture, applications of inorganic fertilizers become absolutely necessary.

But the transition is not easy. There are several myths surrounding the use of chemical fertilizers and/or organic materials (organic fertilizers). Some sections of the society, particularly the activists or advocates influenced by NGOs or INGOs, the research community, and even government policy-makers and planners have a misplaced notion regarding the use of chemical or inorganic fertilizers. They believe the chemicals adversely affect soil quality and decrease crop productivity. These claims, however, have no scientific basis, and any decline in soil or crop productivity may be due attributed to over- or misuse of chemical fertilizers.

The purpose of this article is to clarify some common myths by providing scientific facts so that the farmers can understand that either the application of organic materials alone, or an inappropriate combination of the inorganic fertilizers and organic materials, will not yield desirable results. It is aimed to assist planners and policy makers to develop policies to promote for the rational use of inorganic fertilisers or organic materials (organic fertilisers) for achieving food security for an ever-increasing population and getting rid of poverty.

**Myth 1: Organic materials improve the physical properties of all soils**

A common myth is that the organic materials (or organic fertilizers) improve the physical properties (i.e., by improving water retention, reducing soil crusting, increasing soil porosity, and reducing erosion) of all soils. The reality is that the organic materials, particularly when used as soil cover or mulch, can improve the physical properties of only aerobic soils. As rice fields are deliberately flooded and puddled, and hence soil structure is destroyed during land preparation, organic materials cannot improve the soil structure of puddled rice fields. However, such improvements may be of importance for direct-seeded rice grown without puddling, or for non-puddled transplanted rice, which is being promoted through conservation agriculture in South Asia, including Nepal.

**Myth 2: Organic materials can provide required amount of nutrients for high yield**

Another widely propagated myth is that organic materials can provide the required quantity of essential nutrients for high yields. The reality is that organic materials contain minimal amounts of macro-and micro-nutrients. If the nutrients required for high yields are to be supplied through organic materials only, they would be needed in voluminous amounts to supply required amounts. For example, the commonly-used fertilizer urea contains 46% N (nitrogen) whereas FYM contains 0.5-1.0% N. Around 20 kg N would be required to produce 1 ton of rice. So, to produce 5-6 t/ha yield, the rice crop needs about 100-120 kg N. Some of this N will be available through the soil, while the remaining N should be supplied through organic sources or inorganic fertilizers. The exception is that organic materials, especially crop residues (e.g., rice residues), can supply...
(recycle) considerable potassium (K), sometimes even in excess of crop needs. The integrated use of inorganic fertilizers with organic materials should consequently account for this supply of K from organic materials. All concerned must remember that, large amounts of FYM (or any other organic materials) would be required compared to a small amount to supply the same amount of nutrients to the crop. Such large amounts of organic materials are not available with farmers, or will not be readily available through any other sources. Moreover, the nutrient content of organic materials are highly variable and they release nutrients slowly and at variable rates. Information on the period of nutrient release and on the rates by which nutrients are mineralized for the plants to absorb are not provided to farmers, leading to uncertainties in calculations of nutrients to be supplied through such sources. Further, due to the voluminous amount of organic materials, their handling, transportation, and storage will always be an issue. Thus, organic-only practice will be laborious, costly, and impractical.

**Myth 3: Organic fertilizers produce better quality products**

One globally spread (and perhaps believed) myth is that organic fertilizers produce better quality products compared to inorganic ones. The reality is that while organic fertilizers may result in better quality products it is not the application of organic fertilizers alone that results in an increase of anti-oxidants (e.g., total phenolic content). Scientific evidence shows that sustainable use of chemical fertilizers without the use of pesticides can result in high anti-oxidants compared to conventional farming with the application of chemical fertilizers and other chemicals. In fact, studies have shown that the polyphenol content (an anti-oxidant) could even be higher in plants applied with inorganic fertilizers as long as no pesticides are applied.

**Myth 4: Organic materials are cheaper than inorganic fertilizers**

Similarly, many believe that organic materials are cheaper than inorganic fertilizers. The reality is that inorganic fertilizers are actually cheaper than organic fertilizers on per unit of nutrient. Further, they have substantially higher nutrient contents (especially N, P, and K, but also other nutrients), while being readily available to plants. It must be emphasized that it can be cost ineffective to transport organic materials with high-moisture and low-nutrient contents to long distances compared to inorganic fertilizers with high-nutrient contents.

**Myth 5: Legumes and green manures obtain all of their N from atmosphere and all N is used**

The other myth that is beyond logical reasoning is that, in case of green manure and leguminous crops (e.g., cover crops, legume leaves, twigs, and residues), all of their N content is fixed from the atmosphere and all N is utilised by the crops. The reality, however, is that the N in green manures and leguminous crops is not necessarily fixed from the atmosphere as a good portion of it is absorbed from the soil. Also, when green manures or legume residues are incorporated into the soil, not all their N contents are used by the crops as some N is lost during decomposition or mineralisation. However, exceptional cases occur when crops grown in rotation capture nutrient unavailable to crops and recycle the otherwise lost nutrients back to crops. Crops, weeds, or green manures (grown in rotation with lowland rice) can assimilate nitrate and then recycle the N back to ensuing rice crops through retained biomass. Another case is that of deep rooting shrubs (such as in agroforestry systems) grown on deep soils, which can capture nutrient from below the rooting depth of crops and recycle them back to future crops.

**Myth 6: Fertilisers deteriorate soil quality**

The other politically-motivated claim is that chemical fertilizers deteriorate the quality of soil by altering their physical properties and making them acidic. The general perception among policymakers and researchers is that the declining soil or crop productivity is due to soil degradation that can be attributed to the use of inorganic fertilizers. There is no scientific evidence to say that chemical fertilizers, when applied at optimum rates, have an effect on soil structure or its water holding capacity.
Myth 7: Chemical fertilizers provide only a few macronutrients and not micronutrients

Many people believe the chemical fertilizers provide only a few macronutrients and not micronutrients. The reality is that while most organic materials contain some micronutrients by nature, there are now several commercially-available inorganic fertilizers that contain micronutrients. Thus, soil deficient in micronutrients can now be supplied with a smaller amount of inorganic fertilizers containing micronutrients rather than large amounts of organic materials required to supply the same quantity of nutrients for plants.

Myth 8: Organic materials build up soil organic matter irrespective of amounts applied

One popular claim by advocates of organic materials is that organic materials build up soil organic matter (SOM) irrespective of the amounts applied. Organic materials, no doubt, supply nutrients and energy for soil organisms that help in accumulating SOM in soils, their contribution to SOM build-up within a short period of time (e.g., one or two years) is widely misperceived or over-exaggerated. The reality is that large quantities of organic materials would be required to build up SOM. Moreover, the amount of SOM formed with the addition of organic materials depends on the carbon-nitrogen ratio (C:N ratio) of the original materials and conditions during decomposition, and build-up of SOM occurs only in non-flooded or aerobic soils and not significantly on flooded or anaerobic soils. The magnitude of increases in SOM due to the addition of organic materials would be far less than what many advocates of organic fertilizers claim.

Myth 9: It is always safe to apply huge amounts of organic materials on all soils

Advocates of organic fertilizers claim that it is always safe to apply huge amounts of organic materials on every soil, irrespective of the SOM status. The reality is that excess organic materials could cause zinc and sulfur deficiency especially when the field is continuously flooded. Hence, when the SOM is relatively high (>4.0%), manures preferably should be applied in the dry season or aerobic conditions. Further, an increment in toxicity that can be attributed to the anaerobic decomposition of organic materials (such as organic acids and hydrogen sulfide) in flooded soils could also be a concern.

Myth 10: Bio-fertilizers contribute a significant amount of nutrients to the crop

Advocates of bio-fertilizers (or microbial fertilizers) claim that such fertilizers contribute a significant amount of nutrients to the crop and can be used in any crop and for all types of ecosystems. Microbial fertilizers can increase the number of microorganisms and accelerate certain microbial processes such as atmospheric N₂ fixation, phosphate solubilisation, or cellulose degradation. Bio-fertilizers are applied to seeds, to soils in the seedbed, or to composting materials. Soil organisms (bacteria, fungi, algae, actinomycetes, earthworms, etc.) are essential components of the soil, contributing to soil productivity. There are aerobic and anaerobic N₂-fixing bacteria (e.g., *Rhizobia* fix atmospheric N in roots of leguminous plants) and some bacteria and fungi (e.g., *Trichoderma*) are effective in decomposing or mineralising SOM, thus helping farmers dispose farm waste and use these to improve soil productivity.

However, the reality is that bio-fertilizers don’t directly contribute nutrients but merely make nutrients available from other sources like atmospheric N₂ or SOM. While the role of the bio-fertilizers has been recognised, there are pieces of evidence that their effects on crop growth or yield have been inconsistent or not as dramatic as claimed by the advocates of bio-fertilizers. Moreover, since most of the microorganisms in bio-fertilizers work under aerobic conditions, they may not be effective under anaerobic conditions.

Conditions, where bio-fertilizers are effective, are not defined properly to guide extension workers and farmers. Hence, it is important that the bio-fertilizers developers indicate the presence of species or strains of organisms (whether aerobic or anaerobic) and the conditions where the product is effective.
In addition, there are two important concerns in using organic materials (or organic fertilizers). One is that raw organic materials may contain pathogens especially when these are from manures, including human faeces. Another is the level of heavy metals especially when the raw materials are industrial, or urban or even household wastes. Bags containing organic fertilizers should be properly labelled providing a guarantee that these are free of pathogens and that the contents of the heavy metals are within the acceptable levels.

In conclusion, based on the available scientific evidences, the most practical strategy for farmers would be the application of the organic materials and inorganic fertilizers at a ratio of 25:75 to supply nutrient requirements for high yield and to obtain yields comparable to that from inorganic fertilizers alone. However, even for the application of this suggested amount, the type, quality, content, release pattern and residual effect of nutrients from the organic materials, as well as the availability and practicality of application of those materials need to be considered. The benefits of inorganic fertilizers, when applied in optimum doses, have been well documented, but such documentation is lacking for organic materials.

Before rationally promoting the organic materials (or organic fertilizers) to farmers, an inventory of available organic sources of nutrients across the country must be prepared as a high policy priority. Likewise, appropriate and scientifically well-designed field experiments must be conducted across climate, soil types and seasons to determine the soil and environmental conditions where organic materials can be effective and be promoted.

The author is Principal Research Fellow, University of Melbourne, Australia & Adjunct Professor, Agriculture & Forestry University, Chitwan, Nepal. Opinions expressed here are solely of the author and do not represent that of the NAPA or Agri-Connection.
Mr. Surendra Osti, NAPA EC Member, got married to Ms. Kanti Adhikari on March 12, 2018. Many, many congratulations to the newly weds from the entire NAPA Community.

Shankar Gaire, Graduate Student at Texas A&M University and Chair, NAPA Student Coordination Committee, presented a poster entitled, Bacterial endophytes as a potential for control of rice seedling disease caused by *Rhizoctonia solani* AG-II.

Dr. Pradeep Wagle, NAPA Joint Secretary, gets recognized as an outstanding reviewer by the Journal of Photogrammetry and Remote Sensing.

Shailesh Bhattrai, a graduate student and NAPA member, won second prize for his essay, “How will agriculture feed the world?” in an essay contest organized by the Tuskegee University, College of Agriculture, Environment and Nutrition Sciences.

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To foster/enhance the quality of life of human kind and environment through scientific research, capacity building, dissemination and charitable activities.

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NAPA Conference Organizing Committee is seeking funds to make the First Biennial Scientific Conference a grand success. The conference will be held on May 26-27, 2018 in Oklahoma City, Oklahoma, USA on the theme ‘Global Food Security through Agricultural Transformation.’ NAPA aims to provide a platform for all: graduate students, academicians, and professionals who are engaged in but not limited to teaching, research, extension, community development, and entrepreneurial activities in the field of Agricultural and Allied Sciences across America, Nepal, and beyond. We would like to request all of you to generously donate any amount you would like to make this historic conference a success; no amount is a small amount. A donation of even one dollar will make a huge difference. You may also opt to seek any of the options mentioned in Panel A, B, or C below.

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