

# Agri-Connection

Vol. 4, Issue 4, December 2019



**NAPA**

Association of Nepalese Agricultural Professionals of Americas

**A QUARTERLY NEWSLETTER**

# Happy New Year 2020!

नयाँ बर्ष २०२० को

हार्दिक मंगलमय

# शुभकामना



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# Agri-Connection

Vol. 4, Issue 4, December 2019

## A QUARTERLY NEWSLETTER

### President's Desk

NAPA community and beyond:

#### Happy Holidays and Happy New Year 2020!

We salute all the committed and hardworking members whose tireless contributions have made NAPA a growing professional organization in the Americas and beyond. As we bid farewell to 2019, we proudly celebrate NAPA's history-making accomplishments and the impact it has made toward agricultural transformation. I would like to share with you major milestones achieved in 2019: 1) Excellent growth in membership with 105 new members joined, mostly in the life member category; 2) Eight professional Webinars organized; 3) Observed World Food Day 2019; 4) The inaugural issue of *Global Journal of Agriculture and Allied Sciences (GJAAS)* published; 5) Two Research and Policy Briefs released; 6) The first book of NAPA on '*Principles and Practices of Food Security: Sustainable, Sufficient and Safe Food for Healthy Living in Nepal*' is near-ready for the printing house; 7) Contributed expertise to develop postgraduate curriculum at Tribhuvan University, Institute of Agriculture and Animal Sciences, Nepal; 8) Provided experts' feedback on agriculture sector draft plan prepared by the National Planning Commission, Nepal; 9) Awarded 15 mini-research proposals in Nepal and mid-term review meeting organized; 10) Delivered three presentations about NAPA's progress and future strategies in Brain Gain Initiative, NASEA/ANMA convention, and NRN Global conference; 11) Organized seven outreach meetings across America and in Nepal; 12) NAPA 2020: the 2<sup>nd</sup> Biennial Conference has been scheduled for May 22-24, 2020.

In addition, we have formed a committee to observe 2<sup>nd</sup> NAPA Day on January 06, 2020. NAPA 2020 Conference Organizing Committee is working relentlessly to bring the momentum of the conference. We feel honored

having increasingly self-motivated proactive professionals, emerging scientists, entrepreneurs, and students from agriculture and allied disciplines as one NAPA family. We will leave no stone unturned to keep fueling momentum and elevating the scope and impact of NAPA on '*Global Food Security through Agricultural Transformation*' with our collective expertise and energy. **Please join us to share your expertise, time, energy, monetary contribution, and creative thoughts and ideas to make the scheduled NAPA 2020 conference a grand success.**



On behalf of the Executive Committee, I sincerely thank all self-motivated professional volunteers for their great enthusiasm, dedication, and willingness in serving the NAPA community and its stakeholders through webinars, donations, time, expertise, creative thoughts, collective energy, various sub-committees, as reviewers and editors of the journal, book, research and policy brief, Agri-Connection, and many other ways. Our great appreciation is always extended to the generous donors and sponsors of NAPA's flagship programs, including scholarship, research mini-grants, endowments, and conference.

We greatly appreciate all volunteer contributors to the Agri-Connection online newsletter. Sincere appreciation and thanks to all hardworking Editorial Boards for **Agri-Connection, GJAAS, NAPA Book, and Research and Policy Brief**. We look forward to welcoming all of you to Atlanta, Georgia, USA, for NAPA 2020, the 2<sup>nd</sup> NAPA Biennial International Conference, May 22-24, with the theme "*Global Food Security through Agricultural Transformation*."

Together, we can make a difference.

Lila B. Karki, Ph.D.

**Association of Nepalese Agricultural Professionals of Americas (NAPA)**

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## EDITORIAL

The holiday season coupled with the turning of the year brings a soothing social milieu amidst the chilly winter in the northern hemisphere. We as a NAPA family, have more joys to share with the celebration of NAPA Day with an array of sports, fun, health-promoting, and social activities, which culminate in a poetry session on January 6<sup>th</sup> every year. Please, do not miss these instances of offering and receiving exhilarating delights!

As NAPA members, we have more reasons to celebrate our milestone of achievements this year. The current issue of Agri-Connection is bringing to you the perk of the milestone success of NAPA. Can you guess what the perk could be? Yes, you know what it is, or at least you are curious to know. It is a compendium of the wealth of knowledge, experience, intellectual rigor, and organization of thoughts of 49 scholarly authors, coordinated and edited by scientific authorities Drs. Drona P. Rasali, Prem B. Bhandari, Uma Karki, Megha N. Parajulee, Ram Acharya, and Raju Adhikari, the book entitled "Principles and Practices of Food Security: Sustainable, Sufficient and Safe Food for Healthy Living in Nepal".

I know how eager you are to have a glance at the book. With a few turns of the pages in this issue, you can sail on the voyage of a preview of the cover page and summaries of 18 Chapters, grouped into four thematic sections.

You have certainly instilled curiosities about what is more to offer by the current issue of Agri-Connection. There are ranges of information about a grand event to be held in Atlanta, Georgia on the memorial weekend of May 2020 - that is 2<sup>nd</sup> NAPA Biennial Conference.

It is going to be a confluence of scientific, literary, athletics, and wellness activities and a general assembly of NAPA members and associates. Please put it in your not-to-miss list of 2020!

This Issue shares our tears of condolence with the bereaved families of a NAPA associate member Dr. Laxmi Narayan Prasad Sah for his untimely demise. On the other hand, we are proud to share our cheers with many NAPA families for academic and professional successes, authorships, and beginning of conjugal knots of NAPA members.

At times, we all muse on the ways we can contribute to the agricultural transformation and development in Nepal. Read Dr. Bishnu Upreti's discussion paper about an integrative framework of agricultural education, research and extension to be evolved within the Agriculture and Forestry University (AFU) in Nepal. Plurality of vision can help rationalize such a model of education, innovation and dissemination of knowledge, technology, and operational strategy.

Now you want to have a murmur of metaphoric lyrics and be nostalgic about your adolescent days of original abode. Enjoy reading agri-poem and join the online poetry evening on January 6! Happy New Year 2020!

Nityananda Khanal, Ph.D.



# NAPA

Association of Nepalese Agricultural Professionals of Americas



**Agri-Connection**  
Vol. 4, Issue 4, December 2019

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# NAPA Proudly Announces



## NAPA 2020: 2<sup>nd</sup> Biennial Conference

“GLOBAL FOOD SECURITY THROUGH AGRICULTURAL TRANSFORMATION”

### Join Us in Atlanta

May 22-24, 2020

Crowne Plaza (Atlanta-Airport)

1325 Virginia Ave., Atlanta, GA 30344, USA

### Conference highlights:

- Student writing contest, Rapid-fire presentations
- Student competitive oral & poster presentations
- Professional oral & poster presentations
- Panel discussions on *Global/Nepal Food Security, Gender in Agriculture, Leadership in Agriculture*
- Professional workshops: Successful grant writing, Data analytics and report writing
- Research mini-grants and scholarship for academic excellence: review and future strategy
- Cultural night
- Charity event: Giving back to community and more

For details: <http://napaamericas.org/conference2020/index.php>



## Crowne Plaza Atlanta-Airport

1325 Virginia Avenue Atlanta, GA 30344, USA

Phone: 1-404-768-666

### Hotel Booking Information:

- Booking website: <https://book.passkey.com/e/49941148>
- Reservations must be made on or before the cut-off date of MAY 15, 2020 to be eligible for the group rate.
- Reservations can be cancelled by 6 PM, 24 hours prior to the arrival without any penalties.
- Based on the availability of rooms and the availability of group rates, the group rate will be offered three days prior and three days following the official meeting dates.
- This hotel is located close (~2 miles) to Hartsfield-Jackson Atlanta International Airport and provides 24/7 free shuttle service to the domestic terminal.
- Many of the Atlanta attractions are in a short drive from the hotel. More information about the hotel location and nearby attractions is available at: <https://bit.ly/2Xhz556>

# NAPA Book Publication

# PRINCIPLES AND PRACTICES OF FOOD SECURITY

SUSTAINABLE, SUFFICIENT AND SAFE FOOD FOR HEALTHY LIVING IN NEPAL

Editor-in-Chief  
Drona P. Rasali

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Prem B. Bhandari

Editors  
Uma Karki, Megha N. Parajulee,  
Ram Acharya and Raju Adhikari



**ASSOCIATION OF NEPALESE AGRICULTURAL PROFESSIONALS OF AMERICAS (NAPA), USA**

PRINCIPLES AND PRACTICES OF FOOD SECURITY

NAPA

A FEW TESTIMONIALS



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# Principles and Practices of Food Security

## Book Chapter Summaries

### CHAPTER 1

#### INTRODUCTION OF THE BOOK: PRINCIPLES AND PRACTICES OF FOOD SECURITY IN NEPAL

Edited by Drona P. Rasali, Prem B. Bhandari, Megha N. Parajulee, Uma Karki,  
Ram Acharya and Raju Adhikari

This document provides summaries of chapters included in the book entitled, 'PRINCIPALS AND PRACTICES OF FOOD SECURITY: *Sustainable, Sufficient, Safe Food for Healthy Living in Nepal*'. The book is laid out in a total of 18 chapters, written by a team of 49 internationally known experts in their respective fields who have not only the knowledge of the subject matter, but also have the firsthand experience of the prevailing situation in Nepal. These professionals are currently working in five countries- Australia, Canada, Japan, Nepal and the United States.

We believe that this book is highly relevant in the Nepali context and this is a timely publication. This is primarily so because food is a universal prerequisite for sustaining life and it is an essential determinant of healthy living for mankind. The production and/or availability of food does not by itself guarantee a healthy living. The available food must be equally accessed by all in sufficient quantity and this food must be utilized properly in a sustainable way. If the food is not safe to eat, it can create grave dangers to human life.

In Nepal, agriculture has been the mainstay of the economy as well as the main source of food and livelihoods for the majority of the people. Yet, the country has been experiencing increasing dependence on the importation of food over time. Despite much emphasis being put on agriculture for long time, the capacity to achieve appropriate agricultural education, innovation of technology, multi-sectoral collaboration and investment required thereof have not been adequate to explore the vast potential of diverse agricultural resources in order to sustainably secure sufficient, safe and healthy food for the people.

Considering the whole gamut of the complexities of agriculture dependent food insecurity prevailing in Nepal, scientists and academics mostly living outside the country have realized that there exists a gap be-

tween knowledge translation of vast scientific data and information integrating production systems, production and post-harvest processing, marketing and utilization of food for a broader sense of food security more than just providing food for life sustenance. In order to address this gap, the Association of Nepalese Agricultural Professionals of Americas (NAPA) has undertaken an initiative to publish a book that integrates these complex components of food security so that it can influence healthy public policies, programs, services and education through dissemination of knowledge on them and innovation of technologies.

The target readership of the book will include: 1) planners, policy makers and decision makers at various levels of the government; 2) non-governmental organizations' program officers; 3) Agricultural officers and food economists; 4) Faculty and graduate level students of food security and food systems; 5) Civic leaders and intellectuals; 6) Food industries, retailers and suppliers; and 7) Food hospitality stakeholders. The book is currently in the near final stage of publication. We expect that the readers will benefit from the knowledge and skills presented in the book towards the improvement of the current Nepali food security situation. We also intend that this book generates evidence- and theory-based scientific discourses among these stakeholders.

The book endeavors to compile and consolidate knowledge from wide ranging information sources on diverse fields closely related to food security in the sense of securing sustainably produced, sufficiently available and safely prepared food for the healthy living of the people. These chapters are broadly divided into four major themes based on the principles and practices of relevant knowledge areas. We are bringing out this compilation of summaries of all chapters in the book for its pre-release information.

# Principles and Practices of Food Security

## Book Chapter Summaries

### GROUP 1: GENERAL AND SOCIO-ECONOMIC ISSUES OF FOOD SECURITY

#### CHAPTER 2. FOOD SECURITY AND THE SUSTAINABLE LIVELIHOOD FRAMEWORK

Prem B. Bhandari, Lila B. Karki, Drona P. Rasali

Food security is a multidimensional concept. According to the Global Food Security Index (GFSI) score (an indicator of food security), Nepal's GFSI score in 2017 was 44.5 out of 100, ranking 81 out of 113 countries. This scenario shows that food security is Nepal's challenge as well. Thus, this chapter examines the various socio-economic, cultural, and structural factors that determine food security at the household level using the Sustainable Livelihood (SL) framework. The SL framework, an integrated approach to studying various livelihood outcomes, is widely used to examine the factors influencing food security in developing countries. To fulfill the aim of this chapter, we introduce the subject matter in the context of Nepal. We define the various concepts of food security and discuss its four major dimensions, and ways of measuring food security. We report on the food security situation of the country from a geographic perspective. Then, we illustrate the sustainable livelihood framework and associated components. We also provide theoretical and empirical links between various livelihood assets and food security along with a review and empirical evidence of the influence of the access to various assets on food security in the Nepali context. Finally, we conclude that food security is a geographically driven issue. We reveal that food security is a geographic problem in Nepal, which varies by north-south as well as east-west geographic regions. We also find that access to various household capitals is important in addressing food security challenges thereby suggesting the significance of household assets in solving the food security problem in the country.

#### CHAPTER 3. FOOD SECURITY STATUS AND CHALLENGES: POLICY OPTIONS AND CHOICES

Basu Dev Kaphle, Yadav Sharma Bajagai, Bed Prasad Khatiwada, Yamuna Ghale, Devendra Gauchan

Ensuring food security has been a priority of the government of Nepal. This has been or is being addressed through its various policies, plans and legal provisions. Since the inception of a periodic plan in 1956, food security and poverty reduction have been prioritized. Since a majority of the population relies on agriculture for livelihood, the agricultural sector plays a major role in ensuring food security for all. The country has made some efforts, especially in the past decade, to adopt policies and programs to address food insecurity problems. Despite decades of developmental planning in the agricultural sector, there has

been no significant increase in production and productivity. Agriculture is underfunded and therefore, it does not attract youths. Besides, the decreasing utilization of locally available and culturally accepted food is another major issue impacting food security. Due to increasing urbanization, improving connectivity and the flow of remittances, Nepali food habits are changing, with increasing consumption of animal-based or market-based food taking precedence. In this context, it is the responsibility of the state to ensure food security for all through the formulation and application of appropriate policies and programs. The process of state restructuring into a new federal system of governance provides an immense opportunity for the articulation of food security policies and programs applicable for federal, provincial and local levels of the government.

#### CHAPTER 4. AGRICULTURE AT THE CROSSROADS: STRATEGIC OUTLOOK FOR FOOD SECURITY, SUSTAINABILITY AND SOCIAL WELLNESS

Krishna P. Sharma, Krishna P. Paudel, Khem R. Dahal

Nepal's agriculture is at the crossroads between its responsibility to feed people and to fulfil their multifaceted expectations. The Green Revolution-based production system has displaced indigenous knowledge-based technology that resulted in a decline in soil productivity, human health, biodiversity, and environment. Sustained food security with healthier agriculture is the major concern today demanding diagnostic reviews of the past, present and projected future scenarios. Despite being always a priority area of the government, the agriculture sector has failed to address issues of food security and sustainability. Subsistence farming has made agriculture less dignified resulting in widespread out-migration of rural youths and the feminization of agriculture. The Agricultural Development Strategy (ADS) is currently under implementation to address issues of poverty, food insecurity and agricultural sustainability with the aim of meeting the United Nations' Sustainable Development Goals. However, there are hidden shortcomings in the ADS demanding immediate remediation as a way of moving forward. To address the problems facing agriculture today and, in the future, such strategies as integrated agro-forest-livestock based farming; local cooperatives; organic/ecological farming; promoting local food and nutrition; climate-smart agriculture; urban and peri-urban farming; innovations like bio-ponics, tunnel and roof-top farming, are recommended. These could be materialized through the acknowledgement that the, "Soil is Our Life- Feed the Soil, and Feed the Family" shouldered by youths and backed by social media and the academia at local levels.



# Principles and Practices of Food Security

## Book Chapter Summaries

### GROUP 1: GENERAL AND SOCIO-ECONOMIC ISSUES OF FOOD SECURITY

#### CHAPTER 5. AN OVERVIEW OF HOUSEHOLD FOOD SECURITY

Bhawani Mishra, Shrinivas Gautam, Krishna Lal Poudel

This chapter focuses on various aspects of household food security in Nepal. Food security can be studied at different levels of hierarchies ranging from an individual-, to household-, region-, and national levels. A household is one of the most important key levels where food security basics play important roles. Household food security can be explained by various factors such as the social, economic, cultural, geographic, climatic and ecological to mention just a few. This chapter, however, focuses only on the socio-economic aspects of household food security in the Nepali context. This chapter also discusses household food security governing issues like climate change, socio-economic policies, health and hygiene, gender, caste, and ethnicity. In addition, this chapter covers analytical methods and policy implications that could improve household level food security in Nepal.

#### CHAPTER 6. NEOLIBERAL GLOBALIZATION, MIGRATION, AND FOOD SECURITY: THE CASE OF NEPAL

Kanchan Joshi, Kalpana Khanal

Globally, enough food is produced to ensure food security for the world's population. Despite this fact, the global food crisis seems to be increasing especially in the agrarian societies of the developing countries. Though South Asia has been able to improve her food production situation substantially in the past 50 years, it is still home to more than 40 percent of the world's poor, majority of whom are subsistence farmers. These farmers are confronted with multiple problems such as socio-political instability and uncertainty, and economic stagnation that lead to migration of human resources. This causes labor deficiency in the agriculture sector of source countries. There is a global context to many of the challenges faced by developing countries while trying to ensure food security and sufficiency. So, it is important to know how the local issues connect to the global context. As the world embraces neoliberal economic policies to promote the free flow of resources and capital, what implications does that neo-liberalization have on the food security conditions of the poor and subsistence farmers? This chapter critically investigates the rarely studied dimension of political economy of food security of Nepal linking the local context to the global. For our study, we primarily rely on the information extracted from secondary resources that included book chapters, journal articles, reports, and news articles. We find that dependency on free trade, and the unprece-

dent rise of multinational companies is affecting the livelihood of small farmers in the global context. This chapter also investigates the historical context of the food security situation in Nepal – comparing the situation between the pre-liberal and the present era, with a special focus on the far western region of Nepal. We find that after excessively embracing liberalization policies, the food sovereignty and sufficiency aspects have gone downhill. The economic squeeze leading to migration has been influential in mitigating the immediate food insufficiency situation. But, in the long run, macro-economic conditions such as the trade balance and the inflation rates of the country suffer. So, policies should focus on increasing the growth of food production within the country, the reduction in food prices on local markets and the increase in farm incomes, all of which will improve the poor people's access to food.

#### CHAPTER 7. THE DYNAMICS OF THE FOOD BASKET COMPOSITION AMONG CHEPANGS

Luni Piya, Niraj Prakash Joshi

Food habits are changing for most communities around the world. Studies related to changes in the food basket composition contribute to shedding light on the changing food related demands and health conditions of the communities. The factors causing those changes and their impacts differ according to locational specificities. While there are ample studies related to the topic of the dietary transitions of indigenous populations in developed countries, the literature gap is dire for similar communities in developing countries especially in Asia. This chapter examines the dynamics of the food basket composition of a highly marginalized indigenous community in the remote mid-hills of Nepal. The analysis is basically qualitative, supported by descriptive statistics based on panel data collected through household surveys in 2010 and 2015. Results show a decline in the consumption of millet from own production and wild tubers. Households' purchase of rice, lentil, cooking oil, chicken, eggs, and sugar from the market is rising rapidly. The results imply that the community is increasingly relying on non-traditional food items from the markets; while the traditional food items cultivated or gathered from the forests are declining. The factors causing these changes in the food basket are discussed from a political economy perspective under five headings: participation in wage economy, adoption of cash crops, external markets, restrictive forestry policies, and the introduction of new crops and food choices. Implications to devise suitable policy-programs aiming to improve the food security of marginalized communities are forwarded.

# Principles and Practices of Food Security

## Book Chapter Summaries

### GROUP 1: GENERAL AND SOCIO-ECONOMIC ISSUES OF FOOD SECURITY

#### CHAPTER 8. THE CAPACITY BUILDING OF FOOD VALUE CHAIN PLAYERS: WHY AND HOW?

Ramjee Ghimire, Katsuhige Nakasone

Nepal has been facing food insecurity for many years. Each year, hundreds of youths migrate to foreign countries seeking unskilled jobs and leaving their families' farmlands fallow, with no manpower to till them. Furthermore, recurrent natural disasters and low adoption of improved technologies are impeding agricultural production. Building on the shared-value business and knowledge management concepts, this chapter discusses why the ca-

capacity building of food value chain actors is critical to attaining food sustainability in Nepal. Information from existing literature, interviews with select experts and reflections on authors' own experiences form the bases of this chapter. The chapter begins with a brief introduction of the topic, definition of food sustainability, a list of food value chain players, food security related laws and provisions, roles and capacity of the food value chain players, and a way forward to improving the capacity of food value chain actors to attaining food sustainability, among others. We conclude by reiterating the need for to motivating the younger generations to pursue farming and educating farmers not to blindly rely on imported and top-down

### GROUP 2: SUSTAINABLE AND IMPROVED AGRICULTURAL PRODUCTION

#### CHAPTER 9. CEREAL CROPS IMPROVEMENT FOR FOOD SUFFICIENCY

Khusi R. Tiwari, Hem S. Bhandari, Dhruba B. Thapa, Jiban Shrestha, Mahesh Subedi, Dilip R. Panthee

Cereals are the most important components of Nepalese diet. Rice (*Oryza sativa* L.), maize (*Zea mays* L.), and wheat (*Triticum aestivum* L.) are the three major cereal crops that account for over 95 percent of all cereal food production. Therefore, increased productivity of the key cereal crops is crucial for the food sufficiency system in Nepal. Despite several decades of research and extension efforts on varietal improvement and production technologies, most of the farmers are still reliant on traditional varieties and production practices. In this chapter, we review the current research on varietal improvement of major cereal crops and discuss future strategies of increasing food production in Nepal. Emphasis on future research is placed on the utilization of advanced genomic to expedited cultivar improvement for higher yield, pest resistance, and seeds production.

#### CHAPTER 10. AGROECOLOGICAL INTENSIFICATION FOR SUSTAINABLE FOOD PRODUCTION: OPPORTUNITIES FOR ADOPTING THE SYSTEM OF RICE INTENSIFICATION

Ram B. Khadka, Krishna Dhital, Sharad Pandey, Rajendra Uphrey, Norman Uphoff

The System of Rice Intensification (SRI) is a set of principles and techniques for improving rice production through the enhancement of the growing environment, giving special attention to how the soils, plants, water, and nutrients are managed, with a positive effect on roots growth and beneficial organisms in the soil. The SRI was first intro-

duced in Nepal in 1999 and it offers solutions for dealing with challenges in rice production, such as low productivity, low soil fertility, land degradation, and climate-change impacts. Trials and demonstrations in diverse areas and environments of Nepal with both traditional landraces and modern varieties have shown that the SRI can enhance paddy yields by 50-100% or more by making better use of locally available resources and by minimizing the reliance on purchased inputs. SRI crops are less affected by stresses, both biotic (disease and pest) and abiotic (droughts, storms, and floods). The methodology is suitable for organic methods of production and enhances the quality of rice. Several initiatives have been started in Nepal through research and extension activities to make the SRI technique more suitable for specific localities. Some of the attractive features of the SRI for Nepali farmers are lower seeds and water requirements compared to conventional practices, higher grain yields under organic management, and the positive response of plants to the inoculation of plants and soils with beneficial microbes. Often, doubled grain yield when growing premium (heirloom) landraces with SRI practices, compared to the currently recommended 'best' cultivation practices, shows opportunities for developing an export market for aromatic Nepalese rice landraces through large-scale production using the SRI. Ultra-low seeds requirements with the SRI compared to conventional practices plus a reduced length of crop cycle create opportunities for improving the production of foundation seeds of improved quality to accelerate the adoption of newly released varieties. This chapter brings together current knowledge and experience from both researchers and farmers over the past 15 years of the SRI evaluation and innovation in Nepal. It also points out opportunities for adopting and applying the SRI principles to improving the production of other crops beyond rice.

# Principles and Practices of Food Security

## Book Chapter Summaries

### GROUP 2: SUSTAINABLE AND IMPROVED AGRICULTURAL PRODUCTION

#### CHAPTER 11. SOIL HEALTH FOR FOOD SECURITY AND AGROECOSYSTEM RESILIENCE

Rajan Ghimire, Upendra Sainju, Ram Acharya

Securing food for a growing population without any negative impacts on the environment will continue to be a challenge for the 21<sup>st</sup> century. About 60 percent of the agroecosystems have either been degraded or used unsustainably to increase food, forage, fiber, and energy production for the growing population in the world. The occurrence of extreme climatic events has increased biotic and abiotic stresses to crops, affecting crop productivity, food security, and agroecosystem resiliency. Improved soils and crops management practices that enhance soil health through increased soil organic matter (SOM), nutrient cycling, and microbial activity, improved nutrient and water use efficiency, and reduced nitrogen (N) leaching and greenhouse gas emissions while sustaining crop production and reducing chemical inputs can increase net farm profitability. Some of these practices including reduced-tillage management, crop residue recycling, crop rotations diversification, integrated nutrient management, manure and compost applications, and livestock integration in cropping systems have the potential of enhancing agricultural production and improving soil health in the smallholder farming conditions of South Asia including Nepal. This chapter focuses on alternative soils and crops management strategies that enhance soil health and crop production in the smallholder farming conditions of Nepal and highlights the need for programs and policies to support farmers in increasing the SOM sequestration through carbon-credit markets and reducing chemical use while sustaining crop yield and profitability.

#### CHAPTER 12. THE CURRENT STATUS OF FRUITS AND VEGETABLES AND THEIR IMPROVEMENTS

Dilip R. Panthee, Tek P. Gotame, Surendra Shreshtha, Khusi R. Tiwari, Hem S. Bhandari

Fruits and vegetables are an integral part of a balanced diet providing the right combination of vitamins, proteins, minerals, and fibers. The objective of this chapter is to review the contribution of fruits and vegetables production to the improvement of a nutritional status that is beneficial to improving the overall human health and contributing to the national economy. We present the state of the research

on various horticultural crops including apples, citrus, mangoes, and vegetables such as potatoes, tomatoes, leafy vegetables, cole crops, and indigenous crops. The economic contribution of fruits and vegetables will be discussed. Information from Nepal and the international level are presented for comparative analysis purposes. Based on the analysis of available information, we conclude that there is a need for the plant breeding towards the improvement of the nutrient contents of fruits and vegetables improvement to narrow the gap to be addressed in the future for the overall health benefit of the society. This analysis may be helpful for plant breeders, public health-related researchers, and policymakers.

#### CHAPTER 13. PRINCIPLES, PRACTICES, AND FUTURE DIRECTIONS OF SUSTAINABLE LIVESTOCK PRODUCTION

Uma Karki, Lila Bahadur Karki, Dala Ram Pradhan, Laxman Sherchand

Livestock production is an integral part of Nepali agriculture and agrarian livelihood. Most farmers have raised a few to many herds of livestock to complement crop production, supply family nutrients, and earn regular incomes from the sale of live animals and/or animal products, such as milk, meat, and eggs. Many farms are operating at the subsistence level. New farmers learn from their parents and grandparents in order to continue with conventional farming. With the increasing population and land fragmentation, decreasing farm size, labor out-migration, and deviation of the young generation from agriculture, sustaining livestock farming is becoming a challenge. There is a need to identify and follow suitable strategies for making livestock farming sustainable and thus promote food security. This chapter discusses essential issues of sustainable livestock production systems, highlighting the historical perspectives of livestock development and current endeavors being made as well as opportunities for improvement, especially focusing on ruminants. The chapter includes four different sections: sustainable livestock production systems, the socio-economic importance of livestock, feeds and forages, and sustainable dairy production. At the end of this chapter, recommendations are made for further improvement of the livestock sector in order to increase food security, improve economic well-being, and promote a sustainable rural society.

Stay tuned for next issue of Agri-Connection featuring summaries of results of the NAPA Research Mini-grant projects.

# Principles and Practices of Food Security

## Book Chapter Summaries

### GROUP 3: EMERGING ISSUES OF FOOD SAFETY REGULATIONS, HEALTHY EATING CHOICES AND CLIMATE CHANGE IMPACTS

#### CHAPTER 14. FOOD SAFETY AND QUALITY REGULATIONS: STATUS, ISSUES AND THE WAY FORWARD

Yadav Sharma Bajagai, Pramod Koirala, Bed Prasad Khatiwada, Raju Adhikari

This chapter presents a legislative framework for food safety regulations in Nepal as a component of food security. The chapter reviews the current regulatory landscape of food safety and quality with an overview of major legislations, government plans and policies, institutional infrastructure and capacity, national food safety control systems in place, and food standards. The chapter also portrays the food safety regulation systems in the developed world, giving an example of Australia and New Zealand. The chapter argues that the production of food to fulfil subsistence family needs was one of the dominant characteristics of agriculture in Nepal until the market-led demand for commodity-based production with high external input gained popularity, at least in the road corridors and accessible areas that supply the food to the markets. This introduced the concept of producing for ‘markets’ where profit is the major driving force and ultimately leading to the use of hazardous chemical pesticides, growth regulators, antibiotics, and probiotics, along with preservatives and coloring agents. In addition, food chains are generally long and less secured in Nepal, as compared to those in developed countries due to poor infrastructure; this increases the likelihood of food being contaminated with harmful agents (microorganism and chemicals). As a member of different international organizations, Nepal has many food- safety related obligations to comply with standard rules and regulations of those organizations. Food- safety related issues started to become a matter of increased concern and one of the priority areas of the government after the country became a member of the world trade organization (WTO) in 2004. In general, there are strong legislative and institutional infrastructure to manage the safety of food. Food- safety related problems are mainly attributable to the weak implementation of legislation rather than the absence of such legislation and guidelines. However, the prevailing laws, standards, and guidelines should be updated and harmonized to the international standards and regularly updated to address the emerging threats and issues. In the context of recent restructuring of the government system to the federalism, there needs to be more clarity about the roles and responsibilities of the central, provincial, and local governments, transitioning from the currently prevailing status to the federal structure of Nepal with the roles and responsibilities distributed across the central provincial and local governments. The

prevailing legislation should be updated where necessary to authorize the provincial and local governments to control the safety of food at their respective jurisdictions with allocation of adequate resources for skilled human resources and infrastructure. Coordination of food scientists and public health experts is very crucial in this regard. This could be an opportune time for Nepal to introduce risk-based food safety systems.

#### CHAPTER 15. SECURING FOOD CHOICES FOR HEALTHY EATING

Drona Rasali, Shanthi Johnson

This chapter introduces the concept of “healthy eating” as an integral part of food security for peoples’ healthy living and wellbeing. It describes, in the context of Nepal, a “pattern of eating” that supports healthy and balanced food choices, how to access healthy food, what constitutes healthy eating habits and how eating behaviors can be modified. Securing adequate food to ensure optimal eating is a key protective factor for growth, maintaining a healthy life through prevention of malnutrition including stunting, wasting, underweight and excess weight. It contributes to preventing disease and is a significant factor in reducing non-communicable diseases (NCDs), food contamination and nutritional deficiencies. Although there has been considerable advancement in communicable disease control, the increasing prevalence of NCDs is becoming a significant burden for Nepal. Increasing socio-economic and geographic accessibility to nutritious food, affordable healthy food choices, the use of traditional healthy foods and supplementing with wild edible plants are some of the prevention strategies to encourage healthy eating and reduce the burden of NCDs. Making healthy choices and meeting nutritional needs based on nationally recommended daily intake of nutrients are fundamental to reducing the burden of disease through behavioral changes and practices for health and well-being. In the context of Nepal, four demographic sub-population groups (infants and young children; adolescents; women; older adults) that are vulnerable to food insecurity with risks of not eating healthy food are identified, while rural, remote and marginalized groups are priority groups that are at risk of food insecurity. Knowledge and skills to grow, plan, purchase and prepare healthy food is crucial in making appropriate changes to healthy eating lifestyles, especially avoiding high sodium and sugar intake. Recommendations are also provided for considerations by relevant service/program providers, researchers, and policy makers.

# Principles and Practices of Food Security

## Book Chapter Summaries

### GROUP 3: EMERGING ISSUES OF FOOD SAFETY REGULATIONS, HEALTHY EATING CHOICES AND CLIMATE CHANGE IMPACTS

#### CHAPTER 16. ASSESSING AGRICULTURE SYSTEM FOR FOOD SECURITY AMIDST CHANGING CLIMATE

Tulasi Paudel, Ram P. Ghimire, Naba R. Devkota, Durga Devkota, Megha N. Parajulee

An inevitable crisis for food is looming by the progressively increasing trend of the need to feed the ever-increasing world population, projected to be about 9.8 billion by 2050. Moreover, significant changes in climate, particularly an increase in average temperature and atmospheric CO<sub>2</sub>, have exacerbated substantial consequences occurring in commodities we consume as food today. With the increased demand for food among consumers and different climatic stresses impacting the food production chain, crops and livestock would respond to these impacts significantly, clearly underscoring the fact that climate change affects agriculture and food production in complex ways. It impacts food and animal production directly through changes in the agroecological environment

and indirectly by influencing socioeconomic conditions, thus affecting the demand-supply continuum for agricultural products. The effects on the quantity and quality of food are major attributes to be taken into consideration in understanding the impact of climate change, necessitating an obvious alteration in the diversity of production systems. For example, the degree of lignification of the plant tissue compromising the quality of feed would affect the animal production enterprise while the range of pests influencing the food production enterprise would shift and likely widen. To address these changes in numbers and intensity, a simultaneous yet multi-sectoral, holistic approach is needed. Developing adaptive crop cultivars and livestock to the changing climate and formulating management strategies improving the resilience of farmers in securing food security is imperative. Therefore, a comprehensive agriculture research system is envisaged as instrumental to continually monitor the challenges in food supply and to assemble the most sustainable plan of action.

### GROUP 4: TWO PROMISING NEW TECHNOLOGIES OF SPECIALTY

#### CHAPTER 17. THE POLYMER (PLASTIC) TECHNOLOGY FOR FOOD SECURITY

Raju Adhikari, Mike O'Shea

The chapter discusses the history of polymer technology, its application in crop production, and impact on global food security. The chapter also discusses its relevance to Nepal. The polymeric (plastic) mulch technology has helped increased global crop productivity by almost 40% by controlling the soil's moisture, temperature, microenvironment and weed growth. Polymers have also been used for the coating of agriculture nutrients such as urea, P, K, and chemicals such as pesticides and known as enhanced efficiency fertilizers (EEFs) technology which has also revolutionized agriculture production by using nutrients and chemicals efficiently and minimized long term detrimental effects on crop and soil environments. Furthermore, polymers have also been used for the coating of seeds to keep seeds resistant to insects and fungal diseases and optimize seed germination under different climatic conditions, and to increase crop production. However, the non-degradability of conventional polymers such as polyolefins used in the above technologies has been of major concern due to its long-term negative environmental ef-

fects. These polymers do not degrade completely and are left in the soil for several years and pollute soil and water ecosystems. Recent proposed regulations in Europe and the USA are now considering to ban the use of these polymers sooner than later. In Europe some of the legislations are already in place. In light of this, scientists have developed an alternative platform technology based on degradable, biodegradable and bio compostable polymers to guarantee the current level of global food production in the future. The use of plastic mulch, the EEFs and seed treatment technologies are an integral part of modern agriculture farming and will play a major role in increasing crop productivity and guarantee food security to feed the expected 9.5 billion human population by 2050. Nepal's current agricultural practices for increased food production based on conventional irrigation systems, and the reliance on direct application of exiting chemicals and nutrients are not sustainable in the future because they are detrimental to the soil and environment. Nepal's emphasis and priority to modernizing the agriculture industry is very timely and a commendable step and should include the adaptation of appropriate advances in agricultural technologies to guarantee a sustainable increase in food production and provide long term food security.

# Principles and Practices of Food Security

## Book Chapter Summaries

### GROUP 4: TWO PROMISING NEW TECHNOLOGIES OF SPECIALTY

#### CHAPTER 18. NON-DESTRUCTIVE ASSESSMENT OF FOOD FOR SAFETY AND QUALITY

Bed Prasad Khatiwada, Umesh Kumar Acharya

Food safety and quality issues are integral components of the food security system. These components have received increasing attention both at policy and consumer levels, recently. The nutrition composition of food including carbohydrates, proteins and fats are crucial. However, food safety can be compromised by physical, chemical and biological contaminations which can make food unsafe for consumption. Conventional methods of assessing food safety and quality are tedious, time consuming, expensive and uneconomical. Recently, optical methods of assessment of food safety and quality are commonly used in developed countries which allows for online and real time assessment of food quality and safety. The optical methods involve measuring the scattering and absorbance properties of light passing through the food and extracting chemical information using chemometric method. These

are also known as the non-destructive methods of quality assessment and are in practice along the supply chain in food systems in developed countries. This chapter provides an overview of the non-destructive techniques of assessing food safety and quality with a focus on basic and recent advances on the use of the near infrared spectroscopy (NIRS) method to assess food safety (such as adulteration, toxicity, frauds, authenticity, pesticides residues) and quality (such as carbohydrates, proteins, fats, dry matter, soluble solids, internal defects). This chapter outlines a pathway for advancing food safety and quality assessment and its regulations in the food system in Nepal. Examples include the meat and dairy industry, the cereals and grain industry, fruits, and vegetables industry. The NIRS is a proven and cost-effective tool for long term quality control and food safety and a quality surveillance tool and it is relevant to Nepal and provides a base from which Nepal could start with research on a few crops with export potentials.

### 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 (RMG) Pool Funds** 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 (\$200 and up). Therefore, you have been invited to make a difference in research-based agricultural education in Nepal

by sponsoring at least one mini-grant 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.

## Photographs in Action: NAPA Research Mini-grant Projects in Nepal



Blooming marigold flowers in experimental plots at Mid-West Academy and Research Institute, Campus of Live Sciences, Dang, Nepal. The study was funded by Jit-Shavitra Research Mini-grant through NAPA. (Photo courtesy: The Grant awardee team of Indu Regmi, Jaya Upadhyay, Laxmi Pandey, Sabina Paudel and Srijana Chapain)

Cauliflower experiment in experimental plots, Mid-West Academy and Research Institute, Campus of Live Sciences, Dang, Nepal. The study was funded by Jit-Shavitra Research Mini-grant through NAPA. (Photo courtesy: The Grant awardee team of Shirisa Acharya, Saurav Bhandari, Subham Kaphle, Ashika Bista and Poonam Belbase)



A harvest from a cowpea germplasm evaluation study at Mid-West Academy and Research Institute, Campus of Live Sciences, Dang, Nepal. The study was funded by Jit-Shavitra Research Mini-grant through NAPA. (Photo courtesy: The Grant awardee team of Abina Pokhrel, Ashmita Gurung, Asmita Bhandari, Suruchi Sharma and Yashoda Bohara)

From research to technology transfer: A NAPA Mini-grant awardee Ritesh Kumar Jha demonstrates plant growth regulator study on tomato under protected structure cultivation system in Kaski, Nepal. The study was funded by NAPA Research Mini-grant. (Photo courtesy: Ritesh Kumar Jha)

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## Call for the Student Writing Contest

NAPA 2<sup>nd</sup> Biennial Conference Organizing Committee is pleased to announce the 2020 College and University Students' Essay Writing Contest. A full-time student enrolled in a college, including community or vocational college, and/or university around the globe pursuing a degree in agricultural or allied field is eligible to participate.

### Essay Topic

**"Making the choice: feeding the world through agricultural innovation and transformation in 21st century"**

#### General guidelines:

- The essay should be written in English language.
- The essay must be author's original work and should be attested by inserting a statement followed by author's full name.
- The essay should follow the standard academic essay structure and format that include an introduction with a thesis statement(s) followed by the body of supporting arguments logically organized using headings/sub-headings that lead to a conclusion(s) and future prospective.
- The essay can be developed based on student's own experience, online research, and scientific literature review.
- Appropriate credits must be given to the work of others through appropriate citation. The essay will be disqualified for the competition if any evidence of plagiarism is established. The committee strongly discourages plagiarism of any form and advises students to avoid engaging in such activity.
- The essay should contain **at least 2,000 words but not exceed 3,000 words**, excluding footnotes, tables, figures, and references, and should be formatted double-spaced.
- A complete list of references cited should be included in the reference section of the essay.
- The essay should have author's name, affiliated college or university, degree program, mailing address, and email ID. A proof of student status is required (e.g., student ID card with expiration date or unofficial transcript or a letter from the college or university certifying the student status).
- A pdf copy of the essay must be uploaded online at: <http://bit.ly/NAPA-SWC> The pdf file should be named "NAPA\_2020\_SWC\_STUDENT NAME\_COLLEGE OR UNIVERSITY NAME". The deadline for submission is **January 31st, 2020**.
- Only one essay can be submitted per contestant.
- The results of the writing contest will be announced during the first week of April 2020.
- **The first, second, and third place winners will be awarded with a certificate and cash prizes of \$300.00, \$200.00, and \$100.00, respectively** at NAPA Second Biennial Conference on May 22-24, 2020 at Crowne Plaza Hotel, 1325 Virginia Ave, Atlanta, GA 30344, USA. Winners are encouraged (but not required) to be presented at the award ceremony.



If you have any questions/concerns, please contact:

Dr. Bharat Pokharel  
Chair, 2020 Student Writing Contest Sub-committee  
Email: [Bharat.Pokharel@gmail.com](mailto:Bharat.Pokharel@gmail.com)

**Essay** *Writing*  
Contest



## नापा सम्मेलन

### नापा (NAPA) कृषि कविता प्रतियोगिता संबन्धि सूचना

अमेरिकाको एटलान्टा (Atlanta) शहरमा मे २२-२४, २०२० मा हुन गईरहेको दोस्रो (द्विवार्षिक) अधिवेशनमा आयोजना हुन लागेको कृषि कविता वाचन प्रतियोगितामा संलग्न हुन इच्छुक सम्पूर्ण सर्जकज्युहरुलाई आफ्नो रचना आगामी मार्च ३०, २०२० भित्र निम्न ठेगानामा पठाउन हार्दिक अनुरोध गर्दछौं।

#### प्रतियोगिताका नियमहरू:

१. कविता कृषि तथा सम्बद्ध विषयसंग आधारित हुनुपर्नेछ।
२. कविता शुद्ध नेपाली भाषामा २०० शब्दमा नबढाई लेखिएको हुनुपर्नेछ।
३. श्रष्टा आफैले वाचन गर्नुपर्नेछ।
४. ३ सदस्यीय निर्णायक समितिले कविताको मूल्यांकन गर्नेछ।
५. उत्कृष्ट (प्रथम, द्वितीय, र तृतीय) ३ कवितालाई क्रमशः \$२००, \$१५०, र \$१०० तथा प्रमाणपत्रले सम्मान गरिनेछ।
६. कविता आगामी मार्च ३०, २०२० भित्र निम्न ठेगानामा पठाउनु पर्नेछ।



#### कविता पठाउने ठेगाना:

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डा. इन्दिरा पौडेल, संयोजक  
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- Agri-Connection Editorial Board

## Featured NAPA Member of the Quarter (Oct–Dec 2019)



**Dev Paudel, Ph.D.**

Postdoctoral Research Associate  
Agronomy Department,  
University of Florida

### Education:

B.Sc. Agriculture, Tribhuvan University, Nepal

M.S., Crop Science, Texas Tech University, Lubbock, TX, USA

PhD, Agronomy, University of Florida, Gainesville, FL, USA

Dr. Dev Paudel is currently working as a Postdoctoral Research Associate in the Agronomy Department at the University of Florida (UF). Dr. Paudel received his Bachelor's degree in Agriculture from the Institute of Agriculture and Animal Science in 2009. After completing undergraduate degree, he worked as Horticultural Development Officer at the Ministry of Agriculture in Nepal, where he was stationed at the District Agricultural Development Office in Sindhuli. Dr. Paudel completed his MS degree in Crop Science from Texas Tech University in 2012 under the guidance of Dr. Eric Hequet where he evaluated the potentials of new testing methods in cotton breeding. After this, he worked as a Research Technician at the Texas A&M AgriLife Research in Pecos, TX where he optimized growing algae for biofuel. Dr. Paudel received Graduate School Fellowship from the UF to complete his PhD in Agronomy.

### Following are Dr. Paudel's major undertakings:

- ◆ Founding President of Plant Science Council at the University of Florida that organized the first DuPont Pioneer Plant Science Symposium at the UF.
- ◆ Chair of the first DuPont Pioneer Plant Science Symposium at UF.
- ◆ Served as the President of Nepalese Student Association at the UF.
- ◆ Initiated monthly 'Nepalese Talk Series' at UF.
- ◆ Awarded Trellis Fellowship by USAID to train researchers and scientists in Kayaba Management Foundation, Ghana on 'Project Proposal Writing'
- ◆ Led a two-week long hands-on training workshop on 'Using R for Applied Statistics' to students and researchers in Tamale Polytechnic Institute, Tamale, Ghana.

- ◆ Software Carpentry Instructor
- ◆ Recipient of Graduate School Doctoral Dissertation Award, UF
- ◆ Recognized as Outstanding International Student, UF International Center
- ◆ Recipient of Gerald O. Mott Award, Crop Science Society, USA
- ◆ Awarded New Frontiers Scholars Award by Corteva AgriScience
- ◆ Selected as Conviron Scholar by the American Society of Plant Biologists
- ◆ Received grants from USDA-SARE, Open Society Institute, Global Future Institute to conduct research
- ◆ Constructed the first genetic linkage map of elephant grass (napier grass, *Cenchrus purpureus*) using next generation sequencing
- ◆ Mentored undergraduate students in bioinformatics
- ◆ Representative of Agronomy Department in the UF Graduate Student Council
- ◆ Student Member of College of Agriculture and Life Sciences Graduate Teaching Awards Committee
- ◆ Coordinator and editor-in-chief of 'A Profile of Agriculture Graduates'
- ◆ Editor-in-chief of inaugural issue of 'Agri-Transformation', annual magazine published by the Hitkari Samiti
- ◆ Translated Madan Puraskar winning war memoir 'Khalangama Hamala' into English
- ◆ Produced training videos on 'Cultivating mushroom for small scale farmers'
- ◆ Member of National Association of Plant Breeders, Genetics Society of America, and American Society of Plant Biologists

### Involvement with NAPA

- ◆ Life member of Nepalese Agricultural Professionals of Americas (NAPA)
- ◆ Coordination of NAPA at University of Florida
- ◆ COC (NAPA 2020 and 2018 conference organizing committee) member
- ◆ Developed online abstract submission portal for NAPA 2020 conference
- ◆ Coordinate Student 3-minute Rapid Oral Presentation for NAPA 2020 conference
- ◆ Rapid Oral Presentation Committee Member for NAPA 2020 conference

## About Featured NAPA Member

**Every issue of Agri-connection has been featuring one of the outstanding NAPA members in different areas of agriculture and allied sciences. 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.**

## Upcoming NAPA Webinar



# N A P A

Association of Nepalese Agricultural Professionals of Americas  
Proudly Announces the 16<sup>th</sup> Talk Session (Webinar)  
On

## Adaptation of Agriculture to Climate Change in the Context of Nepal

By: **Gehendra Bahadur Gurung**

Technical Advisor to Disaster Preparedness Network, Nepal

**January 4, 2020 (Saturday)**  
**9:00 PM US Eastern Standard Time**  
**6:00 PM US Pacific Time**  
**07:45 AM Nepal Time (Sunday)**

### How to Join the Session?

Join from PC, Mac, Linux, iOS or Android: <https://zoom.us/j/803967370>

**Telephone:** Dial: +1 669 900 6833 or +1 646 876 9923,

**Meeting ID: 803 967 370**

Find your local number: <https://zoom.us/u/a1BVSSwpe>



**Talk Summary:** Nepal is highly vulnerable to climate change because of its dependence on nature-based livelihood, the agriculture. Agriculture is highly sensitive to climate change in many ways. Rising temperature and erratic precipitation have brought and have the potential to bring changes in the environmental niche of crops and animals. Directly, the changes affect the physiology of the plants and animals, thereby affecting the production performance. Indirectly, it affects other factors of production such as land, water, labour, etc. In this context, it is vital that Nepal's agriculture pays high attention and adapts to climate change for its development. Mr. Gurung will highlight the impacts of climate change on Nepal's agriculture and possible adaptation measures. He will present the ongoing efforts in adaptation and areas for improvements with focus from policy and practice perspectives.

दोश्रो नापा दिवसको आवसरमा आयोजना गरिने कविता प्रतियोगिता सुन्न नभूलौं !

मिति: जनवरी ०६, बेलुका

Join Zoom Meeting:  
<https://zoom.us/j/713688205>



**NAPA**

Association of Nepalese Agricultural Professionals of Americas

# Welcome New NAPA Members on Board

**We are growing !**

**Our total NAPA membership is at 351 that includes 68 Life Members, 64 General/Regular Members, 152 Student Members, 51 Associate Members, and 16 Family/Joint Members. We are greatly privileged to welcome the following new members in this quarter !**

## ***Students Members***

- Ms. Prakriti Sharma, South Dakota State University
- Mr. Pradip Poudel, Kentucky State University
- Ms. Manisha Hamal, Kentucky State University
- Ms. Anju Chaudhary, Kentucky State University
- Mr. Smriti Kandel, Kentucky State University
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- Mr. Dikshit Poudel, University of Georgia
- Ms. Bimala Acharya, Tennessee State University

## ***Life Members***

- Dr. Milan Shrestha, Arizona
- Dr. Ishwary Prasad Acharya, Iowa

## ***Associate Life Members***

- Dr. Birendra K. Bhattachan, Nepal
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- Dr. Nav Raj Adhikari, Nepal
- Mr. Krishna Hari Devkota, Nepal
- Mr. Ravindra Kumar Yadav, Nepal
- Mr. Ramesh Upreti, Nepal

## ***Family/Joint Members***

- Mrs. Aruna Bhattarai, Nepal

## **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
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**- Dr. Pradeep Wagle, Membership Drive Committee Chair**

## Members' Publications and Presentations

### Journal Articles

- Bhandari, P.** (2019). Regional variation in food security in Nepal. *Dhaulagiri Journal of Sociology and Anthropology*, 12: 1-10.
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### Oral Presentation

- Karki, U.**, **Khatri, R.**, **Karki, L.**, **Bhattra, S.**, **Poudel, S.**, & Tillman, A. (2019). Nutrient content of common forage and browse species available in different grazing systems. 77<sup>th</sup> Professional Agriculture Workers Conference, December 8-10, Tuskegee University, Tuskegee, AL.
- Karki, L.**, **Karki, U.**, & **Paneru, B.** (2019). Economic potential of an integrated approach vs a traditional approach for controlling animal diseases and parasites: The case of small producers in rural Alabama. 77<sup>th</sup> Professional Agriculture Workers Conference, December 8-10, Tuskegee University, Tuskegee, AL.
- Ellis, N., **Karki, U.**, & **Paneru, B.** (2019). Utilization pattern of woodland vegetation by hair sheep. 77<sup>th</sup> Professional Agriculture Workers Conference, December 8-10, Tuskegee University, Tuskegee, AL.
- Karki, L.**, Sullen, J., & Shange, R. (2019). School students' willingness to contribute to global food security through an agricultural track career: The case of George Washington Carver Society's Oratorical Contest. 77<sup>th</sup> Professional Agriculture Workers Conference, December 8-10, Tuskegee University, Tuskegee, AL.
- Rasali, D.** (2019). Reclaiming one health: Nexus between animal and human health beyond zoonosis. SAADC 2019 7<sup>th</sup> International Conference on Sustainable Animal Agriculture for Developing Countries, Pokhara, Nepal
- Subedi, B.**, He, G., Traore, S., Veeramasu, S., Binagwa, P., Neelakandan, A., Wright, D., Spalding, M., Chen, X., Lui, Fengzhen, L. (2019). Genome editing in peanut. 77<sup>th</sup> Professional Agriculture Workers Conference, December 8-10, Tuskegee University, Tuskegee, AL.

### Poster Presentations

- Paneru, B.**, **Karki, U.**, Ellis, N., **Karki, L.**, **Bhattra, S.** (2019). Management strategies for efficient utilization of woodland resources integrating small ruminants. 77<sup>th</sup> Professional Agriculture Workers Conference, December 8-10, Tuskegee University, Tuskegee, AL.

**Bold** = NAPA members

## Celebrating the Success: Members' Achievements



# Congratulations New Graduates



### Mr. Saroj Adhikari Graduates with his Master's Degree

Mr. Saroj Adhikari graduated with a Masters in Aquaculture Economics;

Concentration: Aquaculture economics from University of Arkansas at Pine Bluff.

Thesis title: Consumers' willingness to pay for convenient catfish products.

**Congratulations to Mr. Adhikari on his academic accomplishment!**



### Mr. Yogen Timilsina Graduated with his Master's Degree

Mr. Yogen Timilsina graduated with a Masters in Environmental Studies;

Concentration: Environmental Studies from Kentucky State University

Thesis title: Pungency, Ascorbic Acid, Sugars, and Phenolic Content of Red, White, and Yellow Onion Cultivars.

**Congratulations to Mr. Timilsina on his academic accomplishment!**



## Student Competition Awards

**Mr. Bidur Paneru**, Masters in Animal Science at Tuskegee University won First Place in Graduate Student Poster Competition at 77<sup>th</sup> Professional Agriculture Workers Conference, December 8-10, Tuskegee University, Tuskegee, AL.

**Congratulations Mr. Paneru!**





## Professional Recognition

Dr. Pradeep Wagle has been promoted as an Associate Editor to lead 'Biogeosciences' section of Remote Sensing, one of the reputed peer-reviewed open access journal of remote sensing technology.

**Congratulations to Dr. Wagle!!**



## Happy Married Life



**Tej Achraya weds Sushmita Dahal**



**Rabin Thapa weds Samikshya Karki**

**Congratulations to our NAPA  
Members on their  
marriage !**



**Rishi Bhandari weds Ambika Pokhrel**



**Kshitiz Dhakal weds Paru Gautam**

## 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](mailto: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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- Eligibility for NAPA awards, scholarships, and endowment funds
- 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
- Keeping up-to-date on NAPA's programs and activities
- Volunteering and charitable opportunities
- Discounted rates for registration and hotel reservation during scientific conferences organized by NAPA



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



Thank you.

On behalf of NAPA Executive Committee,  
Dr. Pradeep Wagle  
NAPA General Secretary  
Chair Membership Drive Committee  
Email: [napa2072@gmail.com](mailto:napa2072@gmail.com)



## Article

## Agricultural research for Nepal's development: Redefining role of Agriculture and Forestry University<sup>1</sup> Part III



- Dr. Bishnu Raj Upreti  
Email: bishnu.upreti@gmail.com

### Restructuring Agriculture and Forestry University (AFU) for advancing research

A meaningful, informed, and constructive debate about restructuring of the AFU is of utmost essentiality that can be achieved by engaging a wide range of stakeholders (legislators, scientists, students, teachers, farmers, policymakers, planners, private sector, etc.). Restructuring is necessary in the following aspects/are;

1. Legal (act/regulations),
2. Institutional (governing structures, human resource management, norms, procedures, values, a culture of practice, international relations, etc.),
3. Policy (vision, focuses, priority, resources, linkages, coordination, and collaboration),
4. Integration of education-research-extension, and
5. Thematic orientations (subject areas, research themes, etc.).

While discussing the AFU restructuring in line with the above point, it is relevant to discuss the possible options for restructuring.

Like all other universities in Nepal, AFU was created within the unitary political system, which is now constitutionally changed to a federal provision. Hence, restructuring of AFU is logical, legally required, and contextually needed. In this aspect, here are some possible options for AFU restructuring:

First, **central university model**: No big structures, no branches, to be concentrated at the center to entirely focus on: a) carrying out high-quality research, and b) world-class agricultural education-production of high-quality human resources required to fully utilize potentials of agriculture/natural resources sector. The implications are: a) no affiliated or branch campuses, b) no big extension component, c) administratively less complicated (because of the less number of administrative authorities with the only federal government), and d) a larger impact, better efficiency, and effective management. In this option, the operation of AFU will be similar to the Wageningen University and Research Centre of the Netherlands, which is the topmost agricultural university in the world. In my assessment, this is the

most suitable model for AFU in the changing context.

Second, **federal university model**: Big structure of AFU with branches in provinces and local levels. Main features will be: a) expansion of branch campuses in different provinces and possibly in municipalities, b) a 'land-grant model' where 'education-research-extension' is an integral operation of AFU, c) wide coverage but operationally more complicated in terms of management, efficiency, and scientific impacts, c) engagement beyond federal level and role and engagement of provinces and local governments. If this model is opted, it will have to operate similar to the United States 'land-grant universities' (some of them are also top-ranked in agriculture in the world university ranking). In this option, the government should make arrangements for providing land-properties in provinces and legally binding arrangements to work with. For example, recently established government's Agriculture Knowledge Centres in the districts going beyond AFU Agriculture Science Centre. This option will be more administratively complicated because of the involvement of a greater number of decision-making authorities (federal or provincial governments). In my assessment, this option is too complicated for AFU to be able to operate efficiently and effectively.

The political decision-makers, the legislators, policymakers, and planners are suggested to consider the following areas of AFU restructuring.

### Legal revision

The basic principle of amending the AFU Act must be to ensure 'real autonomy' to empower the university, to keep away from "dirty" political interference, and develop the capacity to offer world-class education and research. Revision of many articles of the Agriculture and Forestry University Act 2067 (2010) is needed to translate the spirit of Preamble which states, "...for the development of agriculture which is spine of the country and to conduct study, teaching and research within the country by making high standard academic and skilled human resource in the concerned subject in an integrated manner for the upliftment of social and economic status of the rural people by modernization of agriculture".

<sup>1</sup>This article constitutes 3<sup>rd</sup> & final part of an extended discussion paper published in the Agri-Connection issues. The 1<sup>st</sup> and 2<sup>nd</sup> parts were published in the last two Issues— Agri-Connection Volume 4, Issue 2 & 3. The paper was originally presented at the seminar "National Agriculture and Forestry Education Policy in Nepal" held in Bharatpur, Nepal on 26 November, 2018.

## Agricultural research for Nepal's development

**Table 1:** Possible options for AFU restructuring in the changing context

Major Characters	AFU as "Federal University" Option	AFU as "Central University" Option
Branch campuses	At Provinces/Local level	No branch campuses
Focus	Education-Research-Extension (land grant model)	Mainly on education and research with some extensions
Scope	Present in all 3 levels (federal, provincial, and local)	Present only at the federal level
Resource contribution	From all 3 levels (federal, provincial, and local)	From federal government
Management-administration	Extremely complex	More efficient and effective
Risks	High, possible political interferences from all 3 levels	Low, possible political interferences limits to a federal level only

First, this act needs to be amended as per the spirit of the Constitution of Nepal 2072. Further, one of the revisions is to relate with the federal structure and in my opinion, AFU must be legally defined nature of university (federal' or 'central' university) and adapt all legal provisions accordingly (as detailed in the table above). All other legal provisions need to be amended/elaborated according to the chosen option ('federal university' or 'central university'). Further, the provision of 'autonomous status in Chapter 2 article 4 is very narrow. It must be revised in the spirit of 'total autonomy' in the management and operation of the university. The amendment must also clearly address the issues of 'Directorate of Extension Services'. If the government decides to go for the federal university model, it has to clarify responsibility and define the operational relationship between the AFU's *Agriculture Science Centre* and the government's recently established *Agriculture Knowledge Centre (Krishi Gyan Kendra)* and *Veterinary Hospital and Service Centre*.

All other articles must be revised to address the issues and concerns raised in the preceding paragraph. The composition of the Senate (Chapter 4, Article 7) must be amended (e.g., instead of representation of trade union, it is essential to include the representation of: a) academically best-performing student from each level, b) professor publishing highest number of articles in high impact journals, c) remove representation of DDC President, Mayor, and Secretaries of 5 ministries, etc.). Further, the Chancellor of the university should not be the Prime Minister or Minister but the reputed academician or independent highly credible individual. Besides, the role of the research center (Chapter 7, Article 15) must be expanded. The relationship of research centers/stations currently operated by the government with AFU must be clearly spelled out in the law. The law and regulations should also clarify the autonomous status of AFU and its role concerning provincial agricultural institutes and research centers as well as the NARC.

### Institutional restructuring

Institutional restructuring is another precondition for AFU to achieve the aim stated in the Preamble. Even the aim stated in the Preamble of AFU needs to be expanded to meet the need of the country in changing national and global contexts. The current approach of selecting executives and other senior officials of the university must be replaced by the international standard of selection, e.g., academic recognition and merit, published in the high impact factor international journals, strong international networks and connections, good track record of generating financial resources, acquiring and supervision of large scale research projects and PhDs/Postdoc and 'vision and action plan to lead university'. The current practice of recruiting based on the dividing senior positions among the political parties at the time of appointment must be legally and institutionally ended. There must be a clear provision of feedback/input from all students, administrative and academic staff, and researchers while selecting AFU executive officials (e.g., Vice-Chancellor, Registrar, Deans, and other academic positions and senior administration). Political activities should legally be restricted in the AFU and those who engage in vandalism and damage of university properties and violence against any member of the AFU should be punished.

AFU must demonstrate/practice transparent governing structures and practices, ensure fair and competent human resources, high-quality education and research, and develop strong internal norms, procedures, values, and culture of practice that demonstrate the character of true agricultural universities discussed in the preceding sections. How can AFU be globally recognized and competent?, When the practice of firing university buildings, padlocking offices, indefinite closure of university by coercive force, creating division and fear, and total politicization come to an end? Why are the key stakeholders of the AFU ignoring this glaring reality?

## Agricultural research for Nepal's development

Is it not the first and foremost responsibility of AFU officials and students to make it a globally recognized, competent, and academically friendly university? If AFU officials and students are determined to keep the university free from vested interests and politicizations, it is possible to develop AFU similar to the five best universities discussed in section 3. The change must start parallel from: a) within AFU, b) the government decision-makers, and c) every person associated with the university.

Further, AFU has an important role to play in feeding the population of Nepal, promoting export of agricultural products, addressing environmental concerns, and stimulating the economic growth of the country while developing itself as one of the best universities in agricultural research and innovations, if it wants to be relevant.

If opted for restructuring AFU as a 'federal university', the government of Nepal needs to adopt a certain form of land-grant model (if not able to fully adopt the United States' model). Experiences show that university-based research under the land-grant structure provides a mechanism for technology transfer, shifting research from laboratory to the field or private enterprises for modernization, and commercialization of the agriculture sector. Modern agriculture has to benefit from the latest advancements in genomics, precision agriculture, global positioning systems, computer-guided irrigation networks, and other emerging technologies (Cordova, 2005). By opting for land grant model with full commitment, there are seamless opportunities for a continuum of basic research to applied research to outreach, that will ultimately address challenges faced by the agriculture sector and for developing national strategies to benefit farmers, allied industries, consumers, as well as care for nature and culture. However, this option needs a guarantee of providing huge areas of land and human resources required to deliver the mandate.

AFU can maximize its potential through creating different Research Institutes (for example, Animal Sciences (Livestock) Research Institute, Forest and Biodiversity Research Institute, Environmental Research Institute, Food Systems Research Institute, Social Sciences Research Institute, Interdisciplinary Research Institute, Institute for agro-ecosystem services, urban agriculture, mountain agriculture, land management, agro-forestry, medicinal and aromatic herbs, fishery, food processing and Impact Assessment Institute (to look the impacts of AFU on society, technology and economy and adapt as per the need of country) to carry out fundamental, basic, applied, and action (field-based) research. There must be an autonomous and strong 'business development and management' component within each of these Research Institutes to secure resources, to obtain commissioned research from the government, commercial businesses and non-profit organizations as well as collaborative research pro-

jects with other national and international research institutes and universities.

### Policy Reform

Another area of restructuring is policies, both of the government of Nepal as well as AFU and other related agencies. First and foremost, the government must develop an agriculture research policy that clarifies vision, focuses, priority, resources, linkages, and coordination on agriculture research based on the present and future needs and challenges. For example, what is the relationship between the two agricultural research institutions of the government (NARC and AFU), how they complement each other, how to maximize the available resources in each institution, must be clarified. Different modalities (NARC under AFU; 2 separate institutions working together for maximizing research impacts, transferring some of the research centers under NARC to AFU, etc.), can be envisioned to redefine the relation between these two institutions.

There is also a discussion going on to create a Deemed to be University. Why it is needed if there is already a dedicated university for agriculture? The government must be clear on where to lead agriculture. Establishing universities may be easy but making them functional as per the globally accepted standard is a daunting task. Instead of creating DU on agriculture, the priority must be to strengthen the existing AFU. Establishing another agricultural university is not only a waste of resources and duplications but also results in creating conflict and pushing back agriculture research. Nepal government must focus on quality of education and research than the number of agricultural universities.

Second, AFU must reform its policy considering the need of the changing political context (unitary to federal structures in terms of thematic focus, geographical focus, government's trade policy, and export promotion policy), need of private sector (what types of human resources are in demand in the private market). AFU must respond to the market need of agriculture manpower as well as agricultural production requirements, food systems, and comparative advantages if it wants to be relevant. The autonomy of the university with zero tolerance in politicization and interference from trade unions should be a core principle of making the university successful, which must be clearly articulated in policy, law, and practices. All academics and students must be engaged in research as an academic requirement and publication in high impact journals must be an important part of the performance assessment of faculties and students.

Nepal government needs to concentrate its efforts and resources to strengthen the teaching-research-extension

## Agricultural research for Nepal's development

capacity of AFU to fulfill the national human resources requirements for the development of agricultural sector instead of teaching agricultural subjects by non-agricultural academic institutions. The existing Institute of Agriculture and Animal Sciences should be transferred to AFU along with its all property.

The debate about whether AFU should be under the Ministry of Education, Science, and Technology or Ministry of Agriculture and Livestock Development is irrelevant, if full autonomy status is granted by law with clearly defined roles and responsibilities of line ministry. If the authority, roles, and responsibilities of the coordinating ministry and the AFU are clarified by the Act, it does not matter to which ministry the AFU belongs. A precondition is that AFU must operate with full "autonomy, accountability, and responsibility".

Regarding the debate on the possibility to form an Agricultural and Forestry Council, it will only add complications, as adding controlling mechanism will undermine the independence of the university. The most important priority of AFU must be to improve its governance, to develop the competency to fulfill the national requirement of agricultural human resources and to deliver high-quality research that ultimately enhances its visibility and recognition, which is possible for AFU only by ensuring autonomy, accountability, and responsibility.

### Integrating education-research-extension

Often, there are all three modalities observed i.e., a) focus on teaching; b) focus on the combination of teaching and research and c) integration of teaching, research, and extension. The land-grant model of the combination of teaching, research, and extension is appealing because of its unprecedented success in the United States. The "Federal University" option with its branches in provinces and even local levels fit with the land-grant model of the United States. The best example of 'Combination of teaching and research' is the Wageningen University and Research in the Netherlands. The "Central University" option presented in the preceding section represents this teaching-research model. In Nepal, whichever option ["teaching-research" (central university) option or "teaching, research, and extension" (federal university option)] is preferred, it requires: a) conducive policy, b) responsive institutional structures, and c) favorable regulatory provisions in addition to d) commitment, e) resources, and f) public ownership. If the government and AFU officials are ready to fulfill these six criteria, one of the two models (land-grant model of teaching-research-

extension; or the Dutch model ('Combination of teaching and research) is suitable for AFU.

### Thematic reorientations: subject areas and research priorities

Addressing the challenges brought by global change processes such as climate change, resource depletion and conflict, loss of agro-biodiversity, bio-piracy, and plant genetic resources, erosion of indigenous knowledge and skills, pollution and loss of aquatic resources, irrational exploitation of non-timber forest products and growing food insecurity requires a robust understanding, research-based concerted action and modified behavior. The dominant knowledge paradigm, consumerist behavior, and greed focused responses (for example, selling plant genetic materials for individual interests at the cost of national interests) are not able to deal with emerging challenges (Upreti, 2012). Hence, AFU like all academic institutions have opportunities to develop robust new technologies, trans-disciplinary knowledge, problem-solving skills, protecting bio-piracy, preservation of biogenetic resources, and indigenous knowledge. AFU needs to combine different approaches ranging from applied disciplinary, multi-disciplinary, inter-disciplinary, and trans-disciplinary research.

The AFU research priorities need to focus on the contemporary issues as per market demand and state responsibility (such as bio-diversity and plant genetic resources, conservation, agricultural diversification, specialization, natural resources management and dealing with resource conflict, aquatic resources and agro-climatic dynamics, non-timber forest products, agro-forestry, land management, forest-ecosystem, food systems and policies, staple food crops etc.) which are nicely outlined by Lele *et. al.* (2010) a) the principles of subsidiary (problem-solving research activities to be conducted where research results need to be applied with responsibility and accountability, b) build its priorities from the bottom-up through socially-inclusive processes involving the key stakeholders, c) combination of different approaches, technologies and practices, including combinations of traditional knowledge, conventional technologies, agro-ecological methods, and modern biotechnology, d) integrate participatory approaches and scientific and experimental methods; e) results-based management to effectively integrate innovative science and development, f) seek effective partnership and linkages with relevant agricultural and rural development research and development interventions to build national agriculture and natural resources research capacity, to increase accountability and for better results in poverty reduction, productivity growth and environmental sustainability.

## Agricultural research for Nepal's development

### Coordination and collaboration

AFU must play a leading role in coordinating agricultural research, forging collaboration with other agricultural research organizations within the country, and abroad and providing substantial research-based evidences for the national agricultural policy. At present, working alone is not appropriate by any institution and therefore the AFU must extend its international cooperation by participating in global and regional consortiums, networks and platforms, promoting collaborative research and exchange. There is a great scope for generating resources from local movements, provincial governments, and the private sector and therefore AFU must closely work with these agencies for mutually beneficial research and innovation.

### Conclusions

Restructuring of AFU is a precondition to be relevant in the changing context (political change in Nepal, challenges brought by global change process, market demands and public expectation). This revision of the existing AFU Act, changes in AFU policy and governing structures, and adaptive management and operation is of utmost importance to make AFU functional. AFU must be restructured to meet the national need of competent agricultural human resources; to support the provincial agricultural institutions, to fulfill the demand of the private sector, and to meaningfully engage in the national agricultural policy process. The existing AFU is not able to carry out all these tasks and therefore restructuring is a precondition.

Nepal government has recognized agriculture as one of the important contributors to national development. Hence, the Nepal government must allocate enough core funds for agriculture research to meet the expected outcomes from the agriculture sector. In this context, the government in consultation with all AFU stakeholders must decide on an appropriate option (either the 'central university' model or 'federal university' model) for restructuring.

There is a great scope for AFU to expand collaboration with national and international agricultural research institutions. Resources available with provincial and local governments are an opportunity for AFU to harness mutually beneficial research work.

AFU needs to take a lead in research collaboration with existing research institutions (NARC and its centers, Forestry Research Centre, etc.), private sector and even with the cooperative sector for cross-cutting innovative research work. AFU must develop right regulations, appropriate procedural guidelines and strong inter-agency coordination to exploit potentials, expand collaboration with international research institutes and universities and participate in larger agriculture-related consortiums and networks.

It is very hard to find any convincing logic for the creation of the Deemed University of Agriculture in Nepal

at a time when there is a separate operational AFU. Further, the separate operation of the Institute of Agriculture and Animal Sciences (IAAS) under the general university (TU) when there is a dedicated agriculture university operating is not convincing and therefore must be transferred to the AFU with all its property. The resistance of TU to handover the IAAS properties to AFU is neither appropriate nor convincing as both are state universities supported by the state and the state has the responsibility to decide at the best of agricultural education of the country.

The AFU also needs to identify priority areas with a thematic focus in holistic value chain approach of agriculture (production, processing, marketing), market demand, national requirements and concerns (such as bio-piracy and plant genetic resource protection) and areas of specializations.

Politicization is damaging the credibility, reputation, and potentials of AFU. Politicization in AFU and high-quality agriculture education and research cannot go together. Therefore, any space for possible politicization and trade unionism must be closed by amending the AFU Act to make AFU as a true agricultural university. Research must be made an integral part of the academic requirement for students and professors and publication of research findings in high impact factor international journals must be the major criteria of performance evaluation of professors. Acquiring large-scale research projects and funding for PhD students and Postdoc researchers must be another major criterion of evaluation of professors.

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### About the Author

**Bishnu Raj Upreti**, PhD (2001) on social sciences (Conflict Management) from Wageningen University the Netherlands, is engaged in teaching and research on social and public policy issues. Currently he is leading the Nepal Centre for Contemporary Research (NCCR) and has many undertakings at national and international level.

## किसानको गीत

कहिले जोत्रे कहिले बस्ने डोको नाम्लो बुनी  
पाखुरीको कमाइ हो किसानको जूनी

काम शुरु हुन्छ उसको घाम झुल्केदेखि  
मात्र घर फर्किने हो घाम डुबेपछि  
न त वर्षा न त हिउँद न त हुन् चाडवाड  
फुर्सद कहिल्यै हुन्न सधैं हतारैहतार

फलन नि खेतमा फल्छ मोती जस्तै धान  
यसकै कमाइले पाल्छ आफ्ना जहान  
किसान मख्ख पछि सधैं यसमा गर्व गर्दै  
ओठबाट मुस्कानका भावहरु छर्दै

शहर हैन उ चाहि सधैं गाउँ प्यारो ठान्छ  
अर्काको ठगी खान ज्यादै गाह्रो मान्छ  
खान्छ कमाइ आफ्नै सधैं पाखुराको भरमा  
अन्न कहिल्यै खाँचो हुन्न मर्दको घरमा

गाउँ बेसी गर्छ सधैं डोको नाम्लो बोकी  
पौरखको छाक मिठो विहान वेलुकी  
पहाडमाथि आलु फल्छ पाखाबारी तोरी  
ठाडो भाकामा गीत गाउँछ मनको धोको फेरी

साहित्यिक कुना



गोबिन्द बराल, क्रिश्चियन्सबर्ग, भर्जिनिया



## 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 \$10,000.00 monetary awards and bestowed many recognitions in the 2018 biennial 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

**Association of Nepalese Agricultural Professionals of Americas (NAPA)**

Website: [www.napaamericas.org](http://www.napaamericas.org)

E-mail: [napa2072@gmail.com](mailto:napa2072@gmail.com)



## Global Journal of Agricultural and Allied Sciences (GJAAS)

### INAUGURAL ISSUE PUBLISHED!

It is with profound pleasure that we announce the publication of the Inaugural Issue of Global Journal of Agricultural and Allied Sciences (GJAAS) early this month. Entire NAPA community, and agricultural and allied sciences expatriates from around the globe should take great pride in this history-making milestone. Established in 2016, NAPA prioritized the publication of a scientific journal at the forefront of several ambitious agenda items to serve its members and beyond. We began assembling an editorial board and volunteers to get the journal established soon after NAPA installed its first Executive Committee. Establishing a brand-new refereed journal, specifically with the international standard, was expectedly a challenge that required an incredible amount of work behind the scenes by many dedicated individuals. A globally eminent journal demands quality papers based on strong scientific data and rigorous research; the authors who trusted GJAAS as their publication outlet, especially in its nascent stage, are greatly appreciated for their consideration, and we express our firm commitment for the high standard of the journal that you have entrusted. We thank all tireless volunteers, including researchers who submitted papers, numerous reviewers, editors, and other contributors.

Because the journal employs a double-blind review process, it can be expected that we only accept the papers that are approved by your research peers. Therefore, we encourage prospective authors to endeavor to submit high quality research papers for publication consideration in GJAAS. On behalf of NAPA Executive Committee and GJAAS Editorial Board, we offer first few articles in this inaugural issue (<https://gjaas.org/index.php/GJAAS/issue/view/1>). The editorial board is working on a few more papers for publication in this first issue. GJAAS is fully functional online, including submission and journal processing. We also plan to publish hardcopy version of the inaugural issue of GJAAS by NAPA 2020 conference in Atlanta. The online submission is now open for the second issue at <https://gjaas.org/index.php/GJAAS>. We also would like to inform prospective authors that you may submit papers year-round without any specific deadlines.

Sincerely,

Megha N. Parajulee, GJAAS Editor-In-Chief

Lila B. Karki, NAPA President

## Heartfelt Condolences



**Date of Birth**  
**1 Sep. 1961**



**Date of Demise**  
**24 Oct. 2019**

We are deeply saddened by the untimely demise of our Associate Life Member

**Dr. Laxmi Narayan Prasad Sah.**

We express our heartfelt condolence. May his soul rest in peace!



**Association of Nepalese Agricultural Professionals of Americas**

# NAPA 2020: 2<sup>nd</sup> Biennial Conference

“GLOBAL FOOD SECURITY THROUGH AGRICULTURAL TRANSFORMATION”

## Conference 2020 Funds Appeal

Dear NAPA members and beyond,

We are pleased to share that the conference organizing committee is working hard to make the 2nd Biennial Scientific Conference a grand success. The conference will be held during May 22-24, 2020 in Atlanta, Georgia, USA on the theme ‘Global Food Security through Agricultural Transformation.’ Individuals and Institutions have opportunities to sponsor at the following sponsorship levels or to sponsor for an event/prize in your name or name of beloved ones.

Levels	Individuals (USD)	Institutions (USD)
Platinum	>1,000	>5,000
Diamond	500-999	4,000-4,999
Gold	300-499	3,000-3,999
Silver	100-299	2,000-2,999
Bronze	50-99	1,000-1,999
Green	<50	<1,000

Events	First prize \$	Second prize \$	Third prize \$	Event Total \$
Outstanding Student Oral Presentation	250	150	100	500
Outstanding Student Poster Presentation	250	150	100	500
Student Writing Contest	300	200	100	600
Agri-Poem Contest	200	150	100	450
Room sponsoring for students and presenters from Nepal	One room for 1 night (\$99)	One room for 2 nights (198)	One room for 3 nights (\$297)	
Food sponsoring for students and presenters from Nepal	Two lunches at the hotel (\$50)	Closing dinner at the hotel (\$27)		

### Events sponsorship opportunity:

Donations can be paid in different ways:

1. Click the **donate** button on the NAPA website (<http://napaamericas.org/donate.php>) and pay using PayPal or Credit/Debit Cards. Please write the purpose of payment (e.g., donation for conference) in the ‘**additional information**’ box.
2. Free electronic wire transfer from several major banks (Bank of America, BB&T, Capital One, JPMorgan Chase, PNC Bank, US Bank, SunTrust and Wells Fargo) in USA to [napa2072@gmail.com](mailto:napa2072@gmail.com).
3. Check can be mailed to Pradeep Wagle, General Secretary, 11821 SW 9<sup>th</sup> St, Yukon, OK 73099.

Please note: “NAPA donations are tax deductible.”

For any questions, please contact NAPA at [napa2072@gmail.com](mailto:napa2072@gmail.com). We thank you in advance for your generous donation.