



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

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

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

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# Agricultural Education, Research, and Extension in Nepal: Role of Expatriates<sup>1</sup>

Megha N. Parajulee<sup>2</sup>



**Abstract.** Higher education in agricultural sciences in Nepal formally began in 1972 with the establishment of Tribhuvan University's (TU) Institute of Agriculture and Animal Sciences (IAAS) in Rampur, Chitwan. Today, Nepal has three agricultural universities (TU Institute of Agriculture and Animal Sciences, Purbanchal University's (PU) Himalayan College of Agriculture Science and Technology (HICAST) in Kathmandu, and Agriculture and Forestry University (AFU) in Chitwan) and several agricultural colleges and polytechnic institutes throughout the country. While these institutions focus primarily on training agricultural scientists, specialists and technicians, Government of Nepal (Department of Agriculture and Department of Livestock Services) conducts agricultural and livestock outreach through its district offices in all 75 districts. Five regional directorates of both departments supervise and monitor all programs conducted by districts within the region. The country's agricultural research is shouldered by Nepal Agricultural Research Council (NARC), which coordinates research activities through its five regional headquarters and several research stations throughout the country. This article highlights the functioning of these institutions as it relates to agricultural human resource development, research, and outreach. Current challenges and future prospects of these agricultural institutions in Nepal's overall agricultural development are discussed. Finally, I discuss how NAPA could collaborate with relevant institutions and professionals to possibly lessen/overcome those challenges.

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<sup>1</sup> Some highlights are reflected in an interview published in Karobar National Economic Daily <http://bit.ly/2eFLaMp> (October 2016).

<sup>2</sup> Vice President, Association of Nepalese Agricultural Professionals of Americas (NAPA); *Professor, Faculty Fellow, and Texas A&M Regents Fellow. Texas A&M University, AgriLife Research and Extension Center, Lubbock, Texas, USA. [m-parajulee@tamu.edu](mailto:m-parajulee@tamu.edu)*

**Introduction.** Nepal takes a great pride in owning the tallest peak (Mount Everest - 29,028 ft) to the deepest gorge (Kali Gandaki Gorge – 18,278 ft) in the world. With this extreme elevation, Nepal offers an incredible geographic variation for the size of the country, with three distinct climatic zones: Terai region, elevated flatlands and hills, and mountain region. These three major geographic/climatic zones have given rise to several agroecological regions. These diverse agroecological regions allow for exceptional and unique agriculture diversity in Nepal. The crop diversity ranges from cereal crops (rice, maize, and wheat), pulses, sugarcane, and industrial crops (rubber, tea, and jute) in the Terai region to specialty spices and high-quality temperate fruits in the lower mountain region, while the elevated flatlands and hills provide an ideal environment for sub-tropical fruits, vegetables, coffee, tea, and other industrial crops. This vast agricultural diversity offers greater opportunity for Nepal to develop a world-class agricultural education, research and outreach model that encompasses wide range of ecological and climatic zones.

Association of Nepalese Agricultural Professionals of Americas (NAPA) is an organization of Nepalese expatriates affiliated with agricultural and natural resources disciplines. Because the primary goal of this organization is to utilize collective skills of agricultural expatriates in the advancement of agricultural education, research, outreach, and production enterprises in Nepal, a reasonable understanding of current state of agricultural affairs of home country is a necessary first step.

The author had an opportunity to spend about five months in Nepal as a Fulbright Senior Fellow for Agriculture in 2014. The assignment entailed visiting an extensive number of academic institutions, government research institutes, private farms, and non-governmental organizations engaged in agricultural development. This visit was followed by two additional short visits in 2015 and 2017. Following observations and policy suggestions are based on the experience, extensive research and discussion with professionals of various institutions in Nepal during those visits.

**Current State of Higher Education.** Nepal offers a highly comprehensive agricultural education at the university level that produces

qualified human resource in nearly every agricultural discipline. In general, Nepali agriculture graduates are academically prepared to be highly competitive with graduates from any other countries in the world. Unfortunately, despite the formal establishment of the Institute of Agriculture and Animal Sciences in 1972 (IAAS, 2011), the growth of higher education institutes remained stagnant for the next 30 years. However, the recent decade is marked by a significant growth in agricultural higher education institutions, including two new universities, Himalayan College of Agriculture Science and Technology (affiliated with Purbanchal University) (2000) and Agriculture and Forestry University (2010), plus several private agricultural colleges and polytechnic institutes (Fig. 1).

**Challenges and Opportunities.** Based on author's visits and interactions at each of these institutions, the author draws the following remarks with regard to the current state of agricultural higher education in Nepal:

- Extreme political interference has hindered the quality of education, which is not surprising given the political instability in the nation.
- The oldest agriculture institution, Institute of Agriculture and Animal Sciences (IAAS) Central Campus, has been displaced from its original location in Rampur, but the new Agriculture and Forestry University that displaced IAAS has not gained a significant traction. The delayed progress of this 7-year old university, AFU, is again partially attributed to uncharacteristic political interference in all areas of university functioning. AFU's establishment of College of Agriculture and Natural Resources in Puranchaur, Kaski is the positive step toward university's long-term vision of making AFU one of the premier agricultural institutions in Southeast Asia.
- HICAST has yet to develop itself into an international level agriculture institution after over a decade of its establishment, but it harbors exceptional potential to achieve such status. Its current academic programs, physical infrastructure, and commitment for further growth are clear indication of HICAST's progressive future.
- TU's newly affiliated colleges (e.g., Dang, Baitadi) need greater resources and TU's attention.

- Coordination amongst universities and government agricultural institutions is unsatisfactorily weak; a synergistic alliance amongst all agricultural institutions, including private agricultural enterprises, is vital for research-based post-graduate agricultural education in Nepal.
- Lack of comprehensive “homework” as it relates to the structure of agriculture education

system in the upcoming federal governance of the country is of concern. Because agriculture is the mainstay of the country, long-term consequences of agriculture policies under the new state restructuring process cannot be overemphasized.



Fig. 1. Institutions of agricultural higher education in Nepal.

While these limitations have handicapped the growth in Nepal’s agricultural education, many possibilities exist:

- Despite extreme political interference in academic institutions, the production of agriculture human resource is increasing; however, the quality of practical education and synergism amongst expertise could be improved. Graduate level agricultural education could be strengthened through increased focus on high quality research-based curricula.
- Strong network of agricultural specialists amongst universities, NARC, Government of Nepal, private industries, and NGOs is much needed to complement various disciplines and programs and to reduce redundancy.
- Coordination among teaching, research, and outreach activities is lacking, but it offers an opportunity for developing a new integrated model of agricultural education in Nepal.
- High officials in every agricultural sector in Nepal are connected to Rampur (IAAS and now

AFU), which should serve as a unifying variable for political leverage in advancing overall agricultural growth and development in Nepal.

- There are boundless opportunities for Nepalese agricultural expatriates to offer their personal service for Nepal’s agricultural growth and development. In return, Nepal’s agricultural institutions offer tremendous opportunities for fostering long-term collaborative linkages for agricultural research.
- These institutions should also develop attractive research-teaching-extension curricula for international researchers to seek tangible collaborations. An effective way for young scientists from these nascent institutions to publish their research in international journals is via active collaboration and partnerships with international institutions.

**State of Agriculture Research.** Nepal’s agricultural research is primarily overseen by Nepal Agricultural Research Council (NARC). Until 1991, agricultural research and extension services of the

country were both under the then Department of Agriculture. The extension service was provided via District Agricultural Development offices in all 75 districts, whereas agricultural research was performed via regional and national research centers. These research centers were generally commodity based and regionally adapted. For example, National Maize Research Center and National Legume Research Center located in Rampur, Chitwan, National Wheat Research Center in Bhairahawa, National Rice Research Center in Parwanipur, and so on.

In 1991, an autonomous agricultural organization, NARC, was established under the Ministry of Agriculture with the mandate to: a) conduct qualitative and quantitative research on different aspects of agriculture, b) identify existing problems in agriculture and find out the solution, and c) assist government in formulation of agricultural policies and strategies. While the idea of separation of research and extension from the Department of Agriculture was sound, the implementation was plagued with bureaucratic complexity and political interference and the original intent of such separation did not materialize. As a result, neither all research centers from the Department of Agriculture were transferred to the newly minted NARC nor the autonomy of NARC, as envisioned in the charter, was implemented. Nevertheless, there is now one regional research center at each of the five developmental regions in the country (Tarahara, Sunsari; Parwanipur, Parsa; Lumle, Kaski; Khajura, Banke; and Dipayal, Doti). In addition, there are 17 agriculture research stations within those regional centers (NARC, 2010) (For details, please refer to [http://narc.gov.np/org/national\\_commodity\\_research\\_program.php](http://narc.gov.np/org/national_commodity_research_program.php)). The author visited all five regional research centers and found that these research centers have tremendous potential for research, both in terms of local resources and technical feasibilities.

**Challenges and Opportunities.** While these centers are not all fully equipped with research facilities, scientists were observed to be highly innovative and productive. We feel that NAPA's vast expertise in almost all areas of agricultural research should prove invaluable asset for these centers to utilize through tangible collaborations. NARC scientists

would especially benefit from these international linkages through information sharing and publication of their research. I expect that these research centers will be retained as regional research centers under the pending federal governing system of the country.

### **State of Agricultural Extension and Outreach.**

Agricultural and livestock outreach programs are primarily implemented via district offices, one each of agricultural and livestock district office per district in all 75 districts. In the last two decades, Nepal's agricultural sector has witnessed tremendous growth in NGOs, private sector agricultural enterprises, and cooperatives, all working together with district agriculture office toward improving crop/livestock production, poverty alleviation, and agricultural sustainability.

The author visited several district agricultural development offices, NGOs (Helvetas, FORWARD, and Namsaling Community Development Center), private farms (tea farms in Ilam and Jhapa, rubber farms in Jhapa, poultry farms in Chitwan), and agricultural development banks. Altogether, at least 38 of the 75 districts were visited that provided the opportunity to interact with nearly every sector of agriculture enterprise in Nepal (Fig. 2). These visits also included interactions with agricultural policymakers and political entities.

**Challenges and Opportunities.** Visiting with district level agricultural extension officers and other allied extension stakeholders (e.g., private industry and NGOs), it is evident that the agricultural extension has clearly reached to Nepalese farmers. However, agriculture extension and outreach must integrate plethora of other issues faced by rural citizens, including woman and child nutrition, food safety, public health, sanitation, and other issues that are directly linked with rural agriculture. Therefore, an integrated approach of extension is needed to deliver necessary informal education as well as to empower rural agricultural workforce for agricultural development and sustainability. Major extension issues in Nepal include integrated crop and livestock production systems, pesticide use (misuse and improper handling) patterns in rural areas, catering agriculture extension to rapidly urbanized locales, food safety and nutrition, among others.



Fig. 2. Districts visited by the author that included agricultural institutions of higher education, NARC, District Development Office and other agricultural enterprises.

**Summary.** NAPA recognizes the need for stronger partnerships between Nepalese agricultural expatriates and agricultural institutions in Nepal in all areas of agricultural education, research, and outreach.

Because Nepalese agricultural expatriates already have exceptionally close relationships with most agricultural scientists and practitioners throughout Nepal, we envision a natural and seamless collaboration between NAPA and Nepal's agricultural institutions. NAPA First General Assembly asserted that Nepal's agricultural research-teaching-extension sector is vibrant and active, but it requires significant amount of coordination amongst these entities, and a productive partnership with NAPA would prove highly valuable in advancing Nepal's agriculture sector. Similarly, Nepal's various agricultural institutions offer tremendous opportunities for collaborative linkages for NAPA members to be able to provide tangible service to Nepal. NAPA's vast network of expertise can also serve as a valuable resource for agriculture policymakers. Significant and tangible collaboration of NAPA is possible with:

- Several NGOs/INGOs engaged in agricultural/cropping system research (such as FORWARD, LIBIRD, NCDC, Helvetas, FAO, DFID, World Bank, USAID, and others)
- Nepal Agricultural Research Council
- Agriculture universities and colleges
- Private industries (e.g., seed companies, beekeeping, poultry)
- Commodity organizations and cooperatives (e.g., rubber, tea, coffee)

NAPA expects that collaborative mechanisms will be developed by Nepal's agricultural institutions to attract international partners. NAPA also plans to directly reach out to these institutions and facilitate the process toward developing such partnerships. Several rounds of discussions between NAPA officers and agriculture policymakers in Nepal within the last several months should produce some valuable outcomes in shaping the long-term collaboration between NAPA and agricultural institutions in Nepal. Additionally, NAPA can coordinate with agricultural expatriates of Nepalese origin and beyond around the globe and make a common platform for a collaborative initiatives.

**Disclaimer:** The views expressed in this article are of the author and do not necessarily reflect the official views of Policy and Research Brief editorial board or that of NAPA.

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Please contact us or submit your contributions at:  
[RPB.napa@gmail.com](mailto:RPB.napa@gmail.com)