



CRS Farmer-to-Farmer Program Assignment Scope of Work

To express interest in this assignment please email priyanka.subba@crs.org

Summary Information				
Assignment SOW Code	NE301			
Country:	Nepal			
Country Project:	Agribusiness Development			
Host Organization:	Centre for Industrial Entomology Development (CIED), Government of Nepal			
Partner:	Department of Agriculture (DoA)			
Assignment Title:	Training on honeybee Instrumental Insemination (II) and identification of promising Nepalese honeybee colonies.			
Objectives of the assignment:	<ol style="list-style-type: none"> 1) Facilitate hands-on training sessions in Instrumental Insemination (II) techniques for honeybees. 2) Identify and select promising honeybees for enhanced productivity and genetic advancement. 3) Provide insights into potential genetic gains and biosecurity concerns associated with importing queen bees. 			
Assignment preferred dates:	May-June			
Desired volunteer expertise:	<ul style="list-style-type: none"> • Proficiency in bee genetics and practical experience in honeybee breeding enhancement. • Demonstrated expertise in colony selection for productivity and genetic superiority, as well as performing instrumental insemination for genetic improvement and high-quality queen production. • Skilled in training facilitation, manual preparation, and protocol development for artificial insemination techniques. 			
Type of Volunteer Assistance:	Building Capacity of Support Services (S)			
PERSUAP Classification ¹ :	Type II			
Approx. number of people to be trained:	Men	Women	Male Youth	Female Youth
	24	16	10	10

Host Information	
Date of completion of baseline & Capacity development plan data collection:	4 th April 2024

¹ USAID precisely classifies PERSUAP in four categories; PERSUAP Type I assignments directly related to pesticides recommendations, Type II as assignments with indirectly related with pesticides, Type III assignments related to curriculum review and designing, business plan development and strategies development and Type IV as assignments associated with other USAID projects and collaborators.

Date of host agreement signing:	16 th April 2024 (counter signed by CP expected on April 24, 2024)
No. of previous assignments: ²	There have been no previous assignments during the current round of F2F. However, during the last round volunteers implemented NE2103: Support for the Centre for Industrial Entomology Development (CIED) in establishing a honeybee breed improvement and resource center and NE2104: Introductory training on honeybee artificial insemination (AI) and identification of promising Nepalese honeybee colonies.
Recommendations given (Total):	
Recommendations applied (Total):	
Name of ToT trainee (if already identified)	Sujan Pokhrel, Plant Protection Officer

A. BACKGROUND

The CRS Farmer-to-Farmer program (F2F) is a five-year (2023-2028) USAID funded program which provides technical assistance to farmers, farm groups, agribusinesses and other agriculture sector institutions in developing and transitional countries to promote sustainable improvements in food security and agricultural processing, production, and marketing. The main goal of the program is to generate sustainable, broad-based economic growth in the agricultural sector through voluntary technical assistance. A secondary goal is to increase the U.S. public's understanding of international development issues and programs and international understanding of the U.S. and U.S. development programs.

F2F volunteers are pooled from a broad range of US agricultural expertise including private farmers, university professors, bankers/certified accountants, animal health and nutrition specialists, soil scientists and agronomists who can provide technical assistance to the local host organizations. The program introduces new innovations and skills to develop local organizations' capacity to participate in more productive, profitable, sustainable, and equitable agricultural systems while providing an opportunity for people-to-people exchange within the agricultural sector.

When the COVID-19 global pandemic broke out, CRS F2F introduced a paired remote volunteer (PRV) model whereby a US volunteer who does not travel provides remote support to a local/national volunteer who carries out the assignment in-person. This model is still used for up to 10% of assignments.

For the 2023-2028 round of F2F, CRS is taking a gender-sensitive approach to programming, which includes conducting a gender assessment of each host prior to initiating assignments. CRS is also asking each host to identify at least one person to be a key trainee (under a Training of Trainer [ToT] model) for each assignment in the hope that this person will be able to replicate the training in the future. This isn't a deal-breaker, but we are strongly encouraging it. Therefore, the volunteer report format will ask you to name the trainee (if there was one) and comment on their level of engagement.

The CRS F2F program in Nepal has identified Agribusiness Development and Climate-Smart Agriculture (CSA) as the topics of its assignments. These are known within F2F as 'Country F2F Projects.' The agribusiness development project involves activities such as vegetable and fruit cultivation, dairy and goat farming, honeybee management, mushroom cultivation, as well as agro-processing, storage, packaging, branding, and marketing. The CSA project includes diversification and crop management, improved water management, and soil

² Discuss new hosts with Program Director.

conservation. CRS F2F's working geographic zones are Sudur Paschim, Karnali, Lumbini, Bagmati, and Madhesh provinces. Requests from other locations and outside-country projects are sometimes considered but are seen as exceptions.

The Center for Industrial Entomology Development (CIED), a constituent body of the Ministry of Agriculture and Livestock Development (MoALD), was established in 1995 to foster the growth and advancement of honeybees, mushrooms, silkworms, and other industrially significant insects throughout the nation. CIED operates by providing policy directives, national standards, and technical support for the commercialization of the commodities. As the principal national authority for the promotion of industrial entomology-related agriculture, CIED plays a pivotal role in steering initiatives towards sustainable commercialization in this sector. CIED oversees the management and supervision of two key agricultural centers, namely the Sericulture Development Centre (SDC) in Khopasi, Kavre, and the Beekeeping Development Centre (BDC) in Godawari, Lalitpur. These centers operate under the direct administrative and technical guidance of CIED, serving as focal points for research, training, and development activities.

The overarching mission of CIED is to contribute to both import substitution and export promotion in honey, mushrooms, silk, and other industrial entomology-related products. Central to its mandate is the commercialization of targeted commodities, achieved through the development and dissemination of cutting-edge technologies, the establishment of national protocols and standards, and the facilitation of access to quality inputs.

Embracing the federal structure mandated by the country's constitution, CIED actively collaborates with provincial and local-level governments. By fostering partnerships and synergies, CIED endeavors to maximize its impact and effectively address the evolving challenges and opportunities within the industrial insects' landscape. CIED, SDC, and BDC currently have a total staff of 52 personnel with 35% female staff and are providing technical support and advisory services to the sub-national governments across the country.

B. ISSUE DESCRIPTION

Despite years of commercialization efforts by both governmental and private sectors, honey production and productivity in Nepal remain significantly low. For instance, the yield per colony is less than 20 kg for *Apis mellifera*, a European breed introduced to the country almost four decades ago, and merely 5 kg for *Apis cerana*, the local breed. The persistently low productivity levels have significantly impacted farmer profitability. Furthermore, this situation is aggravated by the influx of low-cost imported honey, presenting a challenge for local farmers who struggle to compete, despite offering a superior quality product. Consequently, Nepalese farmers have been finding themselves increasingly vulnerable in the honey markets, both domestic and international.

Discussions with government technical staff and farmers alongside literature reviews, have shown that among various factors, the availability and access to bee colonies with superior genetic traits and production potential pose an immediate constraint. Neither the Government of Nepal (GoN) beekeeping centers nor private sector bee firms possess the technical expertise necessary to consistently produce and supply high-quality bee colonies with superior genetic traits.

There are approximately 10 government-run beekeeping centers across the country. These centers primarily focus on offering training and advisory services to farmers, as well as supplying bee colonies for commercial honey production. Alongside these government centers, numerous privately owned commercial beekeeping firms also provide beehives to farmers. However, it's common for private firms to supply weaker colonies to farmers while

retaining superior colonies for themselves. This trend of negative selection has led to a significant decrease in both the production and quality of honeybees nationwide.

To address this gap, the GoN initiated interventions, including the establishment of a breed and colony improvement program in collaboration with the university and national research systems in 2022, supported by technical assistance from F2F volunteer experts. This scope of work was developed based on recommendations from the previous F2F volunteer. The SOW primarily focuses on delivering training and technical support to private sector beekeepers, university faculty, as well as research and extension staff. The main objectives include providing guidance on identifying and selecting promising honeybee colonies and conducting hands-on training sessions on Instrumental Insemination techniques.

This SOW falls under the country project on agribusiness development which aims to enhance the income, employment opportunities, and natural resource management of Micro, Small, and Medium-sized Enterprises (MSMEs) engaged in the honeybee value chain by systematically addressing their technical and input constraints, and capacity development of public and private agencies engaged in the production and supply of bee colonies to beekeeping farmers. This assignment will ultimately support the national goal of fostering profitable commercialization, boosting competitiveness, and promoting a more inclusive agriculture sector.

This assignment will also contribute to mitigating the effects of climate change as bees are significant pollinators and play a crucial role in the conservation of biodiversity, and repair, maintain, and augment ecosystem health and services which are crucial for the ecosystem to absorb atmospheric carbon and minimize its effects.

C. OBJECTIVES OF THE ASSIGNMENT

The general objective of this assignment will be to strengthen the organizational and technical capacities of the public and private sector beekeeping experts and MSMEs on commercial beekeeping management. The specific objectives are as follows:

1. To identify and select promising honeybee colonies within the country, aiming to boost productivity and genetic advancement.
2. To conduct hands-on training sessions specifically dedicated to Instrumental Insemination techniques in honeybee management.
3. To assess and recommend potential genetic advancements while addressing biosecurity concerns linked with importing queen bees.

D. HOST CONTRIBUTION

CIED will mobilize commercial beekeepers as well as government research and extension staff, and surrounding communities to attend the volunteer training. The organization will also assign at least one key personnel to work closely with the volunteer during training preparation and implementation to ensure that key staff members can train other organization members effectively once the assignment concludes.

Furthermore, the host will provide the following contributions:

- Provision of training venue and necessary experimental materials for the training sessions.
- Adherence to Government of Nepal (GoN) policies regarding payment of per diem, stationery, and transportation for participants, and other associated training facility costs.

E. ANTICIPATED RESULTS FROM THE ASSIGNMENT

1. Strengthened honeybee breed improvement program.

2. Enhancement of quality honeybee colony production through new breed improvement methods and techniques implemented in government farms and private sector beekeeping centers.
3. Increased accessibility for farmers to acquire superior and high-yielding bee colonies.

F. DELIVERABLES

The anticipated deliverables accomplished by the volunteer include:

1. Volunteer end-of-assignment report with recommendations for the host organization’s action plan and recommendations for CRS (due before departure from Nepal).
2. Group presentation with local stakeholders at the end of the assignment in-country
3. Final debrief meeting (PowerPoint presentation) with the host organization (plus key stakeholders) and CRS/USAID.
4. A minimum of 3 volunteer outreach activities in the US and in-country using appropriate media (print, radio, TV, group presentations, social media etc.)

G. DRAFT SCHEDULE OF VOLUNTEER ACTIVITIES IN COUNTRY

Day	Activity
Days 1	<ul style="list-style-type: none"> • Arrival at Tribhuvan International Airport (TIA); pick-up by Hotel Kutumba driver • Check-in at Hotel Kutumba, Kupondole, Lalitpur, Nepal. <p>N.B.: In case you encounter any difficulty, please request assistance from Airport Staff to call Suprava Acharya (on WhatsApp or phone) at +977 9840937902 or Nirmal Gadal at +977 9851073671.</p>
Day 2	Rest day in Hotel Kutumba, Kupondole, Lalitpur, Nepal.
Day 3	<ul style="list-style-type: none"> • At 10:00am, the volunteer will be picked up at the hotel by the CRS driver and taken to the office for introductions and briefings. • The volunteer will be briefed by the F2F team about the host and discuss with the team the related logistics and anticipated outcomes. • The volunteer may also prepare study materials while at the CRS Office. • After the briefing, the volunteer will travel to the Department of Agriculture for introductions and to commence the assignment in the company of F2F team members.
Days 4 – 11	Conduct assignment related activities at the host location.
Day 12-13	Activity close-out.
Day 14	<ul style="list-style-type: none"> • Facilitate an in-country/virtual debrief with CRS staff and/or USAID Mission. • Finalize reimbursement of expenditures and liquidations (if any) with the finance department, as required. • Submit volunteer reports, training attendance sheet, assignment report, PPT presentation and any reference materials to CRS F2F team.
Day 15	Depart for the USA

H. DESIRABLE VOLUNTEERS SKILLS

- Proficiency in bee genetics and practical experience in honeybee breed improvement.

- Demonstrated expertise and hands-on skills in selecting promising bee colonies based on productivity and genetic superiority.
- Extensive experience and hands-on skills in facilitating Instrumental Insemination in honeybees for genetic improvement and high-quality queen production.
- Expertise in training facilitation, including the preparation of training manuals and development of protocols for artificial insemination.
- Familiarity with gender and age-related factors pertinent to the volunteer assignment is preferred, although not mandatory.

I. ACCOMMODATION AND OTHER IN-COUNTRY LOGISTICS

- For the duration of the assignment, the volunteer will be booked at Hotel Kutumba (www.hotelkutumba.com) and confirmation will be sent prior to the volunteer's arrival. The hotel includes services such as airport pickup and drop-off, breakfast, wireless internet, etc.
- CRS Nepal will cover the costs of lodging. CRS HQ will provide the volunteer with a per-diem advance to cover meals and incidentals.
- Security information will be provided by the CRS Nepal security focal person at the CRS office.
- CRS Nepal will provide the volunteer with a laptop computer (if s/he needs one), local internet dongle (modem/EVDO) and mobile phone with charged local SIM-card and top-up. Any other required logistics and facilities can also be requested by the volunteer during her/his stay. CRS Nepal will provide a vehicle and accompany the volunteer to the place of the assignment.

J. ASSIGNMENT PREPARATION RECOMMENDATIONS

Training Materials:

- Before travel, the volunteer is advised to prepare all necessary training and demonstration aids and written handouts. Electronic copies of these handouts and any other materials can be printed for immediate use at the CRS office in Kathmandu at the volunteer's request.

Training Participants demographics:

- The training participants will include commercial beekeepers, university faculties/students, government research and extension staff. Training participants will be mixed in nature in terms of education, age, and gender. Women and youth participants will be encouraged to attend.
- The volunteer will be given opportunities to understand the socio-technical and cultural contexts including government sectoral policies and priorities before the start of the actual training.
- A Participatory Training Needs Assessment (P-TNA) will be conducted on the first day of the training and the training curriculum will be updated addressing the diverse needs of men, women, and youth participants.

Roads and transportation:

- This assignment will be implemented in Kathmandu which has good road connectivity. However, traffic can sometimes be heavy, especially during mornings (8:30 to 10:30 am) and evenings (5:00 to 6:30 pm).
- During the assignment period, the volunteer has to travel outside the Kathmandu Valley to visit the government beekeeping centers and private commercial farms. In this case, we can expect part of the section of the road to be rough, due to poor maintenance.

Communication and Security

- While there are no major security issues nationwide, we advise volunteers to remain vigilant and aware of their surroundings. Avoiding travel during early mornings and late afternoons is recommended. Try to schedule activities between 8:00 am and 5:00 pm.
- Nearby hospitals and clinics are available. In case of need, volunteers are encouraged to refer to the CRS F2F guide for accessing medical care during their assignment.
- In Kathmandu, services such as electricity, internet, and cellphone signals are generally reliable and stable. However, during field visits to rural areas, occasional electricity outages and weak internet and cellphone signals may be encountered.

Working environment and Culture

- Nepalese people are known for their friendliness and may actively seek to establish meaningful connections with visitors. It is advisable to accept invitations to informal gatherings such as lunches, wedding parties, and cultural ceremonies to nurture personal relationships with host staff and training participants.
- Nepalese culture often exhibits flexibility regarding schedules and deadlines. When collaborating with locals, it is advantageous to underscore the significance of adhering to mutually agreed-upon deadlines and to communicate how any delays might affect the overall assignment.

Weather-appropriate clothing

- June is the hottest month in Kathmandu with an average temperature of 23°C (73°F) and the wettest month is July with an average of 325.3mm of rain. About 2812 mm (110.7 inches) of precipitation falls annually in Kathmandu. Please visit <https://www.accuweather.com/en/np/nepal-weather> to check the weather forecast closer to your travel dates for any unexpected changes and to pack accordingly.
- It is best to pack a variety of clothing to accommodate different conditions: Lightweight and breathable clothing, such as cotton shirts, shorts, and dresses, are suitable for the warmer months (e.g., June). A waterproof or water-resistant jacket or raincoat is advisable, especially for the wetter months (e.g., July) when there's a higher chance of rainfall.
- Comfortable walking shoes or hiking boots are recommended for exploring the terrain and navigating uneven surfaces, especially if you plan to venture into rural areas or hike in the surrounding hills.

K. KEY CONTACTS

To express interest in this assignment, please email the CRS Baltimore contact listed below. For additional information about the host, issue description or field conditions, please email the country contact provided below, copying the CRS Baltimore contact.

CRS Baltimore
<p>Priyanka Subba F2F Operations Manager / Volunteer Recruiter Farmer-to-Farmer Program 228 W. Lexington Street Baltimore, MD 21201 Email: priyanka.subba@crs.org Contact number: 410-955-7194</p>

CRS Country Program	
<p>Nirmal Gadai Country Director, Farmer-to-Farmer Program CRS Nepal Country Office Maitri Marg - Bakhundole, Lalitpur Metropolitan City Ward No.1, Bagmati Province, Nepal Email: nirmal.gadal@crs.org Cell: +977-9851073671</p>	<p>Suprava Acharya Project Coordinator, CRS F2F Nepal Country Office Maitri Marg - Bakhundole, Lalitpur Metropolitan City Ward No.1, Province 3, Nepal Email: suprava.acharya@crs.org</p>
Host Organization (Primary contact)	Host Organization (Secondary contact)
<p>Sujan Pokhrel Designation: Plant Protection Officer Address: Centre for Industrial Entomology Development (CIED) Email: pokharel2024sujan@gmail.com Contact number: 9849917755</p>	<p>Bhoj Raj Sapkota Designation: Chief (Joint Secretary) Address: Centre for Industrial Entomology Development Email: bhoju101@gmail.com Contact number: 9851188813</p>