

One Health Une santé

Veterinarians Without Borders/Vétérinaires sans Frontières Young Volunteer Program – Ghana 2023

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Take a moment to picture yourself 10 000 km from home! You travelled across Ghana by air, from the capital (Accra) to the business center of the north (Tamale) and then by car along dirt roads to the northernmost tip of the country. You step out into the scorching heat and see an expanse of golden savannah grasslands dotted with baobab trees, traditional mud houses housing multigenerational families, and children playing alongside goats, sheep, pigs, and chickens. Women carry babies on their backs, sow seeds to feed their families, and community members collect water from a borehole. A donkey seeks water, 2 bulls plow a field, and a guinea fowl is slaughtered for dinner. You are in Yua in the Upper East Region (UER) of Ghana, where One Health is woven into everyday life. Interrelationships among humans, animals, and the environment are palpable and inseparable. UER is a living, breathing example of how a balanced and interconnected One Health system is vital in fostering resilience, sustainability, and collective well-being. This is where we spent our summer as part of the Young Volunteer Program with Veterinarians without Borders/Vétérinaires sans Frontières-Canada (VWB/VSF-Canada), volunteering with the Ghana Poultry Network (GAPNET).

Since 2017, VWB/VSF-Canada has sent people to Ghana as part of the Young Volunteer Program to volunteer with GAPNET, an opportunity for current or recently graduated university students to work with local partners to learn, grow, and contribute skills and knowledge in a cross-cultural setting. This summer, our student team included Marley Blok (UBC 2023), Dr. Keisha Harris (OVC 2023), and Sandra Nyman (OVC 2026), with Canadian veterinarian Dr. Alina Gardiner (OVC 2019) as project supervisor. We were part of the Volunteers Engaged in Gender-Responsive Technical Solutions (VETS) project operated by VWB/VSF-Canada. The goal of the VETS project is to improve economic and social well-being of the world's most marginalized people, particularly women and girls, in 6 countries in Africa and Asia.

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The VWB/VSF-Canada Young Volunteer Program and GAPNET team in front of their home base in Yua, Upper East Region. (Left to right) Gloria Essel (VWB/VSF-Canada Country Coordinator in Ghana), Dr. Keisha Harris (OVC 2023), Marley Blok (UBC 2023), Sandra Nyman (OVC 2026), Dr. Alina Gardiner (OVC 2019), and Issaka Awudu Agandaa (GAPNET volunteer).

As Young Volunteers in Ghana, we partnered with GAPNET, a community-based, non-profit, non-governmental organization (NGO) promoting sustainable One Health objectives by supporting livestock management and farming practices to increase household income and improve food security in Ghana. GAPNET has already conducted several projects, including supporting women farmers through guinea fowl production, advocacy work for donkey welfare, and borehole drilling initiatives (1).

Throughout our placement, we worked with GAPNET to assist with projects enhancing the welfare and productivity of livestock on small-scale, family-owned farms, with an emphasis on promoting gender equity and empowering women. During our placement, alongside our GAPNET team members, we undertook 3 distinct tasks: capacity development to assist GAPNET trained Community Animal Health Workers (CAHWs) with a vaccination campaign against peste de petits ruminants (PPR); a One Health research project on disease surveillance in the UER; and animal husbandry training for women's groups.

We quickly learned that in the UER, farming is a way of life for everyone, with crops cultivated primarily for sustenance. Farmers mainly grow millet, maize, groundnuts, and the fiber crop bito using intercropping methods (2). Farming in Ghana



Issaka Awudu Agandaa bringing some of his goats and sheep home after a day on pasture.

uses limited mechanization and is labor-intensive, from plowing fields with donkeys or bulls to sowing, weeding, and harvesting crops by hand. Dependence on rainfall and changes in rainfall patterns due to global warming impact the growing season that typically spans from April to October (3). This year, farmers in UER experienced difficulties and could not begin sowing until mid-June, limiting their harvest and ability to sustain themselves through the dry season.

The region has numerous small-scale farmers, each owning a few animals, including goats, sheep, cattle, chickens, guinea fowl, ducks, and donkeys. Most are free-range, enabling them to forage for feed and water during the dry season (2,4–6). When pastures are scarce, livestock keepers and animals may have to venture far in search of sustenance, exposing them to potential health risks like zoonoses, and complicating disease management, animal welfare, and food safety.

During the wet season, abundant pastures are overshadowed by widespread cultivation of crops. Consequently, animals are staked to protect crops. This is labor-intensive, requiring frequent herding, tying, and visits to provide water and shade. Access to veterinary care is limited due to underfunding, understaffing, and limited availability of safe and affordable transportation for veterinarians (7,8). There are only government-funded veterinary officers in the UER and limited funding, often leaving only 1 officer to cater to several distant communities and lacking many vital supplies.

Vaccines are often unavailable or unaffordable, and lack of awareness on animal welfare and disease prevention further exacerbates the issue. Consequently, animal production in UER and surrounding areas is often viewed as quick cash instead of



(Left to right) VWB/VSF-Canada Young Volunteers Sandra Nyman (OVC 2026), Dr. Keisha Harris (OVC 2023), and Marley Blok (UBC 2023) conducting small ruminant physical exams during the PPR vaccine campaign.

sustainable income. Farmers sell small ruminants and birds during times of need, *e.g.*, school fees or medical bills, prioritizing immediate financial gains over long-term sustainability.

Beginning in 2021, VWB/VSF-Canada and GAPNET addressed the lack of veterinary care by training 41 individuals in 20 communities in Ghana as CAHW, community members who can perform basic veterinary services, provide education for farmers on animal husbandry, and participate in disease surveillance (9–12). In the UER, CAHWs are supported in disease surveillance reporting *via* an easy-to-use cellular app (event Mobile Application tool) from the Food and Agriculture Organization of the United Nations (FAO) (13). In addition, 49 more CAHWs are to be trained by September 2023. CAHWs relieve pressure on government veterinary service and provide more immediate and preventative veterinary care, with an expectation that farmers will adopt long-term sustainable livestock practices that will create more stable income.

One of our primary goals was to work alongside the CAHWs to support communities and improve small ruminant health through technical training during a vaccination campaign for PPR. This campaign was spearheaded by the Economic Community of West African States (ECOWAS), with an objective of eradicating PPR by 2030 (14). PPR is an important cause of mortality among small ruminants in Ghana, inflicting considerable financial losses and using considerable veterinary time and resources (14). Over 5 weeks, GAPNET and their CAHWs targeted 13 communities across the UER. Working diligently alongside veterinary officers and CAHWs, GAPNET successfully vaccinated > 5000 small ruminants. As students, we enhanced our technical veterinary skills under the oversight of a local veterinarian, offering deworming and wound cleaning. Farmers expressed profound gratitude for our shared efforts with GAPNET, assuring us that these services reduce animal morbidity and mortality.

Our team developed and conducted a One Health research project surrounding disease surveillance in the UER, determining how veterinary staff, GAPNET/VWB/VSF-Canada trained



(Left to right) VWB/VSF-Canada Young Volunteers and Community Animal Health Workers (CAHWs) Marley Blok (UBC 2023), Esther (CAHW), Felix (CAHW), Dr. Keisha Harris (OVC 2023), and Sandra Nyman (OVC 2026) after a day of PPR vaccination.

CAHWs, and farmers contribute to disease monitoring. The objective was to identify successes, limitations, and gaps in disease surveillance and refine the CAHWs program. Ultimately, we hope this will improve disease surveillance and communication between CAHWs and collaborators. We gained insights into challenges in veterinary care and strengthened relationships with local CAHWs, who shared challenges and successes.

It was evident that agriculture practices are deeply gendered; women are primarily responsible for animal rearing, whereas men are often involved in the sale of animals and maintaining crops (2,15–17). This gendered division of labor has been shaped by traditional and cultural norms. Gender equality issues affect agriculture, with traditional gender roles limiting women's ability to own land or control their finances (18), creating barriers to full participation and autonomy in farming activities. As a result, women may face challenges in accessing resources and opportunities that could enhance their agricultural practices and economic independence. Addressing these gender disparities and promoting gender equality in agriculture is crucial for empowering women and unlocking their untapped potential contributing to sustainable agricultural development in the UER.

To address this gender gap, our team spent several weeks facilitating training sessions for women's groups on animal husbandry and biosecurity for small ruminants and poultry in 7 communities. We focused on appropriate sources of food and water, building and maintaining animal housing, sanitation, consequences of overcrowding, monitoring animals during reproduction, disease prevention and treatment, and appropriate disposal of animal carcasses. These topics aim to improve animal health and welfare and inform women when to reach out to CAHWs. Many women actively participated in the training,

indicating their dedication to improve animal management. We provided a platform for women to share their outcomes resulting from these recommendations, creating a valuable learning experience.

This summer, we had the privilege to work alongside the GAPNET team and CAHWs to enhance livestock welfare and productivity through technical training of CAHWs, a One Health research project on disease surveillance, and training women's groups in animal husbandry and biosecurity. We are proud of our achievements and hope our contributions will be sustained by future VWB/VSF-Canada volunteers and GAPNET. Thanks to: VWB/VSF-Canada and Global Affairs Canada for providing resources; our supervisors Dr. Alina Gardiner and our in-country VWB/VSF-Canada project coordinator Gloria Essel; our partner organisation GAPNET and Dr. Anthony Akunzule, Executive Director of GAPNET; and Dr. Alina Gardiner and Dr. Shauna Richards for editing this article. Thank you, especially to Issaka Awudu Agandaa and the other Yua community members for welcoming us. Thanks to everyone who donated time, resources, services, and encouragement; none of our work would be possible without you!

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