Outreach Efforts Around the Globe: A Review of Horticultural Projects in Africa, the Middle East, and the Caribbean: Proceedings from the ASHS International Horticultural Issues and Networking Professional Interest Group 2022 Workshop

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Many opportunities exist across the continents regarding horticultural crops and their potential to alleviate human suffering. By 2050, 70% of the world’s population will live in cities coupled with a simultaneous decrease in arable land in rural areas; this scenario makes traditional and urban farming both needed. Most of the world’s 570 million small farms are in Asia and Africa. It is believed that by 2050, the global population will reach 9.6 billion (Ebel et al. 2020; Eigenbrod and Gruda 2015; Lowder et al. 2016). Properly planned and well-executed, horticultural operations’ personnel can bolster the well-being of children and adults throughout the developing world. For example, more than 2 billion people in developing countries are afflicted by micronutrient deficiencies (Nutraceutical Business Review 2022; Suman and Bhatnager 2019). Specialty crops (primarily fruits and vegetables) can help mitigate this problem while increasing income and job opportunities for all involved, but particularly for female farmers.

In addition to reaching students and producers around the globe, it is equally imperative that we train American students in the value of international efforts and how they can positively impact the United States. Besides traditional horticulture programs offered on a worldwide basis via universities and other institutions of higher learning, many global organizations such as the Winrock International Farmer to Farmer Volunteer Program and comparable groups also provide outreach efforts across the continents reaching marginalized populations to level the playing field by promoting gender equality in horticulture (Gatzweiler and von Braun 2016; Kumi and Elbers 2022; Schnelle MA, personal observation; Srivastava et al. 2020). In summary, education is crucial for expanding horticulture in developing countries (Ebel et al. 2020).

To address aforementioned issues, the International Horticultural Issues and Networking Professional Interest Group of the American Society for Horticultural Science developed and hosted a workshop at the 2022 ASHS Annual Conference. The objective of the workshop, titled “Outreach Efforts Around the Globe: A Review of Horticultural Projects in Africa, the Middle East, and the Caribbean” was to initiate a dialogue regarding opportunities to share horticultural knowledge abroad and the challenges but also rewards associated with such endeavors. Discussions included but were not limited to working with marginalized populations, engaging with global school gardening study abroad programs, tackling specific pests and diseases such as bumpy top associated with banana plantations in many countries, and overcoming barriers with global citizens living at or below the international poverty rate. These and other topics were presented in light of adjustments made for the COVID-19 pandemic and how researchers were forced to pivot, as well as the possibility for future projects. Coordinator M.A. Schnelle invited presenters to address various horticultural issues and challenges at the global scale as well as present an overview of the respective country or region being discussed. Schnelle commenced the event with a brief overview and introduction of the workshop and then immediately followed with his lecture concerning advances in horticulture/agriculture in the Democratic Republic of the Congo (DRC). Schnelle’s primary work was at Katanga Methodist University, Mulungushi, DRC. The school expanded its programs from only theology-based coursework to adding a production agriculture curriculum. Schnelle scouted fields on school property with faculty and growers and discussed additional crops that could possibly be added, namely specialty cut flowers because cargo planes regularly left the DRC relatively empty. Last, Schnelle was able to lecture in-person, to Katanga Methodist University first- and second-year students discussing integrated pest management, soil fertility, improved varieties, and the possibility of trialing ornamental plant materials as specialty cut flowers. Training and discussions with growers and students were predicated on the fact that fewer than 20% of residents had access to the internet, as well as only 17% were able to enjoy electricity. Shillah Kwikiiriza followed with a timely topic of being flexible regarding endemic COVID-19 student travel programs. Kwikiiriza and colleagues, from Iowa State University, forged a collaborative relationship with agriculturists in Uganda with one example being Mpirigiti Rural Training Center in Kamuli, Uganda. Their efforts were focused in five areas: 1) entrepreneurship; 2) livestock; 3) water, sanitation, and hygiene; 4) community nutrition; and 5) education. Creative attempts to mitigate economic downfall because of COVID-19 included using treadle sewing machines to make face masks for local citizens. Also, through cooperative training efforts, deep wells were dug to obtain a reliable and clean source of drinking water in the region. Iowa State University personnel offered 2- to 6-week
opportunities to travel to Uganda to collaborate with local experts in Uganda to offer training in promoting crop diversification, orchard establishment, promotion of small vegetable gardens to farmers with limited land, and more. The team emphasized food safety and security. Also addressing yet another project in Africa was J.L. Griffis, Jr, who presented the topics of banana bunchy top virus (*Babuvirus* sp.) and banana (*Musa* sp.) micropropagation in Malawi. Griffis’ mission was to teach micropropagation of banana in Malawi to help mitigate the spread of banana bunchy top virus. Although virus-indexed banana is commercially obtainable, many growers found them cost prohibitive and thus their desire to determine methods to escape the virus but still independently propagate their crop.

Last, now addressing Asian and European challenges, a review of a decade-long project regarding efforts to empower Turkish women farmers was delivered by R.G. Brumfield via in-person training in Turkey, in which she and her team covered computer literacy, citrus and greenhouse production, and business management. Within 2 years, partnerships were forged in Germany, Spain, and Malta to develop Empowering Women Farmers with Agricultural Business Management training (EMWOFA). Deliverables were ultimately a training manual for educators, a workbook for women farmers, and e-learning videos in English, Turkish, Spanish, German, and Maltese. Although the genesis of this project was in Turkey, Brumfield and fellow researchers reached out to all of the previously mentioned countries, which led to the empowerment of women and families, enhanced food security, and the building of communities.

In conclusion, attendees were exposed to several organizations seeking assistance, both volunteer and paid, from experts in horticulture to address real-world challenges across the globe. Furthermore, a better understanding of current needs and production challenges was ascertained particularly for the Middle East, Africa, and the Caribbean. Along with understanding the current plight of various geographic populations, individuals gained insight regarding how to “reach” producers both in-person and virtually. Not only did workshop participants acquire valuable information about horticultural opportunities in select areas around the globe, but they also were afforded an opportunity to network with speakers and other attendees with like interests.

**References cited**


