Feed the Future Country Fact Sheet

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Conservation Agriculture Reduces Time and Labor for Women in Cambodia

Manuel Reyes

A Cambodian farmer uses drip irrigation and conservation agriculture practices to grow vegetables.

Sustainable agriculture is an effective way for farmers to improve their livelihoods without depleting natural resources. However, many smallholder farmers in developing countries are not familiar with sustainable agricultural practices and often revert to traditional farming methods that are labor-intensive and environmentally damaging.

In Cambodia, where 70 percent of the population relies on agriculture to sustain livelihoods, farmers have continued to use practices that have led to degraded landscapes. But with assistance from Feed the Future, Cambodian farmers are adopting sustainable agricultural practices without adding to their time or cost burden.

Conservation agriculture can prevent environmental degradation through three complementary practices: minimal soil disturbance (sometimes called “no till”); continuous mulch cover; and planting diverse crops. In combination, these strategies help farmers improve soil health and prevent water evaporation while also reducing manual labor.

Through the Feed the Future Innovation Lab for Sustainable Agriculture and Natural Resource Management, led by Virginia Polytechnic Institute and State University, Manuel Reyes from North Carolina Agricultural and Technical State University began promoting these conservation agriculture and water-saving techniques in Cambodia. Two years later, 56 households on over 149 hectares were using conservation agriculture practices to grow maize, millet, pigeon pea, cassava and soybean.

Encouraged by this early success, researchers expanded the project scope to focus on women vegetable farmers, with additional funding from the Feed the Future Innovation Lab for Collaborative Research on Horticulture, led by the University of California, Davis. Partnering with Agricultural Development Denmark Asia, a Danish NGO, researchers added drip irrigation to the targeted conservation agriculture practices to assess farmer adoption and see how labor needs, yields and incomes would be impacted.

The women farmers grew a variety of vegetables, including string beans, cucumber, Chinese cabbage, kale, tomatoes and eggplant. Each of the farmers Reyes worked with committed to using four specific practices for growing vegetables on 100 square meters of land, dividing their plots into four sections to be farmed as follows: conservation agriculture with hand watering; conservation agriculture with drip irrigation; traditional methods with drip irrigation; and traditional methods with hand watering. They were each supplied with a water tank and drip irrigation system, which they could use as long as they complied with the experiment’s protocols.

While the four different practices showed no significant differences in yields or income for the vegetable farmers, there was a substantial difference in the labor required to maintain each of the four plots. The researchers estimate that growing vegetables using traditional methods with hand watering requires hauling about 1,300 pounds of water per day during the dry season, and up to twice that amount during very dry seasons. By contrast, drip irrigation and conservation agriculture freed the women farmers from the drudgery of carrying water, tilling and weeding.

Many of the women were so pleased with the new practices that they asked to end the experiment early to avoid the extra labor required to maintain the field tests. This research indicates that sustainable farming practices that minimize environmental degradation can also cut down significantly on time and labor burdens for farmers, showing promise for empowering women in the agriculture sector.