IMPACT: South Asia

A summary of evidence for impact, 2013-2018

The World Vegetable Center (WorldVeg) conducts research, builds networks, and carries out training and promotion to raise awareness of the role of vegetables for improved health and poverty alleviation. Our work focuses on three broad areas: improving vegetable varieties, production methods, and diets. Our impact is evidenced by rigorous evaluation studies published in international peer-reviewed journals.

World Vegetable Center

WorldVeg has had a presence in South Asia since 2006. This summary highlights evidence for impact in the region from 2013-2018.

Improving vegetable varieties

500,000 farmers in India use tomato and chili pepper seed developed from genetic material supplied by the World Vegetable Center

India has experienced substantial growth in its private vegetable seed sector. Nearly all vegetable seed companies use genetic material from WorldVeg in their vegetable breeding programs. Often they use particular traits such as disease resistance. An evaluation study using data from 27 private seed companies in India showed that 11.6 tons of hybrid tomato seed and 15 tons of chili pepper seed sold in 2014 (about 14% of total seed sales for these crops) contained WorldVeg genetic material. This amount of seed is enough to reach about half a million Indian farmers per year.

Schreinemachers P, Rao KPC, Easdown W, et al. 2017. The contribution of international vegetable breeding to private seed companies in India. Genetic Resources and Crop Evolution 64, 1037-1049. http://dx.doi.org/10.1007/s10722-016-0423-y

1.2 million farmers in India, Bangladesh, Pakistan and Myanmar use improved mungbean seed developed from genetic material supplied by the World Vegetable Center

Mungbean is an important grain legume in South and Southeast Asia; it contributes to better human diets and sustainable agriculture. The public sector, not the private sector, is the primary producer of pulse seed, including mungbean. The World Vegetable Center has long-standing collaborations with public-sector organizations in South Asia to deliver improved mungbean varieties to farmers. A recent study using data collected from 259 local mungbean experts in India, Bangladesh, Pakistan and Myanmar found that improved mungbean varieties based on genetic material supplied by the World Vegetable Center were adopted by 1.2 million mungbean farmers and grown on 1.7 million hectares of land.

Schreinemachers P, Sequeros T, Rani S, et al. 2018. Counting the beans: Quantifying the adoption of improved mungbean varieties in Asia. Manuscript under review.

Improving vegetable production methods

Building farmers' capacity to produce off-season vegetables increased incomes by 48% during the kharif season in Bangladesh

Fruit and vegetables taste best when eaten in season. This is also when they are cheapest. But many farmers also would like to produce and sell vegetables in the off-season, when supplies are lower and prices are higher. The World Vegetable Center has built the capacity of hundreds of farmers in southern Bangladesh to produce tomatoes during the kharif season, which runs approximately from June to October and is not the primary production season. An evaluation study using statistical matching methods to compare trained and non-trained farmers showed that the income of trained farmers was 48% higher during the kharif season, but the study also highlighted concerns about increased pesticide use.

Schreinemachers P, Wu M-h, Uddin MN, et al. 2016. Farmer training in off-season vegetables: Effects on income and pesticide use in Bangladesh. Food Policy 61, 132-140. https://doi.org/10.1016/j.foodpol.2016.03.002

Building farmers' capacity in integrated pest management for eggplant (brinjal) production reduced pesticide use by 30% and raised profits by 29% in Bangladesh

Pesticide overuse is a serious problem in vegetable production in South Asia and pesticide use is known to be particularly high for eggplant. The World Vegetable Center and its partners have developed an integrated pest management (IPM) package for eggplant production. More than 2,500 farmers in southern Bangladesh were trained to use this package. An evaluation study using statistical matching methods and a sample of 600 trained and non-trained farmers showed that the intervention reduced pesticide use on eggplant by 30% and increased profits by 29%.


The Daily Star

SECOND EDITION

People's Right to Know

Goodbye pesticides

Pheromone trap working wonder in Jessore

Farmers check a pheromone trap, billed as a substitute for highly toxic pesticides, at a Jessore village.

Gautam S, Schreinemachers P, Uddin MN, et al. 2017. Impact of training vegetable farmers in Bangladesh in integrated pest management (IPM). Crop Protection 102, 161-169. https://doi.org/10.1016/j.cropro.2017.08.022

Improving diets

School gardens improve children's knowledge and preferences for healthier foods in Bhutan and Nepal

Diets of many children in South Asia lack essential vitamins and minerals. School garden interventions that combine hands-on gardening with nutrition education and community involvement have potential to improve child nutrition. The World Vegetable Center and partners developed a school garden package and piloted it in schools in Bhutan and Nepal. The cost of establishing a school garden was about US$ 1,000 per school. Impact was measured using a cluster randomized controlled trial design. The study showed that school gardens are effective in improving children's knowledge of and preferences for healthy eating. In Bhutan, gardening and related classroom activities also increased the likelihood of children including vegetables in their meals in school or at home.

Schreinemachers P, Bhattarai DR, Subedi GD, et al. 2017. Impact of school gardens in Nepal: a cluster randomised controlled trial. Journal of Development Effectiveness 9, 329-343. http://dx.doi.org/10.1080/19439342.2017.1311356

Schreinemachers P, Rai BB, Dorji D, et al. 2017. School gardening in Bhutan: Evaluating outcomes and impact. Food Security 9, 635-648. http://dx.doi.org/10.1007/s12571-017-0673-3

Household gardens increase vegetable production and consumption of poor rural households in Bangladesh

Household garden interventions combine capacity building in gardening with nutrition education and community-based support systems and are usually targeted at women. The World Vegetable Center developed a household garden package and implemented it in Bangladesh, India and Nepal. A recent study evaluated the impact in Bangladesh using pre- and post-intervention data for 646 intervention and control households. The intervention costs about US$ 50/garden and increases the supply of vegetables by 16.5 grams/capita/day. This effectively closed the vitamin A intake gap. We also found that it increased women's control over food supplies and income, and led to gains in women's self-confidence and stature in the community, thereby contributing to closing the gender gap.

Schreinemachers P, Patalagsa MA, Islam MR, et al. 2015. The effect of women's home gardens on vegetable production and consumption in Bangladesh. Food Security 7, 97-107. http://dx.doi.org/10.1007/s12571-014-0408-7

Patalagsa MA, Schreinemachers P, Begum S, et al. 2015. Sowing seeds of empowerment: effect of women's home garden training in Bangladesh. Agriculture & Food Security 4, 24. http://dx.doi.org/10.1186/s40066-015-0044-2

Schreinemachers P, Patalagsa MA, Uddin N. 2016 Impact and cost-effectiveness of women's training in home gardening and nutrition in Bangladesh. Journal of Development Effectiveness 8, 473-488. https://doi.org/10.1080/19439342.2016.1231704

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