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## Developing Healthy Vegetable Seedling Systems for Vegetable Smallholders in East Africa

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### Abstract

Healthy planting material is a critical, basic agronomic requirement and a key principle component of good agricultural practice (GAP), towards maximising productivity and reducing production losses from pests and diseases. In East Africa, the health of vegetable seedlings remains a key challenge. Smallholder vegetable farmers regularly sow their seed into nurseries in or close to the field area and are therefore aware of the benefits of using transplanted seedlings. However, farmer nurseries are rarely sanitised or protected to prevent infection of the seedlings with pests and diseases. Consequently, this practice regularly results in the immediate infection of germinating seedlings with soil-borne pests and diseases and thereafter with airborne or vector-borne diseases. This includes plant parasitic nematodes, especially root knot nematodes. The use of infested seedlings consequently leads to low production potential, and reduces host suppression of pests and disease as the season progresses, which indirectly results in high use and reliance of synthetic pesticides. The promotion of improved, healthy vegetable (tomato and pepper) seedlings, using sustainable seedling systems has been the objective of a GIZ/BMZ supported project at IITA. Healthy seedlings were distributed to farmers to compare their performance against normal practice. This resulted in better healthier crop production. Further improvement of seedlings by enhancing them with microbial antagonists, further increased their benefits to farmers, reducing pest and disease incidence and increasing yields. To create sustainable delivery systems, pilot seedling units have demonstrated a high demand from farmers, and provide a suitable mechanism for maintaining supply. The results are discussed.

**Keywords:** Peri-urban, seedling health, smallholder, sub-Saharan Africa, sustainable