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Title	Implementation of ecosan aspects in the urban vegetable production of Havana
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Implementation of ecosan aspects in the urban vegetable production of Havana

This study compiles an investigation of implementation possibilities of ecological sanitation systems in Havana, Cuba. To reach this goal the urban vegetable production was described, production constraints analysed, and the potentials of ecosan techniques, in particular urine utilisation, explored.

For the realisation onsite interviews were conducted including aspects as ownership, localities, and management practices. Discussions were held with stakeholders and experts of the different topic-related institutions in the field of urban agriculture, health and environment, as well as administration. Onsite measurements provided additional data on supply of water, nutrients, and organic matter. Further field trials on urine fertilisation were undergone.

The results show that there are lacks especially in the supply of nutrients and organic matter in the urban vegetable production of Havana. This was due to a shortage of organic and inorganic fertilizers in the market and limited recycling through, for example, locally composted organic waste. Therefore, the biggest motivation for the use in ecosan systems in Havana is the demand of a qualitatively good and hygienically safe source of fertiliser. Water conservation by applying these technologies has no importance for users in the given situation.

Farmers were interested and motivated to participate in first pre-tests on fertilisation of ornamental plants with fermented urine and afterwards tests in organoponics. Further research and development involving gardeners and other stakeholders are needed particularly regarding yellowwater utilisation.