

# Hydroponics and Climate smart agriculture practices farmers are adapting to – Part 1

Climate change poses a significant threat to farmers and to sustainability of their output. A change in climate may reduce cereal yields globally by 10-20% by 2050's in absence of adaptation.

Climate smart agriculture is about increasing farm productivity in an environmentally and socially sustainable way. It includes proven techniques such as mulching and developing drought or flood tolerant crops to meet demand of changing climate. Hydroponics farming is one of the climate smart techniques that farmers are adapting. This technique involves growing crops in water rather than on soil where growth and productivity is controlled by type and amount of nutrients added.

## Hydroponics unit

The nutrient film technique (NFT) is a unit used in hydroponics. It's a very shallow stream of water containing all dissolved nutrients required for plant growth which are recirculated past the bare roots of plants. The unit is automated and a water pump is used to pump water into the crop.

Small black pipes feed water through plastic cups that hold inert media with the crop. The hydroponics nutrients are put in the water and together flow through up to the last crop.

## Benefits of hydroponics

Use of limited space in setting up hence very useful in urban areas, it saves up to 80% water since it recycles water, there

are shorter farming cycles hence increased outputs from the farm , it's clean farming since there is no soil used and faster growth of crops because of the nutrients used.

The unit is good for lettuce, broccoli, cauliflower, spinach and kales. Although there can be a challenge of insects and mite pests especially when done in a greenhouse environment.

## **Best conditions**

For a properly designed nutrient film technique, each gully should be at least 1 litre/minute. Channel length should range between 10-15 metres as being long depletes the nitrogen for the plants.

Urban agriculture requires soil, manure, grass or dry leaves for mulching and stones to start your farm. Rabbits are fed from the vegetables in the urban farm. Manure is made from cow dung waste decomposed and put in sacks.