

Less water, more food



Dr. Atef Swelam with a raised-bed machine.

In Egypt, a desert country that gets almost all its water from the Nile, the scarcity of water has become a challenge in agriculture. Climate change is worsening the problem through rising temperature and loss of agriculture land. However a new irrigation technology may soon change that.

In collaboration with science partners from Agriculture Research Center (ARC), National Water Research Center (NWRC), and Zagazig University, Dr. Atef Swelam has developed cost-effective multi-crop raised-bed technology for small to medium farms. The machine can be used for sowing different crops and are helping farmers to cope with rotation problems, water management, diseases and the over-application of chemicals.

Mechanized raised-bed farming has demonstrated multiple benefits for wheat, maize and sugar-beet, in terms of water savings, greater efficiency in agricultural practices and increased crop yields. It has also reduced water logging with better drainage of excess water from the active root zone of the crop. The system which uses raised-bed dimensions (furrow width depth and raised-bed width) helps wheat growers to save applied water. It can be use both for intensive crops (such as wheat, berseem and rice) and interspaced crop (such as corn, sugar beet and faba bean). Cultivated areas in Egypt have increased from 1,670 hectares to a phenomenal 45,000 hectares over three years (2011-2014).

This newly developed and locally manufactured raised-bed machine has enabled the farmers to achieve remarkable results that include, in approximate terms 25% savings in applied water, 50% reduction in seed rate, 25% decrease in farming costs, 30% increase in fertilizer use efficiency and 15-24% increase in crop yields. The machine costs around five thousand US Dollars and farmers can buy it as a collective action.

As well as benefiting, this cost effective technology provides a good opportunity for local investment and employment for new graduates. Once farmers see the potential of mechanized raised-bed farming, they

may soon change their agricultural practice and adopt the technology that not only benefits the farmers, and the agricultural sector, but food security as well.

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This post represents the author's views only.

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