



AGRICULTURAL INNOVATION FOR FAMILY FARMERS



GROWING FOOD IN IMPOSSIBLE PLACES

What is the innovation?

Low-tech hydroponics enable plant growth in arid environments with a soilless cultivation technique that uses up to 90 percent less water and 75 percent less space. It has been successfully used for production of animal feed.

Why is it innovative?

Nomadic herders and their cooperatives can use hydroponics to grow fodder, if clean water is available, which when mixed with locally available, dry concentrate nutrient supplements decreases the cost of feeding by circa 30 percent. The major advantage with such a system is the absence of weeds and other soil-borne pests, no toxic pesticide residue, better use of water, better control over nutrients, increased forage quality and yields.

How does it work?

Low-tech hydroponics allow plants to be grown from seeds placed in an inert substrate (e.g. sand, perlite or gravel) in a nutrient enriched aqueous medium. Further, the use of plastic trays presents additional advantages, such as improved seedling root systems, easier removal of seedlings and smaller storage space requirements.

When green fodder is produced using hydroponic technology, it contains roughly 16–18 percent protein. This intervention is designed to urgently minimize the devastating effects of external climatic shocks and is of particular interest in arid and semi-arid areas where herder livelihoods strongly depend on a high quality and low-cost source of fodder.

Where?

The innovation is being used in the West Bank and Gaza Strip, in all eleven governorates.

Who are the beneficiaries?

The beneficiaries of this innovation were 15 livestock cooperatives with roughly 50 members each, totaling 750 beneficiary livestock herders.

What are the results?

Since 2011, FAO has been promoting the use of hydroponic technology (soil-less plant propagation) by herders and their cooperatives, providing a low-cost, high quality source of fodder that is available year-round.

As currently 90 percent of feed and fodder is imported from outside the West Bank, the potential economic benefits of utilizing locally produced fodder are substantial. The hydroponic method led to a decrease in the cost of livestock feeding by approximately 30 percent, allowing herders to save capital, and reallocate resources for other expenditures. It also resulted in increased milk production and healthier livestock.

Many of the livestock cooperatives include female members, allowing these most vulnerable herders and their households to benefit from hydroponic fodder.



SDGs the innovation contributes to: SDGs 2 & 13

Looking to the future:

Aquaculture, the practice of fish farming and hydroponic plant production, offers the opportunity for even greater nutritional returns from a closed - circulating production system. Such systems can reduce water consumption by 90% compared to traditional, field-based agriculture. This is very good news for the agriculture sector, which worldwide, uses about 70% of available freshwater.

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