

## ORIGINAL RESEARCH

### Technological Approaches in Food Systems

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**Introduction:** Sustainable agriculture is directly linked to food sustainability. Sustainable agriculture is an integrated system of animal and plant production practices to provide enough human food, use resources efficiently, and effective farm operations. Food systems are a combination of all factors that are important for food security. The demand for sustainable, healthy produced food is greater than ever before. Technological approaches can help for the alignment of various issues such as availability, organization, and distribution of the current food. Technological innovations and advancements are essential in promoting sustainable food systems in Kenya.

**Scope:** Technologies like precision farming which involve the combination of artificial technologies, the Internet of things and drones helps to collect, monitor and analyze big data. This helps farmers optimize land productivity and improve land productivity.

The Food sector has been experimenting with novel ways to improve food production on existing land. For example, countries that are densely populated and lack fertile agricultural lands, like Singapore, Qatar, and UAE are considering other techniques like indoor farming. Methods like vertical farming require limited or no pesticide. The technology involves entirely insulated indoor operations. Crops are produced at multiple levels using electrical lighting, like light emitting diodes (LEDs).

Technologies such as alternative proteins include plant-based or lab-grown meat. These methods offer sustainable ways of meat production.

Personalized nutrition and diets are also an emerging trend. This is because the scientific community has revealed that different people's bodies react differently to the same type of food. Some organizations use continuous monitoring devices to track blood levels of vitamins, glucose, and more.

**Objective:** This study aims to address the question of how technological innovations can impact and transform food systems.

**Findings:** Alternative proteins can help manage the rising meat demand in a sustainable manner. Mobile applications monitor and can creating personalized diet plans based on different types of health, and genetics. These applications can also connect the farmer to the market and the expected weather forecasts.

Technological approaches in food systems offer solutions for many challenges faced in the value chain and agriculture. They also have great potential to improve our food systems.

**Conclusion:** It is imperative that the government and various organizations work together to incorporate technology in finding solutions to creating a sustainable food system.