



7/7

CURRENT TRL
& TARGET TRL

SHELF LIFE

EXCELLENT SHELF
LIFE AT AN
ACCEPTABLE COST

LIGHTING

EFFICIENT LIGHTING TO
OPTIMIZE GROWTH

SENSORS

TO CONTROL AND
STEER THE PROCESS



COUNTRIES



PARTNERS

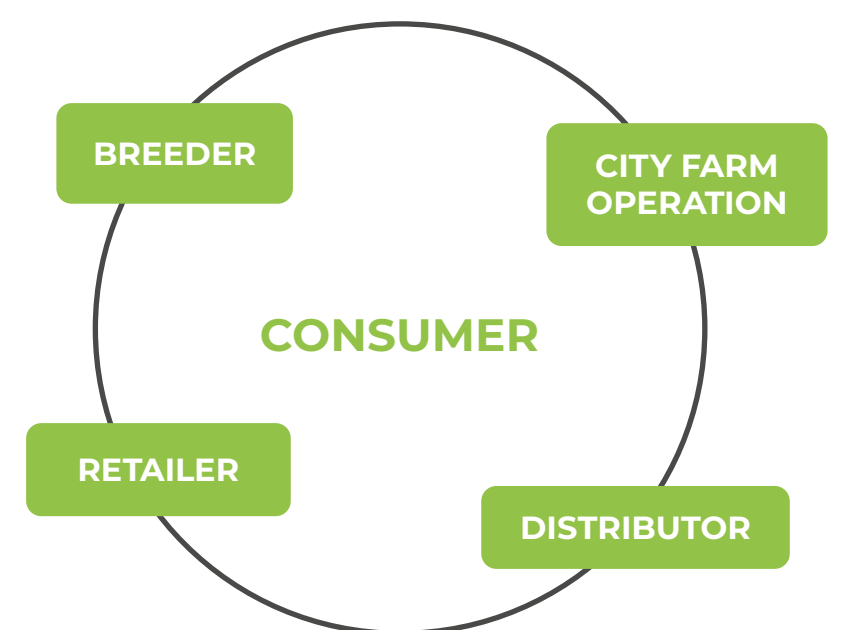


Former Philips Lighting



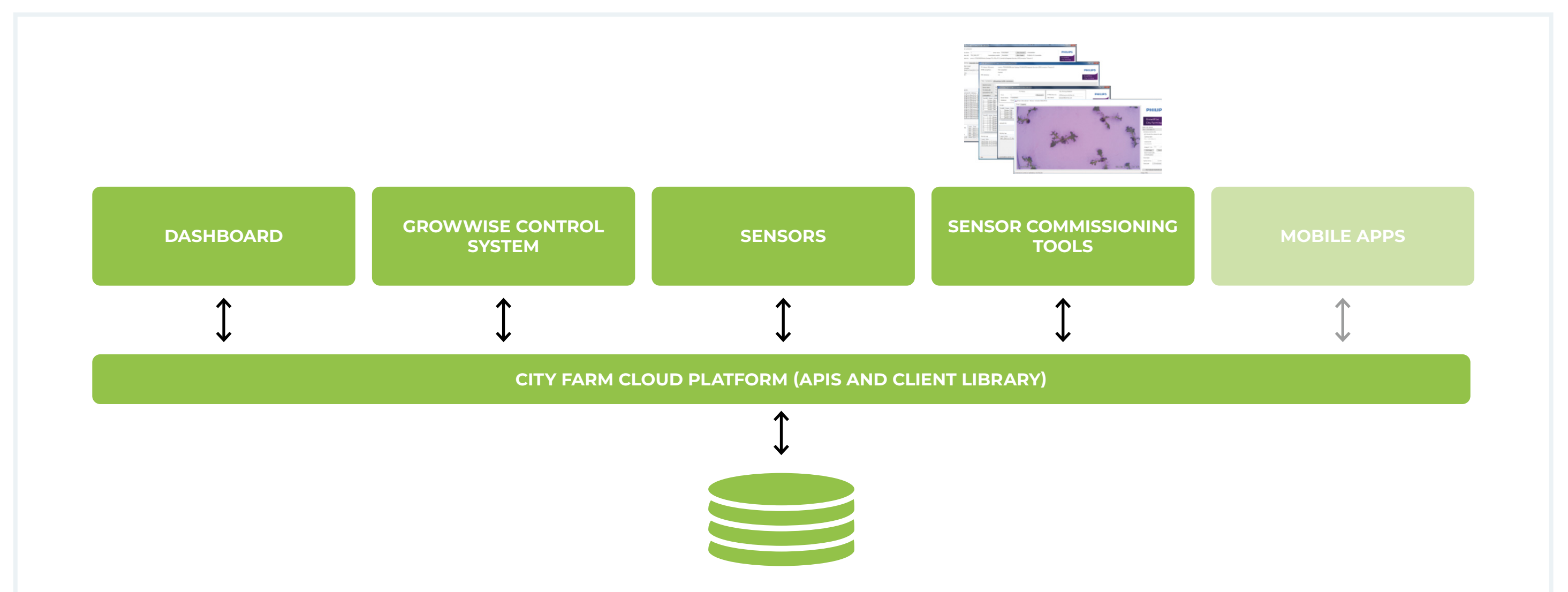
4.1 CITY FARMING LEAFY VEGETABLES

Growing sufficient food of high quality for a growing population is becoming a challenge. There is a lack of arable land and a shortage of qualified growers. New and sustainable methods for producing food of high quality in a controlled environment with limited human intervention are required. City farming (a.k.a. vertical farming) growing indoors under LED lighting without use of daylight is such a method that is gaining momentum.



City farming is an innovation
in food production that benefits
all actors in the value chain.

HOW IT WORKS



- A data platform that enables storage and retrieval of data via web APIs and a client library.
- Sensors that measure relevant plant properties.
- A system for dynamically controlling the lighting (level and spectrum) for optimum plant growth.
- Cloud applications such as dashboards and tools (e.g. for commissioning sensors)

THE IMPACT

OUR OBJECTIVES

It is an aim of this use-case to develop an IOT sensing and control solution for city farms to be able to continuously monitor, automate, and improve their operations. This solution includes:

- The development of a lighting control system,
- The deployment of suitable sensors to measure plant growth parameters (typically 100 sensors per 1000 m² of growing area),
- The development of a data platform.

ON ECONOMY

The outcome of this use case will be an improvement of the city farms' efficiency, as well as its adoption rate. Relevant KPIs in this respect are the production yield (kg/m²/year) and shelf life and nutritional value of the produce (with lettuce as key crop).

ENVIRONMENTAL IMPACT

Compared to crop growth in open field and in greenhouses, city farms use far less water and crop waste. Moreover, no pesticides need to be used.

