

LEAN IMPLEMENTATION IN AGRICULTURAL SECTOR

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Lean is a systematic method for waste minimization within manufacturing systems without sacrificing productivity. This method was derived from Japanese manufacturing industry and is now used in most of manufacturing plants in Europe. There has been little literature and understanding of lean in the context of agriculture and farming so far. Lean in agriculture provides a different set of challenges due to seasonal variability, bulk production, processing and problems in handling and storage.

To evaluate possibility of Lean implementation in agricultural sector, it is significant to define which waste are met in this sector. I will hereby introduce some examples for so-called Lean dead wastes in farming and agriculture sector.

Waste point	Features and examples
Defect	Wrong application of fertilizers, wrong mix of feed, bad seed quality
Overproduction	Production is very difficult to manage due to largely nature dependence. Over-application of nutrients and overproduction of vegetables.
Waiting	Very typical in agriculture to wait for the last step to complete by the farmer. Increased spoilage of the farming products requires short time to the market and waiting time should be limited.
Non-value-added processing	Incorrect and unnecessary procedures or systems lead to waste. Inefficiencies in the drying, grain conditioning and combining process.
Transportation	Excessive movements of machines, transportation of fertilizer and too long distances before applying it
Inventory	Poor customer service, excessive spoilage. Applicable for fx. stock of seeds and fertilizer.
Motion	Poor design of workplace leads to lost or damaged items. Traditional agricultural practices don't give any importance to ergonomics.
Employees	Lack of employees' involvement and unused knowledge of employees. Family based farming often discount manpower use

It is no doubts, that some of lean tools could help to fight against waists, that I have defined in the table above. Modern technologies and innovations are spreading all over through all the industries and businesses. Agricultural business is also ready for innovations and therefore it is time to implement Lean Manufacturing to Lean Agriculture. It is an excellent opportunity for the agriculture sector to increase their efficiency by reducing waste and improving the product quality. Lean principle offers a range of tools and techniques to businesses in order to improve efficiency and reducing waste. The implementation of lean principles in the agriculture sector would have a tremendous effect on the food supply chain.