

Greenhouse Management

Analysis document

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Introduction:

Due to the small and expensive landmass of the Netherlands, having an efficient food production method is a must. This method will help improving the quality and lower the costs. That's why they are using artificial environment - greenhouses. However there are some problems with the greenhouse management.

Problems:

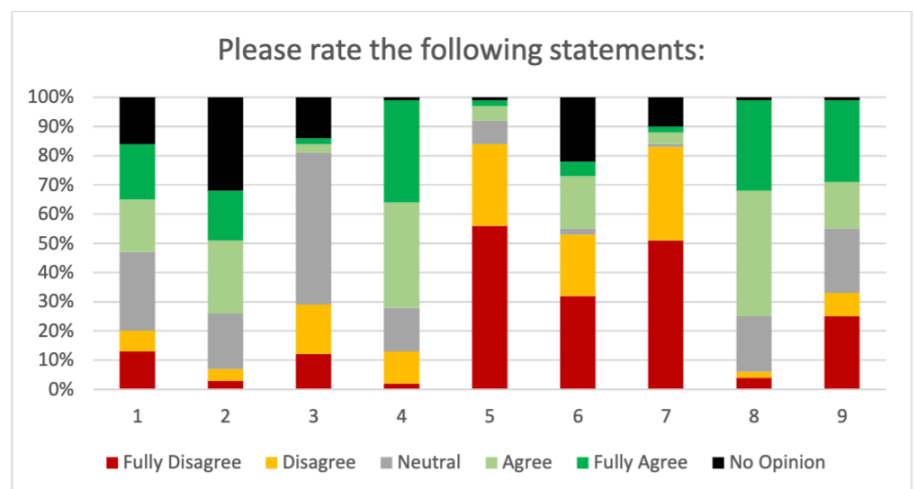
1) One of the examples of the problems of the greenhouses is that one of the largest corporations Everlast Agro B.V., which has currently ten greenhouses with independent managers, has problems with handling the load. This sometimes results longer working hours or not enough work for the employees.

2) Every greenhouse grows one crop. Due to lack of knowledge, greenhouses rarely switch to another crop. That leads to lack of profits, because of the differences in yields depending on the season, and even losses during some months.

3) Even though all greenhouses are equipped with heating, ventilation and air distribution systems to control the microclimate the values do not correspond in every part of the greenhouse and an average is taken. This interferes the optimum growth of the crops for sustainable production. But with investing in better equipment there will be another problem: exceeding energy costs.

4) Another problem is the Covid pandemic and the soon expected lockdown. If there is a lockdown there will be no people working in the greenhouses and therefore a lot of losses. As we can see from the chart around 75% of the people agree that Covid-19 situation has a negative impact on their work performance.

5) Certain actions are better to be automatised.



- 1 I care more about the environment than making a profit
- 2 The demand for our produced goods is increasing
- 3 During fall/winter, it is difficult to generate income
- 4 I am satisfied with the production/gain
- 5 It is better to have a product available all year instead of seasonal
- 6 I am aware at all time how the production of goods is holding up
- 7 The current state of digitalization of my field of work is sufficient or better
- 8 The Covid-19 situation has a negative impact on my work performance
- 9 With the right equipment, I could work in home office

Solutions:

1.1) The solution to that problem is automatisation. Technology is surrounding us everywhere and can help for handling the load, sowing and taking care of the crops.

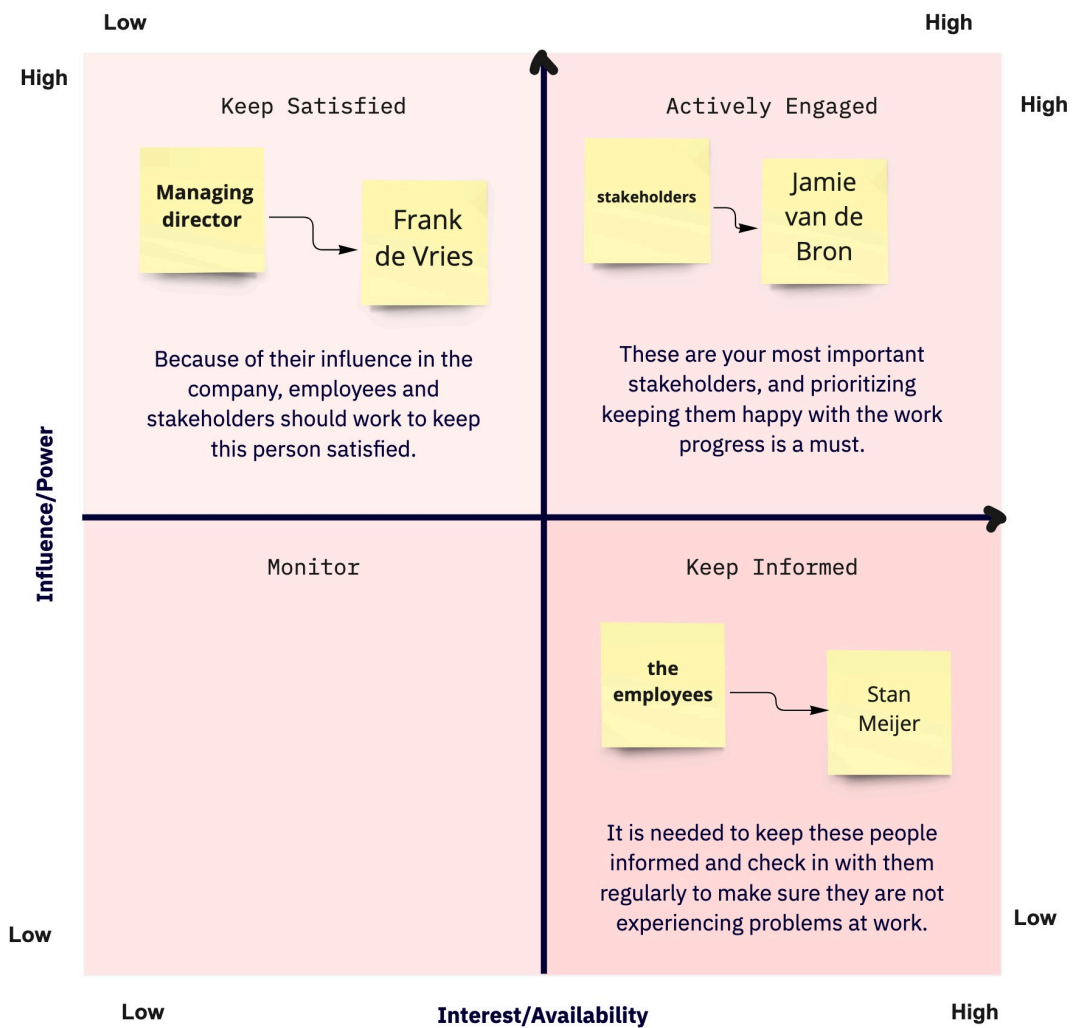
2.1) If there is an exchange of people between the greenhouses there will be people that have the knowledge to grow a variety of crops in every greenhouse. They will be also exchanging experience between themselves and there is a possibility that every person is able to learn to grow more than 1 crop. This will also increase the yields because there will be more load of each crop in their best season and every greenhouse will have multiple best seasons for the different type of crops not only one best season for one type.

3.1) They have to optimise the systems to monitor every part of the greenhouses and be updated with the stage of growth on each plant for sustainable production. Something like an app that syncs with the systems in the greenhouses is going to be useful so the employees can easily access every data they need and monitor the growth of the plants. For reducing the energy costs a good solutions is solar panels.

4.1) Automatisation and online monitoring of the greenhouses are the solutions of this problem also. In the first interview the managing director says that because of the pandemic he wants his employees to be able to monitor the crops from home and just go to the greenhouses if they are needed there. If the workers can manage the crops during the lockdown they will maintain the profits.

5.1) In the second and third interview the workers mentioned that the greenhouses were built 10, 12, 15 years ago and the technology is not up to date and some actions needs to be automatised. Simple actions like opening and closing doors can change the temperatures and the humidity of the greenhouses. In the second interview the worker compares this problem to opening and closing the door of the fridge. The automatisation of this simple actions can have a positive impact on the crops. He also says that seeing the data combined and calculated will save a lot of time. The worker from the third interview believes that better monitoring also means less wasted energy which is very important for the environment.

Stakeholder analysis:



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References:

- Interview with Managing director at Everlast Agro B.V (Frank de Vries)
- Interview with Employee at Everlast Agro B.V (Stan Meijer)
- Interview with Stakeholder at Everlast Agro B.V (Veronica Bakker)
- Survey taken among the employees of Everlast Agro B.V