**This is a quick summary of the document I made before answering the questions. Most of the things in interview 1 and 2 are left in the summery since I think they are important. But I have shortened the Note and interview 3:**

**Note for the Everlast Agro B.V. case**

The company doesnt know **which problems to tackle first. Also** sustainability is very important for them. Improvement proposals should also be profitable in the longer term.

**1.2 Company and current scenario**

The company has currently **ten greenhouses** spread across het Westland in the Netherlands. A new greenhouse is **added every year.**  Each greenhouse is independently managed by a **manager.** Each greenhouse is responsible for its own employees and employees are not exchanged. Sowing, transplanting and harvesting are the most labor-intensive. It sometimes happens that the peak load cannot be handled well here. This sometimes results in longer working hours. On other days, there is not enough work and employees are sent home earlier. Harvested crops are offered at a fruit and vegetable auction. Yields for each crop depend on the season. For example, tomatoes yield more in winter than in summer. Other crops again yield more in summer. Each greenhouse grows one crop. The company’s profits vary from month to month. Some months even see losses. Crop quality varies. The company fully understands the need to maintain the optimum growth environment of the greenhouse for sustainable production. It is for this reason all greenhouses of Everlast Agro B.V. are equipped with heating, ventilation, and air distribution systems to control the greenhouse microclimate. However, these systems typically monitor and control the environment on quite a coarse scale. The values do not correspond in every part of the greenhouse and an average is taken. The company wants to develop this further so that the most optimal growth can be achieved at each growth stage of each plant. One of their popular crops are tomatoes.

**Interview 1**

Our focus lays on the mass production of tomatoes, carrots and cucumbers. We run several greenhouses in the Netherlands and produce for both, the European and the national market.Usually, we export into countries closeby. Germany, Belgium, but of course also further away if the demand is there.

Would you say it’s important for your success in the market to improve your greenhouse management? Well, of course it is. We work in a field where each plant needs to perform up to its maximum, to have as much output as possible. The more we can produce, the more we can sell. The demand is there, but if we don’t have enough to deliver, we lose customers to companies from Italy or Spain – they have the climate advantage there, especially for tomatoes. But we have the technical advantage.

**problem:**

We’re not going out of business because of it, but looking at our cost-profit margin, the exceeding energy costs are a problem. And not only that, we’re in the middle of a pandemic, even if things look quite good now, we’re just one more Covid variant or whatever away from the next lockdown. Crops don’t really care about lockdowns though. They want water, they want air, they want light and they want attention. All that costs money – even the air, because we have to filter it before it goes into our greenhouses. And of course those who have to maintain all of this. Employees also are expensive.

**what are the things that need to be done better in order for your company to work more efficiently?**

would be to have more efficient monitoring systems, to begin with. It’s much easier if my employees can take a look at the systems from home and just go to the greenhouses if they are needed there. Our current system is a few years old – it works well, but it only lets us manage and monitor the greenhouse on a coarse scale. We need more data, more details, and all of that up to our current challenges.

also the company we worked with to implement the system does no longer exist, and they also documented it quite poorly. It works, for now, but is certainly not future proof.

**Interview 2**

there is still a lot of work that needs to be done by hand that can be automated. look at this [he points at digital display, showing the current temperature in the greenhouse, 24°C], this is the temperature right now. Right where we are. We have two other of these, one over there [he points towards the middle of the greenhouse] and one at the other end. If I want to see the overall temperature of the greenhouse. I have to look at this, then that [points towards the middle again], then that [points towards the other end of the greenhouse] and then do the calculation. Might not seem like much, but do that for 5 greenhouses multiple times a day. I can spend my time with better things than that. So something automatic would be great. : So you would like to see this data combined and the calculations done for you? Interviewee: That would save me a lot of time, yes. , what would be best would be to see the overall status of the greenhouse. Humidity, Temperature, and so on.

**Interview 3**

They don’t really care about wasting water, energy or polluting the soil with artificial fertilizers. I took the opportunity to step in and make ourselves greener.

**Analysis of the Agro Case based on my summary:**

**• What is the problem?**

The current greenhouse monitoring system is outdated and not operating at maximum efficiency. We need a more data-driven approach because a lot of the manual labor can be skipped this way. Thats why we should automate some tasks. Additionally, the company should adopt a more sustainable strategy that focuses on reducing waste.

**• What should we solve?**

-Outdated and inefficient greenhouse monitoring system.

-Lack of detailed data.

-Tasks that can be automated.

-Environmental impact issues.

**• How are we going to solve it?**

Upgrading the greenhouse monitoring system to provide more detailed data and remote access for employees. Implementing automation for some of the calculations and data collection where posible. Maybe trying energy-saving technologies? Also trying more sustainable farming methods and waste reduction.

**• Who is important?**

Frank de Vries, Managing director Everlast Agro B.V

**• Who are the stakeholders?**

Veronica Bakker, stakeholder at Everlast Agro B.V.

**• What references did you use in the analysis?**

The information provided in the "Note for the Everlast Agro B.V. case" and the 3 given interviews.