Executive Summary

Sýnnefa Green Limited through its greenhouse division (Illuminum Greenhouses) seeks to establish a long lasting solution to the ever rising food insecurity, sudden climate change, unpredictable weather patterns, pests, crop diseases and outdated technology affecting our agricultural sector.

Our solution is simple, modern greenhouses with sensor technology. Greenhouses offer a controlled and regulated environment. So, what's different with ours? We seek to create a limitless integrated modern greenhouse with sensors that monitor temperature, humidity, soil moisture and most importantly regulate the water supply which is channeled through driplines and link them up to the farmers mobile phone. The monitoring and regulation is done by the farmer remotely through their mobile phones. They can be able to open and close their irrigation system as well as query and get alerts on their current greenhouse status i.e Temperature, Humidity and Soil Moisture content via SMS. This can be done from anywhere and anytime of day just by sending a simple SMS to their greenhouse. This system is powered by solar panels thus green and can work in rural areas where electricity is a challenge. The farmer shall also be getting periodic SMSs on the status of the greenhouse or also send a query SMS to the device which in turn responds with a summary of the greenhouse micro climate parameters.

Water conservation has been a major concern in arid and semi arid lands due to the rapid climate change and land degradation. It is with this in mind that we have put in drip irrigation technology into our greenhouses to improve water conservation and minimize wastage. Kenya has 5.4 million hectares of arable land, but only 17% of this land is suitable for rain fed agriculture; leaving the remainder in need of irrigation and pumping technology. Our device using its soil moisture sensor effectively maintains the soil at the required percentage only irrigating the crops when required. This is outside the norm where farmers have traditionally irrigated based on physical examination of the soil and specified times in the morning and evening creating a lot of loopholes for errors such as delayed irrigation, excessive or poor watering.

We have developed our first prototype that fixes these inefficiencies and has received excellent reviews from our farmers. Urban farmers have reduced their water bills by up to 60% due to the improved irrigation by automated drip lines. We have also received numerous requests by interested farmers to acquire the device given the savings it provides on water and efficient control of greenhouse parameters.

Inclusion of youth in Kenyan agriculture has also been a huge challenge for our government however, almost 75% of our potential clients are youth (less than 35 years). We believe the ability of remotely controlling your greenhouse from your office, class or home has made greenhouse farming the appealing and viable due to the inclusion of ICT technology which the youth have a bias towards.

Our business model has also in itself propelled the development of this greenhouse automation system. No grants or seed capital have been used to develop our prototype but only company generated profits. The market outlook for our innovation is beyond greenhouse farmers, we project that we will also target outdoor drip irrigation farmers in Kenya and beyond as the system

would still regulate water for them.

Our company was founded by 2 partners who have known each other for 8 years and is steered by a team of very young Kenyan professionals. Our co-founder, Brian Bett, 23 years old, is a graduate with a degree in Economics and Statistics. Brian handles our finances and business development portfolio. He is also responsible for building the companies robust business model which has seen us grow at a 76% rate since 2013. Taita Ngetich, 21 years old is the other co-founder with a degree in Mechanical and Manufacturing Engineering. He runs the daily operations of the company and is charged with the responsibility of developing the greenhouse automation system.

At present, we have hit a turnover of $53,700 since inception in Aug. 2013 and constructed over 300 greenhouses directly impacting 1245 people owning these greenhouses some being women groups, youth groups, community based organisations and individual urban farmers, our main target customers mainly being Base of Pyramid farmers who earn less than a $500 a year. We hope this forum will help us to further develop our technology to allow us to continually impact more Kenyan farmers to earn better income and improve their lives.