Read NOW!

WHAT’S HOT RIGHT NOW?
Welcome to Issue 2 of the SpiceUp Newsletter. As we move into the fifth quarter of the project’s implementation, we take a look at what we’ve achieved since the first quarter.
Welcome

This is the second issue of the SpiceUp Newsletter, a platform for sustainable pepper farmers in Indonesia. In this issue we continue with the introductions to our partners and we cover the progress of the SpiceUp mobile app development and user engagement activities, with farmers and B2B clients.

If you’d like to share your thoughts and opinions regarding anything you read in our newsletters, we’d be happy to hear it. You can contact us via the details below.

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UNDERSTANDING THE CONCEPT OF PEPPER FARMING

The SpiceUp platform will assist farmers in conducting Good Agricultural Practices by providing plot specific recommendations based on inputs from both satellite data analyses, and ground measurements from our field experts and farmer information. From this point, we can already identify the challenge(s) of tailoring the available information to produce the exact recommendation(s) needed by farmers. Our experts conducted a series of discussions to better understand how the data modelling will work. The team created a work flow diagram that provides guidance on how to build the recommendations into the platform.

COMPLETION OF BASELINE SURVEY

The SpiceUp baseline in Kalimantan was conducted in March 2019. 1,191 farmers were interviewed, and this was the last section of the baseline exercise (after Lampung and Bangka).

The baseline gave insights into pepper production, fertiliser and pesticide use, and irrigation, as well as household composition. It also indicated that current low pepper prices cause lower gains for farmers. Additionally, the type of information desired by pepper farmers was collected. In general, farmers wanted weather information and information about pest & diseases. The findings also showed considerable variations in the
situation of farmers in the various regions; for example, in age, gender, duration of farming, type of pepper grown, use of revenues and ability to invest, smartphone use and willingness to pay for an app or information service. This will be a main source for the direction of the implementation of the project’s activities.

For more information about the baseline results, please subscribe to our newsletter or contact either of our project managers.

SPICEUP GEO-INFORMATION SERVICES RELY ON HIGH RESOLUTION DATA FROM MULTIPLE SOURCES

Nelen & Schuurmans uses Lizard’s ‘geoblocks’ as a tool to process geo-data on-the-fly. Geoblocks enable big geo-data solutions for operational data flows. An example in SpiceUp is the conversion of daily data into seasonal KPIs. This will be useful when giving actionable advice to B2B users, who generally evaluate farm performance over longer time periods. Geoblocks enable big geodata solutions for operational data flows. Nelen & Schuurmans have been developing the geoblocks over the past years. Since 2019, there have been large technological improvements, which enables Lizard users to create geoblocks via the application programming interface.

The Work Package 3 team holds bi-weekly meetings where they update each other. The majority of the work has been on integration with the mobile app and there has been considerable progress since the last update.

» The soil nutrient maps of Bangka have been configured in Lizard, and the data is automatically converted into nutrient advice (gram / tree / growth stage) using ‘Geoblocks’.

» A Lizard importer has been configured for VanderSat’s soil moisture data to
provide SpiceUp users with the latest water management advice.
» Satu Titik has been informed how to extract fertilizer and water management advice from Lizard in order to provide SpiceUp advice at farm level.

GATHERING FARMER INPUTS TO GENERATE BUSINESS INTELLIGENCE

VanderSat conducted several interviews with farmers to gather their inputs to generate business intelligence. The goal of the interview was to find out what actions farmers take during the dry and wet seasons. There was also a need to know what measures farmers take to minimize losses and how they would act if they have available resources. The results of the interviews show:

DROUGHT
Drought doesn’t cause yield or tree problems if the dry season is normal. The plant wilts and some farmers even stated that it can actually help a good harvest. Only when the dry season is longer than 7 months do some farmers report tree loss.
» No farmer irrigates during a normal dry season. When the drought is longer than 5 months, some farmers will irrigate the plants manually. Only some farmers see the benefits of an irrigation system, a lot of them do not see the need.
» During the tillage phase, the plant needs wetness. Farmers use mulching (covering of the soil with leaves) to retain the moisture.
» In South Bangka, soaking processes are affected by drought because there is no running water source near, they use ponds.

WETNESS
In comparison, wetness is a much bigger problem. Firstly, wetness invites pest and diseases, which has a high impact on yield and tree loss. Diseases which are often mentioned include: foot rot disease, yellow disease and insects. Many farmers do not have a drainage system in place, even though some create ditches when there is water logging or use mounds below the pepper trees. However, drainage is particularly important, especially for farms with flat topography. Aside from that, plants need dryness before flowering. Rainfall before harvesting is damaging because the berries fall off the trees, which reduces the quality and yield.

Farmers are thus looking for information about the onset of rain to plan their harvesting. Most farmers don’t receive weather information, but base their actions on their knowledge of weather patterns. Many farmers are interested in investing in drainage or irrigation systems if they had access to resources, and many have mentioned more regular fertilizer (and pesticide) application would be the first investment.

In addition to all the above, one of the main problems is also the low market price for pepper. These challenges have reduced the farmers’ motivation to grow pepper.
SPICEUP MOBILE APP DEVELOPMENT

After the lengthy selection process, the SpiceUp team has finally chosen to work with Satu Titik on developing the mobile application. As an initial step, Satu Titik met with the technical team of Indonesian and Dutch partners in Bali this past June to further discuss the expectations for the App, and how to coordinate tasks between the different service provision teams of the consortium and the Satu Titik team.

The Satu Titik team has been given the challenging task of competing the Means of Verification Product (MVP) for the SpiceUp app before the end of 2019. However, most of the preparation work has been done, and the service provision team is finalising the data integration work to be further developed as advice within the app.

Some features included in the app are:
- Farm profile
- Farm growth and health monitoring
- Following the farm’s progress
- GAP Advice (Fertilizer, Pest & Disease, Water Management)
- Traceable transaction
- Online shop for farm input
- Weather overview
- Market price overview

SPICEUP PARTICIPATES IN THE 2019 GROWASIA HACKATHON

On 22 July, SpiceUp attended the GrowAsia Hackathon 2019 Finals in Singapore. SpiceUp was invited to attend the finals after winning the Indonesian chapter in June. At the hackathon, the team presented ideas on how traceability of agricultural commodities could be enhanced using DNA tagging technology. DNA tagging is a novel tagging technology where DNA is used as a medium to tag certain produce. Compared to other methods of tagging, such as the QR code, DNA is more reliable because it is harder to copy or be corrupted. The team presented an idea of how DNA spray can be used as a method of tagging in the field and proposed a mechanism to ensure proper DNA tagging and to avoid fraud in the process. Furthermore, the team also presented ideas on the business model of the traceability system.

After the judge’s deliberation, SpiceUp was selected as the 2nd Runner Up. As one of the winners, SpiceUp had the opportunity to discuss a pilot plan for the ideas with the private sponsors of the hackathon. The hackathon was also a great experience for the team to engage with other players in the industry, potential partners and clients, as well as potential investors.
TRAINING OF SPICE UP FACILITATORS

From 28 – 31 March, the first Training of Facilitators (ToF) workshop was held in Bangka and was attended by 46 participants from across the Bangka region. The facilitators will assist in socializing SpiceUp's services. They are mostly agricultural extension officers that have experience training farmers and are familiar with the farmers themselves.

The workshop aimed to build a commitment between the facilitator and SpiceUp and to increase their capacities and to provide facilitators with a general understanding of the SpiceUp program. Most importantly, the facilitator will also be trained on how to deliver and broadcast messages about SpiceUp and its service to the pepper farmers.

DEMO PLOT PROGRESS

The SpiceUp demo plot in Bangka is growing very well and as planned. Entering the sixth month of the crop stage, the plant is now ready for fertilizer application and pruning. PT.CAN will use a calculation model given by IPB and Balittro to determine the quantity of fertilizer to apply. The time of application will be decided based on the recommendation on weather conditions and soil moisture level data.

All demo plot activities are carefully monitored with the help of our e-logbook system, developed together with Akvo’s tools. The tools forward all information gathered in the e-logbook to respective persons on the team, so everyone is updated with most current stage of the demo plot.

The ToF participants expressed positivity about SpiceUp, as they feel that the program offers important and useful advice and solutions for the problems currently being faced in pepper plantations. However, the knowledge level of pepper farmers is a challenge as most don’t know about technology based agricultural applications. This was identified as an opportunity for SpiceUp services to improve their current practices.
Our Partners

SpiceUp is made of a consortium of eight public and private partners from Indonesia and the Netherlands, including: Verstegen Spices & Sauces BV, ICCO Cooperation, Nelen & Schuurmans (N&S), VanderSat, Institut Pertanian Bogor (IPB), Akvo, PT. Cinquer Agro Nusantara (PT CAN), and Balittro.

NELEN & SCHUURMANS
Nelen & Schuurmans is a leading Dutch consultancy in water management, geodata and system integration. We provide services in climate resilient urban planning, flood risk management and operational decision support systems. Our mission is to contribute to a safer, healthier and more sustainable world by providing the best information on the physical environment.

Agricultural consultancy is now our fastest growing branch. We help farmers by collecting the most accurate geodata available and translate it to practical advice. For more information, please visit: www.nelen-schuurmans.nl

INSTITUT PERTANIAN BOGOR (IPB)
IPB was established in 1963 and is an Indonesian state agricultural university based in Bogor. It is the only state university focusing on tropical agriculture and life sciences. IPB aims to become a research-based university and leader in innovation that excels at the global level in agriculture, marine, and tropical biosciences.

Their mission is to pioneer superior and leading research in transformative science and technology; and to explore the latest sciences in agriculture, marine and tropical biosciences. For more information, please visit: https://www.ipb.ac.id

VANDERSAT
VanderSat is a leading global provider of satellite observed water, temperature and vegetation data products and services. They deliver innovative products to three different customer segments: Agriculture, Food & Commodities - Insurance & Banking - Water Management.

VanderSat has developed a patented method to provide accurate high-resolution images of soil moisture at any place on earth, every day. Their technology is extensively documented in scientific peer-reviewed literature & is now available through their API. For more information, please visit: https://www.vandersat.com/
Our Project Team

HATAMI NUGRAHA

Hatami is the CEO and Founder of PT Cinquer Agro Nusantara (CAN), and has been involved in several pilot projects in the spices sector in Indonesia. He has an engineering background and is passionate about introducing cutting-edge technology to agricultural business and farming practices. In SpiceUp, he supplies the Sustainable Tracing System and is involved in User Engagement activities. Hatami is based in CAN’s Head Office in Bandung, but regularly stays in Bangka Island to manage the spices business, organize the pilot project and to also nurture the pepper plantation.

WISSE BEETS

Wisse has a background in ecohydrology, water management and climate studies. He graduated in 2009 in rural Russia studying salinization with remote sensing techniques. After graduating he worked for 8 years in an Amsterdam based consultancy in water management, monitoring and strategic climate resilience. In 2018, he joined Nelen & Schuurmans as project leader in agricultural consultancy and climate resilience. Within the SpiceUp project he is responsible for the technical design of the services. He enjoys translating large abstract datasets to practical and useful information.

You can learn more about the other consortium partners and fellow team members in our upcoming newsletters. Subscribe to our mailing list here.
Achievements and Focus

OUR ACHIEVEMENTS IN Q3-4

1. The baseline survey is completed for all four provinces of the SpiceUp project areas, including data analysis work and reporting;
2. Soil test results from Bangka have been completed. IPB also conducted soil test surveys in Lampung, and are processing laboratory evaluations;
3. PT. CAN established a champion farmers network in Bangka and held the first training for the facilitators;
4. PT. CAN identified a plot of land in Lampung to be the second demo plot;
5. The work package on Service Provision developed a web app on the Lizard platform that allows the team to view Spiceup’s advice and respective layers;
6. Satu Titik was chosen as the mobile app developer;
7. VanderSat collected information on irrigation and drainage practices during fieldwork in Bangka and Lampung;
8. VanderStat established a relationship with local weather departments;
9. The SpiceUp team continued discussions with potential B2B clients, and presenting the value proposition of the SpiceUp business to a broader audience;
10. The SpiceUp team conducted initial discussions with consortium partners to determine the business model of SpiceUp and the formulation of the SpiceUp enterprise.

OUR FOCUS FOR Q5

In Q5, the project is focusing on the development of the SpiceUp app and the marketing strategy of the platform:

1. Continuing the progress on mobile app development; the Minimum Viable Product should be available by October 2019;
2. Finalizing the SpiceUp website;
3. In depth learning on how SpiceUp can utilize user interaction data from the app for various purposes, such as to give benefits for farmers;
4. Conducting the ToT training for champion farmers in Bangka;
5. Establishing the demo plot in Lampung;
6. Revise the UI/UX of the demo plot monitoring logbook for better user experience by the team;
7. Further soil analysis to generate land suitability map for agriculture;
8. Conduct in depth study and analysis to strengthen the GAP advice formula for SpiceUp app (pest and disease, irrigation, fertilizer, etc);
9. Preparation work setting up SpiceUp’s social enterprise.
STAY TUNED!

You can subscribe to our mailing list here so you don’t miss out on receiving the latest news and updates from SpiceUp. You can also follow us on our social media channels for more timely updates.

If you have any questions or comments for our project team, you can get in touch, via the contact persons below, at any time.

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