

SAMS- NEWSLETTER

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MONTHLY DISSEMINATION,
BANDUNG

03. 2020. 6TH SCM IN JELGAVA

DEAR SAMS COMMUNITY,



Smart
Apiculture
Management
Services

We would like to inform you with this quarterly update about news and upcoming events on our project activities.

Our newsletter has a new style

A WARM WELCOME TO OUR NEW AB MEMBERS

The final touches to an idea or product always rely on external views from experts. These external views also influence the SAMS project and the related product development. Therefore, SAMS welcomes the following new members in the Advisory Board.

Ethiopia

Bees for Development Ethiopia



*Meat and Dairy Development Institute –
Ministry of Industry*

*Ethiopian Honey and Beeswax Producers and
Exporters Association (EHBPEA)*

Indonesia

Labtek Indie



Lebah Madu Indonesia

Local Enablers

West Java Provincial Forestry Service

EU

Bees for Development



Bees Abroad

icebauhaus e.V.

Thanks to all Advisory Board members for your willingness to let the SAMS idea and products grow. For more information about the Advisory Board visit <https://sams-project.eu/advisory-boards/>

If you also want to be a partner of the SAMS project (AB member, business partner, ...), please visit our homepage and fill out the [application form](#).

By GIZ

SAMS HARDWARE CHALLENGES AND SOLUTIONS

Regarding the SAMS system operation in Indonesia, various difficulties were encountered – sensor placement inside the hive, measurement device network connection problems, data upload stability, configuration problems. A new version of Raspberry Pi software has been prepared that also targets some of the mentioned issues.

Operation of SAMS systems in Ethiopia are constantly disrupting due to Internet connection problems and availability of mobile network in rural areas. Different scenarios are currently being discussed to reduce the data loss due to the network interruptions.

By UNILV

SAMS HARDWARE DEVELOPMENT & DATA DISPLAY, INDONESIA



Picture: Fakhri from Labtek Indie works on the interactive mockup for the DSS mobile app.

Initially we have installed 2 early prototype systems at the collaborating beekeeping site in Ciwidey, but now we plan to install nine more robust systems. First, we were assembling the systems in our office in Bandung prior to taking them to the location, which is a 2-3 hours ride away from our office. Approximately, in December 2019, the systems will be implemented at the apiary. Currently, we are waiting for the apiary to be stabilized, since in the last months many of the bee colonies were absconding caused by a lack of bee forage. One of the outputs of the UCD workshop in July was an early stage design for the interface for the Decision Support System (DSS) app on mobile devices. We digitalized the paper prototype into an interactive digital mockup to test how it looks and interact as a prototype. Then, together with GIZ, UNILV and UNIKAS, we reviewed and improved it. The designing process is quite challenging, as the aim is to produce an easy and useful interface for all of our beekeepers, including the traditional ones. Through the iterative development process, we are confident, that at the end the product will meet their needs and solve their problems.

By CV.PI (+ Labtek Indie)

Further SAMS Update and Activities ...

D 4.2 – REPORT ON DATA ANALYSIS AND INTERPRETATION

October 2019. Deliverable D4.2 – report on data analysis and interpretation was prepared and submitted to the EU. The report covers description of various bee colony states and the possibilities to detect/ recognize them. Deliverable D4.2 also includes description of different data analysis algorithms, methods and models applied to detect abnormalities in the bee colony behavior and to identify different colony states, including death, swarming etc.

By UNILV

D 5.3 - FINAL BEE MANAGEMENT & BEE-HEALTH SERVICES & REPORT



Picture: Bee management scenario.

December 2019. The final report on bee management and bee-health services of the SAMS project covers the objectives and main project creations of the last two years of work package 5 “Api management”. It fulfils the task 5.1 “contextualizing of local systems” including bee management and bee-health management. The report includes results of the literature study complemented by expert opinions from the two target countries Indonesia and Ethiopia as well as an introduction and a manual to the SAMSwiki database, smart bee management scenarios (left picture) and a floral calendar of important bee plants.

By UNIGRAZ

TRANSFERABILITY STUDIES WP 6, ETHIOPIA

The work on transferability studies started as planned after 16 months of project implementation. As an approach, capitalizing on existing data sources is followed. Cooperatives and unions are among the identified best platforms for technology and knowledge transfer. On top, different stakeholders were contacted to collect important inputs for transferability studies. Empowering the beneficiaries through training, the delivery of SAMS BEEHIVES and promoting entrepreneurs are also another dimension of the work. ICIPE and ApiTrade Africa are linked to SAMS to address cross-regional SAMS-Business development. ICIPE recently launched a five-years project to reach a larger beekeeping community and eager to distribute SAMS products to beneficiaries. ApiTrade Africa promised to bring on board key stakeholders organisations across Africa to participate in SAMS. As part of this commitment, ApiTrade decided to host the Apiexpo Africa 2020 in Ethiopia in October. This is a great opportunity to bring SAMS to real life, as the entire continent will participate in the expo.

By Holeta

BIMONTHLY DISCUSSIONS – ROUND 3: IoT EXPERT, BANDUNG



Pictures: The IoT expert Budi Rahardjo sharing his ideas (top); group picture (bottom).

14 November, 2019. Labtek Indie organized the 3rd SAMS Bimonthly Discussion entitled “Hacking IoT Ecosystem”. Budi Rahardjo, an IoT expert and a lecturer from the Electrical Engineering Department was a speakers at this event. Located at the Labtek Indie office, Bandung, the expert shared his knowledge on IoT ecosystems (landscape of policy and regulations related to the implementation of IoT) in Indonesia. During the discussion, there were interesting questions raised by the audience, starting from data privacy, to business models and the challenges of IoT development in Indonesia. In order to develop an optimal IoT in Indonesia, it can be concluded that it is necessary to create a proper ecosystem or hub that is open and egalitarian, which connects IoT engineers and IoT experts to learn from each other. Further, IoT engineers (e.g. data analysts, data scientists, economic or social experts) are important stakeholders. On the business side, raw data produced by the IoT technologies is important; how could we interpret and utilize the data to support other needs and businesses? The discussion process went well and was casually moderated by Gustaff from Common Room.

By CV.PI (+ Labtek Indie)

MARKET SURVEY, INDONESIA

November, 2019. The Market Survey is one of the activities being carried out by the Indonesian and Ethiopian SAMS teams. This survey activity was carried out to illustrate consumer preferences in the market. The first stage of this survey is a survey of honey consumer preferences.

For Indonesia, the UNPAD team prepared a questionnaire involving several experts from various fields (from food experts who have experience with honey, to economics and

management, and statisticians who are experienced in carrying out surveys). The market survey on honey consumer preferences is planned to take place from mid-November to early December, with the distribution of respondents coming from Java, Sumatra, Bali, and Nusa Tenggara. The choice of locations was chosen because they are the largest honey-producing regions in Indonesia. The survey method used was an online questionnaire survey.

The link for online survey can be found at: https://www.soscisurvey.de/SAMS_Kuesioner_SurveiPasar_01/

By UNPAD



Picture: Language selection page in the online survey.

10 RULES OF HONEY BEE MANAGEMENT

November, 2019. Ten important “rules” for honey bee colony management were published and are available on the SAMSwiki. They serve as a guideline for beekeepers to increase the quality of their honey bee products (e.g. honey) and to improve the health of their honey bee colonies. The “rules” were evaluated by our SAMS experts and collaborating beekeepers from Ethiopia, Indonesia and Europe to guarantee their validity for these regions.

By UNIGRAZ

VISIT AN APIS MELLIFERA BEEKEEPING SITE IN SUBANG, INDONESIA



Pictures: UNPAD team with the leader of KTH Karya Lestari & KTH Madu Lestari (top); Filtering honey with a gauze (bottom).

03 December, 2019. The UNPAD team visited “*Apis mellifera* KTH Karya Lestari” in Subang to maintain the partnership and to learn more about the quality of honey, the harvesting process and honey packaging. In addition, the visit also had the purpose to raise the awareness of the importance of good quality bee products and how important it is to maintain the quality of honey. UNPAD learned, that the beekeepers working at this apiary use gauzes to filter the honey twice after the harvest to improve the quality of the product.

Also, the UNPAD team was invited to visit the beekeeping site of the KTH Madu Lestari group that keep 50 *Apis mellifera* colonies at their apiary.






By UNPAD

Meetings Meetings Meetings ...

... MONTHLY TEAM MEETING, BANDUNG

On 15th October 2019, the Indonesian team met with the Common Room to discuss the results of SCM 5 Brussels, the task of UNPAD on business plans and market surveys, the development of the implementation of SAMS in Indonesia by CVPI, and also further Talkshow plans.

Based on the meeting, the results obtained were:

-  20 business plans that must be prepared by the UNPAD team do not have to be startups, but can be in the form of ideas
-  market surveys will be carried out by distributing online questionnaires using beekeepers who have/have been involved in SAMS activities
-  SAMS implementation locations that have been implemented: D'Bees in Ciwidey, Tani Kota in Bandung, Ciburial Bandung;
-  at the end of the year 10 SAMS modules will be implemented;
-  SAMS Talkshow will be held on the Internet of Thing (IoT) with the theme of Implementation and Regulation of IoT in Indonesia.

By UNPAD



Picture: SAMS Indonesia team monthly meeting with Common Room.



Picture: SAMS Indonesia team monthly meeting with Common Room.



Picture: UNPAD with Dr. Vincent Piket



Picture: Ramadhani Eka Putra, Ph.D from SITH ITB

... WITH DR. VINCENT PIKET FROM EU, BANDUNG

12 October, 2019. The UNPAD team had the opportunity to meet Dr. Vincent Piket. Dr. Piket visited the EU Ambassadors in Indonesia and Brunei Darussalam.

The UNPAD team presented the SAMS project to Dr. Piket and he was appreciating the project and offered his support for further actions.

... WITH THE AB MEMBER SITH ITB, JATINANGOR

15 November, 2019. UNPAD met the AB member SITH ITB at the ITB campus to discuss the partnership between the SAMS beneficiaries and the local Advisory Board members. The team presented SAMS latest developments, especially those from Indonesia. Further, to improve the understanding of the world of beekeeping, the UNPAD team also explained some important biological definitions which were also implemented in the SAMSwiki.

By UNPAD

... WITH THE WORKING GROUP BEEXML, MUNICH

16./17. December, 2019. BeeXML is an international working group for bee data standardization and one of the SAMS' collaboration partners. In order to create a XML standard, which is a self-describing data format that allows the exchange of data, the first working group meeting took place in Munich on December 16 and 17, 2019.

GIZ joined the beeXML meeting on behalf of SAMS. Together with Walter Haefeker, the founder of the group, as well as other researchers, scientists and beekeepers, e.g. from the Associate Research Fellow at Appalachian State University, the BeeHub project, the BeeKing project, the Austrian Beekeeping Association, the Latvian Beekeeping Association and the Upper Bavarian State, the unambiguous storage of certain data (e.g. time, date and location) have been discussed. Besides, the strategic next steps incl. promotion and implementation of beeXML have been focused.

By GIZ

SAMS Capacity Building Activities



Pictures: New SAMS beehive constructed by the TOT participants (right) and some TOT participants assembling the bottom board of the beehive (left).

CB ACTIVITIES ETHIOPIA

October, 2019. Feedback on SAMS BEEHIVE quality collected after the first capacity building (CB) training conducted for 15 beehive builders. The major drawback identified from the report was the strength of the hive supers because of lack of proper overlapping between the sides with lengths of 505 and 365 mm. In order to correct the problem, the side of 365 mm was increased to 390 mm and new hives were constructed, tested and checked for the required quality. Based on the improvement made, capacity building to six TOT trainees selected from HOLETA and Bako Agricultural Engineering Centre was conducted at HOLETA from 07/10/2019 to 13/10/2019. The participants' selection criteria were experience and capacity to interpret the new design into meaningful concepts in the future CB activities. During the training, 10 new complete SAMS beehives were constructed and CB for different beehive producer workshops was planned to be conducted by categorizing into three clusters with the help of these TOT participants.

By HOLETA



Picture: Robert Brodschneider from the University of Graz gives a training on pollen diversity and bee health in Carinthia, Austria.



Picture: Group picture of the participating biology teachers.

CB ACTIVITIES AUSTRIA

October, 2019. With a total of 60 participants in the two workshops organized in October, the capacity building of the University of Graz in full progress.

Lecture on honey bee pollen availability and bee health: fifty-two beekeepers in Völkermarkt were trained in the monitoring of the environment, pollen diversity, bee health and available pollen sources in Austria. Lessons learnt were not only the monitoring but also the importance of the environment for bee colony development and bee health. Additionally, the small hive beetle and the wasp *Vespa velutina* and their roles as bee health threats were discussed.

SAMS honey bee monitoring, importance of honey bees and pollination (TOT workshop): eighteen biology teachers were attending the workshop in Graz to learn more about the SAMS project and the importance of honey bees for the society, including their role for income gaining and rural development, and for ecosystems (pollination). Further, the participants were trained on SAMS honey bee monitoring and ecosystem services.

By UNIGRAZ

CB ACTIVITY IN LATVIA

November, 2019. A workshop was organized on November 25, during which SAMS project was introduced to the IT students to demonstrate different hardware and software solutions developed within the project, including topics, such as SAMS project in overall, Precision Beekeeping, bee colony monitoring, SAMS hardware and data warehouse. Workshop was more focused on practical hands-on exercises and therefore practical objective was to develop prototype of the SAMS hardware for bee colony main parameter monitoring and connecting hardware to the SAMS data warehouse for data observation and visualisation.

By UNILV

SAMS on events and conferences ...

EUROPEAN RESEARCH DAY 2019, SURABAYA



29 October, 2019. Padjadjaran University was one of the universities invited to share its experiences with international cooperations, especially with consortium involving European universities/projects at the European Research Day event organized by Euraxess and the European Union in Surabaya.

Some of the speakers presented included; Indonesian Academy of Sciences, and Director of the Eijkman Molecular Biology Institute, European Funding Alumni Program, Padjadjaran University, Nuffic-Neso Indonesia, Institut français

d'Indonésie, Spanish CDTI, DAAD, ASEAN EURAXESS, Marie Skłodowska-Curie Actions (MSCA), Science Fund Indonesian Knowledge.

By UNPAD

HABIBIE FESTIVAL 2019, JAKARTA

16 October, 2019. Labtek Indie was invited to participate at the Habibie Festival in Jakarta. The festival was designed to inspire, educate and motivate broader people on technology and innovation. In its 7th year, “the future of learning, work, play and living” was the main theme. Aside from the exhibition, various seminars, workshops and discussions were held. Labtek Indie took part to exhibit the SAMS hardware prototype in the “Makerland zone”, as well as to speak during the



Pictures: Mita on stage holding a silent talk (left); the SAMS Labtek Indie team (center); SAMS booth at Habibie Festival 2019 (right).

“Makertalk session”. Amanda Mita presented “Bee The Change: The Challenges of Smart Beekeeping in West Java” as a “silent talk”. Mita spoke through a microphone, but only participants using headphones heard the output. Both slots were a hit with many interested people attending. Their backgrounds varied from high school and IT students, NGO and tech startup workers, tech communities, as well as ecology and agriculture practitioners. Besides networking with other local IoT creators took was possible.

By CV.PI (+ Labtek Indie)

AGRITECHNICA 2019, HANNOVER



Pictures: Sascha Fiedler and colleagues in the exhibition area.

10 to 16 November, 2019. According to the organiser's concluding report, around 450,000 visitors came, 130,000 of whom came from abroad. Agritechnica in Hanover is the world's largest agricultural technology trade fair and is organised by the German Agricultural Society (DLG). Agritechnica is the innovation exchange for the entire agricultural sector. With its range of agricultural equipment and new developments, it represents a comprehensive information forum for solving problems in agriculture and agricultural technology. The SAMS Bee Monitoring System was on display throughout the entire exhibition period. The developers of the University of Kassel were available for questions and presented the latest project results.

By UNIKAS

EXPOSURE SEMINAR FOR ICT IN AGRICULTURE VALUE CHAIN DEVELOPMENT, FELDAFING

09 December 2019, SAMS was featured during the Exposure Seminar for ICT in Agriculture Value Chain Development of the Green Innovation Centres for Agriculture and Food Sectors, which took place from December 3rd to 12th in Feldafing. As part of the German Federal Ministry for Economic Cooperation and Development's (BMZ) special initiative ONE WORLD - No Hunger, the Green Innovation Centres operate in 15 partner countries to promote innovations that increase farmer incomes, boost employment, and improve local food supplies.

During the Exposure Seminar, Sascha Fiedler from University Kassel presented the SAMS concept and prototype to local actors from the programme's partner countries. Amongst others, participants were from the political, private and social sectors of Mali, Burkina Faso, Ghana, Ethiopia and India. The goal of the event was the presentation of SAMS as an ICT solution for agricultural value chain development, as well as fostering strategic discussions and identifying cooperation options.

By UNIKAS

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