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SAMS –Newsletter

Vol. 1, September 2018

www.sams-project.eu

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.

1. Project activities since January 2018

1.1. Kick-Off event of the SAMS project, January 2018, Feldafing, Germany

1.2. SAMS project website launched

1.3. 2nd Steering Committee Meeting of SAMS, April 2018, Witzenhausen, Germany

1.4. Throwback ITAPIC and LORA test Latvia

1.5. Beekeeping Industrial Tree/Value Chain, May 2018, Indonesia

1.6. Business Model Canvas Workshop, May 2018, Indonesia

1.7. Advisory Board Meeting in Ethiopia, June 2018

1.8. Tests on swarming, May and June 2018, Kassel, Germany

1.9. 1st User Research Workshop in Indonesia, June 2018

1.10. 1st User Research Workshop in Ethiopia, July 2018

1.11. 3rd Steering Committee Meeting of SAMS, September 2018, Jelgava, Latvia

2. Conferences and Events

2.1. Citizen Science conference, February 2018, Salzburg, Austria

2.2. Asia Pacific Week, April 2018, Berlin, Germany

2.3. Re:publica, May 2018, Berlin, Germany

2.4. 10th Indo-German Frontiers of Engineering Symposium, May 2018, Potsdam, Germany

2.5. Riung Karsa, July 2018, Bandung, Indonesia

2.6. Exposure Seminar ICT in Agriculture Value Chain Development, August 2018, Feldafing, Germany

2.7. EurBee 8, September 2018, Ghent, Belgium

Upcoming Events

Agrosym Symposium, 4.-7.10.2018, Sarajevo, Bosnia-Herzegovina
http://agrosym.ues.rs.ba/index.php/en

International Mugla Beekeeping & Pine Honey Congress, 15.-19.10.2018, Mugla, Turkey
http://www.muglacongress.org/eng/

AAA Conference, 22.-25.10. 2018, Jakarta, Indonesia
https://www.aaaconference2018.com/

Apimondia Symposium, 30.11-04.12 2018, Addis Ababa, Ethiopia
http://www.apisymposium2018.org/

Entomological Society of Austria, 16.03.2019, Graz, Austria
http://www.entomologie.org/

1. Project Activities since January 2018

01. 2018 - Kick-Off event of the SAMS project, Feldafing, Germany (hosted by GIZ)

From January 29 until 31 the official Kick Off event of SAMS – *Smart Apiculture Management Services* – took place in Feldafing, Germany. SAMS is a three-year project supported by the European Union's Horizon 2020 research and innovation program. The project started in January 2018 and is implemented by the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH in collaboration with the University Kassel (Germany), Latvia University of Life Sciences and Technologies (Latvia), the University Graz (Austria), the University Padjadjaran (Indonesia), CV. Primary Indonesia (Indonesia), Oromia Agricultural Research Institute, Holeta Bee Research Center (Ethiopia) and ICEADDIS – IT-Consultancy PLC (Ethiopia). At least one representative of each institution participated in the event and introduced their work, background and expectations for the project. In line with the individual thoughts and expectations of the institutions, the individual work packages have been introduced by the lead partner and discussed to make sure that all partners are on the same level concerning the implementation of the project.

The idea behind the project is an appropriate and adapted ICT solution that allows the active monitoring and remote sensing of bee colonies to ensure bee health and bee productivity. The implementation of the Decision and Advisory Support Tool will give answers to the specific requirements of beekeeping in the target countries. Since the technology will be available open source, it is also intended to be transferred and used in other countries all over Sub-Saharan Africa, ASEAN and Europe.

Besides the official part of the Kick Off event, the partners got to know each other deeper during visits to Starnberg, Dinner and a bowling night.

SAMS Consortium


SAMS Consortium

By GIZ

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02. 2018 - SAMS project website launched

In February our partner Latvia University of Life Sciences and Technologies launched the official website of SAMS www.sams-project.eu.

Information about the Consortium and involved project staff as well as news, disseminations and project results can be found on the website.

In the near future, we will also add a description of the involved countries as well as on their current bee situations. In addition, a link to a wiki page with information on “key numbers of apiculture”, “honey bee products and honey bee sector”, “bee forage”, “beekeeping”, “bee pathology” and “possibilities for smart bee management” will be available on the SAMS website. The SAMS newsletter as well as relevant project material like flyer and posters can be found under “downloads” and an upcoming event calendar will be included.

By GIZ

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04. 2018 - 2nd Steering Committee Meeting of SAMS, Witzenhausen, Germany (hosted by UNIKAS)

From the 4th to the 6th of April the second consortium meeting took place in Witzenhausen, Germany and was hosted by the **University of Kassel**. New group members were introduced and heartily welcomed within the SAMS consortium. Prof. Dr. Hensel, the head of the Department of Agricultural & Biosystems Engineering, held a presentation about the beautiful place Witzenhausen, with its numerous amounts of cherry trees, and about its importance for the University of Kassel. The main objectives of the meeting were to discuss first work achievements of the working groups, the presentation of detailed working plans and the discussions about next steps and required inputs. During the 2nd SCM, another important meeting took place: the UCD (User Centered Design) Strategy Meeting. The participants developed a portfolio of possible stakeholders and user groups for the SAMS technology. They created a detailed working plan for the UCD process, including layout user research strategies, selection of methods, development of documentation strategies and user research workshops in the two target countries, Ethiopia and Indonesia.

Besides the official agenda, the partners had the chance to enjoy a personal tour through the local tropical greenhouse, a side visit to a test station of ITAPIC, which is a previous project developed in the EU program ICT-Agri-12, and a casual walk through the city of Witzenhausen.

ITAPIC technique

Green house visit

By University of Graz

Throwback: ITAPIC

The EU funded (within ICT-AGRI 2012 FP 7) project "Application of Information Technologies in Precision Apiculture" (ITApic) was implemented between 2013 and 2016. The project was mainly focused on adapting precision agriculture methods and principles in beekeeping by implementing existing and newest technologies in the field of information and communication technologies in order to identify different honeybee colony states. The project objectives included the development of a bee hive monitoring system and a web service system for data access (with measurement storage). As a result, the bee hive monitoring system were developed together with a web-based data system and integrated decision support. The open source technologies developed during the ITAPIC project are the fundamental blocks and forms the technological background for the SAMS project.

By Latvia University of Life Sciences and Technologies

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04. 2018 - LORA test Latvia

Data sampling started in April 2018. The consortium members of the Latvia University of Life Sciences and Technologies in cooperation with the Latvian internet service provider and telecommunication company Lattelecom installed three temperature sensors supporting LORA technology within honeybee hives.

LoRaWAN technological solution allows low energy consumption devices to communicate with Internet-connected applications over long-range wireless connections for many years with only one battery. LoRaWAN network coverage and sensors were provided by Latvian company Lattelecom. Three bee colonies were equipped with LoRaWAN enabled temperature sensors. Measurements from sensors were

transmitted to the LoRaWAN network gateways and servers and access to collected data was provided through the Lattelecom IoT portal web application.

Three hives of *Apis mellifera mellifera* were equipped with temperature sensors for colony monitoring. The experiment took place at Strazdu iela 1, Jelgava, Latvia (N 56, 390, 4500 and E 23, 450, 1500). Sensors were installed on April 10, 2018. Norwegian-type hive bodies made of wood with external size 470 x 470 x 270 mm and internal size 380 x 380 x 270 mm, with a wall thickness of 45 mm, were used in the experiment. Sensors used were Adeunis Temp (see figure) with references: ARF8181BA, ARF8180BA, ARF8181FA (source: https://www.adeunis.com/en/produit/temp/).

Sensor Adeunis Temp

Application of LoRa sensor for bee colony temperature monitoring is theoretically possible, but considering economic aspects is not so attractive, because of the measurement unit price, which is about 70 EUR per unit (2 temperature sensors per unit – out/in). However, taking into account that usually new technologies becoming more affordable after some time, authors foresee that application of LoRa sensors will be also economically feasible in the future.

Still Precision Beekeeping is not only limited by the temperature measurements; next important parameter is weight of the colony. Equipping scales with LoRa technology would be a good solution, because in that case amount of LoRa radio chip price will be comparable with scales price. LoRaWAN network solutions could be applicable in regions, where mobile networks have poor coverage and quality of services (e.g., Internet), for example African region, where is a good potential for Precision Beekeeping, but new technologies are not implemented so quickly.

By Latvia University of Life Sciences and Technologies

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05. 2018 - Beekeeping Industrial Tree/Value Chain, Sumedang, Indonesia

Due to a lack of publications and references regarding derivative beekeeping products, **Universitas Padjadjaran** arranged a workshop and invited researchers with various different backgrounds. The aim of the workshop was to define the possible derivative beekeeping products such as honey, pollen, wax, propolis, royal jelly, bee venom, etc. The stakeholders from business, community (beekeepers), government and media were also invited to the workshop to obtain more perspectives. At the end of the day, we managed to draw an industrial map of Indonesian beekeeping products. The chart was still a draft version and needs another iteration to confirm and validate the data.

By Universitas Padjadjaran

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05. 2018 - Business Model Canvas Workshop, Sumedang, Indonesia

The business models of existing beekeeping activities are still unknown or not clearly recognized. So **Universitas Padjadjaran** invited beekeepers to discuss about their beekeeping activities, from colony management to beekeeping business, to represent the current condition of the beekeeping businesses in West Java, Indonesia. Four beekeepers from different places in West Java were invited to the workshop, they came from Bandung City, Ciamis Regency, Pangandaran Regency and West Bandung Regency. In the end of the day, we captured their business models through Business Model Canvas (BMC) one for each and we summed up their business models as the general business model of beekeeping in West Java, Indonesia.

Advisory Board UNPAD

To summarize the Advisory Board of the Universitas Padjadjaran, there are five big groups of partners: academics, government, community, business and media. Academic partners are Ir. Yadi Supriyadi, M.S, Dr. Drs. Wahyu Gunawan, Hj. Diana Sari, SE., M.Mgt., Ph.D, Prof. Dr. med. Tri Hanggono Achmad, Ida Widianingsih, S.IP., M.A., Ph.D and Rizky Abdulah, S.Si., Apt., Ph.D from Universitas Padjadjaran and Dr. Ir. Rika Raffiudin M.Si. from Bogor Agricultural University. Governmental partners are Aris Dwi Subiyantoro from the West Java Provincial Forestry Office and Tunggul Riksi Pamrih from the National Apiary Center. The community is represented by Deby Bustomi (beekeeper) from D'Bees and Didik Budi Purwanto from the Indonesian Apiary Association. M. Yusri Satriana from the State owned forestry company represents the business group and partners from media are Ade Karisman from Universitas Padjadjaran Media and Erik Palupi from Media Wave.

By Universitas Padjadjaran

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06. 2018 - Advisory Board meeting in Ethiopia

On the 19th of June 2018, the first Advisory Board meeting was conducted in Addis Ababa, Ethiopia on SAMS project with the view of collecting necessary input for successful project implementation. The following representatives from 7 different Advisory Board organizations were attended the Advisory Board meeting held for one day. Asefa Amaleddegn, Agricultural Transformation Agency (ATA), Markops Lema, Florian Mandescheid and Yemesrach Tadesse from ICEADDIS, Gemechis Jeleta from Netherlands Development Organization (SNV-Ethiopia), Gemechis Legesse, Taye Negera and Kibebew Wakjira from Oromia Agricultural Research Institute (Holeta), Juergen Greiling from Ethiopian Apiculture Board (EBA), Solomon Mengesha and Rita Nedif from GIZ-Ethiopia. Hailegeorgis Demissie from BEZA Mar excused from the unforeseen reason failing to participate on the Advisory Board meeting.

All participant board members introduced themselves, their organizations work and their responsibilities in their organizations. They also expressed their expectations for the day and also from project at large. Following introduction, warm welcome keynote by Markos Lemma from ICEADDIS was delivered. In line with the SAMS project: background, objectives, methodology, expected outputs overview presented by Kibebew Wakjira from Holeta and discussion conducted on the expected project results. Markos introduced the SAMS outlook on UCD and IOT and how they link and advance SAMS. He discussed how the current SAMS prototype is designed to identify the different states of a bee colony to prevent colony losses and boost production and productivities of beekeeping.

Ethiopian Advisory Board

Project implementation areas were also presented from the Holeta team. The board also discussed about proposed project implementation areas and selected 3 out of 5 regions for sustainability and easy of implementation: Addis Ababa, Oromia, SNNP. The areas are suggested for the reason that there are 40 active cooperatives supported by 24 development agents working on beekeeping and horticultural crops production across these 3 regions. The Advisory Board also agreed to hold a regular meeting every 6 months with the possibility to meet in between if there is a necessity for it and to allow new members to join the board as the project progresses. Finally, all the representatives signed the document acknowledged their respective organizations engagement with SAMS.

By Oromia Agricultural Research Institute, Holeta Bee Research

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05/06. 2018 - Tests on swarming

The hardware development for the SAMS beehive monitoring system is proceeding successfully and according to plan. The team from the Department of Agricultural and Biosystems Engineering at the University of Kassel were prototyping a self-sufficient monitoring system that records acoustic signals from a beehive. First results could be gained to predict swarming events. These results will be used to develop a decisions support system for beekeepers.

Honeybee hives and the monitoring system at the study site

The acoustic signals of four honeybee colonies were recorded over 25 days during the swarming period in 2018. The results were analyzed using statistical forecasting methods. Dominant frequencies could be identified that largely coincided with the results of other studies. Characteristic changes, such as the

increase in sound intensity over time, which indicate the swarming behavior, were determined with high accuracy by predictive modeling.

Further steps are the implementation of additional sensors for temperature and weight, as well as reduction of the energy consumption using different microcontrollers for the HIVE monitor system.

By University of Kassel

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06. 2018 - 1st User Research Workshop in Indonesia

Indonesia is quite divergent in culture and other preconditions and since SAMS is a multi-national, interdisciplinary project to apply IoT technology in beehives located in tropical regions, the primary success factor for SAMS is to develop solutions that are understandable and useable for all user groups, beekeepers as well as scientists and commercial users. Furthermore, SAMS will be of high interest for political and commercial stakeholders in the countries. Their interests have to be taken into consideration to ensure their support during the project implementation as well as afterwards. Therefore, a team of local experts will continuously analyze, within the different user research phases, the requirements in Indonesia.

Since the methods of UCD are suitable to organize an effective and efficient collaboration between the partners and to ensure, that needs, demands and limitations of end users are in major focus during the development of the individual SAMS products.

As a part of the first user research phase a team consisting of GIZ members and a researcher from the University of Kassel has travelled to Indonesia to meet Advisory Board members, partner beekeepers and important stakeholders and to gain a deeper insight into the beekeeping situations in Indonesia and the requirements itself.

Indonesia - The Paradise for bees

According to Madu Bina Apiari (2015), Indonesia has huge natural and human resources for beekeeping with tropical rain forests of ca. 105 Mio ha and Mangrove forests of ca. 3.5 Mio ha, rubber (3.5 Mio ha), oil palms (6 Mio ha), coffee, tea, nuts, citric fruits, rice, maize, beans etc.

The evergreen ecosystem that you find in Indonesia has been mentioned by Mr. Purwanto (Indonesian Apiary Association), as *the paradise for bees* during the kick-off event of SAMS at the University of Padjadjaran.

From the currently nine honeybee species known, eight honeybee species as well as more than 20 stingless bee species are calling Indonesia their home. The European honeybee was introduced 40 years ago, but due to plantations (eucalyptus, palm oil and rubber), the domestic honeybees such as *Apis dorsata*, *Apis cerana* and the stingless bees like *Tetragonula laeviceps* are more common in this region.

But if the living conditions for bees are so good why is Indonesia not one of the main honey producers in the world?

Through a weak beekeeper rate, organization and sales due to a high price as well as through a low rate of professional processing, support and marketing the apicultural sector in Indonesia is developing slowly. Besides the funding for wider research and development activities the downsizing of honeybee populations, uneconomical costs of production, uncontrolled chemical use, insufficient technical support, unstable quality of products and changes in the forests, especially of the availability of bee forages, are seen as main challenges mentioned by beekeepers, the Indonesian Apiary Association, the National Apiary Center and the West Java Provincial Forestry Office during the Kick Off.

Official opening of SAMS – Bandung, Indonesia (June 25, 2018)

As evidence that the processing of honey has a big potential and could be a great income source for everyone our partner from the Universitas Padjadjaran developed together with the "Local Enablers" different honey products such as honey espresso, honey butter, honey cookies and chocolate as well as honey nut paste to taste during the break.

Honey products by UNPAD & local enablers

Since the end user is of major interest concerning the implementation of SAMS, our partners from CV.PI and UNPAD organized a trip to Ciwidey to meet one beekeeper, who already sells his honey as main income source. During the side visit, the beekeeper Mr. Debby gave us a deeper insight on what he experienced as major risk for beekeeping, what are possible management problems and how marketing and product selling works in his region.

Compared to the insights we have also gained during the side visit of the former and reactivated training center in Gunung Arca/ Sukabumi a wider and deeper look into the topic and potential challenges were possible.


Field trip to Ciwidey – meet the beekeeper D-Bees and his ladies

Apart from the side visits and conversations with beekeepers and trainer, the brainstorming with stakeholders along the value chain and from important institutions during the User Centered Workshop has been the main part of the trip. During a World Café Session it was possible to shed some light on the different point of views concerning management questions as well as on potential problems and their priorities.


User Centered Workshop

Based on the findings, the first Needs Assessment report with specific information on technical, regulatory and educational requirements as well as on management aspects and bee species has been developed and will be the baseline for the ongoing User Research process.

By GIZ

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07. 2018 - 1st User Research Workshop in Ethiopia

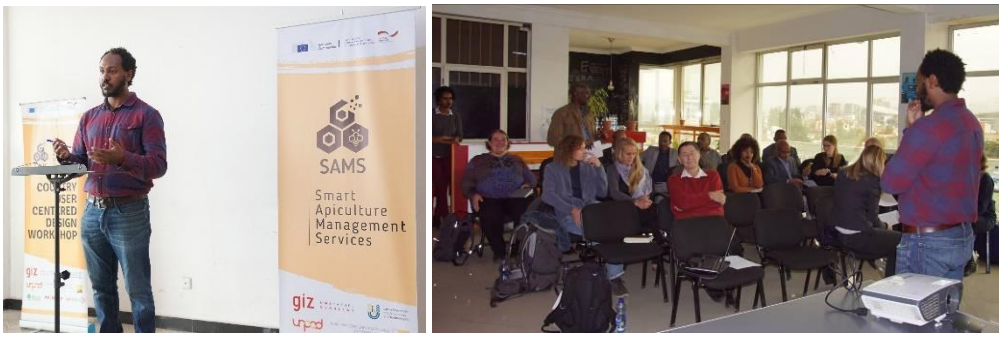
As already mentioned in the article about the User Research Workshop in Indonesia, Ethiopia is also quite divergent in culture and other preconditions, which leads us to the point that SAMS faces different challenges in Ethiopia than we do in Indonesia or Europe.

Political and commercial stakeholders as well as associations and beekeepers are also in Ethiopia of great importance for a successful implementation of SAMS. Therefore, a team of local experts will continuously analyze within the different user research phases the stakeholders and requirements in Ethiopia.

After we have conducted our first User Research workshop in Indonesia at the end of June GIZ, a representative of the University of Kassel and a representative of the University of Padjadjaran went on to Ethiopia. We have also focused on meet and exchange with important political and commercial stakeholders, Advisory Board members, potential partner beekeepers and connected projects to get a deeper insight into the current situation and to experience the conditions SAMS has to face during the project implementation.

Field trip to Hawassah – meet beekeepers

After a first side visit of possible partner beekeepers in the region of Hawassah / Wondo Genet (south of Addis Ababa) the official opening ceremony of the SAMS project has been held on July 16 2018 in Addis Ababa. Ms. Corinne Bansbach (GIZ Deputy Country Officer in Ethiopia) and Angela Zur (GIZ Feldafing, Project Coordinator) inaugurated the official opening ceremony. In addition to the consortium members from the University of Kassel, the University Padjadjaran, Holeta and Iceaddis, experts from the Ethiopian Apiculture Board (EAB), Agricultural Transformation Agency (ATA), Netherlands Development Organization (SNV), Apinec Agroindustry PLC., Babich Agroforestry PLC. and additional GIZ projects such as the Sesame and Avocado Alliance as well as from the Biodiversity and Forestry Programme attended the ceremony.



Official opening of SAMS- Addis Ababa, Ethiopia (July 16 2018)

During this ceremony Mr. Bekana from the Ethiopian Apiculture Board mentioned that the sector development can be boosted through ensuring a higher quality of honey and honey related products to fulfill standards, sector promotion and marketing, a better coordination and networking plan between all relevant actors, a strengthened policy environment and through capacity development. For this the Executive Committee of the EAB included actors from the ministries, the private sector, producer cooperatives and development actors who are interested in foster the apiculture development in Ethiopia.

Beekeeping has a long tradition and history in Ethiopia and it is Africa's leading honey and beeswax producer. Currently there are 5 honeybee sub-species of *Apis mellifera* in Ethiopia and approximately 2 Mio households with overall around 10 Mio honeybee colonies, which do beekeeping mostly as additional income. Despite the fact that Ethiopia is the 10th biggest honey producer in the world and that the honey production increased from 28,000 tons/ year in 2001 up to 53,000 tons/year until 2017, the Ethiopian apiculture sector is far behind his potential and cannot take advantage of its potential of 500,000 tons/ year.

The current performance is low due to a lack of beekeeping knowledge on all kind of beehives that are used in Ethiopia, a shortage of trained work forces and beekeeping equipment, as well as due to pests, predators and the usage of agricultural chemicals, which leads us to low quality of the products.

The Ministry of Agriculture (MoA 2013) also has recognized the unused potential, which could boost Ethiopia to become one of the main honey producers in the world and lead to a better main income for

farmers and beekeepers. Therefore, the MoA identified specific targets for the honey value chain they want to achieve by 2025:

• Increase of annual honey production from 50,000 t to 200,000 t (500,000 t potential)

• Increase of annual beeswax production from 3,800 t to 12,000 t (50,000 t potential)

• Increase of annual honey export from 400 t to 2,400 t and annual export revenues from 1.5 Mio US$ to 8 Mio US$

• Increase of annual beeswax export from 400 t to 1,000 t and annual export revenues from 1.4 Mio US$ to 5 Mio US$

To fulfill the targets of the MoA and the objectives of SAMS, capacity building and training are major points to improve the management of bee colonies and to shift beekeeping from the traditional beekeeping to the modern box hive beekeeping. This is especially so important since Mr. Bezabeh from the Oromia Agricultural Research Institute Holeta Bee Research Center mentioned that 90% of the bee colonies in Ethiopia are kept in traditional hives which have an annual yield of 5-7 kg crude honey/year. At the same time, the transitional hive could produce between 15-25 kg /year and the modern box hive could come up with 30-45 kg/ year. The transitional hives are currently just used by 3% of the national beekeepers while the modern hive system is used by 7%. As we learned, it is very important for Ethiopian beekeepers to learn more about the shift of hive systems and the management of the hives as well as to create the awareness that this sector has a huge potential to become a main income source for families.

Traditional Bamboo Beehive

Transitional Beehive

Modern Beehive

Claypot Hive for stingless bees

After a successful opening on Monday, a second field trip to the Bee Research Center of the Oromia Agricultural Research Institute in Holeta has given the experts a better insight on structures on Research Institutes all over Ethiopia, about technical requirements and the bee test sights.

Visit of the Bee Research Center Holeta and first day of the UCD Workshop with partners

With a mindset full of new information and implementation conditions a successful User Centered Design Workshop with partners and businesses, all interested in the SAMS products and bee related services has been conducted on Thursday.

Based on the findings, the first Needs Assessment report with specific information on technical, regulatory and educational requirements has been developed and will be the baseline for the User Centered Process.

By GIZ

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09. 2018 - 3rd SCM of SAMS in Jelgava, Latvia (Hosted by UNILV)

The **Latvia University of Life Sciences and Technologies** invited the SAMS consortium members to the 3rd SAMS SC-meeting into the Jelgava Palace, Jelgava. The event took place from the 26th to the 28th of September. Dr. Gatis Vitols, the head of the Faculty of Information Technologies, welcomed the consortium members and introduced the LLU and the faculty. After the warm welcome of our hosts, an overview of the next two days' agenda was given and new SAMS members were introduced to the consortium. The main objectives of the 3rd SCM were to talk about each work package's progress and to discuss open questions and issues. A special focus was on the user research progress. We were talking about the outcome of the workshops in the two target countries Ethiopia and Indonesia and the assessment of local beekeepers' needs and requirements. The results of the so far submitted deliverables were presented and discussed. Oromia Agricultural Research Institute Holeta Bee Research Center (Holeta) submitted a manual on beehive construction and operation which will be suitable for the SAMS technology in Ethiopia and the University of Graz presented bee health management and bee health indicators of the two target countries. The deliverables will available for download at the SAMS project website.

Besides the official part of the event, the meeting participants had the chance to socialize during several side events, organized by our Latvian hosts. Not only an excursion to the Jelgava St. Trinity Church tower, but also a visit of the Jelgava palace's own museum and tombs were set up. The consortium members had also the chance to enjoy the city and local food in two very nice restaurants of Jelgava.

The participating consortium members in front of the Jelgava Palace and in the meeting room

The next SCM will take place in February 20 to 22, 2019 in Graz, Austria.

By University of Graz

Conferences and Events

02. 2018 – Citizen Science conference, Salzburg, Austria

The 4th citizen science conference held in Salzburg from February 1-3 was attended by more than 100 persons from different science disciplines. In his oral presentation, Dr. Robert Brodschneider, a SAMS consortium member from the University of Graz, focused on honeybee research and citizen science. Different ways of participation, but also peer review, publication and feedback to practice were discussed. In SAMS, citizens can contribute by collecting data for science, but gain also information on honeybee colonies, which influences their practical hive management work.

More information about the citizen science conference can be found under https://citizen-science.sbg.ac.at/index.php

By University of Graz

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04. 2018 - Asia Pacific Week, Berlin, Germany

Project partners from CV. Primary Indonesia, Adityo Pratomo, and the University of Padjadjaran, Dr. Dwi Purnomo, presented the EU funded project SAMS during the Asia-Pacific Week 2018 on April 24, 2018 at the Conference on Digitalization in Berlin.

The APW (https://apwberlin.de/) is one of Germany's most important platforms for dialogue and cooperation with Asian partners from business, culture, science and politics. The conference is based on an ever-growing network of partner institutions, like ministries, embassies, economic associations, cultural institutions, NGOs, universities and enterprises. Innovative events on crucial topics regarding global developments characterize the program. This year the focus laid on the global megatrend of the 21st century "Digitalization" with his great opportunities and challenges for companies and people in Europe and Asia. In an exchange between startups, corporates, and SMEs the most important trends of digitalization have been discussed, since Asia is one of the world regions with great dynamics and social acceptance of digital technologies.

Due the fact that bees play a key role in the preservation of our ecosystem, the global fight against hunger and in ensuring our existence the audience of the SAMS session got an answer on the question if bees & digitization match and how they match. As an overview of the EU-funded H2020 project the GIZ presented the framework & content of SAMS, which has been followed by a presentation on SAMS as an UCD driven and IoT research project (by Adityo Pratomo) and SAMS as a catalyst for social businesses (by Dr. Dwi Purnomo).

Dr. Dwi Purnomo (University of Padjadjaran), GIZ, Adityo Pratomo (CV.Primary Indonesia)

More information about the Asia Pacific Week can be found under https://apwberlin.de/

By GIZ

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05. 2018 – Re:publica, Berlin, Germany

How can ICT solutions contribute to make bees healthier?

Our partner from Iceaddis IT Consultancy PLC presented the EU funded project SAMS "Smart Apiculture Management Services" under the headline of "How to make bees healthier with IT solutions – the Ethiopian case" at the Tech Salon of the Federal Ministry of Economic Cooperation and Development stand on May 3.

The re:publica in Berlin is Europe's biggest conference on topics concerning digitization and society, while also being one of the world's most inspiring festival for the digital society.

The aim of the re:publica is to present the opportunities and advantages of digitization in the individual spheres of life, while at the same time critically examining them through a look behind the scenes. The direct exchange of knowledge and the simultaneous networking of experts, users, creative minds, multipliers and innovators is a crucial point of the re:publica & allowed Markos Lemma, Gustaff Ismandar (SAMS Advisory Board) and the GIZ team to connect with other like-minded people.

Markos Lemma Iceaddis, Ethiopia

POP: Angela Zur (GIZ), Stefanie Schädlich(GIZ), Markos Lemma (Iceaddis) and Indonesian Advisory Board Member Gustaff Iskandar (Common Room Network Foundation)

More information about the re:publica can be found under https://18.re-publica.com/de

By GIZ

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05. 2018 - 10th Indo-German Frontiers of Engineering Symposium, Potsdam, Germany

The SAMS project has been presented at the 10th Indo-German Frontiers of Engineering Symposium 2018 in Potsdam, Germany by the Department of Agricultural and Biosystems Engineering (University of Kassel).

The Indo-German Frontiers of Engineering Symposia (INDOGFOE) are a series of interdisciplinary, binational conferences which are co-organized by the Indian Department of Science and Technology (DST) and the Alexander von Humboldt Foundation. Funding on the German side is provided by the

Federal Ministry of Education and Research. The activity brings together outstanding, early-career German and Indian engineers and natural scientists from industry, universities, and other research institutions to introduce their areas of engineering research and technical work, thereby facilitating an interdisciplinary transfer of knowledge and methodology that could eventually lead to the development of cooperative networks of young scientists from both countries.

By University of Kassel

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07. 2018 - Riung Karsa, Bandung, Indonesia

Universitas Padjadjaran held a press gathering in order to socialize research-based products, invented by their researchers. The program was delivered in form of a talk show or a tea talk in the afternoon and named Riung Karsa (Riset Unggulan Unpad dan kerjasama Untuk Masyarakat Untuk Masyarakat Sejahtera) or in English it means UNPAD's Remarkable Research and Cooperation for Community's Wealth). Riung Karsa is a media brand for research and innovation results with impact to the local communities. This program is regularly held every Friday afternoon from 15:30 - 16:30 local time at Sixty two Cafe, Cisangkuy Street No. 62, Bandung.

For the beginning, Riung Karsa introduced Smart Apiculture Management Services (SAMS). Dwi Purnomo as the team leader of the Indonesian researcher team explained how the SAMS project can achieve EU's commitment to the UN Sustainable Development Goal (SDG No 2) "end hunger, achieve food security and improved nutrition and promote sustainable agriculture" through the ICT implementation in apiculture and through mainstreaming the data for researched based businesses that can be run by the community.

By Universitas Padjadjaran

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08. 2018 - Exposure Seminar ICT in Agriculture Value Chain Development, Feldafing, Germany

Expert Input "Open Source Strategies—IoT for bees & the SAMS UCD process" by Sascha Fiedler (University of Kassel) & GIZ

In 2015 the German Federal Ministry for Economic Cooperation and Development (BMZ) commissioned GIZ to implement the program "Green innovation centers for the agriculture and food sector". This program is running up until 2021 and its purpose is to support the development of specific agricultural value chains in 13 countries in Africa (Benin, Burkina Faso, Cameroon, Ethiopia, Ghana, India, Kenya, Malawi, Mali, Mozambique, Nigeria, Togo, Tunisia, Zambia).

Within the context that hunger is still primarily a problem that is related to poverty and that more than 800 million people face starvation while another two billion suffer from chronic malnutrition. Due to the fact that locally adapted innovations are needed in order to foster sustainable development throughout the agricultural and food sector the Green Innovation Center aim to boost production in agricultural systems, raise productivity, enhancing organization and improving marketing and processing along the entire agricultural value chain.

Given the recent dynamic advances in ICT for agriculture in Africa and BMZ's growing interest in the topic of digitalization and development, GIZ Feldafing organized a workshop in order to explore the potential of new technologies for value chain development. Due to this fact GIZ invited experts and service providers from various African and European countries to exchange ideas, experiences and insights concerning value chains.
The aim of the lecture on "IoT for bees and the SAMS UCD process" was to provide all participants a practical insight on the importance and use of Open Source technologies and User Centered Design (UCD) methods of prototyping and development within this framework in general and especially within our SAMS-project.

Sascha Fiedler (UNIKAS) explaining what the use of IoT and UCD could add for a value within the agricultural sector

The 30 participants were local GIZ employees, local entrepreneurs and initiatives as well as employees of national agencies or ministries from Benin, Tunisia, Mali, Togo, Ghana, Ethiopia, Zambia, Malawi and Burkina Faso. All of them were invited by the Green Innovation Centers to attend this 10-day Exposure Seminar in Bavaria, Germany.

By GIZ

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09. 2018 - EurBee 8, Ghent, Belgium

EurBee 8, the 8th congress of Apidology took place from 18th-29th of September in Ghent, Belgium. Dr. Robert Brodschneider from the University of Graz visited the most important get together of researchers studying different aspects of wild and managed bees. Topics of the conference include discussions about responding of bees to environmental changes, species conservation, pollination services, beekeeping management and colony losses. The SAMS project was presented to all interested conference participants in form of a scientific poster.

SAMS poster visitors

More information about the EurBee can be found under: http://www.eurbee2018.org/

By University of Graz

Upcoming Events

10. 2018 - Agrosym Symposium, Sarajevo, Bosnia-Herzegovina

AGROSYM is, for nine years, an annual platform for international scientific discussions on agriculture, food, rural development, environment and forestry. Multidisciplinary results reported during AGROSYM will contribute to the dissemination of knowledge and good practices to all actors of the agrofood chain (e.g. farmers, extension agents, researchers, policy makers) as well as the general public about the importance of agriculture and food science, one of the most important strategic areas of many national research strategies. Symposium will be held in hotel Termag on Jahorina mountain, near Sarajevo at October 4-7, 2018. SAMS partners from Latvia University of Life Sciences and Technologies will present topic about LoRaWAN technology "APPLICATION OF LORAWAN TECHNOLOGY IN PRECISION BEEKEEPING". As well a poster about the SAMS project will be presented during the event.

More information can be found under: http://agrosym.ues.rs.ba/index.php/en/

By Latvia University of Life Sciences and Technologies

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10. 2018 - Asian Apicultural Association conference, Jakarta, Indonesia

From 22th - 25th October 2018 @ Casa Grande Grand Ballroom of Merlynn Park Hotel, Jakarta – Indonesia. Dwi Purnomo and his team from Universitas Padjadjaran will promote the SAMS project through oral presentation. The topics that will be presented are 1) flowering plant calendar as basic data to support beekeeping, 2) the journey of beekeepers along their business and 3) SAMS project Indonesia; answering challenges of the industrial revolution 4.0 in beekeeping in Indonesia. He is also invited by the organizer of the conference as the leader of the SAMS project in Indonesia. The conference will gather beekeeper experts and stakeholders from around Asia and Indonesia itself, so we would like to utilize the opportunity to promote and obtain support and networks that will be useful in the SAMS implementation process.

More information can be found under: https://www.aaaconference2018.com

By Universitas Padjadjaran

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10. 2018 - 6th International Mugla Beekeeping & Pine Honey Congress

Between the 15th and 19th October 2018 the team from Latvia University of Life Sciences and Technologies will attend the "6th International Muğla Beekeeping and Pine Honey Congress" at Liberty Hotels Lykia, Fethiye - Ölüdeniz, Turkey. Participants of the congress are researchers, scientists and shareholders of the beekeeping sector on the international level. Participants are gathered to discuss and share knowledge and ideas in the field of beekeeping including technical and economic challenges. SAMS partner team from Latvia University of Life Sciences and Technologies will present two posters: "SAMS-International Partnership on Innovation in Smart Apiculture Management Services" and "Application of LoRaWAN in Precision Beekeeping".

More information can be found under: http://muglacongress.org/eng/

By Latvia University of Life Sciences and Technologies

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12. 2018 – Apimondia Symposium, Addis Ababa, Ethiopia

The Apimondia Symposium event will be held from 30th of November to 4th of December 2018, at the United Nations Economic Commission for Africa (UNECA) conference center in in Addis Ababa, Ethiopia, which is known to be the heart of the political city of Africa. The Ethiopian Apiculture Board (EAB) in collaboration with the Apimondia and other apicultural sector stakeholders will organize the event. The symposium is the second of its kind in Africa and the first one in Ethiopia. About 300 actors from Ethiopia and abroad are expected to display their products.

The objective of the symposium is to facilitate the exchange of information and discussions between beekeepers, scientists, honey-traders, development practitioners, policy makers, NGOs, bilateral agencies and regional organizations on the pollination role of bees, bee health, environmental services and transformation of the beekeeping sector. The title of this year's symposium is "The Role of Bees in Food Production" with the theme: "Significance of Bees' Pollination for Improved Food Production". The topic is meant to highlight the less understood and underexploited role of bees in crop pollination in Africa. Attention will also be given to their role in ecosystem services and poverty reduction.

More information can be found under: http://www.apisymposium2018.org

By Oromia Agricultural Research Institute, Holeta Bee Research

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03. 2019 - Entomological Society of Austria conference, Graz, Austria

The SAMS poster will be presented at the Austrian Entomological Colloquium on March 16 in Graz. The event takes place at the University of Graz and is focusing on reports and poster contributions, to share new research results with interested parties. The Austrian Entomological Organization was founded in 1975 and is situated in Vienna. Their goal is the promotion of entomology in Austria through socializing of Austrian experts and with the public, as well as the representation of Austrian entomologists at international events and committees.

More information can be found under: http://www.entomologie.org

By University of Graz

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UNIGRA	University of Graz, Austria
UNPAD	University Padjadjaran, Indonesia
CVPI	CV.PRIMARY INDONESIA-
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