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**Meeting Minutes of German-Brazilian Initiative
for Cooperation in Agribusiness and Innovation**

**Working Session
Sunday, September 15th, 2019
08:30 am - 01:00 pm
Venue: Natal, Brazil
Hotel SEHRS**

Chairmen:

Germany

Jordi Tormo, BDI/BASF
Friedrich Wacker, BMEL

Brazil

Weber Porto, ABAG
Fernando Camargo, MAPA

Meeting Minutes of German-Brazilian Initiative for Cooperation in Agribusiness and Innovation

Welcoming remarks

Brazilian side:

Weber Porto, Vice-President Brazilian Agribusiness Association (ABAG)

Fernando Silveira Camargo Secretary of Innovation and Development Rural and Irrigation representing Brazilian Ministry of Agriculture (MAPA)

Fernando Schwanke, Secretário da Agricultura Familiar e Cooperativismo (MAPA)

Weber Porto welcome all participants and presented a movie about the Agribusiness development in Brazil in the last 50 years. He pointed out the importance of this group to try to increase the cooperation between both countries in the agribusiness sector.

Fernando Silveira Camargo, welcome the German participants, mentioning the strategic importance of the dialog between both countries, involving government and private sector.

Fernando Schwanke, welcome the Initiative, mentioning that the dialog is not only once a year but follows other meetings and actions were of the parts has taken place in both countries. F. Schwanke mentioned the importance in Brazil of Small Farmers and Family Farming, to generate income and improvement of Family Farmer's and traditional communities' assuring quality of life by structuring productive chains of extractives activities, socio-biodiversity and use of renewable sources of energy. The importance of the sustainable issues for social and environment assets and preservation.

German side:

Jordi Tormo, Vice President – Business Management Industrial Solutions-BASF and

Friedrich Wacker, Head of Department 62 at the Federal Ministry of Food and Agriculture (BMEL)

Jordi also welcome all participants, thanks to ABAG, CNI and BDI for organizing the meeting in the beautiful NE of Brazil in Natal.

Friedrich Wacker, representing the federal Ministry of Food and Agricultures (BMEL), mentioned the strategical relationship between both countries, and the good dialogs also in some delicate issues. F Wacker reports about the European dialogs with Mercosur and mentioned the climate change issue, for mutual information. As this is the 17th session of the bilateral meeting, as a demonstration about the confidence and the great value on this bilateral discussion in Agriculture sector.

1. Review Actions Session 2018

Weber Porto and Jordi Tormo pointed out that some of the topics of the last meeting has been solved. The still open points from last meeting are in the actual agenda to be discussed during this meeting.

2. Political Aspects

2.1 State of Art of Agriculture Policy in Brazil

Fernando S. Camargo (MAPA) informed that the Brazilian government defined 4 different platforms 4.0, one of them the Chamber 4.0 of the Agribusiness. This integrated program consists in several programs for connectivity and IoT, considering the large scale in a huge country. The great challenge for Brazil and the goal for his ministry is connect al country, the increasing the productivity and the insertion. Next year with the tender for the 5G, will be a breakthrough, to make the innovation accessible for everyone in the agriculture business. The strategic guideline will be to increase the sustainability of the agriculture channel and make it accessible for the small and huge farming. Germany can be a partner of Brazil in this issue.

With all changes in the world, increasing population and climate changing, Brazil is developing the Agriculture with Sustainable Goals, with Technology for using deteriorated land, controlling environmental boundaries, increasing productivity, making more with less. Advancements in livestock production, today can be increased also with German technologies. Brazil is developing in a fast track the implementation of the requirements of the Brazilian's Forest Code and federal laws that requires landowners to conserve or restore native vegetation in rural properties. The georeferencial cadaster for environmental and agriculture is ongoing in more than 3 million properties, and will give a database for the efficiency in the agriculture and environmental policies. In Environmental issue in 2009, Brazil launched the ABC Program to hasten the adoption of low-fossil carbon Technologies. The ILFC *integração Lavoura Pecuaria Floresta* systems integrate the production of food, fiber, energy, livestock, and products in the same area.

Highlighting the importance for Brazil of the Trade Agreement EU-MS, he pointed out that the Agreement in the Mercosur public opinion is very well accepted, and was surprised that in Europe the public opinion is not the same.

Trade Agreement between EU-Mercosur in the agriculture sector is very important for Brazil and Mercosur and will reach 98% of bilateral trade items, in 10 year, its huge deal para Brazil.

Brazil is in line to expand the Trade Agreement's with a strong commitment to open his economy.

In negociation: Mercosur-Canada, Mercosur-South Korea, Mercosur-Singapore, Mercosur-Lebanon, Mercosur-Tunisia, Brazil-Mexico

Under evaluation: Mercosur-Japan, Mercosur-Indonesia, Mercosur-Vietnam, Mercosur-Eurasian Union.

Fernando Camargo includes a comment that Brazil is increasing fast his participation in the Asian market, especially in the China. New possibilities for increasing added value are under negotiation's today.

2.1. State of Art of Agriculture Policy in Germany

Friedrich Wacker (BMEL) informed about the actual policies in Germany. The agriculture issues are strongly linked to the environmental aspects. In Germany as well in Europe the Climate Change has taken the society priority in policy in all sense. It is a big issue in Germany, affecting the meaning and preferences of the consumer. This agenda has increase since our last meeting in Cologne and takes place not only for the agriculture but also in industry, commerce and society. It is for Germany important to address it also in the international relationship because it's a common goal for everybody. In our bilateral agenda it should be also a strategic issue.

He pointed out the relevant EU Mercosur Agreement, as a strategic partnership for a long term prospective and mentioned the chapter of the collaboration in the sustainable cooperation as it is in the Climate Change. There is a great room for enhance the cooperation of our common bases of global assistance for

the future of the mankind, where the agriculture has a great protagonist in the area of a safe and inclusive food and feed provider, for a benefit for all.

With the growth of the population worldwide, the necessity of produce more and be more productive is imminent, it will increase the social and ecological engagement, in this contest the preservation of forest including Amazon forest is important, all world is facing the same challenge to become more sustainable.

Brazil and Germany both get together has developed a long work together increasing the confidence and trust in the cooperation with German potentials in scientific research, these partnerships should take advantage of that.

The innovation agenda should be more intensive between academia, R&D institutions and entrepreneurship. The Sustainably Chapter is looking also, for the effect on Amazon Biome, the sources coming from nature, the CO2 captures in the world is responsibility of all, and all have to preserve. The third issue is analysing behaviour of domestic authority, the issue climate change in the agriculture very well positioned international competition, have polices, have fair rates, functional institutions, very competitive processing industry in international market. Germany is thrilling for agriculture export and for agriculture imports source a lot of products imported from Brazil. The partner in part of its scale for business model has been questioned as unsustainable. But Europe and Germany need Brazil in their supplier channel and can't dispense these partnerships. That is the strategically aspects of both interests. Germany will be chair of UE council in 2020 with special focus on discussion of agriculture polices. Germany on going establish international digitalization polices in agriculture for next year. This could be a good moment to increase our partnership.

3. Business and Trade Aspects

3.1 Crop Protection – Innovation and Trade Challenges between Brazil and Germany

Speaker: Eduardo Leduc (BASF)

Leduque presented the indicators of crop protection index of Brazil compared to international standard and shows that Brazil has good position compared to many developed countries (France, UK, Japan, etc.). The public opinion is doing a wrong report about the new legislation in Brazil. Scientific based products with technology and less effect are the reality.

Recommendations: Create a German/ Brazilian Group to discuss the MRL Index for sustainable and fair-trade rules. This group can contribute decisively not only to the communications issue but also for the understanding between EU – MS and other developing countries.

Action: How to intensify the discussion among governments around MRL harmonization? Define Forum's in Germany to discuss about it.

3.2. German Brazilian Cooperation on Sustainable Agribusiness

Ingo Plöger made remarks on the recent Amazon issue, aside of Real and Fakes news, the perception of the consumers is changing about fair trade and sustainability. The impact on the demand of Brazilian products in Germany and Europe is real. Both sides should be aware that only with consistent and well-done data and information can avoid severe damage. Brazilian food and feed producers who are certified and well introduced into the European market need the official participation of German institutions to show up the sustainability efforts of our long-term cooperation. Brazil will have in the next weeks the visit of the Minister of Environmental and the Minister of Agriculture in Germany, and it will be helpful to have the support from the German government for the dialog.

Marc Reichard, CEO from Bayer, reported his experience of his 10 days expended in the Amazon area where the fire on Rainforest happened. He met many local areas and has dialogs with ONG's, local farmers, IBAMA and local authorities. One of the major reasons of illegal deforestation is the non-well-regulated property rights. With the new legislation of the before mentioned CAR the social inequality will arise if the issue about land property will not be solved. Despite of that the real facts the deforestation index in the last 10 years has decreased substantially but it needs a understanding that the social environment has to be reconsidered also, and the real needs to be inclusive in the sustainable action's. The open dialog with the stakeholders should be enhanced to share responsibility from the producers to the consumers.

The Initiative debate this issue and recommend to create a **Dialogue Platform** to discuss on sustainability production (including all steps of chain) MAPA- BMEL. The Initiative also asked to the German government to make efforts to bring the *Global Bioeconomy Summit 2022* to be held in Brazil, maybe Manaus.

4. Bioeconomy and Sustainability

4.1 German-Brazilian Bio innovation Hub - Update

Speaker: Murillo Villela Filho (Evonik)

Murillo Villela explained that the G-B Bio innovation Hub has made the efforts to structure the bases. Now it's the phase of implantation and the challenge is also for the founding. The central idea is to promote the Bio innovation initiatives through a German Brazilian Prize. The prize is awarded to German-Brazilian R&D&I cooperation projects that correspond to the guiding principles of the policy strategy Bioeconomy of the German Federal Ministry of Food and Agriculture, BMEL, the Brazilian Bioeconomy Congressional Front, the Agribusiness Initiative, BioInnoHub, and agreement between BMELV, BMBF and MSTIC.

The prize is awarded alternatively in Germany at the annual CLIB international Conference and in Brazil at the annual Brazil Bioeconomy Forum & Award organized by ABBI.

The prize is awarded to projects that have particular potential in terms of economic value creation, ecological compatibility and job security or creation. A balanced profile of all three criteria is essential.

The prize is awarded to German and Brazilian consortia from scientific institutions and industry. With regard to technological maturity, both projects and pilots and demonstration projects will be considered. Depending on the research component of the project, the scientific quality of the project and the economic potential will be particularly evaluated.

The jury consists of representatives of the Agribusiness Initiative, CLIB and ABBI.

Action: Need to define FTE at each country for coordination of activities!

4.2 Bioeconomy & Sustainability new patterns for Cooperation

Speaker: Ingo Ploger (ABAG)

Bioeconomy as a new concept, is in a worldwide debate. ABAG developed together with CEAL a concept to describe the GDP using the information of the increasing preference of the consumer for more sustainable products. The megatrend shows that the world consumer is driving out from the unsustainable fossil-based products to renewable sustained products. This will be the major driving forces of the future. To describe the real increase of this megatrend, the concept foresee's a methodology to describe the GDP not in the traditional way (agriculture , industry, services) but coming from the fossil economy through circular getting to bioeconomic. As Brazil is a economy where the bioeconomic content is high, and Germany is a economy where the driving forces are very dynamic, the proposal is the have a group of expertise to analyses the concept and give insights to establish common patterns for the measurement.

Friedrich Wacker, react very positive to the insight and remembered that he personally has worked in a similar project for many years ago. Fernando Camargo sustained the idea and put the EMBRAPA on the track to be one of the institutions.

Actions: Ingo Plöger will be in charge to build up a Brazilian group of Academia, Institutions and Entrepreneurship together with Friedrich Wacker in Germany to try to form a concept to be present to the next meeting.

4.3 Sustainable Bioeconomy actions - Green Latin America - Green Rio and GB Award

Speaker: Dr. Tilman Schachtsiek (BMEL)

Speaker: Beatriz Bley, Manager (Planeta Orgânico - Green Rio)

Maria Beatriz Bley told about the success of Green Rio event where they had the opportunity to discuss about Bioeconomy. And emphasis the similar events that is occurring as OECD Seminar–November 26th, 2019, Jan 2020 –Grüne Woche Berlin, October2020-Green Rio

The idea to format Bioeconomic courses that to recognize in Germany and Brazil as Rainforest Business School and Youth and student exchanges for Bioeconomy, combining company-university and institutions. The participants support Mrs Bley to make efforts to bring to Brazil the Global Forum Bioeconomy 2022.

4.4 Joint Research activities on Bioeconomy

Speaker: Dr. Florian Bittner (Julius Kühn-Institut)

Presented a development of common activities in bioeconomy of the Julius Kuehn Institute and Embrapa - that should be continued to make a progress in the academia cooperation (ANNEX)

5. Innovation Aspects and Bilateral Cooperation's

5.1 RAS experiences and chances for Brazil

Speaker: Burkhard Hormann, ColossalFish Germany

Speaker: Walter Quadros Seiffert UFSC

Developing with the support of MAPA and BMEL a RAS Pilot project in Brazil with the involvement and promotion of bilateral Brazilian and German suppliers, research institutions and universities to create a Bioeconomy industrial standard for sustainable on shore RAS fish protein production in Brazil for the national and international market. Starting with a RAS Shrimplant including Shrimp larva and dam's production for the national and international market (EU/Germany) and to initiate a know-how transfer on both sides. Also with the involvement of the exploration of renewable resources, e.g. Algae etc. It should also open the opportunity for small and midsize Brazilian agriculture producer to participate in an environmentally friendly protein production. Colossalfish/ HanseGarnelen will help with the funding, structure and development of the Pilot Project.

Colossalfish will send together with Prof. Walter Seiffert a detailed draft of this Pilot Project to Secretary Camargo and Secretary Schwanke.

Actions: Colossalfish will send a draft of a pilot program for a RAS system for shrimps and fishes to MAPA Fernando Camargo and Fernando Schwanke to create a concept to be presented to different localities (northeast of Brazil for shrimps, or North for Amazonian fishes etc..)

5.2 Cooperation on Biogas Technology Transfer

Speaker: Hans Diether Beuthan (WWZ-BD)

Hans Dieter Beuthan explained their experience's in Santa Catarina with projects on Biogas and mentioned the possibility to make a Technology Transfer through training process with engineers and technicians

Actions: BMEL to investigate Biogas production as an option for bringing cost structure down especially in forums in North of Brazil.

5.3 Cooperation on Animal Welfare and Protection

Speaker: Thomas Timm (AHK São Paulo)

Speaker: Dr. Jörg Hartung (Universität Hannover)

Prof. Dr. Jörg Hartung (Universität Hannover) presented the publication Animal Welfare and protection German and Brazil, the group recognized the excellent work of the professor. Officially it will be launched on September 23, 2019 in São Paulo.

6. Agriculture 4.0

6.1 Disruptive solutions in the agribusiness

Speaker: Besaliel Botelho BOSCH

Besaliel presented the Bosch smart solution for Agribusiness. IoT in Agriculture fields like livestock, crop science, and agriculture management are some of the areas where BOSCH has bring innovation in these fields. The future of the smart agriculture 4.0 is integration of simultaneous engineering in the different fields of the application, and the management of the data inputs in real time. The advantage in productivity and efficiency is exponential for small and huge farmers.

6.2 The digital future of the agribusiness

Speaker: Marc Reichardt BAYER

Marc Reichard shows a presentation about efficient management of agriculture application of crop development and efficient defense technologies. The use of IoT and Artificial Intelligence are some of the aspects to be considered in the near future to bring new knowledge to the field.

6.3 Agriculture 4.0 - Efficiency and Yield increase through Digitalization

Speaker: Almir Araujo Silva (BASF Brazil)

Almir A. Silva shows the development of application of science and technology in the field made in Brazil on equipment's using ingredients applied to the situation of the field. These actions are only possible to highly sensitive sensors and software to correct in real time the soil differentiations.

Actions: The participants incentive the enterprises that they should give a opportunity for the Start Ups involved in the innovation process to be in the next Agrishow in 2020 in Brazil so that the creative youth can be in this very important event.

7. Strategical routes for biomass cooperation

7.1. Rota 2030 and RenovaBio the challenge for the sustainable mobility

Speaker: Besaliel Botelho BOSCH, SAE

Speaker: Luiz Cornacchioni (ABAG)

Besaliel and Luiz Cornacchione stressed the Programs in Brazil Rota 2030 and Renovabio as an very important milestone for the long-term sustainable development of the modern mobility in Brazil. Besaliel remembered that the major issue of the modern mobility is to reduce dramatically the emissions and to increase the energy efficiency. The electro mobility is in the highest point of governments agenda. In Germany a new policy is in development to reach the goals of the Paris Agreement. E cars under development has an emission of 40g/100km measuring well to wheel. In countries with continental dimensions and with the sustainable production of non-fossil fuels like ethanol, new developments in the

hybrid cars reaches the same or sometimes better emission of fossil fuel. In case of the cars been presented by Japanese producers like Toyota or Honda the emission are in the score of 40g/100km. The very positive aspect is that the price of the vehicle is much more accessible of the e-cars and the infrastructure is not necessary to be installed because of the ethanol distribution in Brazil. In the opinion of Besalier, here will be not only one solution for the e-mobility in the world. The intermediate technology like the flex hybrid car should be presented also in Europe, because it could help Europe to reduce faster their emission grade. That could be a great contribution of the Mercosur to Europe for the goals of The Paris Convention.

Action: BMEL and BDI and other institutions in Germany to facilitate the presentation of these technologies to increase the demand of hybrid flex cars. BMEL to introduce this issue also in Brussels and try to facilitate the presentation in special events, like Grüne Woche 2020.

8. German Brazilian Cooperation on Agribusiness (government)

Both sides declare that the dialog should be more intensified, and that the trustfully relationship can help a better understanding. The possibility for a dialog between the Ministers in the ANUGA will be a good opportunity. Both sides stressed that the Initiative meeting in the new format and the contend was very well conducted and efficient and recommend that it should be continued in that way in the next year.

9. Miscellaneous and Closing Remarks

Jordi Tormo asked to the participants an evaluation and summary of the experiences in this meeting.

Friedrich Wacker says for his side it was a very productive meeting and a very confident exchange of opinions that increases the confident and the good work of everybody in this Initiative.

Fernando Camargo is very satisfied with group discussion and offered all support of his Ministry.

Weber Porto and Jordi Tormo agree with this evaluation and suggest to make an intermediate meeting in March 2020 by Teleconference. This idea is welcome from both governments.

Friedrich Wacker informed that is he closed to his retirement and that is his last participation in Natal-RN as a representative of German Government side. He is satisfied with the results of the group and thanks everybody for the very trustfully work over the years. Weber Porto and Jordi Tormo, thanks Friedrich Wacker for the intensive and very productive work and his active leadership in this last years, and invite him to be in our meeting in the next year in Munich.

Weber Port thanks for the very productive meeting, thanks for all the support of BDI, CNI and ABAG and the very impressive participation of so many leaders on very sunny Sunday in Natal. The thanks are also extended to the staff in Natal.

Protocol Nina Teles ABAG

ANNEX OF JOINT RESEARCH ACTIVITIES ON BIOECONOMY

Joint Research activities on Bioeconomy between the Julius Kuehn Institute (JKI) and Brazilian research institutions

The Julius Kuehn Institute (JKI) is the Federal Research Centre for Cultivated Plants in Germany

→ directly subordinated to the Federal Ministry of Food and Agriculture (BMEL)

→ asked to organize or accompany certain events in the frame of GreenRio in 2018 & 2019

GreenRio 2018

3 expert discussions - plant phenotyping and plant breeding

- Biological control of plant pathogens

- Industrial use of renewable resources

1 workshop - bees and other pollinators (and how to protect them)

→ objective was to bring GER and BRA experts together, to identify common challenges, and to initiate common activities.

Manaus, May 2019 (right before GreenRio2019)

Workshop on „*Medicinal and Aromatic Plants*“ (of the Amazonas region), held at University of the State Amazonas (UEA) with support and contributions by FAS, ABio, Embrapa, Fiocruz, and several more. About 70-80 participants in total from science and politics and with high presence of media.

→ Take home message:

- improve the income of family farmers in the Amazonas region
- promote sustainable production, harvesting, processing, marketing of medicinal plants → not exclusively, but preferably within the Amazonas region
- preferably select high value plants for high value products
- let indigenous family farmers participate at any step
- maintain already existing, traditional knowledge

GreenRio, May 2019

→ Presentation of workshop results

→ Ratification of Joint Declaration of Intent between JKI & SEAD, now between JKI & MAPA

→ Signing of Joint Declaration of Intent between JKI and EMBRAPA

PRESENT OUTCOME

A - RUNNING PROJECTS:

JKI Institute for Grapevine Breeding & Universidade Federale de Santa Catarina (UFSC) „*Mapping of Grapevine Genetic Loci for Resistance to Downy Mildew and to Anthracnose*“ (2018 – 2021)

→ Objective is to start a joined pre-breeding initiative and to develop markers for application in grapevine breeding programs in both, Brazil and Germany. Both diseases - downy mildew and anthracnose (black spot) - cause severe phytosanitary problems in Brazil. Downy mildew is widespread in Germany and anthracnose is expected to become a serious threat in Germany due to climate change.

JKI Institute for Biological Control & School of Agriculture at Sao Paulo State University (FCA, UNESP)

„Biodiversity as resource for the development of microbial-based insecticides in sustainable agriculture and forestry“ (2019 - 2022)

→ Objective is to provide fundamental information on the functional biodiversity of entomopathogenic fungi as a basic concept for the development of plant protection products.

B - JOINT DECLARATIONS OF INTENT:

Joint Declaration of Intent between JKI & Special Secretariat for Family Farming and Agrarian Development (SEAD; now part of MAPA) in December 2018 at JKI headquarters in Quedlinburg/GER

→ Objective is to promote joint supporting actions that contribute to the sustainable development of agriculture and food industries in the two countries, encouraging SEAD and JKI to cooperate in their activity and research areas in the field of agricultural science and technology, including renewable energies, for strengthening agriculture, food and nutritional safety as well as development of small family farmers.

Joint Declaration of Intent between JKI & EMBRAPA at GreenRio in May 2019

→ Cooperation areas include, but are not limited to (i) Natural resources & climate change, (ii) New Sciences like biotechnology & nanotechnology, (iii) Precision agriculture, information technology, and communication, (iv) Production systems, (v) Food safety, nutrition, and health, (vi) Markets, policies, and rural development.

Joint Declaration of Intent between JKI & University of the State Amazonas (UEA) in September 2019 in Potsdam/GER

→ Objective is to contribute to the sustainable development of the agriculture in the two countries by encouraging UEA and JKI to cooperate with each other in conducting research in the field of agricultural science, with particular focus on medicinal plants.

C - PROJECTS UNDER PREPARATION:

Initial projects between JKI and EMBRAPA shall focus on formerly identified research topics (plant phenotyping & breeding, biological control, medicinal and aromatic plants). Two first project drafts are presently circulating between EMBRAPA and JKI, coping with the

→ *Building of partnerships for improvement of medicinal and aromatic plants in Brazil*

→ *Improvement of phenotyping technologies in grapevine research*

D - OTHER ACTIVITIES

Two (multilateral) workshops co-organized by JKI in Latin America:

- „Towards more sustainable agriculture through managing the soil microbiome“, 14-16 Nov 2019, in Montevideo/URY → several BRA scientists (also from EMBRAPA) going to join this workshop
- „Risk assessment of Hazards of Pesticides to Bees“ in Feb 2020 (most likely), in Montevideo/URY → already existing good partnership between BRA and GER bee scientists to be continued at this occasion (see workshop at GreenRio2018)