Further information on the project "A centre of excellence for sustainable social enterprises and circular economy in Ghana".

Table of contents

Initial situation

i. Problem situation

Many common agricultural practices in Ghana (e.g. slash and burn, use of chemicals, etc.) jeopardise environmental sustainability, pose a health risk and contribute to climate change. In addition, fewer and fewer Ghanaians consume the recommended amount of fruits and vegetables, leading to an increased risk of disease. Education on healthy eating is lacking.

Knowledge of natural herbs is being lost due to increasing reliance on western medicines, which are often misused, causing great harm. Sanitation in Ghana is poor, if it exists at all. Many people go into the bush or to the beach to defecate, which contributes to groundwater and environmental pollution. Public toilets are often in precarious hygienic conditions.

With the exception of the big cities, there is no official solution for the disposal of inorganic waste in Ghana. Disposing of it in an environmentally sound manner is a major challenge. Locals dump municipal waste haphazardly in public places and burn small piles of it in ineffectively small smouldering fires that lead to the formation of toxic gases, which in turn affect health. Electricity in Ghana is expensive and unreliable, with regular blackouts. In addition, the majority of people use firewood or fossil fuels for cooking, which increases pressure on natural forests and non-renewable energy sources.

ii. Need for action & approach to problem solving

The world urgently needs a change of direction in the use of natural resources, otherwise climate change will lead to dramatic changes in our livelihoods in the coming decades. Neither does Ghana's government provide the necessary solutions and incentives for people in the project's thematic areas, nor does it teach the education system about possible alternatives to its unsustainable practices. Therefore, the development of a centre of excellence for sustainable social enterprises and circular economy is urgently needed. We need showcase examples of how to live sustainably and corresponding knowledge transfer.

Objective

We want to contribute to the elimination of the lack of education. The goal by the end of 2022 is to have built the main infrastructure and started education (1'000 community members taught in sustainable use of natural resources). Our goals are s.m.a.r.t (specific, measurable, achievable, realistic, time-scaled), please see Table 1.

Measures

i. Principle, idea

The project focuses on four core areas: Health (healthy eating, herbal medicine and natural sanitation), Education (the centre itself), Community Development (workshops) and Environment (organic farming (permaculture), waste recycling and renewable energy). By emphasising the education aspect, the project builds capacity, which should ensure measurable sustainable development in the long run.

ii. Activities to achieve the objectives & procedure

Initial workshops with the local population (conducted in March 2020) ensure that the project activities really address the most urgent problems (local relevance). Specific activities include the expansion of existing infrastructure such as the Commercial Department, the Organic Farm, the Administration Block and the Pedagogical Department. Two social enterprises for the production of oyster mushrooms and sustainable palm oil will enter commercialisation in 2021. The focus in all activities is always on education.

In agriculture, we rely on CO_2 sequestration using plant carbon and agroforestry systems to protect natural resources for future generations. The food we produce is processed gently to preserve secondary plant compounds, which are essential for a healthy diet. Meals are used to provide information about ingredients and medicinal values. Cooking classes round off the nutrition topic.

We systematise the knowledge about Ghanaian herbal medicine by creating a herbarium and teach it in our herbal clinic. We produce affordable medicines to improve the health of community members and create jobs. Herbal medicine supports people to heal themselves. We build composting toilets to raise awareness about pollution and produce high quality compost.

We are equipping the centre with waste recycling stations to sensitise the population on the issue of public dumping and burning of plastic waste. We also support the Busua community in setting up a public waste disposal system by procuring two skips. A workshop transforms inorganic waste into useful items (e.g. rainwater drainage pipes or solar water heaters made from empty plastic bottles, empty glass bottles to reinforce mud buildings). We also show photovoltaics as a way of becoming independent from the state electricity grid, and demonstrate a biogas plant for climate-neutral cooking.

Learners expand their knowledge primarily through practical engagement, complemented by teaching the underlying theory of the respective practices. Similar to the vocational education system in Switzerland, learners do practical work four days a week and learn the underlying theory of the respective practice on the fifth working day of the week. Our educational offer provides complementary knowledge to the public education system at primary, secondary and tertiary level ("evening and holiday schools").

Partnerships

Agriculture: *Research Institute of Organic Agriculture (FiBL), ETH Zurich*, *Kwame Nkrumah University of Science and Technology* (KNUST), *University of Ghana*, *Kumasi Institute of Tropical Agriculture* (KITA), *Ghana Permaculture Institute* (GPI).

Herbal medicine: *Ghana Federation of Traditional Medicine Practitioners Associations* (GHAFTRAM).

Natural sanitation: *Escape3Points* (eco-lodge in nearby Akwidaa); has many years of experience in building and operating composting toilets.

Waste recycling: *Escape3Points, DomeGaia* (NGO from Hawaii); have many years of experience with waste recycling for the construction of environmentally friendly, cost-effective structures. *Ahanta Traditional Council* (Busua); is developing a concept for a public waste management system.

Renewable energy: *Exosolar, Takoradi Renewable Power Resources Ltd, DAS Biogas Construction Ltd.* (small companies from Switzerland and Ghana) bring technical know-how to the project.

Management in general: *Baobab Children Foundation* (has been running a similar centre near Cape Coast for almost 20 years); key issues are integration of the project in the village community and other important cultural aspects.

Impact and benefits

i. Output, Outcome und Impact

Table 1 shows the output and outcome indicators as well as the impact (Logical Framework Matrix).

ii. Sustainability

We promote knowledge transfer and ownership by strongly involving the target group and the local population in the project cycle. In this way we build capacity and in combination with the workshops we expect that awareness will also be raised. This would lead to a sustainable change in the habits of the target group, which in turn could lead to improved health and employment. In this way, a signal effect could be achieved that would lead to the improvement of livelihoods and the health status of the communities as a whole.

We also facilitate exchange of experiences and partnerships while strengthening local, national and international networks. Workshops with local and national decision-makers also aim to ensure that OPC influences public discourse and national policy. Meanwhile, we are developing a basis for replicating the project's successes in other areas of the Global South with similar socio-economic conditions.

Table 1: Logical Framework Matrix (Log Frame) of the project [1]

Impact	**Indicators**
The project results will be replicated in other areas of the Global South with similar socio-economic conditions.	The number of people in the Global South who regularly engage in sustainable practices is increasing.
Outcome	**Indicators**
1. Community members, especially youth, are changing their habits in terms of organic farming (permaculture), waste recycling as well as natural hygiene, and are switching to a healthy diet and increased use of plant-based medicines and renewable energy. These behavioural changes lead to new employment opportunities as well as improved health and overall higher sustainability levels of the communities in and around Busua.	The number of people regularly engaging in sustainable practices is increasing, which i) creates new employment opportunities, ii) improves livelihoods and health status, and iii) increases the overall sustainability level of communities in and around Busua.

Outputs	**Indicators**
1. The sustainable organic farm is expanded and used for training activities.	1. By the end of 2021, families in the community plant 10,000 vegetable, spice and/or medicinal plants (100 plants per family). 2. By the middle of 2022, families of the community plant 1'000 trees (10 trees per family). 3. By the end of 2022, 1,000 community members (100 families) will be trained in sustainable agriculture.
2. Waste recycling stations are being developed to educate community members.	1. Waste recycling stations will be expanded by mid-2021. 2. 1,000 community members (100 families) will be trained in waste recycling by the end of 2022.
3. The sustainable energy facility will be expanded and used for training activities.	1. Functional photovoltaic systems are installed by the end of 2021. 2. By the middle of 2021, the constructed biogas plant is functional. 3. 1,000 community members (100 families) are trained in renewable energy by the end of 2022.
4. Composting toilets are used to educate community members.	1. 1,000 community members (100 families) will be trained in natural hygiene by the end of 2022.
5. An herbal clinic is installed to systematise the knowledge of herbal medicine and to train and treat the members of the community.	1. An herbal clinic will be established by mid-2021. 2. By the end of 2021, the inventory of local flora will be planted locally as much as possible. 3. 50 part-time jobs for wild collection of herbal ingredients are created by mid-2022. 4. Affordable herbal products are available to community members by mid-2022. 5. 1,000 community members (100 families) will be trained in self-healing through herbal medicine by the end of 2022. 6. 1'000 community members (100 families) are treated through local herbal medicine by the end of 2022.
6. A food processing centre (outdoor kitchen) will be built, which will prepare quality meals and be used for training purposes.	1. A food processing centre (outdoor kitchen) will be installed by mid-2021. 2. By the end of 2021, a menu with 10 healthy dishes and corresponding information brochures will be developed. 3. 1,000 community members (100 families) will be trained to prepare healthy dishes by the end of 2022.

[1] For reasons of readability, we use the short version of the log frame here (columns verification means and external factors (assumptions/risks) as well as corresponding activities and required inputs excluded). In the case of funding, the full log frame will be elaborated upon request. We have individual, smaller applications for the sub-projects "residential building" and "school building", as well as for the two social enterprises. If you are interested in further information in this regard, please do not hesitate to contact us.

Risks

i. Risks that may jeopardise the success of the project

Table 2 shows the possible risks and their estimated probabilities. Both are based on many years of observation and experience of the project manager with the situation on site.

Table 2: Possible risks and their estimated probabilities

Risk	Estimated probability
1. The expansion of existing or the construction of additional infrastructure takes longer and/or costs more than planned	Medium
2. The local population is not interested in training in the subject areas of the project	Low
3. The vegetable farm and/or agroforestry system are not productive	Medium
4. The local population does not see their current diet as unhealthy, cooking classes are not very popular	Medium
5. There are already too many herbal clinics in the region	Low
6. Composting toilets are not culturally accepted	Low
7. Waste recycling is logistically too difficult	Low
8. Photovoltaic and biogas plants are too expensive for the local population	Large

ii. Measures to avert or manage risks

Table 3 shows the possible measures to avert or manage the risk. We only propose measures for risks whose estimated probability we do not classify as "Low".

Table 3: Possible measures to avert or manage risks

Risk	Measure
1.	Delays can be minimised by involving experienced people and making arrangements for contract work. It is crucial that the quality of the work does not suffer. Since we work with natural materials (bamboo, raffia palm, wood) whenever possible and sensible, we keep costs low. Only wood has become more expensive in the meantime, but we can apply for a wood use permit from the forestry commission, which may give us access to free wood due to the social status of the project.
3.	Experience shows that in vegetable production we have to deal with a bacterially caused wilt disease as well as nutrient deficiency. The latter is also a problem in the agroforestry system, in addition to a lack of water in the soil. We counter these difficulties with adapted species and variety selection, protected cultivation as well as nutrient analyses of the soil followed by specific fertilisation and irrigation.
4.	Ghanaians are proud of their cuisine. Often the dishes are not unhealthy per se, but the excessive consumption of carbohydrates and fat usually leads to an unbalanced diet. We orientate ourselves strongly on the local culture, and only change minor, but essential things, so that the identification with the dishes remains. We also try to introduce more fruit/vegetables into the diet through innovative courses.
8.	We use the centre's pilot facilities to engage with policymakers about government programmes and ask international funding programmes for specific funds.

Evaluation and reporting

i. During the project

We continuously assess the project performance through monitoring and evaluation. Monitoring records progress and possible delays in ongoing activities through weekly team meetings, in which we reflect on successes and difficulties of the previous week, as well as the current situation, and thus develop an (adjusted) target for the coming week. This allows for quick action to address shortcomings and ensures that project performance can be continuously improved and optimised.

The evaluation isolates errors, conveys experiences and makes recommendations to project managers. In this way, the repetition of mistakes is to be excluded. This is done through a quarterly assessment of current output and outcome indicators against the targets set in the Logical Framework Matrix (Table 1). The semi-annual reporting includes two quarterly assessments of project progress and use of funds. In this way, we guarantee a technically and financially efficient management of the project.

ii. After completion of the project

A final report summarises what has been achieved and how funds have been used, points out difficulties and outlines how we intend to address these in the future.

Special eligibility

i. Relevance

The need for preventive approaches to counteract climate change has reached the general population. By establishing the competence centre, we are assuming our responsibility towards the civilian population.

ii. Innovative strength, uniqueness

Compared to other initiatives, the project is innovative because it approaches the problem holistically. The symptom of unemployment involves a complex of interrelated problems that cannot be treated separately. Many previous projects looked at certain parts in isolation and thus could not address the larger problem. Looking at the complex of problems from different angles and addressing many parts of the problem at the same time can lead to unexpected interactions and thus contribute to a holistic solution.

iii. Effectiveness and efficiency

As a small organisation, OPC is run by highly committed people who are directly involved in the project. We work transparently, on a voluntary basis and with the highest quality standards, also in impact measurement. This is how we guarantee that contributions get where they are supposed to go.

iv. Impact potential for funding foundations

Funding foundations can position themselves as pioneers on the topic of sustainable resource use in the Global South. In this way, it is possible to communicate today that one is actively tackling the problems of tomorrow and working out solutions on a small scale, which can then act as a model for a sustainable world. By educating young people in the thematic areas of the project, one can steer the elite of tomorrow towards sustainability. Because only with leaders of tomorrow who think and act sustainably can we create the urgently needed change of direction in the use of natural resources.

Detailed budget

BUDGET ITEM	YEAR			TOTAL
	2017-20	2021	2022	Total
LOCAL STAFF (effective expenses)	**0**	**35'000**	**35'000**	**70'000**
Local project coordinator	0	12'000	12'000	24'000
Construction worker (incl. maintenance work)	0	23'000	23'000	46'000
INTERNATIONAL STAFF (own contribution)	**80'000**	**20'000**	**20'000**	**120'000**
International project coordinator	80'000	20'000	20'000	120'000
LAND (own contribution)	**27'500**	**0**	**0**	**27'500**
Purchase of four acres of land for the project	27'500	0	0	27'500
MISCELLANEOUS EXPENDITURES (own contribution)	**66'500**	**0**	**0**	**66'500**
Cars, tractor, machinery, containers, transport, etc.	66'500	0	0	66'500
CONSTRUCTION PROJECTS (materials, actual expenses)	**0**	**192'500**	**117'500**	**310'000**
Commercial Department (CD)				
Gate house/security post (incl. barrier)	0	5'000	0	5'000
weighbridge (for sustainable palm oil factory)	0	25'000	0	25'000
Soap factory	0	20'000	0	20'000
Warehouse	0	7'500	0	7'500
Packaging unit	0	10'000	0	10'000
Shop	0	12'500	0	12'500
Residential barracks for employees and volunteers (CD)	0	15'000	0	15'000
Sanitary facilities	0	2'500	0	2'500
Organic Farm (F)				
Food processing centre/restaurant (already under construction)	0	5'000	0	5'000
Herbal clinic	0	15'000	0	15'000
Residential barracks for staff and volunteers (F, already under construction)	0	5'000	0	5'000
Sanitary facilities		2'500	0	2'500
Administration Block (AB)				
Administration building (incl. reception)	0	20'000	0	20'000
Car park	0	5'000	0	5'000
Guesthouse (incl. sanitary facilities)	0	7'500	55'000	62'500
Pedagogical Department (PD)				
School building (two classrooms)	0	20'000	0	20'000
Conference centre	0	0	40'000	40'000
Car park	0	0	5'000	5'000
Residential barracks for staff and volunteers (AB & PA)	0	0	15'000	15'000
Sanitary facilities	0	0	2'500	2'500
General				
Access to state electricity grid (process already underway)	0	10'000	0	10'000
Improvement of road network (levelling, rain gutters, gravel pitches)	0	5'000	0	5'000
TRAINING WORKSHOPS (effective expenses)	**0**	**5'000**	**5'000**	**10'000**
Facilitation materials (whiteboards, projectors, flipcharts, etc.)	0	2'500	500	3'000
Workshop fees (transport costs and catering)	0	2'500	4'500	7'000
TRANSPORT (effective expenses)	**0**	**5'000**	**5'000**	**10'000**
Fuel and maintenance car	0	5'000	5'000	10'000
TOTAL (effective expenses & own contributions)	**174'000**	**257'500**	**182'500**	**614'000**
TOTAL (effective expenses)	**0**	**237'500**	**162'500**	**400'000**

Kantonales Steueramt Zürich

18/10 127

Verfügung

Steuerbefreiung (Staatssteuer, allgemeine Gemeindesteuern, direkte Bundessteuer)

I. Unter dem Namen **Obrobibini Peace Complex** besteht aufgrund der Statuten vom 04. März 2018 ein Verein im Sinne von Art. 60 ff. ZGB mit Sitz in Zürich.

II. Gemäss § 61 lit. g StG und Art. 56 lit. g DBG sind juristische Personen, die öffentliche oder gemeinnützige Zwecke verfolgen, für den Gewinn und das Kapital, die ausschliesslich und unwiderruflich diesen Zwecken gewidmet sind, von der Steuerpflicht befreit.

III. Der Verein bezweckt in uneigennütziger Weise die ausschliessliche Unterstützung von materiell schlechter gestellten Menschen im globalen Süden, welche mit von ihm getragenen Zentren des Lernens für nachhaltiges Leben in Kontakt stehen (Statuten, Art. 2).

Da weder Erwerbs- noch Selbsthilfezwecke verfolgt werden und eine Zweckentfremdung der Vereinsmittel auch nach Auflösung des Vereins ausgeschlossen ist (Statuten, Art. 12), rechtfertigt es sich, den Verein gestützt auf § 61 lit. g StG und Art. 56 lit. g DBG ab Gründung wegen Verfolgung von gemeinnützigen Zwecken von der Steuerpflicht zu befreien.

IV. Eine allfällige Änderung der Statuten oder Auflösung des Vereins wäre dem Kantonalen Steueramt Zürich, Dienstabteilung Recht, mitzuteilen. Dieses ist berechtigt, jeweils in Jahresbericht und Jahresrechnung Einsicht zu nehmen und weitere Aufschlüsse zu verlangen.

Das kantonale Steueramt verfügt:

1. Der Verein **Obrobibini Peace Complex**, mit Sitz in Zürich, wird ab Gründung wegen Verfolgung von gemeinnützigen Zwecken von der Staatssteuer und den allgemeinen Gemeindesteuern sowie von der direkten Bundessteuer befreit.

2. Eine allfällige Änderung der Statuten oder Auflösung des Vereins ist dem Kantonalen Steueramt Zürich, Dienstabteilung Recht, mitzuteilen. Auf dessen Verlangen sind diesem Amt Jahresbericht und Jahresrechnung einzureichen und weitere Aufschlüsse zu erteilen.

3. Gegen diese Verfügung kann **innert dreissig Tagen** nach Zustellung beim Kantonalen Steueramt Zürich, Dienstabteilung Recht, Bändliweg 21, Postfach, 8090 Zürich, schriftlich Einsprache erhoben werden,

   - **betreffend Staats- und Gemeindesteuern:** durch den Gesuchsteller bzw. die Gesuchstellerin und die Gemeinde,
   - **betreffend die direkte Bundessteuer:** durch den Gesuchsteller bzw. die Gesuchstellerin und das kantonale Steueramt, Dienstabteilung Bundessteuer.

4. Mitteilung an:

   a) den Verein Obrobibini Peace Complex, Herrn Christian Andres, Arminstrasse 9, 8050 Zürich, zuhanden des Vereins,

   b) das Steueramt der Stadt Zürich,

   c) das kantonale Steueramt, DAAD.

Zürich, den 28. März 2018
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Kantonales Steueramt Zürich
Dienstabteilung Recht
Die juristische Sekretärin:

Versandt am: 28. März 2018

lic.iur. Isabelle Wirth

Obrobibini Peace Complex

ETH
Eidgenössische Technische Hochschule Zürich
Swiss Federal Institute of Technology Zurich

CURRICULUM VITAE

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1. Education:

Institution:	**Swiss Federal Institute of Technology (ETH Zurich)**
Date:	04. 2015 – 03. 2018
Degree:	**Dr. sc. ETH (Agro-Ecosystem Sciences)**
Thesis title:	Transdisciplinary Systems Research to Reduce the Cocoa Swollen Shoot Virus Disease in Ghana

2. Language skills (5 is the highest):

Language	**Level**	**Passive**	**Spoken**	**Written**
German	**Mother tongue**	Mother tongue	Mother tongue	Mother tongue
English	**5**	5	5	5
French	**5**	5	5	4
Spanish	**4**	4	4	3

3. Professional experience:

Date: from (month/year) to (month/year)	**Since 05. 2018 – present**
Location	Zürich, Switzerland
Company / Organisation	**Swiss Federal Institute of Technology, Zurich (ETH)**
Present position	**Post-Doctoral Research Fellow**
Job Description	Research sustainable production systems in the tropics

Date: from (month/year) to (month/year)	**09. 2011 – 12.2019**
Location	Frick, Switzerland
Company / Organisation	**Research Institute of Organic Agriculture (FiBL)**
Present position	**Senior Research Scientist & Coordinator**
Job Description	Research sustainable production systems in the tropics

4. Key qualifications:

Tropical agronomy, esp. agroforestry with perennial crops (cocoa, oil palm and fruits); organic agriculture (agroforestry, vegetables, beekeeping and mushrooms); organic soil fertility management; data collection, management, presentation and interpretation (quality monitoring, statistics (R)); participatory and transdisciplinary research; sustainable building; project management, communication and coordination; networking and fundraising.

5. Specific experience in low- and middle-income countries:

Country	**Date: from (month/year) to (month/year)**	**Name and brief description of the project**
Ghana	2018 - 2020 2015 – 2017 06. 2014	Several business trips for *project implementation* "DAFS" (Post-Doc) Several business trips for *project implementation* "TransdisCSSVD" (PhD) Business trip for *project development* TransdisCSSVD (PhD)
Bolivia	07. 2014 – 08. 2014 11. 2012 – 12. 2012 04. 2012 – 05. 2012	*Scientific support* in the FiBL project "Long-term systems comparison in the tropics" (remote area). Crop: cocoa
India	03. 2013	*Coordination* of the FiBL project "Long-term systems comparison in the tropics" (small village). Crop: cotton
Côte d'Ivoire (Ivory Coast)	2018 07. 2011 – 12. 2011	Business trip for *project implementation* "DAFS" (Post-Doc) Multiply awarded *Master thesis* at Bringakro field station (small village) of CSRS, lab work at INP, Yamoussoukro. **Title**: "Fertilization of *D. rotundata* with poultry manure: effect on nutrient dynamics and nutrient use efficiencies". Crop: yam
Sri Lanka	10. 2008 – 01. 2009	Certified *professional internship* at CIC Pelwehera and University of Peradeniya (non-compulsory part of M.Sc. studies at ETH). **Title**: "Gaining applied research experience in tropical agriculture in Sri Lanka". Crops: maize, tropical vegetables

6. Selected publications:

Peer-reviewed articles

Niether, W., Jacobi, J., Blaser, W.J., **Andres, C.**, Armengot, L. (2020) Cocoa agroforestry systems versus monocultures: a multi-dimensional meta-analysis. *Environmental Research Letters* 15: 104085. doi: 10.1088/1748-9326/abb053

Cicek, H., Bhullar, G.S., Mandloi, L.S., **Andres, C.**, Riar, A.S. (2020) Partial Acidulation of Rock Phosphate for Increased Productivity in Organic and Smallholder Farming. *Sustainability* 12: 607. doi: 10.3390/su12020607

Andres, C., Hoerler, R., Home, R., Jörin, J., Dzahini-Obiatey, H.K., Ameyaw, G.A., Domfeh, O.K., Blaser, W.J., Gattinger, A., Offei, S.K., Six, J. (2018) Social network to inform and prevent the spread of cocoa swollen shoot virus disease in Ghana. *Agronomy for Sustainable Development* 38: 53. doi: 10.1007/s13593-018-0538-y

Niether, W., Armengot, L., **Andres, C.**, Schneider, M., Gerold, G. (2018) Shade trees and tree pruning alter throughfall and microclimate in cocoa (*Theobroma cacao* L.) production systems. *Annals of Forest Science* 75: 38. doi: 10.1007/s13595-018-0723-9

Andres, C., Blaser, W.J., Dzahini-Obiatey, H.K., Ameyaw, G.A., Domfeh, O.K., Awiagah, M.A., Gattinger, A., Schneider, M., Offei, S.K., Six, J. (2018) Agroforestry systems can mitigate the severity of cocoa swollen shoot virus disease. *Agriculture, Ecosystems and Environment* 252:83-92. doi: 10.1016/j.agee.2017.09.031

Niggli, U., **Andres, C.***, Willer, H., Baker, B.P. (2017) Building a global platform for organic farming research, innovation and technology transfer. *Organic Agriculture*. doi: 10.1007/s13165-017-0191-9

Andres, C., Gattinger, A., Dzahini-Obiatey, H.K., Blaser, W.J., Offei, S.K., Six, J. (2017) Combatting Cocoa Swollen Shoot Virus Disease: What do we know? *Crop Protection*, 98, 76-84.

Gramlich, A., Tandy, S., **Andres, C.**, Chincheros, J., Armengot, L., Schneider, M., Schulin, R. (2017) Cadmium Uptake by Cocoa Trees in Agroforestry and Monoculture Systems under Conventional and Organic Management. *Science of the Total Environment* 580, 677 – 686.

Armengot, L., Barbieri, P., **Andres, C.**, Milz, J., Schneider, M. (2016) Cacao agroforestry systems have higher return on labor compared to full-sun monocultures. *Agronomy for Sustainable Development* 36: 70. doi:10.1007/s13593-016-0406-6

Schneider, M., **Andres, C.***, Trujillo, G., Alcon, F., Amurrio, P., Perez, E, Weibel, F., Milz, J. (2016) Cocoa and total system yields of organic and conventional agroforestry vs. monoculture systems in a long-term field trial in Bolivia. *Experimental Agriculture* 53, 351-374. doi: 10.1017/S0014479716000417.

Andres, C., Bhullar, G.S.* (2016) Sustainable Intensification of Tropical Agro-Ecosystems: Need and Potentials. *Frontiers in Environmental Science* 4: 5. doi: 10.3389/fenvs.2016.00005

Jacobi, J., **Andres, C.**, Schneider, M., Pillco, M., Calizaya, P., Rist, S. (2014) Carbon stocks, tree diversity, and the role of organic certification in different cocoa production systems in Alto Beni, Bolivia. *Agroforestry Systems* 88: 1117. doi: 10.1007/s10457-013-9643-8

Forster, D., **Andres, C.***, Verma, R., Zundel, C., Messmer, M.M., Mäder, P. (2013) Yield and Economic Performance of Organic and Conventional Cotton-Based Farming Systems – Results from a Field Trial in India. *PLoS ONE* 8(12): e81039, doi: 10.1371/journal.pone.0081039.

Books

Rahmann, G., **Andres, C.**, Yadav, A.K., Ardakani, M.R., Babalad, H.B., Devakumar, N., Goel, S.L., Olowe, V., Ravisankar, N., Saini, J.P., Soto, G., Willer, H. (Eds.) (2017) Innovative Research for Organic 3.0 - Proceedings of the Scientific Track. Volume 1. Johann Heinrich von Thünen-Institut, Braunschweig, 1, Thünen report, Nr. 54, S. 1-511. Proceedings zu: Organic World Congress 2017, Delhi, India, 9-11 November 2017.

Rahmann, G., **Andres, C.**, Yadav, A.K., Ardakani, M.R., Babalad, H.B., Devakumar, N., Goel, S.L., Olowe, V., Ravisankar, N., Saini, J.P., Soto, G. Willer, H. (Eds.) (2017) Innovative Research for Organic 3.0 - Proceedings of the Scientific Track . Volume 2. Johann Heinrich von Thünen-Institut, Braunschweig, 2, Thünen report, Nr. 54, S. 512-808. Proceedings zu: Organic World Congress 2017, Delhi, India, 9-11 November 2017.

Book chapters

Andres, C.*, AdeOluwa, O.O., Bhullar, G.S. (2017), Yam (*Dioscorea* spp.). In: Thomas, B., Murray, B. G. and Murphy, D. J. (Eds.), Encyclopedia of Applied Plant Sciences, Vol 3, Waltham, MA: Academic Press, 2017, pp. 435–441.

Andres, C.*, Comoé, H., Beerli, A., Schneider, M., Rist, S., Jacobi, J. (2016) Cocoa in monoculture and dynamic agroforestry. In: Lichtfouse, E. (Ed.) *Sustainable Agriculture Reviews* 19, 121-153, Springer International Publishing, Switzerland.

Andres, C.*, Mandloi, L.S., Bhullar, G.S. (2015) Sustaining the supply of organic White Gold: The case of SysCom innovation platforms in India. In: Dror, I., Cadilhon, J.-J., Schut, M., Misiko. M., Maheshwari, S. (Eds.) *Innovation Platforms for Agricultural Development: Evaluating the mature innovation platforms landscape*. Routledge, London, UK.

Strategic documents

Niggli, U., **Andres, C.***, Willer, H., Baker, B.P. (2017) A Global Vision and Strategy for Organic Farming Research – Condensed version. Version February, 2017, TIPI – Technology Innovation Platform of IFOAM – Organics International, Research Institute of Organic Agriculture (FiBL), Frick, Switzerland

*corresponding lead author

7. Selected Grants and Awards:

World Food System Grants (2018, amount awarded: 270'000 CHF), World Food System Center, ETH Zurich, Switzerland. 24 months grant for the project "Dynamic agroforestry systems for sustainable intensification of cocoa production in West Africa (DAFS)".

Josef G. Knoll European Science Award (2018, amount awarded: 10'000 Euro), Stiftung fiat panis, Ulm, Germany. Oral presentation at award ceremony in the frame of Tropentag 2018: "Global food security and food safety: The role of universities", September 17-19, Gent, Belgium.

Visiting Research Fellowship for Early Postdoctoral Researchers (2018, amount granted: 60'000 CHF), Swiss–African research cooperation SARECO, Switzerland. 15 months grant for the project "Dynamic agroforestry systems (DAFS) to reduce greenhouse gasses and restore environmental health in West African cocoa landscapes".

Swiss – African kick-starting projects (2016, amount granted: 10'000 CHF), University of Basel, Vice Rectorate for Education, Switzerland. Two-year kick-starting grant for the project "Transdisciplinary systems research to reduce cocoa swollen shoot virus in Ghana (TransdisCSSVD)".

E4D Scholarship (2014, amount granted: 175'000 CHF), programme "Engineering for Development", ETH Global / Sawiris Foundation for Social Development, Zurich, Switzerland. PhD scholarship granted for three years for the project "Transdisciplinary systems research to develop a novel holistic concept for reducing the spread and impact of CSSVD in West Africa (TransdisCSSVD)".

Hans H. Ruthenberg Award for Graduates (2013, amount awarded: 2'500 Euro), Stiftung fiat panis, Ulm, Germany. Oral presentation at award ceremony in the frame of Tropentag 2013: "Agricultural development within the rural-urban continuum", September 17-19, Stuttgart-Hohenheim, Germany. More info.

SFIAR Master Thesis Award (2013, amount awarded: 1'000 CHF), Swiss Forum for International Agricultural Research, Zollikofen, Switzerland. More info. SFIAR Interview No.17.

Poster award (2011, amount awarded: 100 CHF), Zurich-Basel Plant Science Center (PSC), PSC Symposium: „Understanding Plant Phenotypes", November 4, ETH Zurich, Switzerland. Title of awarded Poster: "Fertilization of *Dioscorea rotundata* with poultry manure: effects on nutrient dynamics and nutrient use efficiencies".

Master thesis grant (2009, amount granted: 15'000 CHF), Fondation du Centre Suisse de Recherches Scientifiques en Côte d'Ivoire, Neuchâtel, Suisse. Scholarship granted for the implementation of a field trial for the project "Effet d'apport de fientes de poulet sur la productivité et l'efficacité d'utilisation des éléments nutritifs de *Dioscorea rotundata* dans le centre de la Côte d'Ivoire".

8. Personal interests:

Decades of practical experience with the subjects of gardening, cooking, healthy nutrition, sports and herbal medicine. Intensive practice of meditation, yoga and Ayurveda.

9. Personal references:

Prof. Dr. Andreas Gattinger, Head Organic Farming Group, Justus Liebig University Giessen, Karl-Glöckner-Str. 21 C, 35394 Gießen, Germany, Phone: (+49) 641/99-37731, E-Mail: andreas.gattinger@agrar.uni-giessen.de

Name der Buchhaltung: 2020
Buchungsperiode: 01.01.2020 - 31.12.2020
Währung: CHF

Form 1.04.02d

Schlussbilanz per 31.12.2020

Buchhaltungsvergleich mit:

Konto	Bezeichnung		Aktuell	Vergleich	Diff.	Diff. %
1	AKTIVEN					
10	UMLAUFSVERMÖGEN					
100	Flüssige Mittel	145'835.01				
1010	Postkonto		109'462.96			
1020	Bankkonto		3'568.05			
1050	Zugesprochene Spendengelder		32'804.00			
	T O T A L :	**145'835.01**	**145'835.01**			
2	PASSIVEN					
20	FREMDKAPITAL KURZFRISTIG					
200	Verbindlichkeiten	152'957.18				
2100	Christian Andres privat vorausbezahlt 2017-2020		152'957.18			
28	EIGENKAPITAL					
280	Eigenkapital	-46'459.88				
2800	Kapitalkonto		-46'459.88			
	T O T A L :	**106'497.30**	**106'497.30**			
	Reingewinn per 31.12.2020	*39'337.71*	*39'337.71*			
	T O T A L :		**145'835.01**			

Name der Buchhaltung: 2020
Buchungsperiode: 01.01.2020 - 31.12.2020
Währung: CHF

Form 1.04.02d

Erfolgsrechnung per 31.12.2020

Buchhaltungsvergleich mit:

Konto	Bezeichnung		Aktuell	Vergleich	Diff.	Diff. %
3	BETRIEBSERTRAG					
30	BETRIEBSERTRAG					
300	Betriebsertrag	223'641.77				
3000	Ertrag Mitgliederbeiträge		2'652.00			
3001	Ertrag Spenden und Kollekten		85'602.82			
3003	Institutionelle Geldgeber		135'386.95			
	T O T A L :	**223'641.77**	**223'641.77**			

65	Verwaltungsaufwand					
650	Verwaltungsaufwand	13'926.63				
6500	Büromaterial		1'383.70			
6510	Telefon/Porti		1'116.18			
6540	Sonstiger Verwaltungsaufwand		209.05			
6542	Promo/Werbung		11'217.70			
66	Mankessim					
660	Kompetenzzentrum für nachhaltige Agroforstwirtschaft	63'233.64				
6600	Inputs/Betriebsmittel		6'227.56			
6601	Machinery/Maschinen		8'335.52			
6602	Buildings/Gebäude		27'275.49			
6603	Labour/Arbeit		7'202.85			
6604	Land preperation/Bodenbearbeitung		7'209.82			
6605	Various/Verschiedenes		759.25			
6606	Living/Lebenshaltungskosten		316.92			
6607	Logistics/Logistik		3'612.79			
6608	Crop protection/Pflanzenschutz		213.11			
6609	Working untensils/Arbeitsutensilien		36.07			
6610	Post-harvest/Nach-Ernteverfahren		568.85			
6611	Landpacht		1'475.41			
67	Busua					
670	Ausbildungszentrum für Nachhaltigkeit	106'859.82				
6700	Income/Löhne und Lebenshaltungskosten Ghana		29'641.37			
6702	Platform/Lernplattform		1'163.40			
6703	Water system/Wassersystem		3'662.48			
6704	Workshop/Werkstatt		3'578.20			
6705	Herbal medicine/Kräuteheilkunde		70.00			
6706	Solar system/Solaranlage		528.60			
6708	Compost toilet/Komposttoilette		234.80			
6709	Living house 1/Wohnhaus 1		9'384.60			
6710	Construction/Allg. Aufwand Bau		511.00			
6711	Fungiculture/Pilzzucht		5'086.79			
6712	Electricity/Erschliessung Netzstrom		242.00			
6713	Cars/Aufwände Autos		7'160.40			
6714	Office/Büroaufwand		276.20			
6715	Various/Verschiedenes		258.02			
6716	Palm oil factory/Fabrik für nachhaltiges Palmöl		18'610.40			
6718	Poject "Food System Caravan"		1'134.53			
6719	Biogas digester/Biogasanlage		4'838.60			
6720	Road/Strassennetzwerk		1'230.00			
6721	Hotel/Gästehaus		6'600.00			
6722	Gate house/Tor-Häuschen		3'000.00			
6723	Farm		100.41			
6724	Materials/Materialien		1'192.90			
6725	Grundbucheintrag		722.68			
6726	Food center/Lebensmittelverarbeitungszentrum		7'632.44			
68	Bank/PC Aufwand					
680	Finanzaufwand	283.97				
6840	Bankspesen		283.97			
	T O T A L :	**184'304.06**	**184'304.06**			

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Erfolgsrechnung per 31.12.2020

Buchhaltungsvergleich mit:

Konto	Bezeichnung	Aktuell		Vergleich	Diff.	Diff. %
	Reingewinn per 31.12.2020	*39'337.71*	*39'337.71*			
	T O T A L :		**223'641.77**			