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SUSTAINABLE DEVELOPMENT GOAL:

ENDING HUNGER

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LEAD ARTICLE

ENDING HUNGER BY 2030**HOW MUCH WILL IT COST AND WHAT WILL IT TAKE?**

As it stands today, the United Nations Sustainable Development Goal 2 (SDG2), to end hunger and malnutrition by 2030, will not be achieved. The number of hungry people is currently rising, from 653 million in 2015 to 690 million in 2019. In 2019 an estimated two billion people did not have regular access to safe, nutritious and sufficient food, whereas three billion people could not afford healthy diets. If recent trends continue, over 840 million people, or 10 percent of the global population, will suffer from hunger by 2030. COVID-19 is expected to worsen these trends and is estimated to have pushed an extra 132 million people into hunger in 2020 alone.

To achieve SDG2 by 2030, investments need to increase dramatically, especially in Asia and Africa. The majority of the world's undernourished are living in Asia (381 million in 2019), while Africa (250 million) has experienced the fastest rise in numbers. The G7 governments bear a particular responsibility after committing to lift 500 million people out of hunger and malnutrition by 2030 at their Summit in Elmau in 2015. But how much money will be required to achieve SDG2? And where should it best be invested?

How much will it cost to reach SDG2?

According to a recent study by ZEF and the Food and Agriculture Organization of the United Nations (FAO), achieving SDG2 does not need to be prohibitively expensive, provided that a mix of least-cost measures with a large potential of reducing hunger are prioritized. Ending hunger globally by 2030 is estimated to require US\$ 39-50 billion annually until 2030. The G7 nations would need to contribute US\$ 11-14 billion of that sum to meet their Elmau target, effectively doubling current aid flows for agriculture, food and rural development (US\$ 17 billion in 2018). Since 2000, Germany has achieved the highest increase in its contribution to these sectors, followed by Japan and France.

What will it take?

A bundle of promising investments will be required to end hunger and malnutrition by 2030. Short-term measures are needed to provide social protection and nutrition programs to the hungry poor, including those affected by COVID-19. In addition, long-term measures requiring high up-front investments but also generating a high long-term impact are needed, such as research and development (R&D) in the agricultural sector, investing in irrigation, reducing food loss and reforming trade policy. It is crucial to optimally phase such investments: those with longer-term impact should be frontloaded if their benefits are to be reaped before 2030.

The context in which these measures are implemented matters. The ZEF/FAO study finds that countries that have made good progress in fighting hunger and malnutrition spent substantially more on agriculture and experienced relatively high agricultural growth. However, manufacturing is also gaining importance in the economy of countries that made good progress in hunger reduction, and the labor force is gradually moving out of agriculture and rural areas. In addition, the countries that performed better in hunger reduction also showed higher growth rates in capital formation and gross domestic product (GDP) compared to the countries that performed worse in hunger reduction. Thus, hunger reduction goes hand in hand with better outcomes of human and macro-economic development.

Ending hunger requires a focus on Africa

Africa requires particular attention if it is to achieve SDG2. The continent has the highest prevalence of undernourishment in the world (19 percent in 2019), ahead of South Asia (13 percent). If recent trends persist, the prevalence of hunger will increase to 26 percent by 2030. Increasing food production in Africa could improve food security while opening up economic opportunities for African food producers and small businesses. A study by ZEF/Akademiya2063 highlights a number of priority areas for action to boost the production of African food supplies:

- Invest in young women and men, e.g. through providing vocational training and extension services.
- Invest in innovation and related agricultural research on crops, livestock, agro-forestry and fisheries.
- Support the adoption of environmentally sound irrigation, energy, digitalization and mechanization technologies developed by the local private sector.



- Implement sustainable land use, agroforestry practices and agro-ecological approaches.
- Improve market access through infrastructure investments, inclusive markets and regional trade integration.
- Strengthen the business environment for food and agriculture, including financial infrastructure.

Reaching SDG2 is possible only if concerted action is taken across the globe – both by donors and recipient countries – to substantially increase investments and target these investments towards least-cost, high-impact interventions to end hunger and malnutrition.

For more information see:

[ZEF/FAO study](#)

[ZEF/Akademiya2063 study](#)



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WORLD FOOD PROGRAMME RECEIVES NOBEL PEACE PRIZE INTERVIEW WITH ZEF-ALUMNA TANIA OSEJO CARRILLO

Tania Osejo Carrillo is a forest economist from Nicaragua. She currently works as a cash transfer programme officer, having earlier worked as a climate change adaptation officer, at the World Food Programme (WFP) in Rome, Italy. She was a junior researcher at ZEF from 2009 to 2015. Andreas Haller (ZEF PR) conducted the interview via Zoom.



The World Food Program (WFP) received this year's Nobel Peace Prize. Congratulations! What was your reaction when you first heard the announcement?

I was surprised because the staff didn't know that WFP had been nominated for the prize. Just a limited number of people knew. So it was a real surprise, for all our colleagues around the world, when we heard this wonderful news. And my first thought went to all our colleagues at the frontline, providing food assistance to those who need it the most. These colleagues are working very hard, under tough conditions, in different duty stations including emergency operations in places such as South Sudan and Yemen. This prize is a recognition of their efforts; it is for those working at the frontline.

We wouldn't have achieved this kind of recognition without the cooperation of national and local governments, NGOs, research institutes, and universities. We work with multiple partners around the world at different

fronts. Our main objective, to achieve food security and nutrition security for all, is a joint effort and can only be achieved by collective action.

Where do you see the connection between the fight against hunger and the effort to create and maintain peace?

The connection that I see is the extent to which the target groups have access to decent livelihoods. If people are economically empowered, the risk of food insecurity is reduced – which in turn helps to reduce tensions within and between communities and ultimately, to avoid conflict situations. As long as human beings have decent livelihood opportunities and sufficient assets, it really helps reduce the tensions, even at the family level, and then you go through the community level and so on. So, livelihoods are one of the entry points. We have to send the message that our work is not only about food delivery. We have to create opportunities for our target groups to become more economically empowered and to have more ownership of decisions that affect their lives. If they can have access to credit and to different kinds of financial services, they will be more food secure, less vulnerable, and have more opportunities.

As a researcher you've studied the effects of climate change on food security. What are the biggest challenges in this regard?

The most important step for me is that we reached an agreement regarding the actions to be taken to address the situation. These actions include investments in climate-change adaptation, as well as in climate smart agriculture, all in all investments that take into consideration the climate change information that we have. We use this

information to develop and implement programs that will reduce the vulnerability of the poorest population around the world. For me, the most important thing is the collective action on different levels – from community level to the international level – considering the specific needs of our target populations. That's the main focus in terms of climate change and food security.

Talking about cash... The Nobel Peace Prize comes with money, of course. In what ways beside money, does the prize help the WFP achieve its goals?

It will help a lot. It raises awareness around the world about the importance of providing the fundamental human need for food and nutrition security and thus be able to reduce tensions among families, communities, and nations. So the focus is on what is required at this moment of development whatever the conditions are. It's a recognition of the importance of food security and of addressing this problem around the world, but also of the importance of collective action, especially during the COVID-19 pandemic. The WFP as an organization, has not stopped working, notwithstanding COVID-19. We adjusted to the situation. It took us a couple of weeks and it was a huge effort at different levels from senior management to the sub-office levels of country offices. The organization had the capacity for that. This adaptational reaction was possible because we work with the governments and also coordinate our efforts with our partners on the spot. So, we were able to build a war plan to implement this work. When you consider the different situations in all these countries because of COVID-19 and then respond to their needs, this is a recognition of collective action on a global level, which entails a lot of coordination with governments, population, communities.

As the ongoing pandemic increases poverty, how is the situation right now?

We have some preliminary results from the monitoring reports we conducted. I know that in the case of Latin America – that's the region I work with – the most affected people will be those working in the informal sector and the population living in urban areas. They lost their livelihoods because of restrictions on mobility. They were not able to work because income-generating activities just collapsed. And so the situation got worse. In Latin America we can see a quite significant increase in food insecurity from 3 million people at the beginning of 2020 to 17 million people in August 2020. These data are based on our monitoring reports, so the numbers are still estimates. We need to wait for the official information from governments. We have to be prepared and we have already estimated what budgetary resources will be needed in the future. The recovery of livelihoods in the urban setting is something that we are looking at very closely. Together, we'll be working very hard to protect the population.

The Sustainable Development Goal no. 2 projects a world without hunger by 2030. Are you confident that this goal can be achieved despite the setback with the pandemic? If yes, what makes you hopeful? If no, what must be done to get on course?

For me it's not about being confident if we are going to reach the goal. My focus as a person is on my work together with the different partners to achieve the goal. We cannot

stop. If we think we are not going to reach it, we are defeated. We need to focus on the goal. And the goal is to reduce food and nutrition insecurity around the world. Of course, we have a set of different goals within this framework, but we are trying to focus on 2030. What are the needs in terms of human resources, budget, types of intervention programs to achieve the 2030 Agenda? I would say that it's not only about the delivery of food. We need food assistance, working food systems, working digital financial inclusion. There are many different approaches that we adopt in order to reach SDG 2.

At the end, could you tell us a bit about the role ZEF has played in your professional career.

I have to say, the ZEF is in my heart. It stays in your heart forever. This experience to have the opportunity to meet people from different backgrounds from all around the world was priceless. I come from a very small country in Latin America, that is Nicaragua. So, meeting somebody from Ghana who studied in China or Japan or people coming from the University of Nairobi or somebody from Uzbekistan was totally priceless. And I felt very welcome in Germany. I made super good friends in Bonn during my PhD. Also, the quality of the education we received was unique. We were coming from different academic backgrounds from social science to natural science to economics. ZEF standardized the level of knowledge so that everybody has the same basics. And from there we all specialized. What I learned from ZEF about discipline is that it's really important to be very focused and straight to the point. And to work very hard! I would say these are the most important things that I kept from ZEF and I apply them every single day of my life.

Thank you for the interview.

People buy and sell food at a market in Madagascar.
Photo: Jochen Dürr



EMPOWERMENT OF WOMEN AND FOOD SECURITY IN PAKISTAN

GENDER INEQUALITY AFFECTS THE HEALTH AND NUTRITION OF CHILDREN

Pakistan faces serious levels of hunger according to the [Global Hunger Index 2020](#), an annual report by Welthungerhilfe and Concern Worldwide based on UN data.

The proportion of children under five with stunted growth is very high, averaging 37.6 percent for the years 2015 to 2019. During this time period, 7.1 percent of children suffered from wasted growth and the infant mortality rate stood at 6.9 percent. Many factors contribute to inadequate nutrition among children, including availability of food, purchasing power, health conditions, access to clean water, access to public infrastructure, and the status of women in society.

In Pakistan, the overall social condition of women is dire. The [Global Gender Gap Report 2020](#) of the World Economic Forum ranks the country third from bottom of 153 countries, placing it among the most gender unequal countries in the world. For Pakistan, there is little robust evidence of the link between the social condition of women and children's health and nutrition. Yet, evidence from other countries suggests that these linkages are strong.

Motherhood and reproductive health

Women's health before, during, and after pregnancy directly affects children's health. According to the [Demographic and Health Survey \(DHS\) Pakistan 2019](#), 52 percent of women between the ages of 15 and 49 were recorded as anaemic – considerably higher than the global average of one in three women. Young-age pregnancies are also a major factor behind early childhood mortality and low birth weight. Repeated pregnancies and low use of modern contraception exacerbates these effects. 18 percent of women in Pakistan are married by the age of 18. Furthermore 17 percent of married women in the country's urban areas, and 22 percent in rural areas, have an unmet need for family planning.

Domestic violence, low education levels, and hard work

Domestic violence and its accompanying emotional and mental distress affect children's health too. The [Demographic and Health Survey \(DHS\) Pakistan 2019](#) shows that 28 percent of women of reproductive age in Pakistan experienced physical violence at home, 7 percent experienced violence during their pregnancy, and 3



Health and nutrition of women and children are affected by gender inequality. Photo: Till Ludwig

percent suffered health problems such as miscarriage due to violence in 2018-19.

A new study by [Owen Schochet and others](#) from 2020 reveals that women's low level of education is yet another factor that contributes to inadequate nutrition for children. Educated mothers have better health and nutrition practices and can better gather information on child health and nutrition. Half of Pakistan's adult women are illiterate, with an even higher illiteracy rate among women in rural areas. This means that many women are unable to read nutrition labels on baby food or instructions on formula milk preparation, which affects children's nutrition.

Women's burden of work in agriculture is a further relevant factor affecting the health of children. While women undertake almost all domestic and childcare work, especially in the case of low-income households in rural areas, they also work on their farms or as wage laborers. Women work an average of 34 hours per week in agriculture in addition to their domestic work. As farm work is largely not remunerated (own farm) or low paid (wage labor), women often lack both enough time to care for children's health and nutrition and the purchasing power to provide to their children a diverse and healthy diet.

Efforts to improve the hunger situation in Pakistan need to consider the status of women. While empowerment of women is a worthy goal in itself, it will also yield long-term positive outcomes through improvements in children's health and nutrition.



Sundus Saleemi

was a junior researcher at ZEF. She wrote her doctoral thesis about "[Empowerment of Girls and Women in Rural Pakistan: Migration, Decision-making and Consciousness](#)".

[Contact](#)

“COVID-19 IS AN ADDITIONAL CHALLENGE TO THE FOOD SYSTEMS”

INTERVIEW WITH ZEF JUNIOR RESEARCHER EMILY INJETE AMONDO ON HER FIELD RESEARCH IN UGANDA

Emily Injete Amondo writes her PhD-thesis on “Climate Variability and Health Adaptation: Effects on Human Health Outcomes, Food security and Welfare”. She was in the field when the pandemic broke out. Katharina Gallant (ZEF) interviewed her about her research and her experiences.



Please tell us a bit about your research?

My research focuses on the interlinkages between climate variability, nutrition and health, and rural households’ welfare. The intensity and frequency of weather extremes such as floods, droughts and heat waves have increased globally. The negative effects of weather extremes on nutrition and health vary depending on age and gender. Therefore, I investigate how weather extremes affect the nutritional and health outcomes of children under five, and if weather effects explain the gender health gap among men and women of working age.

You were conducting your field research in Uganda during the outbreak of COVID-19. How did this affect your research?

The field survey was conducted in the frame of a collaborative partnership between Makerere University and ZEF under the Volatility project. As the lockdown in Uganda was implemented just at the time we had planned to start the survey, the pandemic created many uncertainties and I had to stay longer than planned in the field. Working under the curfew hours was quite a challenge since most of the sampled households were in remote and shock-prone districts.

One of the impacts of COVID-19 is the disruption of food systems. Will COVID-19 exacerbate this phenomenon?

COVID-19 is an additional challenge to other shocks threatening food systems in East Africa, such as floods and

locust swarms. First, there was a shift of focus in addressing the issues mentioned above as food insecurity and poverty increased. Second, the confinement measures implemented to contain the virus led to limited accessibility to sufficient and nutrient-rich food. Farmers were unable to access key production inputs and markets on time, which caused a reduction in agricultural incomes.

How exactly did the COVID-19 pandemic affect your respondents?

Changes in consumption patterns during the lockdown period were reported in our baseline survey. On average, at least half of the household consumed less expensive food, stopped eating certain kinds of food and ate limited portions or a reduced number of meals. Access to markets outside of the respondents’ villages was limited, especially in the districts that had recorded cases of COVID-19. In addition, food was more expensive in markets, especially in food-insecure districts such as Moroto.

What kind of measures did the Government of Uganda take to mitigate the impact of the pandemic?

Safety nets – the COVID-19 food relief program was implemented in just two of Uganda’s urban districts. It was not inclusive since the poorest and highly food-insecure districts experiencing multiple shocks were not targeted. Other government measures included payment deferrals and other financial support programs.

Do you have any advice to students planning to conduct fieldwork?

Collaborative field research with well-established research institutions is extremely valuable. Such partners are well-informed and help provide solutions that would be difficult to realize independently. Students planning to conduct fieldwork should be flexible during these uncertain times and should be well-informed of the situation on the ground before leaving for the field.

Thank you for the interview.



FOREST FIRES ARE NOT GENDER NEUTRAL

INTERNATIONAL RESEARCH PROGRAM LOOKS INTO SOCIAL AND GENDER TRANSFORMATIONS LINKED TO FIRE EVENTS IN THE AMAZON



The Amazon region is experiencing unprecedented changes to its biodiversity, climatic conditions, and landscape. Deforestation and biodiversity loss have increased in the region in recent years, due to human-made fires, mainly set to clear land for extensive cattle ranching, agriculture, oil extraction, and mining. In 2019, the huge fires that destroyed primary forests caused regional and international outrage and condemnation. However, human-made fires continue to devastate large parts of the Amazon. Several reports show that 2020 saw the worst fires in the region since 2012.

During the COVID-19 pandemic controls on fire use have been further relaxed, exacerbating the lack of effective protection policies. Affected by the pandemic, indigenous and other local communities have had to restrict their movements, impeding them from guarding for intruders who ignite fires on their lands.

Impact of fire on local communities and women

Studies show the severe impact of fires on climate change and biodiversity loss and, through deforestation, on local livelihoods. More recently, studies have also shed light on changes in land use and its economic drivers locally and in relation to the global economic incentives for deforestation. Less understood are the power dynamics and conflicts of interest among local people living in the Amazon region. Local communities have no choice but to adapt, transform and/or combat the impact of environmental changes, with resources that vary along gender and ethnic disparities. Women are



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affected to a disproportionate extent by the effects of the fires. For example by the negative impact on tasks assigned to them socially, such as caring for their families' health and fetching fresh water for cooking and cleaning. Additionally, fire reduces access to non-timber forest products that are part of daily diets and women's income-source.

Decisions on how to manage land, including fire-ignitions, are usually made by men; therefore, alternative approaches consider them as privileged actors. These approaches not only ignore gender-differentiated impacts, but also women's potential to contribute to reducing fires as well as the increasing number of women's economic initiatives based on the sustainable use of forest services. It is crucial to analyze the link between power relations and the contentious management of land clearance through fire to avoid the reconstruction of traditional and discriminatory gender relations in environmental decision-making

A new research project looks into the issue

The International Research Program for the Assessment of Social and Gender Transformation linked to Fire Events in the Amazon Region (IRASAG-Amazon) seeks to address the highlighted lack of attention to social and gender issues in analyses of fire events. The program aims to foster exchange on this common concern of academics and practitioners in the Amazonian countries of Brazil, Bolivia, Colombia, and Peru. With funds from the International Office of the University of Bonn and led by ZEF, the research partners are working together on a comprehensive proposal to link research and policy towards informed decision-making on land management that reduces both the fires and their impacts on deepening gender inequalities.



Many women took part in a protest march of chestnut pickers (below). Woman working in the Amazonian forest (above). Photos: Lorenzo Soliz

A PANDEMIC AGAINST WOMEN AND GIRLS

DOMESTIC VIOLENCE IN URBAN HONDURAS DURING THE LOCKDOWN IN SPRING 2020



Mural with the image of the Honduran activist Berta Cáceres who was killed in her own home. Photo: David Díaz (Pixabay)

In March 2020 I landed in Honduras, ready to pursue the data collection phase of my PhD on a subject related to women's perceptions and experiences regarding public space. At the very same time the significance of the pandemic became apparent. Guided by my supervisor, tutor and ZEF faculty, I adapted my research and utilized my previously established networks to study the immediate impact of the pandemic on women and girls in Honduras.

Stay-at-home-orders threaten the lives of women

After the World Health Organization (WHO) declared an international public health emergency, the Honduran Government implemented mobility restrictions, neighborhood closings, and suspended constitutional rights. At the same time the authority of the Armed Forces was strengthened. Subsequently, neglected urban settlements in the Central District of Honduras experienced food shortages, water cutbacks, social conflicts, and increased violent acts against women.

During the first 15 days of the mandatory quarantine, the National Emergency System reported 4,245 complaints of domestic and family violence throughout the country. For many women in urban settlements the stay-at-home policies were not the safer option. Quite the opposite, it increased their risk of domestic violence and reduced their access to help and support such as birth control and shelters. Complemented by an unequal increase in productive and reproductive work, the situation put additional pressure on mental health and well-being. The dynamics of financial and relational dependency snowballed into an increased incidence of psychological, physical, and sexual coercion. Underfunded public institutions were not equipped to respond adequately to these conditions. Thus, the public health measures aggravated existing inequalities, placing women and girls at greater risk.

Systematic violence against women

Violence against women is systematic and widespread in Honduras. Every 22 hours a woman dies, constituting an alarming situation of femicide. These hate crimes based on gender have an impunity rate of 95 percent in the country. Additionally, an average of 58 complaints are filed daily for domestic violence and only 22 percent result in favorable resolutions for women survivors. The situation is compounded by precarious legal structures that leave victims of gender-based violence with limited alternatives. The entire legal system continues to endorse laws that, instead of criminalizing offenses against women, serve to intensify impunity.

There are various cultural, social, educational, and judicial factors that reiterate the traditional division of gender roles which leave women in disadvantaged positions. Media outlets and news channels in Honduras use language that reinforces gender stereotypes, reporting violence against women as isolated events. Education and social platforms condone aggression and usually foster victim blaming. In Honduras, the evidence points to violence against women as a structural phenomenon.

For more information about the pandemic in Honduras, read the author's blog post ["Beyond Covid-19: The real pandemic in Honduras"](#).



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AIR POLLUTION IN BOGOTÁ

THE SOCIO-ENVIRONMENTAL CONSTRUCTION OF A HEALTH PROBLEM

Colombia's capital Bogotá faces a severe air quality problem which has led to an increase in the prevalence of respiratory diseases. The city's heavy air pollution is mainly caused by the use of fossil fuel energy, diffusing pollutants into the air. Although public policies have tried to tackle the problem by controlling vehicle emissions and air monitoring, this has been insufficient because they left out the social and environmental factors that have historically shaped the city. If we want to better understand the poor air quality in Bogotá we have to take a look at its historical construction as an urban territory.

Due to its high altitude of 2640 meters above sea level, Bogotá's residents have an increased breathing rate to compensate for oxygen deficiency and are at risk from acute pulmonary oedema. The city has a moderate climate with an average temperature ranging from 3 to 20°C and steady rainfall throughout the year. Trade winds from the northeast clean the atmosphere, but sometimes carry pollutants like smoke and Sahara sand into the city. Wind, rain, high altitude, and moderate temperature make up Bogotá's natural atmosphere.

The historical role of social inequality

Since colonial times, the city has been characterized by an unequal spatial distribution of its population, mainly determined by the price of land. The best land in Bogotá's northeast are owned by the wealthy, while the low and flood-prone downstream areas in the south and west are inhabited by the poor. The air, like an image in a mirror, reflects what is happening on earth. The city's atmosphere is divided into two kinds of spaces: a "normal" city with hygienic conditions, full public services, and clean air; and a "subnormal" or "informal" city, which is poor and disconnected, with polluted air and high social and environmental risks.

Waste has polluted the air of the "subnormal" city since the 1950s when Bogotá had its biggest growth in terms of space and population. A dysfunctional waste collection system produced a lot of stench and messy places in the period from the 1950s to the 1990s.

Urban traffic and the burning of fossil fuels

Vehicle emissions became the biggest problem for the city's air quality from the 1970s. Back then, gasoline vehicles were the main means of transportation in Bogotá. Old models with outdated technology have filled



The red TransMilenio buses are powered by diesel and emit lots of pollutants. Photo: German Rojas (Pixabay)

the city's streets for decades, producing lots of pollution with no public policies in place to control it. In the poorest areas in the city's south and west, houses were built close to factories. In addition, large avenues crossing the city from the north to the south were constructed, carrying heavy diesel traffic through the urban area. The introduction of the diesel-powered bus rapid transit (BRT) system TransMilenio in the first decade of the 21st century only made matters worse. By 2018, diesel and gasoline contributed about 45 and 15 percent, respectively, to the total particulate matter emissions. Particulate matter is a major environmental problem and the most dangerous pollutant for public health, as it increases the risk of cardiac, brain and lung diseases.

Unequal exposure to environmental health risks across urban zones in Colombia's capital is yet to be taken seriously by its municipalities. The case of Bogotá highlights the variation in the extent to which different parts of a city are affected by environmental risks.

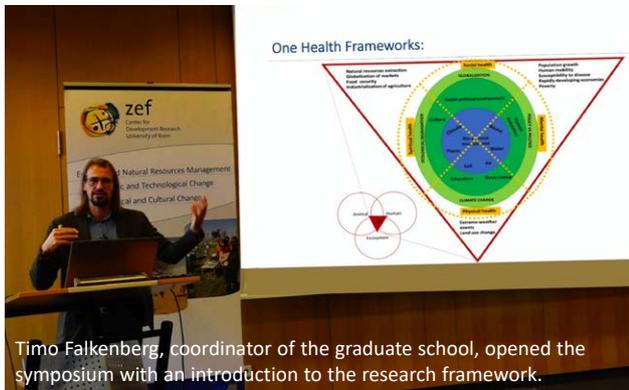


Mauricio Alberto Angel Macias

is a medical doctor for public health at the National University of Colombia and a former doctoral researcher at the [Doctoral Studies Support Program \(DSSP\) on "Environmental peace building and development in Colombia"](#), a project run by ZEF and the Institute of Environmental Studies (IDEA) at the National University of Colombia. Mauricio is the first alumnus of the DSSP program.

[Contact](#)

HUMAN, ANIMAL, AND ENVIRONMENTAL HEALTH ARE INTERCONNECTED INTERNATIONAL SYMPOSIUM AT ZEF ON WORLD ONE HEALTH DAY



Timo Falkenberg, coordinator of the graduate school, opened the symposium with an introduction to the research framework.

The graduate school “[One Health and Urban Transformation](#)” celebrated the World One Health Day on November 3, 2020 with an online symposium. Researchers presented their research findings on the impact of urban systems on human, animal and environmental health in Germany, Ghana, India and Brazil.

Reflecting the transdisciplinary approach of the graduate school, the event provided an opportunity for dialogue between more than 100 participating government officials, donors, grassroots activists, and scientists. The importance of One Health, the contributions of the graduate school to the One Health concept, remaining research gaps, and the future of One Health were among the topics discussed.

The importance of One Health

The current pandemic is an example of disease emergence at the human-animal-environment interface. COVID-19 spread to humans due to a combination of factors, including close contact with wildlife, changing diets, increases in food demand, poor sanitary conditions in food markets and processing units, global movement of people, and a shift in political priorities away from the public health system. Other challenges include unregulated land-use changes, antimicrobial resistance, and the socio-economic conditions that expose people to environmental



The One Health umbrella.

Research at the One Health and Urban Transformation graduate school

The graduate school extended the scope of One Health research from disease prevention to the promotion of physical, mental, social and spiritual health. Healthy environments such as clean air, water and soils are now placed at the center. The research clusters within the project are redefined to focus on: the burden and determinants of antimicrobial resistance; the effects of urban land-use changes, green spaces, and water management on health; the evaluation of policy-change processes and the implementation process of One Health policies; the interactions between food, sustainability, and health.

The future of One Health research

One conclusion drawn at the symposium was that future One Health research has to place more focus on practical applications. While the concept of One Health is convincing and gets traction at the international level, it remains unclear how to best operationalize the approach. One Health has to transcend its focus on infectious diseases towards a more integrative approach that looks at social, economic, and environmental determinants of health. The integration of ethical debates into One Health is also required to address issues of equality and justice, not only for human health but also for animal welfare and environmental conservation.



One Health graduate school students before the pandemic.

The whole symposium is documented online, including videos of the presentations:

<https://www.zef.de/project-homepages/one-health/template-following/symposium-2020.html>

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"WE WOULD RATHER DIE FROM COVID-19 THAN FROM LACK OF FOOD." IMPACT OF THE PANDEMIC ON RURAL-URBAN SETTINGS IN ETHIOPIA

ZEF, the Department of Geography at the University of Bonn, and Hawassa University in Ethiopia recently started a research project on the impacts of COVID-19 in rural-urban interfaces in Hawassa, Ethiopia. Rural-urban interfaces refers to areas which are neither "fully rural" nor "fully urban." Urban and rural conditions are visible, though it is not possible to clearly define where the "rural" ends and the "urban" begins. The project is funded by the Transdisciplinary Research Area "Innovation and Technology for Sustainable Futures" (TRA 6), of the University of Bonn. This article draws on key informant interviews and focus group discussions that were conducted by local research staff in November 2020.

Information and misinformation about COVID-19

The city of Hawassa, with over 300,000 inhabitants, is located approximately 300 km south of Ethiopia's capital Addis Ababa. Most of the people residing in its rural-urban interfaces first learned about the COVID-19 pandemic through state media, mainly TV and radio. Awareness about the threat COVID-19 poses is generally high; an interviewee said "COVID-19 is a killer." In March 2020, at the onset of the pandemic, the Ethiopian government quickly imposed strict measures including a national state of emergency, the closing of schools and universities, travel restrictions, as well as enforcing social distancing rules, the wearing of face masks and the use of disinfectants.

By late 2020, schools and universities had been closed for nine months. Travel restrictions have been partly lifted, though regulations are still in place to reduce the number of travelers in public transport by half. Some interviewees perceive that those traveling from rural areas to the city are potential transmitters of the COVID-19 virus. Furthermore, interviewees stated that they considered that people wearing face masks were infected. An informant shared this story: "My son had a hospital appointment. When I took him there, we were given masks. But after we returned home, we stopped using the masks because people started to run away from us assuming we were infected."

COVID-19 aggravates livelihood risks

Poverty, insecurity due to ethnic violence, food insecurity and vulnerability to natural disasters are regular phenomena that the people of Hawassa's rural-urban setting have to cope with. COVID-19 is 'only' an additional problem and is not considered the most important one.



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Small shops in Hawassa.
Photo: Girma Kelboro

Beside poverty and other insecurities, interviewees mentioned that they were more concerned with, for example, flooding from Lake Hawassa or the outbreak of desert locust swarms than COVID-19. One of the common sayings we heard was: "No one can escape from death; we would rather die from COVID-19 than from lack of food."

After more than nine months of public closures, many people were suffering from lack of food and financial means to cover their expenses. Furthermore, younger people who had to stay home due to measures put in place to curb the spread of COVID-19 have become more vulnerable to risks such as forced marriage, domestic violence or even rape.

Implications and the way forward

Based on the outcome of our survey we recommend that measures to address and reduce the risks of COVID-19 should better take into account the particular livelihoods of people living at rural-urban interfaces. COVID-19, though still an eminent danger, is but one among many risks that people face on a day to day basis. It is therefore important that global and national actions, especially vaccination campaigns, do not overlook other areas of importance; most notably, people's livelihoods.

How the research was conducted

As it was not possible to travel, Girma Kelboro prepared the research process and interview guidelines in Amharic (the national language). Kelboro then recruited research assistants and a senior scientist for local field research coordination and supervision. He trained and oriented the team through zoom meetings and phone calls. They then engaged in the field data collection following the guidelines. Regular reports and updates, as well as discussions to find solutions for the adaptation to local realities were part of the practical approach.

ROLE PLAYING GAME AS A WAY TO BETTER UNDERSTAND FLOOD RISKS CLIMAFRI PROJECT DEVELOPS ADAPTATION STRATEGIES IN WEST AFRICA

Flooding severely affects parts of most West African countries almost every year – with devastating impacts like loss of human lives, destruction of property and infrastructure, and loss of agricultural lands.

To help local communities better cope with flooding and its effects, the project “Implementing Climate-sensitive Adaptation Strategies to Reduce Flood Risk in the Transboundary Lower Mono River Catchment in Togo and Benin” (CLIMAFRI) was developed by an international consortium, of which ZEF is a member. The project aims to develop and implement adaptation strategies for the sustainable management of flood risk and natural resources in this region of West Africa.

Simulating flood scenarios using the Role Playing Game

ZEF devised a role playing game to assess communities’ responses and adaptation options towards floods. The role playing game simulates possible flood scenarios, from extreme to low severity, helps to understand behavior, and allows the players to learn and improve their adaptive and anticipatory abilities.

Suspended research travels and social distancing regulations due to the COVID-19 pandemic were challenges for the development and implementation of the Role Playing Game. The game has to be played in groups, sometimes with more than 10 people per game. Fortunately, the project has an MSc student, Essi Nadège Parkoo, based in Lomé, Togo, who was trained digitally. After the restrictions in Togo and Benin were eased, Ms. Parkoo was able to conduct the role playing game with local communities in September and October 2020 while complying with health and safety protocols.

Challenges for local communities

The game reveals that players struggle to find effective strategies to cope with extreme flood scenarios. In doing so, they use all their resources (number of points in the game context) to be able to afford and/or implement strategies. Several flood events occur during the course of the game (one round represents one year). If players choose to expend all their available resources to deal with a severe flood, they are at risk of losing their livelihoods during the next flood event. The greater the flood risk, the more players lost their points and had to look for additional points to be able to cope.

Ressources for coping strategies need

The game highlights how difficult it is for populations to develop suitable strategies to cope with floods, as they lack the monetary resources needed for flood management. Where communities have limited sources of income and flood-adjustment options, the effects of flooding on agriculture and housing appear to be even more severe. Nevertheless, some coping strategies have already been



Game with a group of women (above).
Flood protection of a reinforced house wall (below).
Photos: Essi Nadège Parkoo

adopted by local communities, including the use of sandbags and wood to raise house entrances, the building of cement houses, the improvement of drainage systems on farm land, the installation of dams and dikes, and by temporarily moving to other places.

Further analysis will look into the acceptance by communities and the effectiveness of strategies to combat flood risk in the Mono River catchment. In the context of the CLIMAFRI project, this will help prioritize significant adaptation strategies for implementation.

CLIMAFRI is funded by the German Federal Ministry of Education and Research (BMBF). More information on: <https://www.bmbf-client.de/projekte/climafri>



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STUDYING ONLINE POST-COVID-19 THE ONLINE DEVELOPMENT STUDY AND RESEARCH COMMUNITY (ODSRC) PROJECT AT ZEF

The COVID-19 pandemic presented a challenge to the Bonn International Graduate School for Development Research (BIGS-DR) at ZEF, since most doctoral students were unable to travel to Germany/Bonn, let alone come together in a classroom. The digitalization of the course program allowed the 2020 student cohort (starting their doctoral studies in autumn 2020) to successfully study together while being physically separated from teachers and each other.

Tackling the challenge of running the ZEF doctoral program in a virtual way made the BIGS-DR team think about a future structure for online learning. The main goal is to integrate ZEF's global development research network into such efforts, allowing associated lecturers, alumni and students to join from around the world to bring in new ideas and perspectives. The team of the newly established Online Development Study and Research Community (ODSRC) project is committed to achieving this goal.

ODSRC was initiated in summer 2020, after a successful application for funds from the German Academic Exchange Service (DAAD). The program is run in cooperation with ZEF's long-standing partner, the International Program in Agricultural Development Studies (IPADS) at the University of Tokyo, Japan, and it is funded by the International Virtual Academic Collaboration (IVAC) of the DAAD.

Virtual lectures and teaching with international partner institutes

The bedrock of the new ODSRC project will be a virtual teaching exchange with international partners. A pilot project was carried out in autumn 2020 with IPADS in Tokyo, which gave a set of online lectures in the interdisciplinary course of ZEF's doctoral program. ZEF, in turn, offered a set of online lectures in which ZEF and IPADS students participated.

The goal of the BIGS-DR/IPADS online collaboration is the integration of virtual lectures and teaching modules into their respective curricula. Such close collaborations might follow with other institutes too. Lecturers from partner institutes, including colleagues from Addis Ababa University (Ethiopia) and Cheikh Anta Diop University (Dakar, Senegal), have already taught in ZEF's disciplinary doctoral courses. Other partners are being contacted, including the DAAD Doctoral Studies Support Program (DSSP) with Colombia, the Graduate Studies

Programs of the West African Science Service Centre on Climate Change and Adapted Land Use (WASCAL), the DAAD Ghanaian-German Center for Development Studies (GGCDS) and the West-African Biodiversity and Ecosystem Services (WABES) initiative.

Building on the online teaching exchange with international partners, the ODSRC project will offer online modules in development studies, created in collaboration with the participating lecturers. The modules will offer an introduction into development studies from different academic perspectives. They will not be exclusively for BIGS-DR or IPADS students but open to students from all interested international partners, with a focus on master's students and aspiring doctoral students. Five modules have been planned so far: Introduction to Development Research; Social, Economic and Ecological Systems; Social Sciences in Development Research; Food Security, Agricultural Sciences and Ecology; and Sustainable Natural Resource Management. The modules will be organized online making use of pre-recorded lectures and self-study materials. Online support sessions by tutors and an online summer school will complete the program.

Peer-to-peer workshops

The ODSRC project also intends to provide online workshops to be held by ZEF and IPADS doctoral students and alumni for their peers. ZEF alumni and advanced doctoral students have gained valuable skills, not only while conducting their research but also through the professional experiences they have gathered since their graduation, such as through jobs with universities, governments, NGOs or the private sector. The ODSRC workshops aim to make such know-how and skills accessible for current students to help them complete their research and grow professionally with an eye on their future careers. Such workshops have already started, in late 2020, with sessions on topics such as: Meta-Analysis in R, Transdisciplinary Research Processes and Science-Policy Engagement, Digital Soil Mapping Using Random Forest Machine Learning, and Field Experiments in the Social Sciences.

The main challenge for the project is to establish an open Learning Management System (LMS). The ODSRC team is currently exploring the best options to create a simple, open system which gives students from across the world access to the online learning modules and workshops.

The ODSRC teaching exchange program, online study modules and workshops aim at establishing an online network which enables a frequent and equal exchange in development studies and research. With such a network and platform in place, working together in a North-South, South-North and South-South direction will become much easier and more affordable.



Max Voit
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FACTS & NEWS

NEW PROJECTS

New project translates scientific results into policy advice

"At the Science Policy Interface: Land Use Synergies and Conflicts within the Framework of the 2030 Agenda" (LANUSYNCON) is a new project at ZEF. It aims to examine the complex trade-offs between different Sustainable Development Goals and to translate scientific knowledge into relevant information for policymakers. **LANUSYNCON** combines expertise from various scientific backgrounds in a trans- and interdisciplinary research framework with case studies in Kenya and Tanzania. The project is funded by the German Federal Ministry of Education and Research (BMBF). *More on our website www.zef.de/lanusyncon.html and on Twitter [@lanusyncon](https://twitter.com/lanusyncon).*



DSSP project entered new phase

The **Doctoral Studies Support Program (DSSP): Environmental peace-building and development in Colombia** entered a new phase from 2021 to December 2025. The project focuses on the general topic "Environment, Peace Building and Development in Colombia". The main objectives are introducing interdisciplinary, integrative and innovative scientific approaches, concepts and methods on environmental relations, natural resources and conflict; Developing a research agenda addressing the Sustainable Development Goals; internationalizing science and fostering comparative analysis of research sites/regions with transnational and regional partners; exploring and critically reflecting the role of higher education for the Sustainable Development Goals. The project is funded by the German Academic Exchange Service (DAAD).

More on our website: <https://dssp-colombia.org/> and on Twitter [@DSSPBonn](https://twitter.com/DSSPBonn)



EVENTS AND NEWS

Ndidi Okonkwo Nwuneli on agriculture businesses at ZEF

One of the most prominent recent speakers at the weekly ZEF colloquium was **Ndidi Okonkwo Nwuneli**, a successful entrepreneur and co-founder of [Sahel Consulting](http://SahelConsulting.com). On January 14, 2021 she talked about her new book "Food Entrepreneurs in Africa: Scaling Resilient Agriculture Businesses". She showed how to start and develop successful and resilient agriculture and food businesses in Africa in practice. If you missed her presentation you can watch the recording of the event on our [Youtube channel](https://www.youtube.com/channel/UC...) where all colloquia are available.



Photo: Ndidi Okonkwo Nwuneli
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ZEF Data Portal updated!

The ZEF Data Portal, a metadata catalogue providing access to a part of the ZEF's research datastock, has been redesigned. The Portal, based on open standards, not only is much more user-friendly than the previous version, but can also be accessed now from various devices (smartphones, tablets). This also applies to the integrated map viewer, in which interactive web map layers from ZEF's own map server as well as from external service providers can be combined, displayed, queried and printed.

Currently, about 200 metadata entries are registered. These include doctoral theses from ZEF's doctoral program, which are linked up to the underlying research data, as well as surveys, statistics, and geographic data files linked to web map services for preview.

[Link to portal](https://www.zef.de/data-portal/)

