

Towards Zero Hunger Partnerships for Impact

Connecting global challenges with local solutions
SDG Conference August 30-31, 2018, Wageningen



WAGENINGEN
UNIVERSITY & RESEARCH



100 years
1918 — 2018



Towards Zero Hunger: Partnerships for Impact

Conference August 30-31, 2018

In 2018 Wageningen University & Research (WUR) celebrates its 100 years anniversary. Many activities within the themes Life, Food and Earth will take place. As part of the activities Wageningen University & Research (WUR) hosts the international conference 'Towards Zero Hunger: Partnerships for impact' which will take place at Wageningen Campus on 30-31 August 2018.

The conference objective is to build bridges between the global challenges and local solutions, and between the various stakeholders (policy, science, business, civil society) to work in new partnerships on achieving the Zero Hunger targets in 2030 (SDG2). With sessions on evidence base for food & nutrition security, balancing synergy and trade-offs between SDGs, and policy-making & governance to achieve the SDGs, pathways for transformative change will be identified. The invited target groups for this conference include government, business, civil society and research, including young professionals and students.

17 Partnerships for the goals



Global challenges, local solutions

Global Challenges

The triple burden of malnutrition affects all countries in the world. Globally, 800 million people are undernourished, 2 billion are overweight or obese and 2 billion are micronutrient deficient. In addition, intensification of food production, processing, and marketing has adverse effects on natural resources. The Sustainable Development Goals (SDGs) target these interrelated challenges. It is not only about improving food security, but also about more healthy diets and enhancing sustainable and resilient food and nutrition systems (i.e. policy, science, business, civil society).

Local Solutions

To reach zero hunger, new sustainable and resilient food and nutrition systems are required, matching local circumstances with higher scale-levels conditions. Development of such solutions requires the involvement of all parties that are playing a direct or indirect role in the food and nutrition systems.

Partnerships - Strengthen the means of implementation

Working with over 2000 partners ranging from local NGO's to multinationals, with scientists and authorities worldwide, WUR is fit for new alliances for sustainable development.



Conference themes

During the conference, presentations, workshops and dialogues will be organised on three topics:

- *Evidence base*
Identify specific needs for multi-disciplinary indicators, methods and approaches that support the development of healthy sustainable and inclusive food systems
- *Synergies & trade-offs*
Findings ways to identify synergies and address trade-offs within and between SDG2 and other SDGs
- *Governance*
Explore new alliances for food security and showcase diversity in food governance

The final session is entitled 'Food system transformation pathways to achieve the SDGs'. In this session food system transformation pathways towards reaching the SDGs will be discussed. Our aim is to connect the aspirational nature of the goals to tangible actions and work in practice.



Involving the next generations

Our next generations have a key role to play in solving the challenges of today and tomorrow. With their open-minded, bold and novel ideas, students and young professionals can challenge leaders in the industry, research and policy and societal organisations to think and act differently. Wageningen University & Research invites youngsters to help achieve the Sustainable Development Goals and call them to come up with solutions.

E-conference; connecting youngsters worldwide

The e-conference provides a digital platform in which university students and young professionals worldwide will work in teams to create solutions to interconnected challenges related to Zero Hunger. By exchanging knowledge, sharing ideas and approaching these challenges from different disciplinary angles, they will gain practical experience in working with the SDGs as well as generating a network of innovative youngsters. As such, they are creating partnerships for impact.

The conference aims to be the start of a global student movement, so that the knowledge gained on SDGs is not just utilized once, but keeps evolving and expanding via continued interaction between university students and young professionals.

The e-conference is expected to contribute significantly to the conference while creating a next generation alliance.



Wageningen Borlaug Youth Institute

In 2018, Wageningen University & Research organizes Europe's first Borlaug Youth Institute, named after the Nobel Prize laureate Dr. Norman E. Borlaug. With this programme, secondary school students are challenged to come with creative, innovative and scientific solutions 'how to feed the world through science'.

With appealing research questions and guidance by Wageningen students and professors, these youngsters will play a starring role 'to feed the world' – now and in the future to come. At the Wageningen Borlaug Youth Institute on 31 August 2018, they will get the chance to speak with world leaders, captains from the industry and great scientists to convince them about their original and ground-breaking ideas. A selective group of students will even take their knowledge and creativity to the Global Youth Institute in the United States in October 2018 to talk with youths and world leaders from the rest of the world 'to feed the world'.

2 Zero
hunger



End hunger, achieve food security and improved nutrition and promote sustainable agriculture

Population growth, urbanisation, dietary change, pressure on ecosystems and climate change are among the factors contributing to greater uncertainties about future food and nutrition security. Food and nutrition security is also increasingly considered as a global public good, and needs to be supported for the sake of security and stability for the global population.

An estimated 805 million people or 12 percent of the global population still suffer from chronic hunger, and 2 billion people around the globe face malnutrition due to insufficient or unbalanced diets. The Wageningen Zero Hunger programme focuses on innovative research for enhancing global food and nutrition security (FNS). It aims to identify options, opportunities and strategies for improving nutrition and strengthening sustainable global and local food systems by developing science-based solutions, creating partnerships and delivering change.



Transforming our World

Some examples

Being the leading SDG for the conference and strongly interrelated with other SDGs, the following pages provide some examples of WUR projects relevant for these SDGs.



N2AFRICA

N2AFRICA is a large scale, science-based “research-in-development” project focused on putting nitrogen fixation to work for smallholder farmers growing legume crops in Africa. Our vision of success is to build sustainable, long-term partnerships to enable African smallholder farmers to benefit from symbiotic N₂-fixation by grain legumes through effective production technologies, including inoculants and fertilizers. The project will run for five years and is led by Wageningen University & Research together with the International Institute of Tropical Agriculture (IITA) and the International Livestock Research Institute (ILRI) and many partners throughout Africa. N2Africa reached more than 230,000 farmers who evaluated and employed improved grain legume varieties, rhizobium inoculants and phosphate based fertilizers.



Banana cultivation

Bananas are a staple food for more than 400 million people in the tropics. They are the fourth most consumed food crop, the most consumed non-cereal staple food, and the most consumed fruit in the world. Global banana production is, however, under critical attack by widespread fungal diseases. There are two major causes Panama disease and Black Sigatoka. The livelihoods of millions of people are at stake due to the Panama disease and Black Sigatoka. The public-private collaboration programme PromoBanana focuses on the Philippines where fundamental and applied knowledge about Panama disease and Black Sigatoka is used for setting up a professional service laboratory. This laboratory offers small and large banana growers the possibility of early disease detection, to prevent spreading, and to optimise fertilisation.



3 Good health and well-being



Ensure healthy lives and promote well-being for all ages

Bad eating habits, over-eating, malnutrition or consumption of contaminated foods are the main causes of adverse food related health effects. In order to prevent this and thus improve human health via a healthy diet we need to develop tools and knowledge. Wageningen contributes to international research agendas by looking into subjects as 'how can we reduce poor eating habits', 'which foods have the best nutritional and health promoting value', 'How can we innovate, produce and distribute these foods in a sustainable way' and 'How can we balance food safety and healthy nutrition'. New findings on impacts on human health need to be translated into best practices for food composition (e.g. reformulation), production, and consumption.

Healthy food helps heart patients

Does a healthy diet help heart patients?

To find out, researchers from Wageningen monitored several thousand heart patients after dividing them over two groups on the basis of their eating habits.

The first group had a healthy eating pattern, whereas patients from the second group consumed more sugar, unhealthy fats and salt. Both groups received optimal medical care. The researchers found that the mortality risk for 'healthy eaters' during 6,5 years was 30 percent lower. That means that next to good treatment, a healthy diet contributed to the chance of a longer lifespan.



SOLARMAL: more food without malaria

Every minute, a child dies of malaria. The disease is costing Africa US \$ 12 billion per year in healthcare costs and lost agricultural production. Finding a way of combating malaria without using isecticides is essential to world food production.

The use of newly developed mosquito trap incorporating human odour has resulted in a 70% decline in the population of the most significant malaria mosquito on the Kenyan island of Rusinga. After the introduction of the odour-baited traps on the island the proportion of people with malaria was 30% lower among those living in houses with a trap compared to those living in houses who were yet to receive a trap. Results of the study were published in *The Lancet*. The odour baited trap may also offer a solution to diseases like dengue fever and the Zika virus.



6 Clean
water and
sanitation



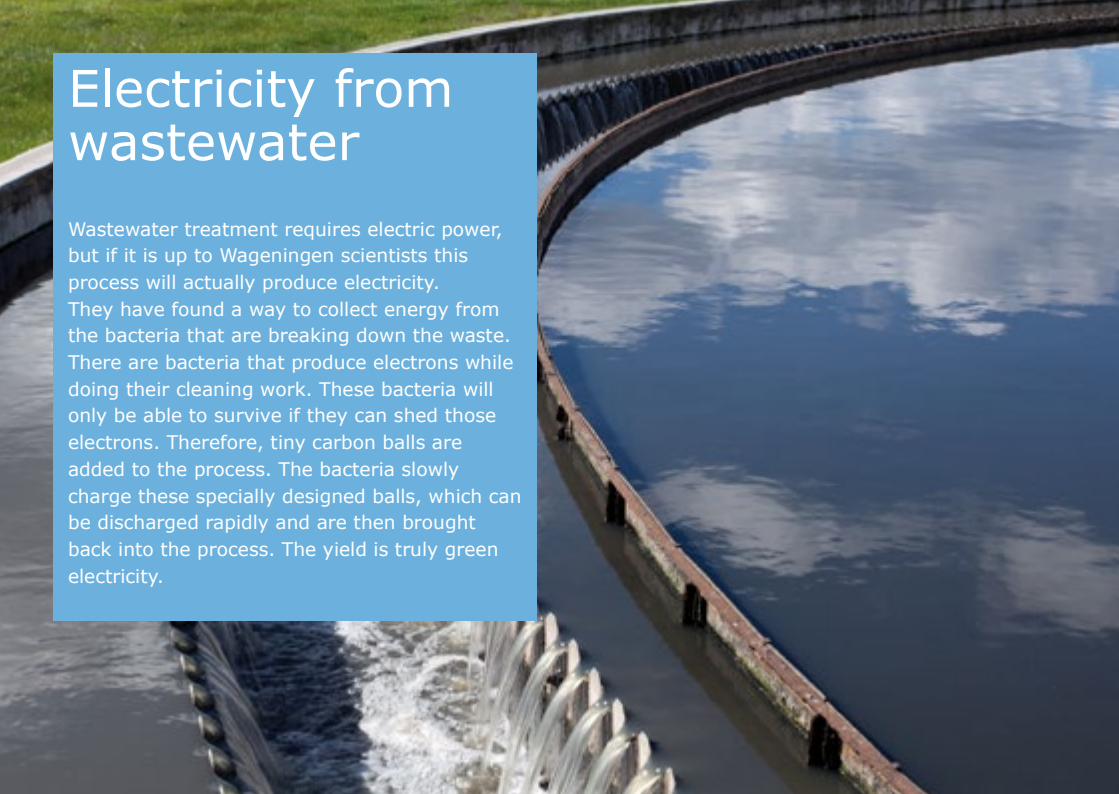
Ensure availability and sustainable management of water and sanitation for all

Water quality is an important factor for global food production. With the population of the world growing and becoming more affluent, managing of the world's resources of fresh water becomes increasingly complex.

Water management is not only crucial for the human interaction with extreme events like drought and floods but also a direct factor in the quality of daily life. To feed and create a living environment for the world, today and in the future, is focus of many researchers of Wageningen University & Research.

Electricity from wastewater

Wastewater treatment requires electric power, but if it is up to Wageningen scientists this process will actually produce electricity. They have found a way to collect energy from the bacteria that are breaking down the waste. There are bacteria that produce electrons while doing their cleaning work. These bacteria will only be able to survive if they can shed those electrons. Therefore, tiny carbon balls are added to the process. The bacteria slowly charge these specially designed balls, which can be discharged rapidly and are then brought back into the process. The yield is truly green electricity.



Living coastal protection

Eco engineering can be used to protect the coast of Bangladesh. Every year, floods wash away the earthen dikes along the Bangladeshi coast. A barrier could be built in the sea to break the waves. Natural processes could be used to help build this barrier, researchers from Wageningen and other institutions have shown.

When a wall of concrete blocks is built just off the coast, oysters will start living on this wall and over time a semi-natural reef will be formed. Behind this reef, mangrove trees could be planted. This vegetation would break the waves before they reach the land. At the same time, it forms a natural habitat for fish and crabs, which the local population could eat or sell to generate some extra income.



11 Sustainable cities and communities



Make cities and human settlements and inclusive, safe, resilient and sustainable

The increasing concentration of people in urban environments means that social, economic and environmental demands for living and working are under pressure. the lifestyle of people, varying during lifetime, is influenced by the direct physical environment, Greening the city increases air quality, reduces noise nuisance, seduces to physical activity, reduces stress and aggression and increases social cohesion. Wageningen Metropolitan Solutions provides information on ecosystem services of urban green infrastructure and the urban ecosystem; develops planning, design and assessment tools to optimize urban green; Creates Cost & Benefit Analysis of urban green; Explores new approaches like biomimicry and its added value; and Understands how to reach and to cooperate with different urban groups and stakeholders.

Metropolitan solution

Cities use up to 75% of the natural resources and produce 60-80% of carbon gass emission. The transition to a circular design of cities is getting more and more urgent. With partners from science (TU Delft, Massachusetts Institute of Technology/MIT), industry (shell, KPN, IBM, Cisco) and government (city of Amsterdam, city of Boston) Wageningen University and Research had developed the Amsterdam Institute for Advanced Metropolitan Solutions. An institute in the area of metropolitan technology and design. Amsterdam functions as a living lab for metropolitan research and acts as an accelerator to translate the research results to other cities and metropolies.




Urban Agriculture

Urban agriculture can contribute to urban needs by connecting local food and energy production to community goals, like care for the urban environment, room for recreation in urban areas, care-facilities or educational possibilities. Urban agriculture can be a garden on a rooftop or balcony, or professional urban food production and processing at the edges of the city. Urban agriculture can contribute to a liveable sustainable city in many ways. It may help to reduce the urban environmental footprint.

More than half of the global population lives in cities. This urbanisation leads to high claims on land and space, a growing need for liveable urban structures and increasing demands for recognisable, locally produced food. Cities and their surrounding countryside are becoming more and more entwined. WUR sees opportunities for new forms of agriculture.





12 Responsible
consumption
and production



Ensure sustainable consumption and production patterns

Globally, a third of all food is lost or wasted between the farm and the fork. Reducing food loss and waste can be a triple win: It can save money for farmers, companies, and households; wasting less can feed more people; and reductions can alleviate pressure on climate, water, and land resources. But it is not only about waste, also current processes for food production need to be modernized and innovated, thus reducing energy and water consumption. The circular economy is envisaged to reduce the pressure on natural resources.



Champions 12.3

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Saving wasted fish

Fish is an essential source of protein in Africa. The huge amounts of fish left to spoil in harbours because it cannot be preserved quickly enough is therefore a dreadful waste.

Researchers from Wageningen joined forces with industry in an EU project to develop a cheap, low-energy method of drying fish. The device dries the fish by blowing it with cool, very dry air, which ensures that the nutrients and quality are preserved. This fish, which would otherwise be wasted, is transported far into the inland areas of Africa where it is a welcome addition to people's diets.



13 Climate
action



Take urgent action to combat climate change and its impacts

Global warming has caused a discernible effect on physical and biological systems. There are many examples of plant and animal species that have spread across the Netherlands or have withdrawn themselves. Risks of agricultural damage by flooding, drought and / or insect damage may increase. Also, effects of temperature increase are visible, for example in the city (heat island effect).



Climate smart coffee

Coffee cultivation in Colombia is suffering from climate change. Due to droughts, heavy rains and erosion harvests lag behind and uncertainty about the incomes of half a million small farmers prevails.

With the help of climate scenarios they are developing early warning systems for the right time for coffee to be planted, fertilized and checked for diseases, and systems for ground cover against soil running dry or improving drainage during heavy rains.



Climate-Smart Agriculture

Agriculture emits greenhouse gasses and therefore contributes to climate change, but agriculture and food security are also threatened by climate change. The growth of the world population and increase of income levels has resulted in a increased demand for food. Yet, this demand is increasing faster than ever before because the number of middle and high income people in the world is growing rapidly. Climate-Smart Agriculture addresses on the one hand the reduction of the environmental and climate impact of agricultural activity and on the other hand the development of food production methods and crops that are well adapted to changing weather conditions.



14 Life
below
water



Conserve and sustainable use the oceans, seas and marine resources

The (inter)national marine policy is aimed at the sustainable use of oceans and coastal areas. Wageningen Marine Research offers both national as well as international governmental institutions and commercial business insight into the consequences of the current ocean policy on, for example, ecosystems and biodiversity.



Best Tuna

Across the world's oceans float thousands of buoys, placed there by fishermen to increase their catches of tunas including yellowfin, bigeye and skipjack. NGOs and governments worry about overfishing of (juvenile) tuna and other fish species, and until now there is little monitoring and regulation.

Given the economic importance of the tuna fisheries, sustainable and equitable management is imperative to continued regional development. The BESTTuna programme explores whether and how they provide adequate incentives to adopt sustainable fishing practices and that reduce pressure on tuna stocks. Results of the programme are implemented in new policies that improve the overall governance and transparency of the fishery.



Sustainable seaweed cultivation

Agriculture has been developing for millennia, but on the oceans hunting and gathering is still the norm. WUR scientists see opportunities for sea agriculture.

A seaweed field the size of The Netherlands could provide enough proteins for the entire European population. This field could even be placed in the middle of the Atlantic Ocean, where agricultural production does not interfere with rich ecosystems. Growing crops in the ocean also means that the nutrients that have been flowing into sea for years - due to human activity - can finally be regained and brought to land.



15 Life
on
land



Protect, restore, and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification and halt and reverse land degradation and biodiversity loss

In the Planet Earth Management research by WUR the perspective is the earth and its resources for mankind. Emphasis of research is on the impact of human actions on the intrinsic and utilitarian values of the earth ecosystem on the one hand, and on guiding societal choices to be made in land, water and sea management in order to maintain the resilience of planet Earth on the other.

Better forest management, more income

A billion people worldwide depend on the forest for survival. Much of this forest, however, is hardly maintained, making it harder for it to yield products such as firewood and food, with people suffering as a result. WUR has demonstrated that the situation improves when inhabitants and professionals work together, exchange knowledge and agree on rules for effective forest management. In the Lao Cai region of Vietnam this approach has led over a ten-year period to a forest area increase of a third and a local household income increase of one fifth. Yet another way Wageningen University & Research is working on the quality of life.



More green in China

Due to erosion, the rich soil of the Loess Plateau in China in the Yellow River disappeared. Researchers from Wageningen advised the Chinese government how to reduce the washing away of this soil.

Replanting and limiting of grazing and agricultural activities have made the area green again, and assure the maintenance of food production. A problem still is the contamination of the soil and water by crop protection agents. The researchers from Wageningen are therefore working together with local parties on land-use and management, that takes into account people and the environment.





Wageningen University & Research

Wageningen University & Research is a collaboration between Wageningen University and Wageningen Research foundation.


In 2018, Wageningen University & Research will celebrate its 100th anniversary. A century in which the organisation has proved its worth as a worldwide expert in the field of healthy food and living environment. In these hundred years, we have acquired a wealth of valuable knowledge and developed high-quality education. The unique combination of teaching, research and value creation has enabled the organisation to improve the quality of life. We intend to continue the mission of our organisation into the future. *'To explore the potential of nature to improve the quality of life.'*

A staff of 6,500 and 11,000 students from over 100 countries work worldwide in the domain of healthy food and food production and living environment for governments, non-governmental organisations and the business community-at-large.

More information at

www.wur.eu/sdg

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To explore
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