

Global Threats: How Belief and Rationality Shape (In)Action

Conference Abstracts



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Oral Presentation

Forest fight in Germany

—

when beliefs overrule knowledge

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ABSTRACT

Forest are suffering all around the globe from rapid climate change and extreme events. For decades now, scientists investigate what happens when trees die from warming and drought and how this affects forest at different spatial scales. Despite this global trend, society and foresters in Germany were shocked when exceptionally hot and dry summers hit Central Europe in 2018 and 2019. Millions of trees died during these two years and afterward, more than 300 000 ha of forests were heavily damaged or destroyed. This situation has sparked a fierce debate over how forests should be restored and made more resilient for future climate. Despite the fact that Germany has invented “scientific” forestry more than 300 years ago, the current debate is led in a very emotional way. Surprisingly, more non-scientist than scientists are taking leading positions in this debate, and the rationale is dominated by dogmatic belief and nostalgic idealization. Due to large uncertainties in climate conditions and how forests may cope with them in the future, the psychological relief provided by belief and illusion may compromise rational thinking and empirical knowledge. There is a substantial risk that policy making will be strongly influenced by forest populism, and this can threaten rational forest planning into an uncertain future.

In this presentation, I will scientifically document the forest situation in Germany by setting it in the larger global context. I will then walk you through some of dogmatic beliefs that shape the current public debate on forest restoration in Germany. I finally underscore the need for a better education of the public, including exposing children to forest ecology and management during kindergarten and school, but also a greater presence of scientists in the media and in public awareness. Science must overrule belief in the planning of our future.

Keywords: Forest damage, climate change, education

Health, Environment & Education, 2023

Oral Presentation

Disaster Management and Climate Compensation

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ABSTRACT

It is a scientific fact that Earth's climate has changed constantly since the dawn of time. Despite this fact, there is an overwhelming scientific consensus, backed by years of climate research and empirical evidence, that the current rate of climate change is (i) rapid, (ii) induced by human activity (i.e. it is anthropogenic), and (iii) has serious implications for the planet's stability. Climate change has posed a present and real dangers to many countries and communities, especially the not so developed ones. Disasters such as forest fires, cyclones, flash floods, cloud bursts and increasing temperatures are often linked with climate change. These disasters have impacted lives and livelihoods, including damage to crops, property and biodiversity, and have resulted in an increasing advocacy for legislative action with respect to climate protection and climate justice especially for vulnerable areas. Although, scientific scepticism is an intrinsic part of the process of scientific inquiry, problem arises when it leads to denialism based, not on scientific evidence, but on other considerations such as beliefs, development priorities, economic compulsion and lobbyism. This is particularly true in the context of climate change. Despite the overwhelming scientific evidence, we see leaders, political parties and businesses in a state of denial and neglect, often doubting the veracity of scientific information. Climate denialism has resulted in climate inaction and has ensured that the struggle for environmental protection and conservation remains more so in paper and in sloganeering during international conferences and seminars. It is high time that we bust the myth that climate change will not impact the current generation. The policy of climate inaction must give way to legislative and judicial action with regard to right of climate compensation, especially in relation to climate induced disasters. The judiciary should also lead the way by taking a proactive stance in ensuring sound climate induced disaster management.

Keywords:

Health, Environment & Education, 2023

Oral Presentation

Protecting urban forests as a tool for equitable development

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ABSTRACT

Hazelwood is a former steel community located on the Monongahela River in Pittsburgh. Once a neighborhood of 13,000 during the height of operations at the Jones & Laughlin steel mill in the 1960s, it has dwindled to less than 5,000 today. The final plant on the site, the LTV Coke Works, closed in 1998 and the land sat vacant for nearly another 20 years before new development began. Now called Hazelwood Green, the former brownfield site is set to become Pittsburgh's newest technology innovation hub with the presence of the Carnegie Mellon University Robotics Innovation Center, the University of Pittsburgh BioForge, and OneValley, a Silicon Valley-based global entrepreneurship platform. However, what does high-tech industry on the riverfront mean for the blue-collar and no-collar residents of the neighborhood living on the other side of the railroad tracks? With fears of gentrification and displacement rising to the top of community conversations, the cries for more affordable housing have gotten louder. But how can it be done, and where should it be done? As the population has decreased, many of the vacant lots on Hazelwood's steep slopes have become forest over the last 40 years. In fact, The Hazelwood Greenway is the largest in the city of Pittsburgh at 183 acres and was reclassified as a city park in 2022. However, there are many unprotected tree-covered lots that border the greenway and now these lots are being targeted for new housing. Is it possible to have both equitable and sustainable development?

Keywords:

Health, Environment & Education, 2023

Oral Presentation

Charting the Future: Mapping as a Tool for the Greatest Human Migration

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ABSTRACT

Maps are an increasingly important tool for communicating and visualizing complex information about our changing world. They are particularly helpful in understanding the impacts of climate change and how and where communities will be transformed. Maps and the data that power them can help us prepare for humanity's greatest migration and create the infrastructure to support the survival of humankind.

Keywords:

Health, Environment & Education, 2023

Oral Presentation

Addressing the Climate Crisis will Deliver Large Health Benefits

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ABSTRACT

The global climate crisis poses major threats to human health and well-being. Already, we are experiencing more extreme heat waves, droughts, forest fires, and flooding at unprecedented intensity and frequency. These weather extremes have a myriad of health impacts, not to mention further risks to food supplies and altered transmission of vector-borne diseases. And yet, whereas addressing the climate crisis to reduce the extent of heating the planet is critical, the near-term health benefits from climate mitigation policies offer enormous opportunities for public health. This presentation will show how low-carbon policies across the energy, food, and transportation sectors have the potential to save nearly half of all premature deaths every year. What are we waiting for?

Keywords: Climate change; global climate crisis; climate mitigation; health effects; premature deaths; public health

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Urban Vertical Walls as Potential Green Air Conditioners

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ABSTRACT

From an energy point of view, against the backdrop of ongoing climate change, cities increasingly represent "hot spots" in two respects: They absorb an increasing amount of solar radiation, which is accompanied by an increasing heating up of the building fabric, and they release the absorbed energy only slowly, so that densely built-up cities increasingly heat up. The in general dark roofs of the buildings and the vertical facade surfaces, which account for many times the built-up area of cities, play a major role in this process. These conditions have a very detrimental effect on health, and not only in humans. Studies show that especially elderly people¹⁾ suffer greatly from the correspondingly high temperatures, also because the nightly cooling is increasingly reduced and the body is thus stressed. We investigate the effects of facade greening on temperature and humidity, as these are mainly caused by water evaporation (transpiration) and shading.²⁾ We also analyze the effects of facade greening on ambient air quality by measuring the effects on the levels of nitrogen oxides and particulate matter, as well as carbon dioxide. In addition, varieties of ivy and other plants are analyzed with respect to absorption and release of compounds relevant for air quality, in dependence of stress conditions. The results show that - in addition to its air filter functional properties - façade greening fulfills the function of a sustainable and efficient urban climate system by cooling the buildings greened with it in summer and insulating them in winter.

Keywords: Urban Heating, heat stress, facade greening, climate change

- 1) D. Scherer, U. Fehrenbach, T. Lakes, S. Lauf, S. Meyer, C. Schuster: Quantification of heat-stress related mortality hazard, vulnerability and risk in Berlin. *Die Erde* 144 (3-4) (2104) 238-259
- 2) H.G. Edelmann; M. Aduse Poku: Effekte und Parameter von Efeu bewachsenen Fassaden im Vergleich zu blanken Hausfassaden In: *Biodiversität und Klima - Vernetzung der Akteure in Deutschland XIV: Dokumentation der 14. Tagung*. - Bonn: Deutschland / Bundesamt für Naturschutz. - (2018), Seite 26-30 ISBN 978-3-89624-234-1

Oral Presentation

Building Resilience and Changing Behaviours to combat Climate Change through Green Campus Program

Aditya Pundir

Climate reality project, India

ABSTRACT

The world is now moving from climate change to the climate emergency. The new IPCC AR6 report 2022 is all about the coming dangers to food, water, infrastructure and human health and the possible consequences. The need is now more than ever to move fast on both mitigation activities and adaptation. A critical component to this effort will be the response of the communities and their behavioural change both in responsible consumption and towards solutions to the climate challenge.

Greening educational institutions is one of the solutions which promises to work both on infrastructure and behaviour. It can enable schools and colleges to conserve natural resources like water and biodiversity, optimize energy efficiency, manage waste and educate about climate change and sustainability while addressing the well-being of the students as compared to conventional educational institutions.

Green Campus Program (GCP) is a flagship program of the Climate Project Foundation. In our vision and mission of creating a sustainable tomorrow, GCP serves as an effective transformative catalyst. As the name suggests, it transforms conventional campuses into green campuses. We believe that the climate crisis needs a long-term and highly impactful solution, and there is no better tool to resolve it than education. By inculcating the values that make our future generations (bearers of the burdened Earth) more planet-sensible, we try to accelerate the learning dividends by setting examples right there in the campuses of their schools, colleges or universities. The existence of the basic infrastructure, like water conservation, waste composting, clean energy, green spaces and air quality on the campus helps in students understanding of the solutions. We facilitate that further by building interactive exercises which can be carried out with facilitation from mentors.

The results have been encouraging both in the cities and rural areas.

Keywords:

Health, Environment & Education, 2023

Oral Presentation

Israel, a country in the front-line of climate innovation – lessons to share

Ambassador Gideon Behar

Special Envoy for Climate Change and Sustainability
Ministry of Foreign Affairs, Israel

ABSTRACT

Since the founding of Israel in 1948, the young country has faced a variety of challenges related to its geographical location in a desert and arid region. Lack of water, lack of precipitation, desertification processes, harsh environment and more. All of these forced her to find practical solutions to produce food, deal with extreme heat and more. These solutions are becoming essential today in an era of global climate crisis for a wide variety of countries and can help both to reduce emissions and to adapt and build resilience. In the field of water, for example, Israel leads the world in wastewater treatment, where 94% of all wastewater is treated and reused in agriculture. Israel holds another world record for preventing water loss in urban water systems, which amount to few percentages only, and desalinates large part of its drinking water. In the field of agriculture, Israel has developed drought-resistant varieties, advanced irrigation methods and even rice grown with drip irrigation.

Israel is a leader in the development of animal protein substitutes, reforestation in arid areas, and more. Israeli companies develop energy storage and energy efficiency solutions. As the climate crisis worsens, we need practical and applicable solutions for both developing and developed countries, and Israel can offer both. Israel is ready to cooperate and share knowledge and experience because the climate crisis affects us all. In the field of health, for example, much experience has been accumulated in treating health problems arising from high temperatures or dust storms. In the field of education, there is a strong emphasis on introducing the topic of the climate crisis into formal and informal education.

Keywords: Climate change, climate innovations, technology transfer

Health, Environment & Education, 2023

Oral Presentation

Learning about environmental issues as an environmentally protective behavior

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ABSTRACT

I will argue in my presentation that learning about issues that are relevant to environmental protection is a behavior that people implement to protect the environment. But what makes students learn? More specifically, what makes them seek out and process environmental-protection-relevant information? Learning activities, like any other environmental protection behavior, are generally controlled by two sources: the costs of a specific behavior and people's environmental attitudes. Thus, learning becomes more probable when the costs of a learning activity are comparatively small; for example, when a topic is presented in the most accessible manner. Students will also learn more readily about environmental-protection-relevant issues when they care about the particular topic, that is, when they are committed to environmental protection (i.e., when they hold strong environmental attitudes). However, understanding the sources behind students' learning is not enough to capture how much they will eventually retain. To comprehend the amount of knowledge students retain in the long run from the information they receive, we need to understand that learning opportunities can be implemented *in more or less rigorous ways*. Students can be more or less attentive, they can expend more or less time or effort on assignments, and so forth. In other words, how much students learn about environmental-protection-relevant issues depends on the intensity with which they make use of learning opportunities. As I will demonstrate in my presentation, the strength of people's environmental attitudes supports their learning about environmental-protection-relevant issues in two ways: It accounts for students' engagement in specific learning activities but also for how rigorously students engage in these activities—that is, how rigorously they learn and consequently how much knowledge they retain. For this reason, people with strong environmental attitudes—people strongly committed to environmental protection—also know disproportionately more about environmental-protection-relevant issues than people with weak environmental attitudes.

Keywords: Knowledge level; Environmental attitudes; Conservation (ecological behavior)

Health, Environment & Education, 2023

Student Presentations

IMES Student Presentation

Energy revolution as a global challenge

Anna Terporten, Patrick Aede Ongoletum

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ABSTRACT

Global energy supply has been and is continuing to be endangered by the ongoing climate crisis and an ever increase in population. The use of fossil fuels by most countries especially the use of nuclear power is posing additional global threats to human health and the environment.

The solution to this global problem might not be found globally at once or at the same time, however, it lies in the decentralization of energy, according to the principle “think globally, act locally”. Countries have to individually “Act” towards making the world a better place by choosing renewable and clean sources of energy. Our video presents what this mantra means for countries around the world and how they introduce renewable sources of energy to locally deal with a global problem.

Keywords:

Health, Environment & Education, 2023

IMES Student Presentation

Citizen scientists: Local changemakers

Cassandra Carr Kaljo & Chantelle Makwese

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ABSTRACT

The exchange between Patrick and Nalulunji highlights the importance and feasibility of engaging local citizens in scientific research. While the inclusion of citizen science in projects is growing, it is still a relatively unknown approach that has many benefits. The case of plastic pollution of the Nile in Uganda, is based on real work being undertaken by local NGOs.

Keywords:

Health, Environment & Education, 2023

IMES Student Presentation

The internet: A hidden contributor to climate change

Emilia Hyland, Nicolas Hellebrand

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ABSTRACT

The internet is a hidden and unthought of contributor to climate change. Its contributions can be broken down into its different uses, streaming videos and music, sending and receiving emails, surfing the internet, and downloading files. There are certain actions the individual can do to improve their internet footprint, but there are other solutions that do not rely on the end user, but rather the data centers, streaming platforms, and social media themselves. Although the internet has made great strides in improving its impact on CO₂ [equivalent] emission, the drawbacks must be considered and studied more. There is a lack of consensus in the literature and there is also limited scientific research that can be compared across spatial and temporal scales. Information and education is therefore needed to improve future actions toward managing the internet's influence on climate change.

Keywords:

Health, Environment & Education, 2023

IMES Student Presentation

An historical view of how beliefs and knowledge shapes action in plague treatments

Anna Rose, Gabriel Rojas

IMES International Master of Environmental Science, University of Cologne, Germany

ABSTRACT

Throughout human history, the treatment of diseases especially pandemics was rooted in beliefs rather than knowledge. The plague was seen as a punishment from God and cures were based on prayers. Centuries later with the outbreak of the Covid-19 pandemic, prevention, treatment and control, of the diseases are based in knowledge and science. How knowledge shapes action, or beliefs inaction? How can we overcome misinformation.

Keywords:

Health, Environment & Education, 2023

IMES Student Presentation

Oil spills

Mariya Johnson, Amina Nujum

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ABSTRACT

In the video presentation, we would like to illustrate the oil spillage and its consequences on marine organisms as well as the measures practiced till date to reduce its effects. Moreover, this video provides an insight to the degradation of marine ecosystem and effective management techniques to remove the oil spills from oceans. The discharge of liquid Petroleum into oceans or seas either due to leakage from oil transporting tankers or from the bore holes that resulted in contamination and destruction of aquatic ecosystem. Although, there are conventional methods like surface dispersants, underwater dispersants, manual clean up, burning, bioremediation etc, to remove this oil from the surface, recovered oil cannot be reused in most cases. Moreover, the dispersants contain polluting substances that can affect the environment in a devastating manner.

Keywords:

Health, Environment & Education, 2023

Duquesne Student Presentation

Evaluating the appropriateness of free-roaming cat management policies for a small Pennsylvania municipality

Brianna Marks

Duquesne University, United States

ABSTRACT

Free-roaming cats are considered to be among the worst invasive species worldwide, killing approximately 1.4 to 3.7 billion birds and 6.9 to 20.7 billion mammals each year in the United States (The Wildlife Society, 2017). Free-roaming cats can also spread diseases to native wildlife and humans, such as rabies and toxoplasmosis (Bies, 2014). This research will determine the alignment and conflict between a municipal feral cat management policy and resident opinions and priorities.

Keywords:

Health, Environment & Education, 2023

Duquesne Student Presentation

Investigating impact of homeowners private water supply by hydraulic fracturing communication with abandoned wells

Kiley Miller

Duquesne University, United States

ABSTRACT

More than 43 million people, 15 percent of the U.S. population, relies on domestic (private) wells as their source of drinking water. The quality and safety of these wells are not regulated by most state laws, including Pennsylvania. Given the lack of policy and management, a recent environmental case arose in New Freeport, Pa where residents are without safe drinking water due to hydraulic fracturing communication with an abandoned well.

Keywords:

Health, Environment & Education, 2023

Duquesne Student Presentation

Changes in Allegheny County Flood Statistics, Pennsylvania

Alanna Battle

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ABSTRACT

Allegheny County is subject to routine flooding; therefore, it is imperative to understand the drivers of flood dynamics such as land use and precipitation changes, which can change due to climate change. The objective of this research is to determine flood statistics changes at nine gaged rivers in Allegheny County by looking at land use, precipitation, and statistically determined flood frequency using nationally logged gage data for local watersheds. Many of the watersheds showed changes in flood statistics; however, the relative contribution from the identified drivers were not clear.

Keywords:

Health, Environment & Education, 2023

Student Presentation

Remote Sensing for Water Management in the Limpopo River Basin

Gabriella Zuccolotto

Duquesne University, United States

ABSTRACT

Remote sensing is an effective tool for monitoring changes to the environment in regions of the world that have limited ground-based data. In this presentation, the implementation of radar and optical remote sensing techniques for understanding human impacts and guiding decision making will be demonstrated, using the Limpopo River Basin as an example.

Keywords:

Health, Environment & Education, 2023

Teacher Student Presentation

Zero Waste – the future in a mason jar?

Mathilda Schmitz, Melis Özcan

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ABSTRACT

More than ten million tons of waste enter the oceans every year, where it costs the lives of thousands of marine animals. There is hardly another threat as visible today as the burden of plastic waste. The average amount of waste generated by Europe is 505 kilograms per inhabitant. Germany is considered as one of the largest generators of waste with 632 kilograms of waste per person.

According to the Federal Environment Agency, Germany produces 6.28 million tons of plastic waste, one third of which results from packaging materials. One way of reducing waste is through Zero Waste stores, which are now becoming increasingly widespread. The concept of these stores is Zero Waste. The lifestyle is characterized by producing as little waste as possible and recycling everything that can be recycled. Sustainability is the top priority. The products for sale are regional and organic. The primary intention is to increase the reduction of waste in every domain of life. Currently, there are about 342 Zero Waste stores in Germany (in the year of 2022).

In the video you will see the interview with Olga Witt. She is the owner of the first store without non-reusable packaging in Cologne. Olga opened the Zero Waste store in 2016. In the video she provides deep insights into the concept of Zero Waste and a life without packaging waste. Fundamental insights are provided on many questions: What does shopping without waste look like? What is the difference to a regular supermarket? And finally, why should you shop without producing waste?

Keywords: Zero Waste, plastic, environmental pollution

Health, Environment & Education, 2023

Teacher Student Presentation

Digitalization and the greenhouse effect in schools

Jonas Hofestädt, Philipp Hartmann

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ABSTRACT

Digitalization and climate change are also becoming increasingly relevant in schools. At the latest since the Corona pandemic, awareness of the integration of digital media in the classroom is advancing strongly. The effects of climate change are also becoming noticeable in Germany. Extreme heat, drought and heavy rainfall are becoming more frequent. Forests are increasingly infested with bark beetles. Therefore, it is important for climate protection that the mechanisms of climate change are understood and explained already in childhood. This is exactly where the educational project "Forest Climate" of the University of Cologne comes in. Practical environmental education is intended to motivate children to take environmental action. The schoolchildren can independently search for answers using scientific methods, prepare, reflect and present the results of their work. Inexpensive materials are used for experiments to make learning fun at as many schools as possible. Currently, learning modules are available in the areas of carbon storage in trees, the greenhouse effect, biodiversity in forests and CO₂ reduction in everyday life. The materials are also very appealing for the teacher. The teaching units are completely planned and ready for implementation. At the same time, all important information such as factual analysis and didactic legitimation are given. The learning unit Greenhouse Effect is intensively supported by video material and is differentiated in four ways in order to support as many children as possible. An experiment is at the center. The pupils are asked to find out whether different materials can absorb and emit radiation equally well, using the example of a solid. The experiment is supported and supplemented by tasks so that the children understand the basics of the greenhouse effect. To secure the results, a film is made with the help of iPads in which the pupils graphically depict and explain the greenhouse effect.

Keywords: greenhouse effect, climate change, education

Health, Environment & Education, 2023

Teacher Student Presentation

Make cities clean with Billy Green

Jessica Meyer, Mirkan Aydogan

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ABSTRACT

The starting point for the Billy Green System is the advancing climate change. Climate change is particularly noticeable in cities, especially due to the heat island effect. As space for green spaces has been lost due to the high building density in cities, greening systems on house facades can be used to counteract climate change and the associated air pollution. The Billy Green system offers the advantage that it can be installed on almost any façade. The nature of the system helps to improve air quality and increase building energy efficiency, and greening the façade also offers other benefits. As part of this video project, Mr. Minka Aduse-Poku was interviewed to answer some questions about the Billy Green system.

Keywords:

Health, Environment & Education, 2023

Teacher Student Presentation

Can hair help the Oceans?

Sarah Krings, Janine Heylik

Master of Education, University of Cologne, Institute of Biology Education

ABSTRACT

Every year, about 150,000 tons of oil end up in the sea. In the North Sea and Baltic Sea alone, it's about 6,000 tons. Once the oil is in the sea, it is very difficult to get it out again. But human hair can help! Our hair has a high absorption capacity - about 1 kilogram of hair can absorb 8 liters of oil or fats. The organization Hair Help the Oceans has been collecting cut hair from hair salons for almost a year to produce hair mats or hair tubes. The hair mats are to be used primarily on motorboats. On the one hand, the hair tubes are to be used as a preventive measure at bathing lakes and bathing shores in the sea. On the other hand for acute cases, when oil leaks from boats or ships.

Keywords:

Health, Environment & Education, 2023

Teacher Student Presentation

Urban farming for sustainable food production

Ayman Zariouh, Lucas Lenkeit

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ABSTRACT

In this presentation, we present to you the Ernährungsrat Köln e.V. (organization for nutrition Cologne). This is an organization in Cologne, which works towards sustainable cultivation. They created a project called 'the eatable city'. Their 'eatable city' project is of importance because they integrate citizens and companies to reach a specific goal: Planting food sustainable and regional in so-called 'community gardens'. Moreover, these 'community gardens' function as a place of acquaintances, thus new people meet each other and come together.

The products sold in supermarkets are not only constantly available, but their constant availability causes a high amount of carbon emissions due to supply chains that reach beyond the borders. By establishing community gardens, and further eatable cities, investing in food from local gardens can be a way of avoiding unnecessary carbon emissions. Furthermore, the organization tries to figure out how it can be possible to educate other people about sustainability and thereby ensuring a change in consumer behaviours of humans.

The organization describes their goals as such:

We want to bring food policies back to the region, to the municipal level. We want to foster an active dialogue between politics, administration, producer, companies, and consumers in order to strengthen the structures of regional food supply sustainably in the long term. Simultaneously, we want to be an information and action platform for committed citizens, who want to advocate for regional food systems. We promote exchanges between participants, volunteers, and educational institutions.

Keywords: Sustainability, Urban farming

Health, Environment & Education, 2023

Teacher Student Presentation

Growing environmental awareness – School garden project *GemüseAckerdemie*

Ecem Akyazi, Lilith Lieding

Master of Education, University of Cologne, Institute of Biology Education

ABSTRACT

The GemüseAckerdemie is a program that supports schools in the construction of a school garden and then supervises these schools throughout the year. The staff provides training for the teachers, takes care of the ordering of seeds and the cultivation plan for the vegetable planting. In the GemüseAckerdemie, children learn where the food on our plates comes from - on the school's own farmland, together with their teachers.

The children experience directly how a seed becomes a carrot. Together, they take responsibility for their field and understand the impact of their actions. They understand natural interrelationships, look beyond their own horizons and actively explore their natural environment. The goal: to inspire a young generation for nature and sustainability!

All schools that have time and want to participate in the program can do so.

GemüseAckerdemie is primarily an educational program for 3rd through 6th graders. Younger and older grades can also participate, but the caveat is that the educational materials have currently been developed for 3rd through 6th grade curricula. Further differentiation is being planned. The training sessions show teachers everything they need to know for farming. In addition, they are provided with teaching materials, a weekly newsletter and lots of help on the learning platform. The Acker learning platform is the center of knowledge transfer. There you will find extensive educational materials, an overview of current activities in the field, instructions on field care, in-depth training, weekly tips and much more. In addition, the learning platform provides schools with assistance for their public relations work, vacation care, communication with parents or for attracting donations. The schools finance their garden and thus also the support by the GemüseAckerdemie with the help of donations from the school's own support association.

Keywords: school garden

Health, Environment & Education, 2023

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