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The DBU highlights the importance of the oceans for climate, biodiversity and food supply

Erfurt (ots) -

German Environmental Prize awarded to marine biologist Antje Boetius and a team of wastewater experts from Leipzig

The German Environmental Foundation (DBU) has awarded the German Environmental Prize for the 26th time. Today in Erfurt, German President Frank-Walter Steinmeier and the Head of the Board of Trustees of the DBU and Parliamentary State Secretary at the Federal Ministry for the Environment, Rita Schwarzelühr-Sutter, presented marine biologist Antje Boetius (51, Bremerhaven) and an interdisciplinary team of wastewater experts from Leipzig that includes Roland A. Müller (55), Manfred van Afferden (57), Mi-Yong Lee (47) and Wolf-Michael Hirschfeld (70) with the 2018 German Environmental Prize - the most prestigious independent environmental prize in Europe with a remuneration of EUR 500,000. With this year's prize, the DBU is highlighting the importance of our oceans when it comes to protecting our climate, biodiversity and food supply, while also warning of the dangers of climate change, pollution and overfishing. This year's prize also draws attention to the United Nations' call to action to provide the world's population with safe drinking water and adequate sanitation by 2030, which would serve to significantly improve living conditions around the globe.

Oceans act as the most important heat stores on the planet

The DBU emphasized that oceans provide an important habitat for both flora and fauna, regulate the Earth's climate and act as the most important heat stores on the planet. They have mitigated many of the effects of industrialisation and have absorbed a great deal of carbon dioxide and heat. In large part, they determine the Earth's weather patterns as well because they often serve as the source of winds, storms and precipitation. And right now, our oceans are in critical condition. The melting of the polar ice caps, global warming, industrialisation, overfishing, and unimaginable quantities of waste all pose growing threats to this ecosystem. The number of so-called "dead zones" in the world's oceans - hypoxic or low-oxygen areas that are unable to support marine life - have grown by more than one-third since 1995. There are currently 400 of these dead zones around the world covering an area of more than 245,000 km2, which is more than two-thirds the size of Germany.

A ground-breaking step for better living conditions for local populations

This is also due, in part, to the fact that 80 to 90 per cent of wastewater in developing countries is discharged untreated directly into rivers, lakes and the oceans. The DBU has called the implementation a functioning, manageable, low-maintenance, cost- and energy-efficient sanitation sector in these countries a ground-breaking step in terms of improving the lives of the people currently living these countries, as well as the lives of their children and their children's children. At the same time, there is still so much we do not know about the oceans' ecosystems, and it is vital that we close these gaps in our knowledge in order to understand the connection between microbial diversity in the deep sea and global shifts such as climate change. According to the DBU, we must first understand these processes in order to understand the global climate cycle and act on these findings.

Demonstrating the impact of deep-sea bacteria on the global climate

Antje Boetius, deep-sea and polar researcher and Director of the Alfred Wegener Institute's Helmholtz Centre for Polar and Marine Research, was lauded as an outstanding scientist with an extraordinary talent for understanding systemic processes in the world's oceans from an interdisciplinary perspective and for conveying the relationships between them. Through her research, she has demonstrated the impact of deep-sea bacteria on the global climate: these bacteria ensure that only part of the harmful methane gas trapped in the ocean can escape into the atmosphere, thus preventing the planet from heating even faster. The marine biologist, ecosystem researcher and science communicator has repeatedly proven that human activity can be detected in the farthest reaches of the Earth.

Protecting a yet-unexplored world against destructive deep-sea mining practices

In Boetius' view, along with climate change, the global fishing industry has already seriously altered the world's oceans. Her aim is to ensure that the yet-unexplored world of the deep sea does not fall victim to destructive deep-sea mining practices required to mine raw materials such as manganese, iron, cobalt and rare metals. Our oceans must be understood as part of our planet and of our society as a whole, and thus as a crucial aspect of the sustainability aims of the United Nations. The biological diversity in our oceans and polar regions are also an important resource for our future and must therefore be protected.

Pioneering work and capacity development in Jordan

As advocates for water resource protection, the team around the group of researchers at the Environment and Biotechnology Centre of the Helmholtz Centre for Environmental Research (Müller, van Afferden, Lee) and Wolf-Michael Hirschfeld, the initiator of the Training and Demonstration Centre for Decentralized Sewage Treatment, was honoured for their pioneering work in the

area of capacity development in Jordan. Jordan is one of the top three countries in the world most affected by water scarcity and, in recent years, its population has grown by nearly 70 per cent from 5.6 million to 9.5 million (2016) due to the influx of refugees from Syria. The team took an interdisciplinary scientific approach, worked in an advisory capacity in terms of economics, acted as intermediaries in terms of politics, helped to inform the general public, and also took an active role in the practical implementation of the project.

Water scarcity as a major cause of migration

Decentralised, flexible wastewater management systems, which can also be used to supplement existing systems, allow wastewater to be treated at the point of origin while also protecting the groundwater from wastewater contamination and preserving drinking water as a resource. In order to realise this project, the team had to overcome not only the boundaries between the natural, engineering and social sciences, but above all the boundaries between research and practice. This project is crucial because around two billion people around the world are forced to use drinking water that is contaminated with faeces. Alongside poverty, a lack of economic prospects and a lack of political participation, difficult living conditions including water scarcity are one of the main causes of migration.

Background information:

With the German Environmental Prize, which is being awarded this year for the 26th time, the German Environmental Foundation (DBU) recognizes the achievements of persons who have contributed to the protection and conservation of the environment in an exemplary way, or who will contribute to environmental relief in Germany in the future. The prize - which is independent and, with a prize amount of EUR 500,000, the richest prize of its kind in Europe - can be awarded for projects and individual measures, as well as to honour an individual's lifetime achievements. Candidates for the German Environmental Prize are nominated to the DBU by groups such as employer's associations and labour unions, churches, environmental organisations and nature conservancies, scientific associations and research councils, as well as media, trade and commercial associations. Individuals may not nominate themselves. A jury of independent, prominent experts from the fields of industry, science and technology as well as from various societal organisations is selected by the DBU Board of Trustees and makes a recommendation on who they feel should be awarded the prize for that year. The DBU Board of Trustees then makes the final decision. For more information on the 2018 prize winners, please see: https://www.dbu.de/123artikel37810_2442.html

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