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SUMMARY REPORT:
“Sustainable Development Goals and the Role of Research –
A Focus on Coastal Regions”

Organizer: Volkswagen Foundation

The United Nations’ Sustainable Development Goals (SDGs) designed to improve people’s lives and to protect the planet for future generations were adopted in September 2015. At the Herrenhausen Symposium, the focus was on the specific role and contribution of science in this global transformation process. What is the role of research in realizing the SDGs? What kind of research is needed to accomplish this task? These questions guided the conference. They were discussed with a focus on coastal regions where global challenges and sustainability problems crystallize and are already apparent today.

An introduction to Session 1 on the SDGs and the Role of Research in the Past and in the Future was given by ANNA-KATHARINA HORNIDGE (Center for Tropical Marine Ecology, Bremen, Germany), who briefly sketched current developments around the launch of the SDGs. She acknowledged that scientists took some time to get actively involved, but that now pace is picking up and the scientific community is increasingly making itself heard in the debate. Just like politics, industry and civil society, science also has a responsibility to contribute to the SDGs and faces similar challenges. In his keynote “Taking Sustainability Seriously: Some Key Challenges in Research for Democratic Transformation”, ANDREW STIRLING, a professor of science and technology at the University of Sussex, UK, pointed out that “sustainability is about politics and democracy” and that the unprecedented human, social, and physical scales of the SDGs call for societal transformation. He discussed the role of power in shaping not only the political discourse on sustainability but also the
research agenda, the scientific frameworks, and the innovation paths towards sustainability. He showed that many innovative developments which are mainstream today were achieved by social movements that were initially suppressed: “Power favors incumbent sustainability paths.” He stated that science and politics follow a linear logic of progress where alternatives are becoming sidelined, a very typical example being “roadmaps with just one road in them” such as the EU energy roadmap. However, due to the uncertainty and ambiguities involved in sustainability challenges (and solutions), research is needed that is “broadening out” and “opening up” the space for possible action towards achieving the SDGs. The role of science in this process should be to reflect on fundamental assumptions, create space for democratic discussion, and present real alternatives to politics. The complexity of the SDGs can be an advantage in this respect because they stimulate debate and require a reflection not only on the pace of societal transformation but also the direction we go in. The required societal transformation calls for science to be much more explicit about its own basic assumptions and the way that knowledge is contested and shaped by the societal context in which it is produced.

Building on the broader framework provided by Andy Stirling, which was taken up by many speakers and in discussions throughout the conference, Session 1 proceeded to introduce the conference’s focus on coastal regions. Overarching questions focused on suitable regional contexts and scale for achieving the SDGs; another key topic of the conference, the debate about indicators and their role in monitoring the implementation of the SDGs, emerged. In a statement by rural sociologist HART NADAV FEUER (Kyoto University, Japan) on The New Geographical Precision of the SDGs: How Civil Society and Coastal Areas Come into Focus, it was shown that the SDGs are so far mainly geared to the national level and focus on standard economic data. However, in order to address the problems of coastal areas that are among the most vulnerable to climate change, a more holistic and regional focus is needed. Lessons can also be learnt from conventional approaches, such as the Multi-dimensional Poverty Index (MPI) which encouraged governments to gather more and differentiated data. An adequate regional approach can make use of the larger amount of data available at sub-national levels, allows for comparisons of similar regions, and re-directs the focus on especially vulnerable areas such as coastal zones. Moreover, it facilitates the involvement of civil society groups, which are usually active at the local level.
In the second statement, geologist **HILDEGARD WESTPHAL** (Leibniz Center for Tropical Marine Ecology, Bremen, Germany) addressed the question: **Why Focus on Coastal Regions?** She explained that many of the most severe problems caused by climate change are already felt in coastal regions today, actually changing living conditions for the local population, and at the same time increasing awareness and encouraging direct action. There is a major task for science in this context: We need to arrive at a much better understanding of how coastal areas function as feedback loops between society and natural ecosystems, and more interdisciplinary, integrated, and internationally focused research approaches are needed to deal with the large uncertainties surrounding changes in these complex ecosystems.

The **discussion** focused on what could be suitable indicators for measuring the success or failure of the SDGs. It was argued that developing new indicators may be useful as a way of opening up problem definitions and that the search for alternative indicators could be part of a more participatory and democratic process of achieving the SDGs. However, it was also recognized that indicators often steer us away from the more radical questions and that there may rather be a need for new frameworks that show the interlinkages between (existing) indicators, instead of a continued search for the perfect indicator system. The notion of transdisciplinarity was also discussed here — and critically challenged throughout the rest of the conference. In the context of this session’s debate there was some consensus that transdisciplinary approaches can be important as a way of challenging and making explicit the power structures in science and as part of a more open and problem-oriented attitude in research.

**Session 2** focused on concrete examples of **Sustainability in Coastal Ecosystems**. Research projects from different geographic regions with different disciplinary approaches and research designs were presented and discussed with regard to their implications for implementing the SDGs. Geographers **MARIAMA AWUMBILA** (Legon University, Ghana) and **MICHAEL FLITNER** (University of Bremen, Germany) talked about their research on **Rapid Environmental Change and Migration in the Coastal Regions of Ghana and Indonesia**. A need to rethink policy frameworks regarding specific forms of migration was identified: From a cultural and regionally embedded perspective, migration can be seen as a useful adaptation strategy, for instance in Ghana where seasonal migration has a long
tradition. It is not always an adaptation failure, as politicians often think. Sihem Benabdallah (CERTE, Tunisia) and Ralf Ludwig (LMU Munich, Germany) presented findings from the research project Climate Induced Changes on the Hydrology of Mediterranean Basins (CLIMB) – Reducing Uncertainty and Quantifying Risk. It was pointed out that the project was successful in quantifying problems rather than reducing uncertainty. Especially from a Tunisian perspective on the SDGs, it would be crucial to improve access to information, involve stakeholders, and improve communication between researchers and politicians.

Another approach for dealing with local knowledge was introduced by Hendricus Simarmata (Indonesian Association of Urban and Regional Planners, Indonesia), who presented the research project Flood Solution: Bringing Back People Dimension in Flood Risk Management. An informal settlement in Jakarta featured as a “laboratory of local knowledge” where living with floods has become a planned adaptation and is viewed as a normal part of life by the local inhabitants. A lesson to be learnt from this project would be a stronger focus on locally embedded adaptation planning where stakeholders with tacit knowledge take ownership of the process. Reflecting on the role of science for implementing the SDGs against the background of the presented research projects, discussant Maja Göpel (Wuppertal Institute, Berlin) emphasized that there is a need to better understand real-world problems and to (re-)focus on the basic dimension of purpose. During the discussion, links were drawn to Andy Stirling's plea for “opening up” science: Considering that we are in a global search process rather than on a clearly spelled-out sustainable development implementation mission, we should critically scrutinize the indicators monitoring the success or failure of the SDGs to uncover what the numbers really indicate, in order to better understand where we are actually heading.

The interactive Session 3 offered the opportunity to join junior researchers at Topic Tables and discuss their research projects in respect of the SDGs or/and coastal regions. Two examples of the range of topics: “A Questionnaire-based Consideration of Coral Farming for Coastal Socio-economic Development in Mauritius” and “From Apocalypse to Humor? New Ways of Communicating Climate Change and Sustainability”. Along with the 16 young researchers from all over the world, 5 young science journalists also successfully applied for travel grants to participate in the symposium.
In Session 4 a keynote was given by WOLFGANG LUTZ (Leader World Population Program (IIASA) and Vienna Institute of Demography, Austria) on Population Growth as a Non-Topic in the SDGs. He argued that the issue of population growth and climate change couldn’t be adequately addressed by merely focusing on standard demographics. Education is a key dimension often neglected: Increasing levels of education lead to decreasing birth rates; risk awareness increases and coping strategies are improved. By addressing education, the SDGs thus do in fact deal with the issue of population growth in a meaningful way, because education will increase the overall adaptive capacity of human populations in a situation where no precise local climate forecasts are available.

Population growth and density are phenomena directly connected to processes of urbanization. Session 5 focused on Urbanization Processes in Coastal Regions: Coastal-Urban Interfaces. Urban and regional planner HONG CHING GHO (University of Malaya, Malaysia) opened the session with a discussion of Natural Resource Governance in Light of Urbanization in Coastal Regions. It was shown that in urban contexts holistic approaches are needed that cut across sectoral policies and involve local citizens. Here, scientists play a role not only as disciplinary experts, but also as mediators ensuring trust and meaningful participation. This becomes increasingly important considering that according to UN Habitat prognoses, 60% of the world’s population might live in cities by 2030. Against this background, geographer SHUAIB LWASA (Makerere University, Uganda) argued that currently A Second Wave of Urbanization characterized by complexity regarding urban form and function leads to the emergence of a rural-urban continuum and global connections of cities. Especially coastal cities will become hubs of nested interdependencies (e.g. being intermediaries of resource flows, major production sites, and hosting mega-infrastructures). These major transformation processes imply various synergies as well as trade-offs between individual SDGs. Research is needed on indicators that are able to measure the interdependencies, e.g. urban resilience, its relation to path-dependent production and consumption processes, and the sustainability of urban ecosystems.

The complexities in understanding today’s urbanization processes were also discussed by sociologist RÜDIGER KORFF (University of Passau, Germany), who pointed out that a non-space-based definition of urbanity is needed to understand Why Cities Enhance Sustainability. Urbanism and sustainability
are concepts connected by their common focus on flexibility and adaptive capacity. In a global urban society, cities are made up of overlapping and interacting systems that have to adapt and balance each other out. More sustainable system configurations may emerge from such transformative capacity. The discussant JAN BÖRNER (ZEF, Bonn, Germany) concluded that issues of urbanization and sustainability are interlinked with many of the SDGs; the role of science should be to provide integrated assessments. Discussions revolved around how science should get more actively involved and how a better contextual understanding can be gained across different disciplines and with local stakeholders.

At the end of the conference, links were drawn back to the first session and Andy Stirling’s emphasis on the role of politics and power, which again featured prominently in Session 6 on Coastal Regions and the Role of Shared Responsibilities and Future Generations. Especially power differentials in stakeholder processes can play out detrimentally, as was pointed out by sociologist SVEIN JENToft (University of Tromsø, Norway) in his talk on Norway’s Contested Coasts: Conflict Resolution as Interactive Governance. While the benefits of stakeholder participation are increasingly being emphasized, he showed that it is often the already marginalized groups that suffer even more when included in structured processes intended to establish equal footing for all stakeholders. Therefore, the details of participation, of co-production of knowledge and co-management should be understood better and studied more critically. Nonetheless, and as already earlier pointed out by Hildegard Westphal, a transdisciplinary lens is particularly important when dealing with the complexity of coastal areas. This was emphasized by RATANA CHUENPAGDEE (Natural Resource Sustainability and Community Development, Memorial University of Newfoundland, Canada), who argued that Transdisciplinary Research for Coastal Future is required to deal with power imbalances that put small-scale enterprises, social science perspectives, and non-economic policy goals at a disadvantage. The challenges of transdisciplinary research and often inflated expectations, as a fix-all solution should be addressed by capacity building and adequate training for researchers. The final statement by sociologist WOLFGANG GABBERT (Centre for Atlantic and Global Studies, University of Hanover, Germany) on Indigenous Rights, Natural Resources and the State – Perspectives from Middle America also addressed the difficulties of stakeholder involvement. In the case of Central America, indigenous people in coastal areas experience a “third conquest” as a result of geo-
strategic interests and resource exploitation by the state and private business. The session was
summed up by discussant Jan Börner, who asked how ethical dilemmas emerging in the
implementation of the SDGs should be dealt with. Following earlier discussions throughout the
conference, it was concluded that science should not necessarily take an ethical standpoint, but
clearly spell out different alternatives and their outcomes, thus allowing for better choices and more
meaningful participatory processes.

After two days of intense discussion, the symposium showed that the roles of research in
implementing the SDGs can cover a diverse range of functions: From providing reliable data,
identifying risks and “emerging unknowns” with suitable indicators, to facilitating change and
proactively enabling societal transformation through inter- and transdisciplinary approaches. There
is a need to reflect on old questions about the role and nature of research and to define new
responsibilities in the global search and transformation processes towards sustainable development.

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https://www.volkswagenstiftung.de/veranstaltungen/veranstaltungsarchiv/detailansicht-
veranstaltung/news/detail/artikel/herrenhaeuser-symposium-science-and-sustainable-development-
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