

# Technologies for Development

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Editors

# Technologies for Development

From Innovation to Social Impact



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# Foreword

The contribution of innovation and technology to sustainable development was at the heart of the 2016 edition of the Conference on Technologies for Development (Tech4Dev), organized by the UNESCO Chair in Technologies for Development at the Ecole Polytechnique Fédérale de Lausanne (EPFL). Beyond the importance of technological innovation for sustainable development, this Conference raised a question that appears crucial to UNESCO in order to respond adequately to today's complex economic, societal, environmental, and cultural challenges: how do we get from innovation to social impact?

In order to maximize the overall positive benefits of science, we need to *incorporate a vision of innovation in Science, Technology and Innovation (STI) policies including other important components, such as the promotion of South–South and North–South–South cooperation, investments at country level into accessible and quality education systems, gender equality, the reinforcement of science–policy–society interfaces and the inclusion of national, regional, and grassroots innovation capacities, as well as of local and indigenous knowledge.* Today, more than ever, we need more science, *better, interconnected, crosscutting science, relevant to people.*

The adoption of the United Nations' 2030 Agenda in September 2015, with its set of 17 Sustainable Development Goals (SDGs), marked a significant step forward in the recognition of the contribution of STI to sustainable development and its three pillars: economic, social, and environmental. The 2030 Agenda also offers immense opportunities to reconnect science to society and to build a new basis for research and development as a key precondition for both science and society to flourish.

As the only UN agency with science in its mandate, UNESCO has a leading role in using and promoting STI as effective tools to contribute to sustainable development. Since its foundation 72 years ago, the Organization has been strongly committed to reinforcing the links between science, policy, and society, and to promoting STI policies that benefit society as a whole. With its network of international scientific programmes, centers of excellence, institutes, and Chairs

worldwide, UNESCO has an important role to play in the common effort to achieve the SDGs.

This publication allows a larger audience to benefit from the high-level researches presented during the 2016 edition of the Conference, in key areas for sustainable development such as energy, disasters risk reduction, medical technologies, urban development, ICT, and humanitarian action.

EPFL is hosting the UNESCO Chair in Technologies for Development since 2007. UNESCO is grateful for its remarkable work in collaboration with partners from emerging and developing countries, which contributes to poverty reduction and sustainable development.

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Flavia Schlegel United Nation, Education, Scientific  
and Cultural Organization—UNESCO

# Acknowledgements

The editors would like to thank the many individuals and organizations who generously contributed their time, insight, and support. We would like to begin with the members of the Scientific Committee and our Session Leaders, who guided the conference preparation.

We would also like to express our thanks to Prof. Philippe Gillet, Vice-President of Academic Affairs at the Ecole Polytechnique Fédérale de Lausanne (EPFL), for his presence at the Conference and unfailing support of the Cooperation & Development Center (CODEV).

Through openly sharing their great expertise and diverse perspectives, the speakers at the UNESCO Conference substantially contributed to its success. Our heartfelt thanks go to Dr. Flavia Schlegel (UNESCO), Dr. Maria Fernanda Espinosa (United Nations Office), Ms. Barbara Bulc (Global Development), Mr. Yves Daccord (ICRC) and Dr. Ashok Gadgil (University of California, Berkely) for their highly appreciated involvement and support.

This project likewise could not have succeeded without the quality and diversity of the various authors' and researchers' contributions. In response to the call for papers, the Scientific Committee evaluated over 156 papers and ultimately selected 125 to be presented at the Conference. Of these, 17 finalists were chosen based on the following criteria: (1) innovative concept and research questions; (2) potential social impact of the application; (3) contribution to the discipline as whole; and (4) clarity and understandability. We express our appreciation to all of these authors, without who this publication would not have been possible.

In addition, we would like to very warmly thank Mr. Emmanuel Estoppey and his team from the Lavaux UNESCO World Heritage Site, who went out of their way to welcome us for the social event in the charming village of Grandvaux.

Our sincere thanks also go to the Ingénieurs du Monde (IDM) team and our colleagues at CODEV, who contributed extensively to the organization of this conference.

Finally, we are very grateful for the generous patronage of the Swiss Agency for Development and Cooperation (SDC), the Canton de Vaud, the City of Lausanne, the Swiss National Science Foundation (SNSF), the ICRC, and the conference sponsors. Their support and their partnership are critical for bringing us to reflect on how technological innovation can lead to stronger social impact and lead the way toward more suitable development at global level.

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