This document provides an overview of the main activities and impact of the World Resources Forum Association in 2021.
About WRFA

**Empowering collaboration for sustainable resources**

The World Resources Forum is an international non-profit organization mobilizing concerted action to promote sustainability and fairness in the global use of natural resources. Through our multi-stakeholder conferences and projects, we strive to scale up knowledge and practical solutions able to make resource use a driver for shared wellbeing within planetary boundaries.

Our Activities

**Forum**
An inclusive and forward-looking space for multi-stakeholder dialogue

**Projects**
Bridging the knowledge-practice gap through applied research and capacity building projects

Our Focus Areas

- **Resource Extraction**
  Enabling the extractive sector to positively contribute to the SDGs while guaranteeing the supply of mineral resources necessary for the transition towards low-carbon economies.

- **Resource Circularity**
  Supporting the design and uptake of circular economy models to reduce the resource intensity and waste generation of the global economy by keeping products and materials in use.

- **Resource Recovery**
  Ensuring that end-of-pipe solutions efficiently recover resources with high environmental and health standards, reducing the ever-growing need for virgin raw materials.

Board Members

Bruno Oberle (President), Xaver Edelmann (Vice-President), Martine Rohn-Brossard, Peder Jensen, Janez Potočnik, Brigitte Buchmann, Cornis van der Lugt, Helga Weisz, Harry Lehmann, Alice Kaudia, Suojiang Zhang, Merlyn Van Voore
2021: our impact at a glance

- **10** Projects ongoing or completed
- **17** Countries in the Global South where we contributed to capacity building activities
- **110** Partners engaged through our conferences and projects
- **55** Publications co-developed through our projects
- **1,800,000** Mio. CHF income generated
- **65** Countries represented at our WRF2021 Conference
Preface by the President and the Managing Director

2021 – Changing the tide towards an impactful future

After the global events of 2020, 2021 was expected to represent a watershed for the future of our organization. Thanks to the energetic commitment of the WRFA secretariat, the continued support of the Board, and a strong network of international partners, we have organized a widely applauded WRF2021 conference and have been successful in the implementation and acquisition of new projects. This provides us with renewed trust and enthusiasm about what WRFA can achieve in the years and decades to follow.

If 2020 represented a ‘year full of challenges and changes’, 2021 can be considered a turning point for our organization, setting us on a new path for future impact. Due to a fragile outlook in 2020, the Secretariat was not only called to organize a WRF2021 conference with a new format under tight financial resources, but also to generate new income through the acquisition of projects in line with our mission.

Thanks to the dedication and efforts of all our team members, Board members and partners, we can confidently state that we managed to reach the objectives we had set for ourselves. WRF2021, co-hosted by the Swiss Federal Office for the Environment and the Ministry of Environment, Science, Technology and Innovation of the Republic of Ghana, was attended by over 950 international participants, who gave rise to lively discussions and deep knowledge sharing. With over 40% of participants from Africa, the conference showed once again the relevance of our work for the region and, more broadly, for all the stakeholders in the Global South.

On the projects side, the successful acquisition of new projects, both at the European and global level, will allow us to further work in our focus areas of resource extraction, resource recovery and resource circularity. By reinforcing collaborations with old and new partners, our team is deepening areas of expertise which will be instrumental for the long-term impact we wish to achieve.

The results achieved in 2021 allow us to look at the future through a positive lens, with strong prospects for future growth, and leveraging the occasion of our 10th anniversary as a driver for further development. We are looking forward to old and new collaborations for impact in 2022.

On behalf of the WRFA team,

Bruno Oberle
President

Mathias Schluep
Managing Director
WRF’21
A Green Deal for Sustainable Resources

Co-hosted by the Swiss Federal Office for the Environment and the Ministry of Environment, Science, Technology and Innovation of the Republic of Ghana, WRF2021 took place on October 12–14 as a three-days hybrid conference, with activities in Ghana, Switzerland and online. Under the theme of “A Green Deal for Sustainable Resources”, the conference hosted keynotes, panel discussions, workshops and scientific sessions within three conference tracks of Primary Resources, Secondary Resources and Circular Economy.

“All countries depend on the sustainable management of resources, whether they extract, trade or consume resources. The World Resources Forum provides an excellent platform bringing all stakeholders together to discuss innovative solutions”
Ms. Simonetta Sommaruga
Swiss Federal Councillor

“WRF2021 represents a great opportunity to reflect on more sustainable ways of designing, producing, consuming and regenerating value. As MESTI, we are very proud to represent Ghana in this journey”
Dr. Kwaku Afriyie
Minister of Environment, Science, Technology and Innovation, Republic of Ghana

950 Participants
200 Speakers
40% Of total attendees from Africa
41 Partners

Discover the full conference report
OUR PROJECTS
ReduCE Waste Team and local partners

Swiss Federal Councillor Simonetta Sommaruga visits SRI Ghana

Workshop in Tanzania

E-waste handling in South Africa

SRI Team
SRI – Sustainable Recycling Industries Programme

Focus Area: Resource Recovery
In progress (2019 – 2023)

The Sustainable Recycling Industries (SRI) programme contributes to favourable framework conditions that enable the development of a sustainable recycling industry for e-waste and related waste streams in developing countries. Through recycling initiatives in Colombia, Peru, Egypt, Ghana and South Africa, SRI is building capacity for sustainable e-waste management by supporting national activities and implementing pilot projects. The development of the ISO 59014 Standard for Secondary Materials complements the recycling initiatives through a multi-stakeholder process, leveraging synergies with the international community, supporting normative processes and providing metrics and methods to measure and monitor SRI induced changes. The programme is funded by the Swiss Secretariat of Economic Affairs (SECO) and is implemented by the Swiss Federal Institute for Materials Science and Technology (Empa) and WRFA.

Our Role
WRFA is the overall coordinator of the programme, responsible for the planning of the project activities, the setup of the governance structure, the disbursement of funds and the reporting of implementation progress. Beside the coordination role, WRF also provides expertise to the partner countries, especially in issues related to policy, standardization and inclusive business development. WRFA is the convener of the ISO process.

Partners
Empa, National Business Association of Colombia (ANDI); Center for Environment and Development of the Arab Region and Europe (CEDARE); Peru Ministry of Environment; Egypt Ministry of Environment; Colombia Ministry of Environment and Sustainable Development; Ghana Ministry of Environment, Science, Technology and Innovation (MESTI); Egypt Ministry of Communications and Information Technology; StEP Initiative; Ghana Environmental Protection Agency; Mountain Research Institute; Sofies, Swiss Association for Standardization (SNV); Oeko Institut

Highlights in 2021
- All partner countries have made relevant progress in the set-up and/or consolidation of policy development and standardization processes.
- The project has directly supported the recycling industries with advanced institutional capacities, such as the development of vocational training programmes and the establishment of industry associations. Amongst others, this has enabled progress towards more sustainable treatment solutions for hazardous waste fractions.
- The development of an ISO Standard ‘Secondary Materials – Principles, Sustainability and Traceability Requirements’ has been kick-started with a joint working group (JWG) under the parent committees ISO TC207/SC5 (Environmental Management) and TC323 (Circular Economy). The JWG has about 50 members from 20 countries including the USA, Canada, China, Indonesia, Mauritius, Japan, Sweden, England.

https://www.sustainable-recycling.org/
RE-SOURCING – Global Stakeholder Platform for Responsible Sourcing in Mineral Value Chains

Focus Area: Resource Extraction
In progress (2019 – 2023)

The EU Horizon 2020 RE-SOURCING project aims to advance responsible sourcing practices and concepts for inclusion within the global agenda and foster a unified and coherent application of responsible sourcing practices among stakeholders across the entire mineral value chain to contribute to a level playing field. The project will develop a platform to facilitate effective cooperation among relevant international stakeholders to enhance the implementation of responsible sourcing practices, and ultimately contribute to developing a global agenda for responsible sourcing in mineral value chains.

Our Role
WRFA is a consortium partner leading the global agenda setting process, stakeholder engagement and communication and dissemination activities and tasks.

Partners
WU Vienna University of Economics and Business (Coordinator), AHK Business Center Chile, EIT Raw Materials GmbH, Luleå University of Technology, MH Intelligence, Montanuniversität Leoben, Oeko-Institut E.V., Stichting Onderzoek Multinationale Ondernemingen (SOMO), SRK Consulting, Tallinn University of Technology, WWF Germany

Highlights in 2021
- Publication of the Roadmap 2050 for the Renewable Energy Sector, together with the related Good Practice Guidelines Document, which delineates a comprehensive roadmap and accompanying guidelines for achieving a sustainable and responsible renewable energy sector by 2050
- Publication of the State of Play and Roadmap Concepts for the Mobility Sector and the Electronics Sector
- Organisation of three large-scale virtual conferences and expert panels, six workshops, consultation meetings and flagship labs engaging more than 1000 stakeholders from all over the world.

[https://re-sourcing.eu/]
CEWASTE – Voluntary Certification Scheme for Waste Treatment

Focus Area: Resource Recovery
Concluded (2018 – 2021)

The EU-funded CEWASTE project contributed to an improved recovery of valuable and critical raw materials (CRMs) from key types of waste, such as waste electrical and electronic equipment (WEEE) and batteries, through the auditing and certification of traceable and sustainable collection, transport and treatment processes. The project addressed the specific challenges to secure the sustainable access to CRMs for the EU economy and objectives set by the EU action plan for Circular Economy.

Our Role
WRFA was the overall project coordinator and task leader on development of normative requirements and standards.

Partners
Oeko-Institut, Sofies, United Nations University (UNU-VIE SCYCLE), WEEE Forum, Austrian Standards Institute, European Electronics Recyclers Association, European Environmental Citizens Organization for Standardization, SGS FIMKO OY.

Highlights in 2021
- Development of the CEWASTE standard and the related assurance system and verification mechanisms applicable to recycling of valuable and critical raw materials
- Validation of the standard and the scheme through 20 pilot audits
- A roadmap for long-term sustainability of the scheme including recommendations for the European Commission on how to improve the recycling rates of these materials
- Media campaign to disseminate projects results resulting in 118 publications in 10 languages across 28 different countries

https://cewaste.eu/
CICERONE – Circular Economy Platform for European Priorities Strategic Agenda

Focus Area: Resource Circularity
Concluded (2018 – 2021)

The EU Horizon 2020-funded CICERONE project brought together national, regional and local governments to jointly identify and address the challenges associated with the current fragmentation of circular economy priorities and initiatives, and build a strategy for circular economy research and innovation in Europe.

Our Role
WRFA was the task leader for developing the MOOC for programme owners and funding organisations working on circular economy.

Partners
EIT Climate-KIC (Coordinator), Bluenove, French Alternative Energies and Atomic Energy Commission (CEA), Centre for European Policy Studies (CEPS), EIT Raw Materials, ENEA, Estonian Research Council, GKZ, IETU, IVL, Project Management Agency Jülich, LGI, National Cheng Kung University, PNO, Netherlands Enterprise Agency (RVO), Sofia Development Association, TNO, UEFISCDI, University of Maribor, VITO, VTT, Wuppertal Institute, DXCACC

Highlights in 2021
- Development of the Circular Economy Strategic Research and Innovation Agenda (SRIA) to support owners and funders of circular economy programmes in aligning priorities
- Design of joint and systemic programmes to tackle the circular economy transition across four key challenge areas: urban areas, industrial systems, value chains, territory & sea.
- Piloting a platform for circular economy programme owners at national, regional and local level to share best practices, co-create and collaborate on joint programmes for circular economy research and innovation

https://cicerone-h2020.eu/
uPOPCI – Sound management of unintentional persistent organic pollutants and brominated flame retardants in Côte d’Ivoire

Focus Area: Resource Recovery
In progress (2020 – 2024)

Funded by GEF and implemented by UNIDO, this project addresses the issue of persistent organic pollutants (POPs) stemming from e-waste and end-of-life vehicles in Côte d’Ivoire. Addressing more than 90,000 tons of POP containing waste materials, the project is expected to prevent the open burning of 130 tons of plastics and avoid the emission of 13 metric tons of toxic substances, such as brominated flame retardants.

Our Role
WRFA supports Ivorian partners in stepping up their capacities to collect and analyse POPs in waste and environmental samples through assistance in large scale sampling campaigns and technical laboratory training. WRFA supports the project through technology and business expertise towards best practices for the environmentally sound management of the plastics fractions of e-waste and end-of-life vehicles (ELV).

Highlights in 2021

- Development of a technical guide for sampling and the analysis of brominated flame retardants in e-waste and end-of-life vehicles as well as the impacted environments in Côte d’Ivoire
- Planning the procurement of equipment for the laboratory in Côte d’Ivoire, which will provide the country with the capacity to analyze levels of POPs in waste materials and environmental probes
- Support the development of technical guidelines for the sustainable management of e-waste and ELVs.
Promoting implementation of the Minamata Convention on Mercury with a synergetic approach in the ECOWAS region

Focus Area: Resource Recovery
Concluded (2020 – 2021)

In the context of the Minamata Convention on mercury, the United Nations Industrial Development Organization (UNIDO) assists African countries in their early implementation of the Minamata Convention, while seeking synergies with other chemicals and waste management Multilateral Environment Agreements (Basel and Stockholm conventions).

Our Role
WRFA contributed to the enhancement of the implementation of the Minamata Convention on Mercury in countries of the Economic Community of West African States (ECOWAS) by developing a sub-regional approach for the management of mercury containing waste streams, e.g. e-waste and medical waste.

Highlights in 2021

- Analysis of the current situation and framework conditions in view of developing a sub-regional approach for the environmentally sound management of mercury and e-waste.
- Based on the situational analysis, the development of a sub-regional approach for the environmentally sound management of mercury and e-wastes, including an implementation work plan.
- Presentation of the results in a pre-COP side event of the meeting of the Conference of the Parties to the Minamata Convention on Mercury.
ReduCE Waste

Focus Area: Resource Recovery
In progress (2021 – 2022)

The ReduCE Waste project, funded by PREVENT Waste Alliance, supports the Tanzanian government in setting up mechanisms to reduce, control and assess imports of e-waste. The project addresses the challenges associated with illegal import of e-waste mixed with or labelled as used electrical and electronic equipment (UEEE) into the country. It does so by analysing transboundary e-waste flows, contributing to develop and pilot a national strategy and helping to strengthen local capacities for import control.

Role of WRFA
As a project partner, WRFA is responsible for assisting the development of the national guidelines for Tanzania based on the Basel Convention technical guidelines, and for organizing an international workshop for testing the validity of the approach in other East African countries.

Highlights in 2021
- Analysis of the inventory and the main importation gateways of e-waste in Tanzania
- Assessment of the existing national governance structure and regulatory framework related to the management of e-waste and adoption of the Basel convention

Supplement on Eco-Innovation in the Electronics sector

Focus Area: Resource Circularity
In progress (2020 – 2022)

Commissioned by UNEP, this project is aimed at developing a Supplement on Eco-Innovation in the Electronics sector. More specifically, the objective of the project is to develop specific guidelines on eco-innovation for electronic products based on the Eco-Innovation Handbook of the United Nations Environment Programme. In addition, guidelines are tested with companies based in Latin America, with a specific focus on Colombia. These activities are part of a GEF project on Sustainable Chemicals Management.

Our Role
WRFA is the project manager, developing the content of the supplement, with the support of a few external experts.

Highlights in 2021
- Complete draft of the Eco-I Supplement for Electronics is available and has undergone a consultation process.
- Six companies (4 in Colombia and 2 in Peru) have been committed to pilot the Eco-I Supplement for Electronics
E-waste Ghana – GIZ technical cooperation project

Focus Area WRFA: Resource Recovery
In progress (2018 – 2022)

Germany has started a bilateral cooperation with Ghana in 2016 to improve the conditions towards sustainable e-waste management. The effort involves a technical cooperation project, with the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) in the lead, and a financial cooperation project, implemented by the Ghana Ministry of Environment, Science, Technology and Innovation and the German Development Bank KfW. The technical cooperation project engages in three activity fields related to improving the policy framework, developing economically viable business models, and capacity development in the informal sector.

Our Role
WRFA supports the technical cooperation project by facilitating a large pool of international and local experts, providing targeted consultancy services to the projects and its beneficiaries. Expertise is provided in the areas of policy development, strategies for sustainable and inclusive e-waste recycling, take back schemes and financing systems as well as stakeholder dialogue.

Highlights in 2021

- Formal and informal recyclers have been provided with various baseline studies and pilot activities to improve the handling of hazardous fractions contained in e-waste.
- After the unexpected closure of the informal scrap yard Agbogbloshie in Accra, WRFA and its expert pool have supported the mitigation of fallout effects for the local community and the planning of a new location for recycling activities.
- With financial support from the GIZ Ghana project, WRFA has organized the local hub of the WRF2021 conference in Ghana, with the main focus on sustainable e-waste management in Ghana and Africa in general.
Projects acquired in 2021

Africa Maval – Building EU-Africa partnerships on sustainable raw materials value chain (2022 – 2025)

AfricaMaval is a EU-funded project that aims to develop EU-Africa partnership ensuring a responsible sourcing of minerals for the European industry while providing for a sustainable local co-development in the best environmental, social and governance conditions.

Focus Area WRFA
Resource Extraction

Our Role
WRFA has a key role in the assessment of Environmental, Social and Governance (ESG) challenges in Africa. By developing and implementing training programmes for communities, WRFA aims to align mining practices to ESG goals and fostering best practice for responsible extraction.

European Topic Centre Circular Economy and Resource Use – European Environmental Agency (2022 – 2026)

The ETC on Circular Economy and Resource Use is aimed at further developing the evidence based for transitioning to a circular economy, taking into account also wider green economy considerations by looking at impacts of resource use on human health and well-being.

Focus Area WRFA
Resource Circularity

Our Role
As a consortium partner, WRFA is focusing on advancing the knowledge of the repair sector in Europe, assessing the building system, contributing to an analysis for waste trade and understanding the status and developments of the circular material use rate.

DICE – Digital health in Circular Economy (2022 – 2026)

DICE aims to develop and demonstrate novel, circular and environmentally sound solutions to design, collect, directly reuse, refurbish, remanufacture and recycle digital health devices, which will contribute to enabling a circular transition. Solutions will be implemented, tested, and demonstrated through pilots in Norway, Belgium, Slovenia, Spain and Germany.

Focus Area WRFA
Resource Circularity

Our Role
WRFA’s contribution will have a focus on sustainability assessment, developing scaled-up recommendations for the overall EU circular and digital economy agenda and WEEE policy framework for digital health devices, and facilitating and harmonizing stakeholder engagement.
WRF Team
From left to right: Fabian Ottiger, Antonia Mantovanaki, Nicole Nussbaumer, Mathias Schlupe, Farnaz Eslamishoar, Sonia Valdivia, Emanuele Di Francesco, Shahrzad Manoochehri, Xaver Edelmann