CONTENTS

EXECUTIVE SUMMARY 01

FOREWORD BY THE SECRETARY GENERAL 03

LETTER FROM THE PRESIDENT by HRH Princess Sumaya bint El Hassan 05

WAITRO AT A GLANCE 07

WAITRO’S GOVERNING BODIES 12

CHAPTER 1 Online Services & Communication 15

CHAPTER 2 WAITRO SUMMIT 2022 21

CHAPTER 3 The 26th WAITRO GENERAL ASSEMBLY 52

CHAPTER 4 WAITRO ACTIVITIES in 2022 60
<table>
<thead>
<tr>
<th>CONTENTS</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>EXECUTIVE SUMMARY</td>
<td>01</td>
</tr>
<tr>
<td>FOREWORD BY THE SECRETARY GENERAL</td>
<td>03</td>
</tr>
<tr>
<td>LETTER FROM THE PRESIDENT</td>
<td>05</td>
</tr>
<tr>
<td>by HRH Princess Sumaya bint El Hassan</td>
<td></td>
</tr>
<tr>
<td>WAITRO AT A GLANCE</td>
<td>07</td>
</tr>
<tr>
<td>WAITRO’S GOVERNING BODIES</td>
<td>12</td>
</tr>
<tr>
<td>CHAPTER 1</td>
<td>15</td>
</tr>
<tr>
<td>Online Services &amp; Communication</td>
<td></td>
</tr>
<tr>
<td>CHAPTER 2</td>
<td>21</td>
</tr>
<tr>
<td>WAITRO SUMMIT 2022</td>
<td></td>
</tr>
<tr>
<td>CHAPTER 3</td>
<td>52</td>
</tr>
<tr>
<td>The 26th WAITRO GENERAL ASSEMBLY</td>
<td></td>
</tr>
<tr>
<td>CHAPTER 4</td>
<td>60</td>
</tr>
<tr>
<td>WAITRO ACTIVITIES in 2022</td>
<td></td>
</tr>
</tbody>
</table>
Welcome to the WAITRO Annual Report 2022, the annual summary of the WAITRO Global Innovation Family assembled for you by the WAITRO Secretariat. The format remains largely unchanged from 2021, with input from both the Germany Office and the China Office of the Secretariat as well as our much-valued Regional Focal Points and some of the newly-formed WAITRO Working Groups. Final production was done in Nanjing, China.

We start off with letters from the WAITRO leadership, both the Secretary General and the President, followed by an updated "WAITRO at a Glance" section that highlights new members, the evolving geographical distribution of WAITRO, and the composition of the Executive Board and the two Secretariat Offices. There follows an update on the services offered by WAITRO, both the constantly developing SARA platform and the communications products that we offer for members.

The major event of 2022 was the WAITRO Summit and 26th General Assembly, which served to mark the world’s emergence from almost three years of travel restrictions. You will find reports about two days of keynotes, panel discussions, capacity development, and workshops designed to nucleate WAITRO Working Groups around particular sustainable development goals (SDGs). You will also find a report summarizing the General Assembly, which resulted in the election of a new Executive Board for the 2023 – 2024 period and also approved JITRI to continue as host of the Secretariat for 2023 – 2026. We have every intention of maintaining the knowledge base, experience, and close cooperation between both Offices of the Secretariat as we go forward.

The WAITRO Summit was built around networking and, as part of that concept, members were invited to contribute posters promoting their expertise and availability for research partnerships. These are reproduced in miniature as a tribute to the members who worked with us to generate the content. The full-size versions are in the permanent exhibition at the Secretariat Headquarters in Jiangbei New Development Area, Nanjing. JITRI often receives visits from multi-national companies, consulates and embassies from all over the globe and it is valuable for them to see their regions represented in WAITRO. If you don’t see your organization there, it is either because we did not receive a poster or the design was not appropriate for the format. Contact the Secretariat and we will work with you to add you to the exhibition.

Finally, Chapter 4 gives a summary of the events, partnerships and projects that took root in 2022, with thanks to the Regional Focal Points for their tireless efforts to keep the Secretariat well-connected with their regions.

We hope you will find the Annual Report 2022 to be a valuable record of WAITRO’s successful emergence from the challenges of Covid. Most of all, we hope to hear your comments on what was interesting, what was frustrating, and what you would like to hear more about in future Annual Reports. If you don’t like the format, let us know. The power to change things is in your hands!
Welcome to the WAITRO Annual Report 2022, the annual summary of the WAITRO Global Innovation Family assembled for you by the WAITRO Secretariat. The format remains largely unchanged from 2021, with input from both the Germany Office and the China Office of the Secretariat as well as out much-valued Regional Focal Points and some of the newly-formed WAITRO Working Groups. Final production was done in Nanjing, China.

We start off with letters from the WAITRO leadership, both the Secretary General and the President, followed by an updated “WAITRO at a Glance” section that highlights new members, the evolving geographical distribution of WAITRO, and the composition of the Executive Board and the two Secretariat Offices. There follows an update on the services offered by WAITRO, both the constantly developing SAIRA platform and the communications products that we offer for members.

The major event of 2022 was the WAITRO Summit and 26th General Assembly, which served to mark the world’s emergence from almost three years of travel restrictions. You will find reports about two days of keynotes, panel discussions, capacity development, and workshops designed to nucleate WAITRO Working Groups around particular sustainable development goals (SDGs). You will also find a report summarizing the General Assembly, which resulted in the election of a new Executive Board for the 2023 – 2024 period and also approved JITRI to continue as host of the Secretariat for 2023 – 2026. We have every intention of maintaining the knowledge base, experience, and close cooperation between both Offices of the Secretariat as we go forward.

The WAITRO Summit was built around networking and, as part of that concept, members were invited to contribute posters promoting their expertise and availability for research partnerships. These are reproduced in miniature as a tribute to the members who worked with us to generate the content. The full-size versions are in the permanent WAITRO exhibition at the Secretariat Headquarters in Jiangbei New Development Area, Nanjing. JITRI often receives visits from multi-national companies, consulates and embassies from all over the globe and it is valuable for them to see their regions represented in WAITRO. If you don’t see your organization there, it is either because we did not receive a poster or the design was not appropriate for the format. Contact the Secretariat and we will work with you to add you to the exhibition.

Finally, Chapter 4 gives a summary of the events, partnerships and projects that took root in 2022, with thanks to the Regional Focal Points for their tireless efforts to keep the Secretariat well-connected with their regions.

We hope you will find the Annual Report 2022 to be a valuable record of WAITRO’s successful emergence from the challenges of Covid. Most of all, we hope to hear your comments on what was interesting, what was frustrating, and what you would like to hear more about in future Annual Reports. If you don’t like the format, let us know. The power to change things is in your hands!
Dear members and friends of WAITRO,

In 2022, the global health emergency posed by COVID-19 began to gradually recede. While the virus remains a persistent presence, continuing to claim lives and evolve, it no longer maintains pandemic status. But, as stated by the Director General of the World Health Organization (WHO), our ability to effectively tackle shared threats relies upon a unified and collaborative response.

In a similar vein, the United Nations’ Sustainable Development Goals (SDGs) present a comprehensive framework that outlines crucial global challenges and priorities. These goals encompass interconnected issues such as climate change, health, and poverty, necessitating collective action on a global scale for successful resolution. In order to make substantial progress towards achieving the SDGs by the target date of 2030, it is imperative that we foster coordination, collaboration, and accountability among diverse stakeholders. This collaborative approach is vital in working towards a future that is both prosperous and equitable, while also ensuring environmental sustainability.

Research and innovation, therefore, plays a pivotal role in this endeavor. By uniting under the umbrella of WAITRO, we can each contribute our share towards these goals.

With this objective in mind, in 2022, WAITRO made a strategic decision to concentrate on SDG 17, which focuses on Partnerships for the Goals. This theme was chosen as the focal point for our eagerly anticipated Summit, held in November 2022 in Cape Town, South Africa. The Summit featured enlightening keynotes, a thought-provoking roundtable discussion, and an exhibition showcasing SDG Impact Posters created by our members. It served as a catalyst, invigorating WAITRO’s efforts to collaborate closely on SDG-related topics through dedicated working groups. Additionally, the program encompassed a range of capacity development workshops, a poster exhibition representing almost all our members, as well as booths showcasing partner organizations and sponsors.

The Summit stood as the highlight of WAITRO’s activities in 2022. It provided a great opportunity for our members, the Global Innovation Family, to gather in person once again. It became evident that certain occasions, like the Summit, cannot be adequately replaced by virtual meetings. While we discovered the convenience and environmental benefits of conducting meetings online, which saved time, energy, and reduced our individual CO2 footprints, we recognized the significance of occasionally convening in person for special events like the Summit.

Furthermore, with the conclusion of 2022, my tenure as Secretary General of WAITRO came to an end. Although I had ambitious aspirations for my four-year term, the pandemic presented numerous obstacles that hindered the implementation of our plans. Nevertheless, we adapted to the challenging circumstances, discovering new and innovative ways to carry out our work for WAITRO. I extend my heartfelt appreciation to my team at the WAITRO Secretariat, whose unwavering support made many accomplishments possible despite the difficult circumstances.

By handing over the job to Paul Burrows, I am confident that he will do a great job as new Secretary General. However, my departure does not mark the end of my involvement with WAITRO. Since 2004, I have been actively engaged with WAITRO in various capacities, and for the foreseeable future, I will continue to serve as the Chief of Staff at the WAITRO Secretariat. I eagerly anticipate the opportunity to persistently collaborate with and support all of you in this new role.

Thank you all for your continued support of and dedication to WAITRO!

Dr. Eckart Bierdümpel
Dear members and friends of WAITRO,

In 2022, the global health emergency posed by COVID-19 began to gradually recede. While the virus remains a persistent presence, continuing to claim lives and evolve, it no longer maintains pandemic status. But, as stated by the Director General of the World Health Organization (WHO), our ability to effectively tackle shared threats relies upon a unified and collaborative response.

In a similar vein, the United Nations’ Sustainable Development Goals (SDGs) present a comprehensive framework that outlines crucial global challenges and priorities. These goals encompass interconnected issues such as climate change, health, and poverty, necessitating collective action on a global scale for successful resolution. In order to make substantial progress towards achieving the SDGs by the target date of 2030, it is imperative that we foster coordination, collaboration, and accountability among diverse stakeholders.

This collaborative approach is vital in working towards a future that is both prosperous and equitable, while also ensuring environmental sustainability. Research and innovation, therefore, plays a pivotal role in this endeavor. By uniting under the umbrella of WAITRO, we can each contribute our share towards these goals.

With this objective in mind, in 2022, WAITRO made a strategic decision to concentrate on SDG 17, which focuses on Partnerships for the Goals. This theme was chosen as the focal point for our eagerly anticipated Summit, held in November 2022 in Cape Town, South Africa. The Summit featured enlightening keynotes, a thought-provoking roundtable discussion, and an exhibition showcasing SDG Impact Posters created by our members. It served as a catalyst, invigorating WAITRO’s efforts to collaborate closely on SDG-related topics through dedicated working groups. Additionally, the program encompassed a range of capacity development workshops, a poster exhibition representing almost all our members, as well as booths showcasing partner organizations and sponsors.

The Summit stood as the highlight of WAITRO’s activities in 2022. It provided a great opportunity for our members, the Global Innovation Family, to gather in person once again. It became evident that certain occasions, like the Summit, cannot be adequately replaced by virtual meetings. While we discovered the convenience and environmental benefits of conducting meetings online, which saved time, energy, and reduced our individual CO2 footprints, we recognized the significance of occasionally convening in person for special events like the Summit.

Furthermore, with the conclusion of 2022, my tenure as Secretary General of WAITRO came to an end. Although I had ambitious aspirations for my four-year term, the pandemic presented numerous obstacles that hindered the implementation of our plans. Nevertheless, we adapted to the challenging circumstances, discovering new and innovative ways to carry out our work for WAITRO. I extend my heartfelt appreciation to my team at the WAITRO Secretariat, whose unwavering support made many accomplishments possible despite the difficult circumstances.

By handing over the job to Paul Burrows, I am confident that he will do a great job as new Secretary General. However, my departure does not mark the end of my involvement with WAITRO. Since 2004, I have been actively engaged with WAITRO in various capacities, and for the foreseeable future, I will continue to serve as the Chief of Staff at the WAITRO Secretariat. I eagerly anticipate the opportunity to persistently collaborate with and support all of you in this new role.

Thank you all for your continued support of and dedication to WAITRO!

Dr. Eckart Bierdümpel
President’s Message

A year of in-person re-engagement and collegiate renewal has shown that our wonderful fellowship of industrial and technological research organisations has not just weathered the storms of recent years but has emerged into the post-covid calm both stronger and more resilient. We have shown that through the course of those testing times our resolve became greater and our focus more acute.

I feel immensely honoured to have served as President of WAITRO during those difficult times. Together, we showed the world that we are a diverse family of organisations with a global reach. We have worked in unison to refine our goals and to reaffirm our mission. As my tenure as WAITRO President drew to a close on 31st December 2022, I reflected with great humility on the preceding four years during which time I was proud to be a torchbearer for our organisation in times that were so dark for many.

The WAITRO Summit 2022 held in Cape Town last November marked a glorious return to in-person meeting and collaborative ideation. Some 140 delegates, representing more than 35 countries, made for a vibrant gathering that reigned our collective efforts to forge new research partnerships. It was clear from contributions by speakers and conversations among participants that the need for new partnerships and novel working groups to respond even more deftly and innovatively to global challenges and to further hone our contributions to help achieve the Sustainable Development Goals is ever to the forefront of research minds throughout our network.

It was clear that our periods of lockdown were certainly not periods of seclusion. Lines of communication had remained well-and-truly open, and channels of inspiration continued to flow. In recent years we have seen challenges converge, combine and overlap. We are clearly focused on devising solutions that match.

My dear fellow members of the WAITRO family, I shall always be one of you, and my organisation, the Royal Scientific Society, shall continue to be a core and committed WAITRO member. I feel honoured indeed to be succeeded by so a distinguished an individual as Professor Dr Hassan Mandal, President of the Scientific and Technical Research Council of Turkey. I wish him every success as President of WAITRO and I have no doubt that he will be as proud a holder of the office as was I.

HRH Princess Sumaya bint El Hassan
President's Message
A year of in-person re-engagement and collegiate renewal has shown that our wonderful fellowship of industrial and technological research organisations has not just weathered the storms of recent years but has emerged into the post-covid calm both stronger and more resilient. We have shown that through the course of those testing times our resolve became greater and our focus more acute.
I feel immensely honoured to have served as President of WAITRO during those difficult times. Together, we showed the world that we are a diverse family of organisations with a global reach. We have worked in unison to refine our goals and to reaffirm our mission. As my tenure as WAITRO President drew to a close on 31st December 2022, I reflected with great humility on the preceding four years during which time I was proud to be a torchbearer for our organisation in times that were so dark for many.
The WAITRO Summit 2022 held in Cape Town last November marked a glorious return to in-person meeting and collaborative ideation. Some 140 delegates, representing more than 35 countries, made for a vibrant gathering that reignited our collective efforts to forge new research partnerships. It was clear from contributions by speakers and conversations among participants that the need for new partnerships and novel working groups to respond even more deftly and innovatively to global challenges and to further hone our contributions to help achieve the Sustainable Development Goals is ever to the forefront of research minds throughout our network.

LETTER FROM THE PRESIDENT

It was clear that our periods of lockdown were certainly not periods of seclusion. Lines of communication had remained well-and-truly open, and channels of inspiration continued to flow. In recent years we have seen challenges converge, combine and overlap. We are clearly focused on devising solutions that match.
My dear fellow members of the WAITRO family, I shall always be one of you, and my organisation, the Royal Scientific Society, shall continue to be a core and committed WAITRO member. I feel honoured indeed to be succeeded by so a distinguished an individual as Professor Dr Hassan Mandal, President of the Scientific and Technical Research Council of Turkey. I wish him every success as President of WAITRO and I have no doubt that he will be as proud a holder of the office as was I.

HRH Princess Sumaya bint El Hassan
WAITRO NEW members in 2022

WAITRO was founded in 1970 under the auspices of the United Nations. As of December 2022, WAITRO has 151 member organizations from 66 countries.

- **44 members in Africa**
  - New members 2022:
    - FMSTI, Nigeria
    - JU, Ethiopia
    - AFR, Zimbabwe
    - ONG AMEDD, Mali
    - AV, Nigeria
    - UCU, Uganda
    - CCCEM, Malawi
    - NARDI, Botswana
    - UNAM, Namibia
    - BU, Uganda
    - KIBU, Kenya
    - TUM, Kenya
    - AFRIAH, South Africa
    - UNIZULU, South Africa

- **34 members in Asia & the Pacific**
  - New members 2022:
    - NJTECH, China
    - MONASH, Australia
    - SSL, India
    - Jiangsu Forceset Vibration Control Technology Co.Ltd, China

- **26 members in Latin America & the Caribbean**
  - New members 2022:
    - FMSTI, Nigeria
    - JU, Ethiopia
    - AFR, Zimbabwe
    - ONG AMEDD, Mali
    - AV, Nigeria
    - UCU, Uganda
    - CCCEM, Malawi
    - NARDI, Botswana
    - UNAM, Namibia
    - BU, Uganda
    - KIBU, Kenya
    - TUM, Kenya
    - AFRIAH, South Africa
    - UNIZULU, South Africa

- **29 members in Europe**
  - New members 2022:
    - TECNALIA, Spain
    - MT, Germany
    - Green A, Netherlands
    - FORTH, Greece
    - Atlantis, England
    - KIT, Germany

- **15 members in Middle East & North Africa**
  - New member 2022:
    - BGU, Israel

- **3 members in North America**
  - New members 2022:
    - TTC, USA
    - Headway, USA

For more info about the full membership list, please refer to the official website https://waitro.org/
WAITRO was founded in 1970 under the auspices of the United Nations. As of December 2022, WAITRO has 151 member organizations from 66 countries.

**44 members in Africa**
New members 2022:
- FMSTI, Nigeria
- JU, Ethiopia
- AFR, Zimbabwe
- ONG AMEDD, Mali
- AV, Nigeria
- UCU, Uganda
- CCCEM, Malawi
- NARDI, Botswana
- UNAM, Namibia
- BU, Uganda
- KIBU, Kenya
- TUM, Kenya
- AFRAH, South Africa
- UNIZULU, South Africa

**34 members in Asia & the Pacific**
New members 2022:
- NJTECH, China
- MONASH, Australia
- SSL, India
- Jiangsu Forceset Vibration Control Technology Co.Ltd, China

**26 members in Latin America & the Caribbean**
New members 2022:
- FMSTI, Nigeria
- JU, Ethiopia
- AFR, Zimbabwe
- ONG AMEDD, Mali
- AV, Nigeria
- UCU, Uganda
- CCECM, Malawi
- NARDI, Botswana
- UNAM, Namibia
- BU, Uganda
- KIBU, Kenya
- TUM, Kenya
- AFRAH, South Africa
- UNIZULU, South Africa

**29 members in Europe**
New members 2022:
- TECNALIA, Spain
- MT, Germany
- Green A, Netherlands
- FORTH, Greece
- Atlantis, England
- KIT, Germany

**15 members in Middle East & North Africa**
New members 2022:
- BGU, Israel

**3 members in North America**
New members 2022:
- TTC, USA
- Headway, USA

For more info about the full membership list, please refer to the official website https://waitro.org/
WAITRO INNOVATION ECOSYSTEM

WAITRO Programs & Services
- Open Innovation Platform - SAIRA®
- Capacity Development Program
- Innovation Award
- WAITRO Summit
- Fellowship Program

More at: waitro.org/programs-services

WAITRO-UNITED NATIONS RELATIONS
- Special Consultative Status with the United Nations Economic and Social Council (ECOSOC)
- Consultative Status with the United Nations Department of Economic and Social Affairs (UN DESA)

MISSION
To foster innovation and drive sustainable development by empowering member organizations and facilitating collaboration across borders and boundaries.

VISION
A global innovation ecosystem, in which research and technology organizations (incl. universities) collaborate, share knowledge, develop, and disseminate innovative technologies in partnership with the private and public sector to deliver sustainable impact to societies and economies.

OBJECTIVES
Facilitate the participation of member organizations in publicly-funded collaborations and public-private partnerships.
Facilitate collaboration between member organizations and the private sector.
Foster collaborations between member organizations towards the development and deployment of innovative technologies that impact sustainable development.
Improve operational practices and business performance of member organizations and enhance scientific research and technological capacities of their individuals.
MISSION
To foster innovation and drive sustainable development by empowering member organizations and facilitating collaboration across borders and boundaries.

VISION
A global innovation ecosystem, in which research and technology organizations (incl. universities) collaborate, share knowledge, develop, and disseminate innovative technologies in partnership with the private and public sector to deliver sustainable impact to societies and economies.

OBJECTIVES
Facilitate the participation of member organizations in publicly-funded collaborations and public-private partnerships.
Facilitate collaboration between member organizations and the private sector.
Foster collaborations between member organizations towards the development and deployment of innovative technologies that impact sustainable development.
Improve operational practices and business performance of member organizations and enhance scientific research and technological capacities of their individuals.

WAITRO INNOVATION ECOSYSTEM
WAITRO Programs & Services
- Open Innovation Platform - SAIRA®
- Capacity Development Program
- Innovation Award
- WAITRO Summit
- Fellowship Program
More at: waitro.org/programs-services

WAITRO-UNITED NATIONS RELATIONS
- Special Consultative Status with the United Nations Economic and Social Council (ECOSOC)
- Consultative Status with the United Nations Department of Economic and Social Affairs (UN DESA)
General Assembly

WAITRO full member organizations are represented in the General Assembly. Delegates of member organizations meet every two years to discuss the future of the association and work together on new collaboration forms to create lasting ties between members and partners.

Next Meeting: 2024

Main Functions:
- Election of the Executive Board
- Review and approval of the strategic plan and work program
- Review and approval of activities
- Adoption of amendments to the Constitution, By-Laws of the Association and the Rules of Procedure of the General Assembly

Executive Board

The WAITRO Executive Board constitutes the President, two Vice-Presidents, and five Regional Representatives:
- Africa
- Asia & the Pacific
- Latin America & the Caribbean
- Europe
- Middle East & North Africa

The Executive Board Meetings are held twice a year.

Secretariat

The WAITRO Secretariat employs 16 staff members in two offices. One office is located in Fraunhofer-Gesellschaft, Sankt Augustin, Germany; and the other office is located in Jiangsu Industrial Technology Research Institute (JITRI), Nanjing, China.
General Assembly

WAITRO full member organizations are represented in the General Assembly. Delegates of member organizations meet every two years to discuss the future of the association and work together on new collaboration forms to create lasting ties between members and partners.

Next Meeting : 2024

Main Functions:
- Election of the Executive Board
- Review and approval of the strategic plan and work program
- Review and approval of activities
- Adoption of amendments to the Constitution, By-Laws of the Association and the Rules of Procedure of the General Assembly

Executive Board

The WAITRO Executive Board constitutes the President, two Vice-Presidents, and five Regional Representatives:
- Africa
- Asia & the Pacific
- Europe
- Latin America & the Caribbean
- Middle East & North Africa

The Executive Board Meetings are held twice a year.

Secretariat

The WAITRO Secretariat employs 16 staff members in two offices. One office is located in Fraunhofer-Gesellschaft, Sankt Augustin, Germany; and the other office is located in Jiangsu Industrial Technology Research Institute (JITRI), Nanjing, China.
Innovation platform- SAIRA®

Matchmaking and Innovation Platform powered by WAITRO

SAIRA enables and accelerates collaboration between research organizations, academia, governments, civil society, and the private sector across geographical and disciplinary boundaries by offering an easy, accessible, and sensible data protected way to share collaboration needs, innovative project ideas, or developed technology, thereby enabling connections to potential partners. Finding the right partner isn’t easy. Using SAIRA is.

Two test versions of SAIRA were created by Fraunhofer-Gesellschaft (WAITRO Office Germany) as part of a project funded by the German Federal Ministry of Education and Research (BMBF) primarily to connect researchers of WAITRO member organizations. Success cases prove that the SAIRA approach works, and that the digital platform enables collaboration between different stakeholders. To address even more complex challenges in the context of international cooperation in research and innovation, the WAITRO is currently working on a concept for a third version.

Our Vision

Be the world’s best platform at matching researchers and innovators and enabling collaborations for the SDGs.

What is SAIRA for?

SAIRA is designed for people with collaboration needs, innovative ideas, with developed technology, or with a desire to build project teams and consortia to respond to funding opportunities and call for proposals.

- It’s designed to share your idea – no matter if it’s at an embryonic or more advanced stage.
- It’s designed to share your project – no matter if it’s related to implementation, production, or deployment of technological solutions.
- It’s designed to share your collaboration needs – no matter if you are working for a research organization, NGO, company, or a start-up with the desire to scale.

SAIRA is designed to share your partner search and get connected to potential collaborators for research and innovation. It is made for you to find the right partners across disciplines or national borders.

Facts & Figures (as of December 2022)

- Matches (User found potential partner via SAIRA®) in 2022: 22
- Users: 1021
- Organizations: 411
- Countries: 103
Innovation platform- SAIRA®

Matchmaking and Innovation Platform powered by WAITRO

SAIRA enables and accelerates collaboration between research organizations, academia, governments, civil society, and the private sector across geographical and disciplinary boundaries by offering an easy, accessible, and sensible data protected way to share collaboration needs, innovative project ideas, or developed technology, thereby enabling connections to potential partners. Finding the right partner isn’t easy. Using SAIRA is.

Two test versions of SAIRA were created by Fraunhofer-Gesellschaft (WAITRO Office Germany) as part of a project funded by the German Federal Ministry of Education and Research (BMBF) primarily to connect researchers of WAITRO member organizations. Success cases prove that the SAIRA approach works, and that the digital platform enables collaboration between different stakeholders. To address even more complex challenges in the context of international cooperation in research and innovation, the WAITRO is currently working on a concept for a third version.

Our Vision
Be the world’s best platform at matching researchers and innovators and enabling collaborations for the SDGs.

What is SAIRA for?
SAIRA is designed for people with collaboration needs, innovative ideas, with developed technology, or with a desire to build project teams and consortia to respond to funding opportunities and call for proposals.

- It’s designed to share your idea — no matter if it’s at an embryonic or more advanced stage.
- It’s designed to share your project — no matter if it’s related to implementation, production, or deployment of technological solutions.
- It’s designed to share your collaboration needs — no matter if you are working for a research organization, NGO, company, or a start-up with the desire to scale.

SAIRA is designed to share your partner search and get connected to potential collaborators for research and innovation. It is made for you to find the right partners across disciplines or national borders.

Facts & Figures (as of December 2022)
22 Matches (User found potential partner via SAIRA®) in 2022

Users
1021

Organizations
411

Countries
103

SAIRA
www.saira.eco
Communication

WAITRO Digital Marketing Plan 2022

The Digital Marketing Plan implemented by the WAITRO Communications Team in 2022 was designed to achieve communication goals, which focused on increasing brand awareness, community engagement, brand audience, and generating leads. Key performance indicators (KPIs) were set to measure success in meeting the communication goals.

Communication Goals:

- **Increase brand awareness**
  - KPI: Increase number of social media impressions by 15%
  - KPI: Increase organic website traffic by 9%

- **Increase community engagement**
  - KPI: Increase social media engagement by 15%
  - KPI: Increase email click rate by 5%

- **Grow brand audience**
  - KPI: Increase social media audience by 10%
  - KPI: Increase newsletter sign-ups by 5%

- **Generate leads**
  - KPI: Increase number of views of “Become a member” page by 5%

Marketing Strategy (Implementation)

Website Plan

The website plan was conducted in three parts. In the first part, a website analysis was carried out to determine what visitors wanted to do and what we wanted them to do. A list of things that visitors would be expected to do on the WAITRO website and a list of their needs were created. The website usability was analyzed to enhance navigation, layout, and content, and a website design analysis was made aimed at creating more mobile-friendly pages that load quickly.

In the second part of the website plan, an SEO plan was developed to help the website appear in organic search results. The website’s performance in search results was monitored using Google Search Console, and keywords that potential visitors were searching for were identified. Web pages were made search-friendly by optimizing meta tags and titles, improving headings, and enhancing page copy. Additionally, off-site optimization strategies such as backlinks and content marketing were listed to increase search engine rankings.

In the third part of the website plan, audience segmentation was carried out to define who the audience is and what they need and like. The current audience was analyzed and divided into groups based on their interests and needs. An audience segmentation survey was also created to gather more details about the audience.

Social Media Plan

In the social media plan, audience and their needs and interests were defined. The current audience on LinkedIn and Meta Business Suite were analyzed, and a social media calendar was developed, outlining when, what, where and which content would be published on social media. A series of social media posts focusing on WAITRO’s programs and services were also developed.

- **Social Media Series:**
  - International Days #InternationalDay
  - WAITRO New Member #WAITRONewMember
  - WAITRO Funding Series #WAITROFundingSeries
  - WAITRO Member Outreach #WAITROMemberOutreach
  - SDG Series #SDGSeries
  - Saira Series #SairaSeries
  - WAITRO Guest Articles #WAITROGuestArticle
  - WAITRO Events #WAITROEvent
  - WAITRO Summit 2022 #WAITROSummit2022

A Social Media Audit was conducted to evaluate the social media presence and performance across various platforms. Profile information, profile pictures, bio, and contact information were analyzed to ensure consistency and completeness. The quality and relevance of the content across all platforms were evaluated, and engagement metrics, including likes, shares, comments, and follower growth, were analyzed to measure the effectiveness of the social media strategy. Opportunities for improvement were identified based on the findings, and recommendations for enhancing the social media strategy were developed.

Quarterly online marketing reports were also prepared to track progress and inform the social media strategy going forward.
Communication

WAITRO Digital Marketing Plan 2022

The Digital Marketing Plan implemented by the WAITRO Communications Team in 2022 was designed to achieve communication goals, which focused on increasing brand awareness, community engagement, brand audience, and generating leads. Key performance indicators (KPIs) were set to measure success in meeting the communication goals.

Communication Goals:

Increase brand awareness
KPIs:
Increase number of social media impressions by 15%
Increase organic website traffic by 9%

Increase community engagement
KPIs:
Increase social media engagement by 15%
Increase email click rate by 5%

Grow brand audience
KPIs:
Increase social media audience by 10%
Increase newsletter sign-ups by 5%

Generate leads
KPI:
Increase number of views of “Become a member” page by 5%

Marketing Strategy (Implementation)

Website Plan

The website plan was conducted in three parts. In the first part, a website analysis was carried out to determine what visitors wanted to do and what we wanted them to do. A list of things that visitors would be expected to do on the WAITRO website and a list of their needs were created. The website usability was analyzed to enhance navigation, layout, and content, and a website design analysis was made aimed on creating more mobile-friendly pages that load quickly.

In the second part of the website plan, an SEO plan was developed to help the website appear in organic search results. The website's performance in search results was monitored using Google Search Console, and keywords that potential visitors were searching for were identified. Web pages were made search-friendly by optimizing meta tags and titles, improving headings, and enhancing page copy. Additionally, off-site optimization strategies such as backlinks and content marketing were listed to increase search engine rankings.

In the third part of the website plan, audience segmentation was carried out to define who the audience is and what they need and like. The current audience was analyzed and divided into groups based on their interests and needs. An audience segmentation survey was also created to gather more details about the audience.

Social Media Plan

In the social media plan, audience and their needs and interests were defined. The current audience on LinkedIn and Meta Business Suite were analyzed, and a social media calendar was developed, outlining when, what, where and which content would be published on social media.

A series of social media posts focusing on WAITRO’s programs and services were also developed.

Social Media Series:
- International Days #InternationalDay
- WAITRO New Member #WAITRONewMember
- WAITRO Funding Series #WAITROFundingSeries
- WAITRO Member Outreach #WAITROMemberOutreach
- SDG Series #SDGSeries
- SAIRA Series #SairaSeries
- WAITRO Guest Articles #WAITROGuestArticle
- WAITRO Events #WAITROEvent
- WAITRO Summit 2022 #WAITROSummit2022

A Social Media Audit was conducted to evaluate the social media presence and performance across various platforms. Profile information, profile pictures, bio, and contact information were analyzed to ensure consistency and completeness. The quality and relevance of the content across all platforms were evaluated, and engagement metrics, including likes, shares, comments, and follower growth, were analyzed to measure the effectiveness of the social media strategy. Opportunities for improvement were identified based on the findings, and recommendations for enhancing the social media strategy were developed.

Quarterly online marketing reports were also prepared to track progress and inform the social media strategy going forward.
**Email Marketing Plan**

An email marketing plan was developed that involved audience segmentation and aimed to define the audience, their needs and preferences, and identify the groups most interested in WAITRO’s programs and services. The insights and demographics from Sendinblue (email marketing management tool) and WAITRO Survey 2022 Report were analyzed to collect information about the audience based on age, country, position, organization type, membership type, research interests, digital platforms, topics of interest, and social media channels. Furthermore, an email marketing calendar was developed for the newsletter subscribers.

**Results**

<table>
<thead>
<tr>
<th>Website</th>
<th>Social Media</th>
<th>Email Marketing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Increased organic website traffic by 14.83%</td>
<td>Increased number of social media impressions by 55.73%</td>
<td>Increased email click rate by 22.52%</td>
</tr>
<tr>
<td>Increased number of views of “Become a member” page by 19.32%</td>
<td>Increased social media engagement by 52.71%</td>
<td>Increased newsletter sign-ups by 31.67%</td>
</tr>
<tr>
<td></td>
<td>Increased social media audience by 67.60%</td>
<td></td>
</tr>
</tbody>
</table>

**WAITRO Summit 2022 Marketing Campaign**

A marketing campaign was designed to promote the WAITRO Summit 2022, with a call for registrations between August 1st and November 11th. The Communication Plan aimed to achieve the following communication goals:

- **Increase community engagement**
  - KPI: Increase social media engagement by 10%

- **Increase brand awareness**
  - KPI: Increase social media impressions by 10%

- **Grow brand audience**
  - KPI: Increase social media audience by 5%

- **Generate leads**
  - KPI: Attract 3,000 event website visits

The target audience for the campaign was managers and researchers of research and technology organizations, representatives of multilateral institutions, governments, civil society, non-profit organizations, and the private sector, including start-ups and philanthropic organizations. The key message conveyed was that the WAITRO Summit 2022 was the ideal event to learn, network, create new partnerships, and kick-start projects with global impact.

The campaign's deliverables included an event logo, event website, registration portal, speaker & partner briefs, promotional video, press release, media kit, event brochure, website news posts, website articles, social media banners, social media posts, social media paid ads, and email marketing campaigns. These deliverables were distributed through various channels, including the event website, owned channels (WAITRO website, social networks, newsletter), earned channels (members and partners), and paid channels (social media). The outreach team included the WAITRO Secretariat, WAITRO Regional Focal Points, WAITRO Executive Board, WAITRO Partners, WAITRO Members, event speakers, and event attendees.

The campaign's email marketing strategy involved creating a ‘Dissemination Team’. Members with relevant online audience were identified to support in publicizing the event. Universities and research and technology organizations located in South Africa and surroundings were also contacted. Over 150 emails were sent, including the Media Kit and Event Brochure.

The insights from the campaign included the importance of using KPIs to measure performance, LinkedIn’s paid campaign effectiveness in increasing brand awareness, the value of the support of WAITRO members in publicizing the event, and the importance of integrating international marketing actions into WAITRO’s communication campaigns.

**Communication Strategy with WAITRO RFPs**

In 2022, the WAITRO Communications Team developed a communication strategy aimed at enhancing the communication between Secretariat, Regional Focal Points (RFPs) and members. The communication strategy was designed to identify problems, challenges, and possible solutions through a systematic approach consisting of seven steps.

The first step was to identify the issues and challenges in the communication process, followed by getting feedback from the RFPs. The feedback received from the RFPs was analyzed in the third step, and the one-on-one meetings were held with the RFPs and their respective communication persons as the fourth step. Based on the feedback and meetings, the communication strategy was updated in step five, which was followed by the development of regional action plans for each RFP in step six. The final step of the communication strategy was the implementation of the action plans.

The implementation of the communication strategy is an ongoing process, and the WAITRO Communications Team will continue to evaluate its effectiveness and make improvements where necessary to ensure that the communication process remains efficient and effective.
Email Marketing Plan

An email marketing plan was developed that involved audience segmentation and aimed to define the audience, their needs and preferences, and identify the groups most interested in WAITRO’s programs and services. The insights and demographics from Sendinblue (email marketing management tool) and WAITRO Survey 2022 Report were analyzed to collect information about the audience based on age, country, position, organization type, membership type, research interests, digital platforms, topics of interest, and social media channels. Furthermore, an email marketing calendar was developed for the newsletter subscribers.

Results

Website
- Increased organic website traffic by 14.83%
- Increased number of views of “Become a member” page by 19.32%

Social Media
- Increased number of social media impressions by 55.73%
- Increased social media engagement by 52.71%
- Increased social media audience by 67.60%

Email Marketing
- Increased email click rate by 22.52%
- Increased newsletter sign-ups by 31.67%

WAITRO Summit 2022 Marketing Campaign

A marketing campaign was designed to promote the WAITRO Summit 2022, with a call for registrations between August 1st and November 11th. The Communication Plan aimed to achieve the following communication goals:

- Increase community engagement
  KPI: Increase social media engagement by 10%
- Increase brand awareness
  KPI: Increase social media impressions by 10%
- Grow brand audience
  KPI: Increase social media audience by 5%
- Generate leads
  KPI: Attract 3,000 event website visits

The target audience for the campaign was managers and researchers of research and technology organizations, representatives of multilateral institutions, governments, civil society, non-profit organizations, and the private sector, including start-ups and philanthropic organizations. The key message conveyed was that the WAITRO Summit 2022 was the ideal event to learn, network, create new partnerships, and kick-start projects with global impact.

The campaign’s deliverables included an event logo, event website, registration portal, speaker & partner briefs, promotional video, press release, media kit, event brochure, website news posts, website articles, social media banners, social media posts, social media paid ads, and email marketing campaigns. These deliverables were distributed through various channels, including the event website, owned channels (WAITRO website, social networks, newsletter), earned channels (members and partners), and paid channels (social media). The outreach team included the WAITRO Secretariat, WAITRO Regional Focal Points, WAITRO Executive Board, WAITRO Partners, WAITRO Members, event speakers, and event attendees.

The campaign’s email marketing strategy involved creating a ‘Dissemination Team’. Members with relevant online audience were identified to support in publicizing the event. Universities and research and technology organizations located in South Africa and surroundings were also contacted. Over 150 emails were sent, including the Media Kit and Event Brochure.

The results showed that the communication goals were successfully achieved:

- Increased social media engagement by 102.28%
- Increased social media impressions by 593.08%
- Increased social media audience by 8.74%
- +5000 event website visits

The insights from the campaign included the importance of using KPIs to measure performance, LinkedIn’s paid campaign effectiveness in increasing brand awareness, the value of the support of WAITRO members in publicizing the event, and the importance of integrating international marketing actions into WAITRO’s communication campaigns

Communication Strategy with WAITRO RFPs

In 2022, the WAITRO Communications Team developed a communication strategy aimed at enhancing the communication between Secretariat, Regional Focal Points (RFPs) and members. The communication strategy was designed to identify problems, challenges, and possible solutions through a systematic approach consisting of seven steps.

The first step was to identify the issues and challenges in the communication process, followed by getting feedback from the RFPs. The feedback received from the RFPs was analyzed in the third step, and the one-on-one meetings were held with the RFPs and their respective communication persons as the fourth step. Based on the feedback and meetings, the communication strategy was updated in step five, which was followed by the development of regional action plans for each RFP in step six. The final step of the communication strategy was the implementation of the action plans.

The implementation of the communication strategy is an ongoing process, and the WAITRO Communications Team will continue to evaluate its effectiveness and make improvements where necessary to ensure that the communication process remains efficient and effective.
Networking for the Goals, and was designed around key spaces and times for networking with like-minded research professionals. The centerpiece of the summit was a poster exhibition that was divided into Member posters to introduce the capabilities and needs of organizations and SDG impact posters to highlight impactful research projects or results that advance one or more SDGs. The latter posters were eligible for the WAITRO Impact Award, which took the form of a $3000 cash prize. All Summit registrants were given four voting stickers to place on the posters that they considered most impactful and this process both determined the finalists and required attendees to spend time in the display areas, where conversations around mutual interests were most likely to develop. A panel of VIP invited speakers then voted for two winners based on a common set of metrics.

Key themes of the Summit were innovative mechanisms and partnerships for the SDGs, catalyzing finance for innovative, high-impact projects, bridging the gaps between the private sector and innovative and high impact groups, maximizing the impact of applied research on the SDGs, commercializing research results and benchmarking to identify best practices in RTO management.

The Summit was focused on SDG17:

The capital of South Africa was the stage of WAITRO’s flagship event on the 14th and 15th of November 2022, as research and innovation stakeholders from over 35 countries gathered in Cape Town, South Africa for the WAITRO Summit 2022. With the aim of building new partnerships and initiating working groups to face global challenges and contribute to the Sustainable Development Goals (SDGs), more than 140 delegates had the opportunity to learn and hear from renowned speakers, exchange experiences, network and collaborate during the two days of face-to-face event.
The WAITRO Summit 2022

The capital of South Africa was the stage of WAITRO’s flagship event on the 14th and 15th of November 2022, as research and innovation stakeholders from over 35 countries gathered in Cape Town, South Africa for the WAITRO Summit 2022. With the aim of building new partnerships and initiating working groups to face global challenges and contribute to the Sustainable Development Goals (SDGs), more than 140 delegates had the opportunity to learn and hear from renowned speakers, exchange experiences, network and collaborate during the two days of face-to-face event.

Key themes of the Summit were innovative mechanisms and partnerships for the SDGs, catalyzing finance for innovative, high-impact projects, bridging the gaps between the private sector and innovative and high impact groups, maximizing the impact of applied research on the SDGs, commercializing research results and benchmarking to identify best practices in RTO management.

The Summit was focused on SDG17:

Networking for the Goals, and was designed around key spaces and times for networking with like-minded research professionals. The centerpiece of the summit was a poster exhibition that was divided into Member posters to introduce the capabilities and needs of organizations and SDG impact posters to highlight impactful research projects or results that advance one or more SDGs. The latter posters were eligible for the WAITRO Impact Award, which took the form of a $3000 cash prize. All Summit registrants were given four voting stickers to place on the posters that they considered most impactful and this process both determined the finalists and required attendees to spend time in the display areas, where conversations around mutual interests were most likely to develop. A panel of VIP invited speakers then voted for two winners based on a common set of metrics.
Keynotes, Roundtable and Capacity Development Workshops

The Summit kicked off with an opening address from the WAITRO President, HRH Princess Sumaya bint El Hassan (see box) followed by formal welcomes from the Summit co-host, Stellenbosch University, represented by Prof. Eugene Cloete, Deputy Vice Chancellor for Research, Innovation and Postgraduate Studies and the Regional Focal Point host, North-West University, represented by Dr Bismark Tyobeka, Vice-Chancellor. Introductory comments in the context of South Africa were delivered by Feizal Toefy, Chief Director University Planning & Institutional Planning at the Ministry for Higher Education, Science and Innovation.

Dear Members of the WAITRO Family, It is a pleasure to welcome you all to the WAITRO Summit 2022. I am particularly happy that so many of you will meet in person in Cape Town after such a long period of virtual engagement. We must of course celebrate the possibilities for partnership that virtual technology has unleashed in challenged times, but we are human after all, and there is nothing like face-to-face networking to cement relationships and to ignite ideas.

Our 2022 summit will re-unite those who have worked apart for so long and will introduce many of you to a world of creative possibilities. It is certainly time to reboot our collaborative capital and to make sure that we are investing it wisely and widely. In our challenged world, the importance of partnerships cannot be overstated, and those partnerships must be real, resourceful, and multilateral.

For there is no doubt that Sustainable Development Goal 17 is central to everything we are trying to achieve through WAITRO and within each of our 130+ member organizations. The urgency and utility of partnerships becomes ever more vital the further from centers of development and influence that we travel, and our core mission is to ensure that no potential partner is left behind – We each have something to offer. The fact is that solid, communicative, receptive, and adaptive partnerships are crucial to those who have less, and who are heard less.

We learnt many years ago, from the Millennium Development Goal process, that the urgent challenges we all face are cross-cutting. The Addis Ababa Conference of 2015 recognized that financing was vital to any plan of action, but that it would amount to nothing without true partnerships – ones that recognize the weaknesses and strengths of all parties. I believe that our experiences through the pandemic have certainly confirmed that.

But we must also recognize that partnerships between developed and developing nations are not uneven in the way many might believe. These collaborations are certainly not gifts from the great and the good. Partnerships across borders and stretched over cultural divides are investments by all of us in all of us. We need to push home this message clearly and consistently. We each have much to learn from the other, regardless of background or context. Indeed, diversity empowers research and leads to better results for all of us.

The global research community has struggled to live up to the promise of Goal 17, and the strain is showing. In so many contexts, partnerships are neither engaging nor functioning. The fault lines are starkly visible. The COVID-19 pandemic has taught us that we are no longer safe if we work alone. So how can we better work together collaboratively and practice what we preach?

As we explore the potential of Innovative Partnerships at the WAITRO Summit 2022 and imagine the truly Global Impact that we might have, I know that answers will be found by you through novel collaborations. I wish you all well and I very much look forward to sharing the next stage of our journey with you.
Dear Members of the WAITRO Family, It is a pleasure to welcome you all to the WAITRO Summit 2022. I am particularly happy that so many of you will meet in person in Cape Town after such a long period of virtual engagement. We must of course celebrate the possibilities for partnership that virtual technology has unleashed in challenged times, but we are human after all, and there is nothing like face-to-face networking to cement relationships and to ignite ideas.

Our 2022 summit will re-unite those who have worked apart for so long and will introduce many of you to a world of creative possibilities. It is certainly time to reboot our collaborative capital and to make sure that we are investing it wisely and widely. In our challenged world, the importance of partnerships cannot be overstated, and those partnerships must be real, resourceful, and multilateral.

For there is no doubt that Sustainable Development Goal 17 is central to everything we are trying to achieve through WAITRO and within each of our 130+ member organizations. The urgency and utility of partnerships becomes ever more vital the further from centers of development and influence that we travel, and our core mission is to ensure that no potential partner is left behind – We each have something to offer. The fact is that solid, communicative, receptive, and adaptive partnerships are crucial to those who have less, and who are heard less.

We learnt many years ago, from the Millennium Development Goal process, that the urgent challenges we all face are cross-cutting. The Addis Ababa Conference of 2015 recognized that financing was vital to any plan of action, but that it would amount to nothing without true partnerships – ones that recognize the weaknesses and strengths of all parties. I believe that our experiences through the pandemic have certainly confirmed that.

But we must also recognize that partnerships between developed and developing nations are not uneven in the way many might believe. These collaborations are certainly not gifts from the great and the good. Partnerships across borders and stretched over cultural divides are investments by all of us in all of us. We need to push home this message clearly and consistently. We each have much to learn from the other, regardless of background or context. Indeed, diversity empowers research and leads to better results for all of us.

The global research community has struggled to live up to the promise of Goal 17, and the strain is showing. In so many contexts, partnerships are neither engaging nor functioning. The fault lines are starkly visible. The COVID-19 pandemic has taught us that we are no longer safe if we work alone. So how can we better work together collaboratively and practice what we preach?

As we explore the potential of Innovative Partnerships at the WAITRO Summit 2022 and imagine the truly Global Impact that we might have, I know that answers will be found by you through novel collaborations. I wish you all well and I very much look forward to sharing the next stage of our journey with you.
Next, came welcome speeches by Prof. Eugene Cloete, Dep. VC Research, Innovation and Postgraduate Studies at Stellenbosch University; and Prof. Nnenesi Kgabi, Director Research Support at North-West University. The opening ceremony also featured addresses from the Chief Director for University Planning & Institutional Planning, Feizal Toefy, who pointed out that there is less than a decade left to achieve the SDGs and that the effects of Covid-19 has made doing so even harder than before. On the other hand, the pandemic has brought about greater awareness of our vulnerability, the urgency of advancing sustainable development with multi-disciplinary solutions and the importance of using partnerships and collaborations to do so. He described South Africa’s priority investments to build resilient infrastructure, support research and innovation, and ensure domestic technology development in an inclusive and sustainable manner.

The Commissioner for Agriculture, Rural Development, Blue Economy, and Sustainable Environment (ARBE) of the African Union, H.E. Josefa Sacko then addressed the theme of the “Contribution of Youths in Accelerating the Transformation Process of African Agriculture.” She pointed out that the African continent has the youngest population in the world with over 750 million people under 35 years old. This is one of Africa’s greatest assets, but most of them are either unemployed or working in the informal economy, putting them in a very vulnerable situation. One of the flagship programs on accelerated agricultural growth for shared prosperity of the African Union defined specific youth commitments, including creating job opportunities in the agriculture value chain and improving the opportunities for women. Africa is a net importer of food and becoming more so and this needs to change. The Commissioner issued a call to action to establish a food system strong enough to withstand future shocks like the recent pandemic and the conflict in Ukraine. Africa especially needs to increase food production, especially staples, including addressing higher yielding crops and water scarcity. Post-harvest loss, which can reach 30% for maize, must also be reduced. Investment is needed in affordable post-harvest management and cold storage and inter-African trade in goods and services needs to be promoted. Action is needed, not just meetings!
Next, came welcome speeches by Prof. Eugene Cloete, Dep. VC Research, Innovation and Postgraduate Studies at Stellenbosch University; and Prof. Nnenesi Kgabi, Director Research Support at North-West University. The opening ceremony also featured addresses from the Chief Director for University Planning & Institutional Planning, Feizal Toefy, who pointed out that there is less than a decade left to achieve the SDGs and that the effects of Covid-19 has made doing so even harder than before. On the other hand, the pandemic has brought about greater awareness of our vulnerability, the urgency of advancing sustainable development with multi-disciplinary solutions and the importance of using partnerships and collaborations to do so. He described South Africa’s priority investments to build resilient infrastructure, support research and innovation, and ensure domestic technology development in an inclusive and sustainable manner.

The Commissioner for Agriculture, Rural Development, Blue Economy, and Sustainable Environment (ARBE) of the African Union, H.E. Josefa Sacko then addressed the theme of the “Contribution of Youths in Accelerating the Transformation Process of African Agriculture.” She pointed out that the African continent has the youngest population in the world with over 750 million people under 35 years old. This is one of Africa’s greatest assets, but most of them are either unemployed or working in the informal economy, putting them in a very vulnerable situation. One of the flagship programs on accelerated agricultural growth for shared prosperity of the African Union defined specific youth commitments, including creating job opportunities in the agriculture value chain and improving the opportunities for women. Africa is a net importer of food and becoming more so and this needs to change. The Commissioner issued a call to action to establish a food system strong enough to withstand future shocks like the recent pandemic and the conflict in Ukraine. Africa especially needs to increase food production, especially staples, including addressing higher yielding crops and water scarcity. Post-harvest loss, which can reach 30% for maize, must also be reduced. Investment is needed in affordable post-harvest management and cold storage and inter-African trade in goods and services needs to be promoted. Action is needed, not just meetings!
In conclusion, Dr. Raghunath Mashelkar, Former President of the Global Research Alliance and Former Director General of Council of Scientific and Industrial Research, closed the ceremony with a keynote on “Innovation, Inclusion & Resilience – Cornerstones of Post-pandemic SDG 17.” Among other valuable insights, Dr. Mashelkar shared key lessons learned from the COVID-19 pandemic, and how to find opportunity in adversity.

Dr. Mashelkar described Cape Town as heaven on earth, having first visited in 1998 as part of a CSIR review panel. He spoke about the SDGs in a post-pandemic world, which he compared to previous global watersheds such as the second World War. He picked three keywords on which to focus: innovation, inclusion and resilience. The major setbacks created by the pandemic included the biggest global job crisis in recent memory, with 400 million jobs lost in just Q2 of 2020. The healthcare system collapsed in many countries and 1.6 billion children were thrown out of school, all of which impeded progress towards the SDGs.

He recommended that we should learn from the mistakes made during Covid. We learned firstly that the poor get affected the most. Secondly, that partnerships have to be based on innovation, compassion and passion... empathy matters. Thirdly, in terms of supply chain disruption, it was a demonstration that may pressure the full-fledged effects of climate change. Fourthly, designing for resilience is important. Finally, there is indeed opportunity in adversity, for example the development of vaccines in record time. We can do exceptional things quickly, given the motivation and investment.

The key concepts are adaptability, agility, resilient thinking, purpose-driven alignment, and autonomous innovation. In vaccine development, partnerships were critical both in research, development and management. Dr. Mashelkar gave several examples of how cooperation, repurposing and sharing made significant impact into the pandemic response in India and elsewhere.

In the economy, new public-private partnerships have benefited consumers in e-commerce, essentially developing new platforms on which innovation can be built. The developing world can benefit from Google and Microsoft through their investments to develop affordable access to bandwidth. Open innovation platforms based on next-generation innovation partnerships (like SAIRA) will increase the opportunity to bring innovation to the developing world. He introduced the concept of open-source drug discovery, including participation by students, which led to clinical trials for a novel tuberculosis cure.

Finally, he touched on climate concerns, where big multi-nation partnerships are necessary. The critical challenge is in finance. Net zero by 2050 will require investment on the scale of 7.5% of global GDP, a particular challenge for the developing world. Only a very small fraction of this is committed today, and very little of that is in the form of grants rather than debt or equity.

Our greatest challenge is building SDG17 in the VUCA world (volatile, uncertain, complex, and ambiguous). In this new normal, partnerships have to be resilient. Working together to correct the legacy of past injustice is the key concept to remember.

“Building resilient global partnerships is the need of the hour to solve global challenges.”
(Dr. Raghunath Mashelkar, Former President of the Global Research Alliance)
In conclusion, Dr. Raghunath Mashelkar, Former President of the Global Research Alliance and Former Director General of Council of Scientific and Industrial Research, closed the ceremony with a keynote on “Innovation, Inclusion & Resilience – Cornerstones of Post-pandemic SDG 17.” Among other valuable insights, Dr. Mashelkar shared key lessons learned from the COVID-19 pandemic, and how to find opportunity in adversity.

Dr. Mashelkar described Cape Town as heaven on earth, having first visited in 1998 as part of a CSIR review panel. He spoke about the SDGs in a post-pandemic world, which he compared to previous global watersheds such as the second World War. He picked three keywords on which to focus: innovation, inclusion and resilience. The major setbacks created by the pandemic included the biggest global job crisis in recent memory, with 400 million jobs lost in just Q2 of 2020. The healthcare system collapsed in many countries and 1.6 billion children were thrown out of school, all of which impeded progress towards the SDGs.

He recommended that we should learn from the mistakes made during Covid. We learned firstly that the poor get affected the most. Secondly, that partnerships have to be based on innovation, compassion and passion... empathy matters. Thirdly, in terms of supply chain disruption, it was a demonstration that may presage the full-fledged effects of climate change. Fourthly, designing for resilience is important. Finally, there is indeed opportunity in adversity, for example the development of vaccines in record time. We can do exceptional things quickly, given the motivation and investment.

The key concepts are adaptability, agility, resilient thinking, purpose-driven alignment, and autonomous innovation. In vaccine development, partnerships were critical both in research, development and management. Dr. Mashelkar gave several examples of how cooperation, repurposing and sharing made significant impact into the pandemic response in India and elsewhere.

In the economy, new public-private partnerships have benefitted consumers in e-commerce, essentially developing new platforms on which innovation can be built. The developing world can benefit from Google and Microsoft through their investments to develop affordable access to bandwidth. Open innovation platforms based on next-generation innovation partnerships (like SAIARA) will increase the opportunity to bring innovation to the developing world. He introduced the concept of open-source drug discovery, including participation by students, which led to clinical trials for a novel tuberculosis cure.

Finally, he touched on climate concerns, where big multi-nation partnerships are necessary. The critical challenge is in finance. Net zero by 2050 will require investment on the scale of 7.5% of global GDP, a particular challenge for the developing world. Only a very small fraction of this is committed today, and very little of that is in the form of grants rather than debt or equity.

Our greatest challenge is building SDG17 in the VUCA world (volatile, uncertain, complex, and ambiguous). In this new normal, partnerships have to be resilient. Working together to correct the legacy of past injustices is the key concept to remember.

“Building resilient global partnerships is the need of the hour to solve global challenges.”

(Dr. Raghunath Mashelkar, Former President of the Global Research Alliance)

The highlight of the morning of the first day of the event was the Roundtable on SDG 17. This comprised two contrasting keynote speakers followed by a panel discussion.

Dr. Victor Konde. Scientific Affairs Officer at United Nations Economic Commission for Africa, opened the discussion with a keynote address on how to strengthen the means of implementation and revitalize the global partnership. For Dr. Konde, WAITRO should identify key issues that attract the interest of partners and member states and encourage its members to activate formal and informal partnerships along the innovation chain. How do partnerships achieve impact and why do we partner in the first place? By reducing risk of market access is one reason. Accessing equipment or talent that we may not have is another.

Not enough global investment for climate (3.8%) is going into Africa. There is a need to build more capacity, and also to build trust, in order to enable intra-African partnerships. The number of African universities in the Times ranking is going up but too many partnerships are around distribution rather than development and manufacturing. Few technology agreements exist with developing countries. Scientific partnerships are growing but innovation and entrepreneurial partnerships remain weak.

UNECA has had some success with biomedical engineering curriculum development in universities to teach technology and entrepreneurship and has noticed a resulting increase in capabilities across the continent. What WAITRO can do is to identify key issues that attract the interest of partners in member states. Stimulate our members to act to institute both formal and informal partnerships.

Mamati Tembe. Head of Public Affairs Science and Sustainability at Bayer AG.

Dr. Tembe opened with Bayer’s motto: health for all and hunger for none. One size for all does not work so innovation in different countries has to have flexibility. How to make sure that technology is available in different countries? This requires partnering, not just in science but at all levels of the commercialization process including capacity building, entrepreneurship, and digital means to improve productivity at the level of individual farmers, The focus of partnerships should be to ensure that whatever innovation is generated reaches the intended beneficiary, by collaborating and building capacity to create impact.
After the keynotes, high-level guests addressed the question “How can WAITRO contribute to revitalizing the global partnership for sustainable development?” The roundtable was moderated by Dirk Saseta, Director General, Area of Promotion & Management at LEITAT, and included guests who commented as follows:

**David Tveit**, EVP, Energy and Climate Division, DTI; Partnerships in WAITRO are a win-win cooperation. The purpose of DTI is to take technology from universities and make it work in real life. Was involved in WAITRO since 1968, when it was first conceived. Successful initiatives have included fermented foods, which has been an impactful area for 30 years. Want to continue partnerships, benchmarking, and opportunities for Europe to work with Africa in partnerships within WAITRO in food, nutrition, energy, innovation management.

**Prof. Nnenezi Kgabi**, Director Research Support, NWU; Try to address the issues that lead to having partnership strategies on paper but no impact with partners. Several issues need to be considered in partnership strategy- one is what type of partnership do you want? Too many signed agreements are never implemented. Research at NWU is goal-oriented, different Centers partner at different levels. For example, niche level research partnerships are at the incubation stage and one partner may be learning and following, but at the Center of Excellence level, each partner would be expected to bring something to the table. Understanding cultural difference is critical.

**Dr. Paul Burrows**, Vice President Overseas Cooperation, JITRI; WAITRO is the string that connects pearls of research around the world into something far more valuable and beautiful. Impactful research starts with market need, which the JITRI ecosystem connects with research capacity and WAITRO can access on a global level. Cross-cultural partnerships, however, are often challenging and this is, at its core, the irreplaceable value of WAITRO as a nexus for both technical and cultural exchange.

**Dr. Hussam Hussein**, Executive Director Partnerships, RSS; RSS was founded to produce and promote science to inform the development of the country. Partnerships mean sharing information to avoid reinventing the wheel as well as increasing impact through implementing technology which means partnering with industry, farmers and the local community. WAITRO enhances the ability to work together and achieve impact on all 17 SDGs.

**Jaime Arboleda Palacio**, Deputy Director, CTA; WAITRO is an excellent platform, for example not easy to partner in networks in Latin America, learning how to be part of broader groups is valuable. Building trust is critically important. In conclusion the panel talked about the challenges of cross-cultural cooperation and the crucial role that WAITRO serves, both in increasing cross-cultural understanding and by providing opportunity and a venue for organizations from large and small countries, as well as more and less developed countries, to sit at the same table to discuss how to achieve impact on the SDGs. Cooperation outside the WAITRO Global Innovation Family is also effective, but the barriers to membership are low and research organizations should strive to be part of it!

Also, in a parallel morning session, there was a presentation of The Network Pitch Workshop by Pitch Coach and Innovation Advisor, Dirk Lehmann. In this workshop, Dirk shared tips on how to create an impactful pitch, design powerful visuals, and perform a confident presence on stage.

The first day of the summit ended with a reception including entertainment from a local dance troupe and the award ceremony of the German-African Innovation Incentive Award (GAIIA) by the German Federal Ministry of Education and Research (BMBF).
After the keynotes, high-level guests addressed the question “How can WAITRO contribute to revitalizing the global partnership for sustainable development?”. The roundtable was moderated by Dirk Saseta, Director General, Area of Promotion & Management at LEITAT, and included guests who commented as follows:

**David Tveit**, EVP, Energy and Climate Division, DTI; Partnerships in WAITRO are a win-win cooperation. The purpose of DTI is to take technology from universities and make it work in real life. Was involved in WAITRO since 1968, when it was first conceived. Successful initiatives have included fermented foods, which has been an impactful area for 30 years. Want to continue partnerships, benchmarking, and opportunities for Europe to work with Africa in partnerships within WAITRO in food, nutrition, energy, innovation management.

**Prof. Nnenesi Kgabi**, Director Research Support, NWU; Try to address the issues that lead to having partnership strategies on paper but no impact with partners. Several issues need to be considered in partnership strategy: one is what type of partnership do you want? Too many signed agreements are never implemented. Research at NWU is goal-oriented, different Centers partner at different levels. For example, niche level research partnerships are at the incubation stage and one partner may be learning and following, but at the Center of Excellence level, each partner would be expected to bring something to the table. Understanding cultural difference is critical.

**Dr. Paul Burrows**, Vice President Overseas Cooperation, JITRI; WAITRO is the string that connects pearls of research around the world into something far more valuable and beautiful. Impactful research starts with market need, which the JITRI ecosystem connects with research capacity and WAITRO can access on a global level. Cross-cultural partnerships, however, are often challenging and this is, at its core, the irreplaceable value of WAITRO as a nexus for both technical and cultural exchange.

**Dr. Hussam Hussein**, Executive Director Partnerships, RSS; RSS was founded to produce and promote science to inform the development of the country. Partnerships mean sharing information to avoid reinventing the wheel as well as increasing impact through implementing technology which means partnering with industry, farmers and the local community. WAITRO enhances the ability to work together and achieve impact on all 17 SDGs.

**Jaime Arboleda Palacio**, Deputy Director, CTA; WAITRO is an excellent platform, for example not easy to partner in networks in Latin America, learning how to be part of broader groups is valuable. Building trust is critically important.

In conclusion the panel talked about the challenges of cross-cultural cooperation and the crucial role that WAITRO serves, both in increasing cross-cultural understanding and by providing opportunity and a venue for organizations from large and small countries, as well as more and less developed countries, to sit at the same table to discuss how to achieve impact on the SDGs. Cooperation outside the WAITRO Global Innovation Family is also effective, but the barriers to membership are low and research organizations should strive to be part of it!

Also, in a parallel morning session, there was a presentation of The Network Pitch Workshop by Pitch Coach and Innovation Advisor, Dirk Lehmann. In this workshop, Dirk shared tips on how to create an impactful pitch, design powerful visuals, and perform a confident presence on stage.

The first day of the summit ended with a reception including entertainment from a local dance troupe and the award ceremony of the German-African Innovation Incentive Award (GAlIA) by the German Federal Ministry of Education and Research (BMBF).
Panel Discussion, Workshops and WAITRO SDG Impact Award

A panel discussion on Financing Innovative Solutions for the SDGs opened the second day of the WAITRO Summit. The discussion was introduced with a keynote by Keiron Brand, Bankable Nature Solutions Advisor at WWF-Netherlands, on Catalyzing Finance for Innovative Impact Solutions. In the context of Green Finance, he highlighted the importance of building partnerships with companies to ensure that they understand their pressures on nature and their nature-related risks, as well as to deploy resilience activities collaboratively. He pointed out that, whereas the World Wildlife Fund estimates that $3.3 – 4.5 trillion annually is needed to achieve the SDGs, only about $1.4 trillion is actually being funded at present. The gap can only be filled using blended finance models and public – private partnerships such as the model followed by the Dutch Fund for Climate Development (DFCD) and the WWF Bankable Nature Solutions blueprint.

“Encourage a meaningful shift in finance by integrating nature (and climate) into all financial decision making to support a shift in global financial flows away from climate and nature-negative outcomes and towards climate and nature-positive ones.”

(Keiron Brand, Bankable Nature Solutions Advisor at WWF-Netherlands)

After the keynote, renowned speakers discussed the theme Bridging the Gaps between the Private Sector and Innovative and High Impact Groups. Jean-Marc Champagne, Founder and Director of Seneca Impact Advisors, moderated the discussion with the panelists: Wesley Okeke, CEO at CUBIO Innovation Center; Laura Eck, Consultant at WWF; and Fungai Musana, Corporate Engagement Manager at WWF.

In parallel, the participants were again able to benefit from various capacity development events listed separately.
A panel discussion on Financing Innovative Solutions for the SDGs opened the second day of the WAITRO Summit. The discussion was introduced with a keynote by Keiron Brand, Bankable Nature Solutions Advisor at WWF-Netherlands, on Catalyzing Finance for Innovative Impact Solutions. In the context of Green Finance, he highlighted the importance of building partnerships with companies to ensure that they understand their pressures on nature and their nature-related risks, as well as to deploy resilience activities collaboratively. He pointed out that, whereas the World Wildlife Fund estimates that $3.3 – 4.5 trillion annually is needed to achieve the SDGs, only about $1.4 trillion is actually being funded at present. The gap can only be filled using blended finance models and public–private partnerships such as the model followed by the Dutch Fund for Climate Development (DFCD) and the WWF Bankable Nature Solutions blueprint.

“Encourage a meaningful shift in finance by integrating nature (and climate) into all financial decision making to support a shift in global financial flows away from climate and nature-negative outcomes and towards climate and nature-positive ones.”

(Keiron Brand, Bankable Nature Solutions Advisor at WWF-Netherlands)

After the keynote, renowned speakers discussed the theme Bridging the Gaps between the Private Sector and Innovative and High Impact Groups. Jean-Marc Champagne, Founder and Director of Seneca Impact Advisors, moderated the discussion with the panelists: Wesley Okeke, CEO at CUBIO Innovation Center; Laura Eck, Consultant at WWF; and Fungai Musana, Corporate Engagement Manager at WWF.

In parallel, the participants were again able to benefit from various capacity development events listed separately.
The closing ceremony featured speeches by M.Sc. Nienke Buisman, Head of Unit for International Cooperation, European Commission; and Raymond Tavares, Representative in Cameroon & Central Africa at UNIDO. While Buisman addressed the topic “The Africa Union-European Union Innovation Agenda as a contribution to reinforcing partnerships for sustainable development in Africa,” Tavares focused on “Digital Transformation and The Sustainability Imperative.” According to him, WAITRO members must play a vital role in sustainable development, moving from their advisory roles to becoming development actors. For Tavares, WAITRO members must work side by side with Conformity Assessment Bodies to accelerate the use of new technologies, collaborating beyond national borders with the private sector and increasingly exploring nature-based solutions.

Next, participants and guests were able to hear from Yenny Meliana from BRIN, Julienne Nguefack from Université de Yaoundé, James Devitt from University of Huddersfield, and Marcelo Prim from SENAI about their successful collaboration stories initiated through the WAITRO’s Open Innovation Platform, SAIRA.

The highlight of the closing ceremony was the WAITRO SDG Impact Award for the most impactful research poster presented at the Summit. A short list of finalists was selected by the attendees themselves by placing stickers on their favorite posters, a process that also encouraged delegates to physically show up in the poster area that consequently served as a networking nexus. Winners were then selected by a panel of experts drawn from the invited VIP speakers. At the conclusion, Carolina María R. Ortiz (represented by Jaime Arboleda Palacio) from CTA, and Dr. Joshua O. Abuya from Kibabii University received a cash prize in the amount of US$3,000 each from the WAITRO Secretariat in recognition of their projects and their impact on the Sustainable Development Goals.

The last day of the WAITRO Summit 2022 ended with a special dinner held at Lourensford Wine State, where delegates were able to celebrate not only the successful event, but above all, the fact that they were once again gathered together as partners, friends and members of the Global Innovation Family.

In both days, delegates had the opportunity to participate in different capacity development workshops, and kick-off sessions – for the initiation of working groups focused on specific SDGs. Despite the diverse topics addressed in the workshops, such as R&D to Commercialization and 4.0 Industry, a common theme permeated the discussions: the importance of including communities in the search for solutions, listening to those who deal with the problem, and making them part of the problem-solving process. With over 170 registrants from more than 40 countries, the first post-pandemic WAITRO Summit was a resounding success.
The closing ceremony featured speeches by M.Sc. Nienke Buismann, Head of Unit for International Cooperation, European Commission; and Raymond Tavares, Representative in Cameroon & Central Africa at UNIDO. While Buismann addressed the topic “The Africa Union-European Union Innovation Agenda as a contribution to reinforcing partnerships for sustainable development in Africa,” Tavares focused on “Digital Transformation and The Sustainability Imperative.” According to him, WAITRO members must play a vital role in sustainable development, moving from their advisory roles to becoming development actors. For Tavares, WAITRO members must work side by side with Conformity Assessment Bodies to accelerate the use of new technologies, collaborating beyond national borders with the private sector and increasingly exploring nature-based solutions.

Next, participants and guests were able to hear from Yenny Meliana from BRIN, Julienne Nguefack from Université de Yaoundé, James Devitt from University of Huddersfield, and Marcelo Prim from SENAI about their successful collaboration stories initiated through the WAITRO’s Open Innovation Platform, SAIRA.

The highlight of the closing ceremony was the WAITRO SDG Impact Award for the most impactful research poster presented at the Summit. A short list of finalists was selected by the attendees themselves by placing stickers on their favorite posters, a process that also encouraged delegates to physically show up in the poster area that consequently served as a networking nexus. Winners were then selected by a panel of experts drawn from the invited VIP speakers. At the conclusion, Carolina María R. Ortiz (represented by Jaime Arboleda Palacio) from CTA, and Dr. Joshua O. Abuya from Kibabii University received a cash prize in the amount of US$3,000 each from the WAITRO Secretariat in recognition of their projects and their impact on the Sustainable Development Goals.

The last day of the WAITRO Summit 2022 ended with a special dinner held at Lourensford Wine State, where delegates were able to celebrate not only the successful event, but above all, the fact that they were once again gathered together as partners, friends and members of the Global Innovation Family. In both days, delegates had the opportunity to participate in different capacity development workshops, and kick-off sessions – for the initiation of working groups focused on specific SDGs. Despite the diverse topics addressed in the workshops, such as R&D to Commercialization and 4.0 Industry, a common theme permeated the discussions: the importance of including communities in the search for solutions, listening to those who deal with the problem, and making them part of the problem-solving process. With over 170 registrants from more than 40 countries, the first post-pandemic WAITRO Summit was a resounding success.
Capacity Development Workshops at the Summit

From R&D to Commercialization – A Focus on Entering International Markets

Organized by Nermin Siam, from the Karlsruhe Institute of Technology, presented by Andreas Kleinn M.Sc.

Technology Entrepreneurship, Technology application selection (TAS) process, Opportunity recognition, ideation, business modeling. The session introduced how a technology is turned into an idea and ultimately into an international business model: The approaches for technology entrepreneurship researched at KIT were presented and shown with examples: technology ideation, application and selection. Subsequently, approaches were presented to systematically identify customer benefits and to incorporate them into a business model.

Changes in, for instance, water and sanitation services result in complex changes in the health and wellbeing of the people residing in that area, not all of them necessarily positive. Some of those changes are only visible over the long term and some have knock-on effects that were not foreseen at the time of planning and executing the project. Unfortunately, many civil engineering projects and other actions intending to improve the health and wellbeing of communities are assessed very soon after the project is completed and the project then declared a “success”. Follow-up assessments over time are almost never carried out and the local officials in the area are then left with coping as best they can in those cases where not all the predicted positive spinoffs actually materialized. Valuable lessons are thus lost, and the same mistakes tend to occur over and over again. Ways need to be found to improve on this state of affairs and that is what the capacity building workshop hopes to discuss.

Participants were shown actual examples where determining good health and wellbeing turned out to be more complex that originally envisaged in the project or program. After this orientation there was ample opportunity for the participants to engage in discussion on what specific essential points the meeting wants to carry forward to the Working Group on SDG 3 session, together with any recommendations to improve the disconnect between planning and outcome determination in this field.

SDG 3: Good Health and Wellbeing – a convenient motivation or a neglected outcome assessment?

Organized and presented by Dr. Jo Barnes, Senior Lecturer Emeritus, Department of Global Health, Stellenbosch University.

Good health and wellbeing are cross-cutting conditions underlying almost all improvements in living conditions for communities. Many project proposals or preambles to laws or statutes on water, sanitation, energy, etc. contain statements on improving the health and wellbeing of people. This phrase is used as a motivation for the action proposed in the text that follows. Unfortunately, that is also sometimes the last that health and wellbeing are considered in any real or practical way.

Traditional and Innovative Government Funding for Sustainable International Cooperation – Potential, Pitfalls and Strategies

Organized by Joy Owango, TCC Training Centre in Communication, Kenya, International Science Council, Joseph Njogu, Chief Executive Officer, Research Beeline, Kenya and Julia Wiethüchter, Program Manager, WAITRO Office Germany, Fraunhofer Gesellschaft.

This session started from SDG17, which emphasizes the importance of partnerships for sustainable development, but asked how can these be successfully funded in the context of international research collaboration?

Access to funding and funding regulations play a significant role in international cooperation. In this interactive workshop we want to discuss how access to information, finding partners to apply for grants and the funding regulations that the researchers need to follow impact international collaboration. While the session looks at traditional funding in the form of grants, awards and calls it will also highlight innovative ways to acquire resources by working with industry or forming innovation hubs. The workshop looked at every step of the process of a project:

- Applying for funding: Who has access to information? Who can apply? Which types of funding are there?
- Once funding is acquired: How do funding regulations affect the partnership?
- After the funding ends: What are the results not just on the scientific level, but for the researchers and their careers? How sustainable are the partnerships and can they create long-term collaborative structures?
Capacity Development Workshops at the Summit

From R&D to Commercialization – A Focus on Entering International Markets

Organized by Nermin Siam, from the Karlsruhe Institute of Technology, presented by Andreas Kleinn M.Sc.

Technology Entrepreneurship, Technology application selection (TAS) process, Opportunity recognition, ideation, business modeling. The session introduced how a technology is turned into an idea and ultimately into an international business model: The approaches for technology entrepreneurship researched at KIT were presented and shown with examples: technology ideation, application and selection. Subsequently, approaches were presented to systematically identify customer benefits and to incorporate them into a business model.

From R&D to Commercialization – A Focus on Entering International Markets

Changes in, for instance, water and sanitation services result in complex changes in the health and wellbeing of the people residing in that area, not all of them necessarily positive. Some of those changes are only visible over the long term and some have knock-on effects that were not foreseen at the time of planning and executing the project. Unfortunately, many civil engineering projects and other actions intending to improve the health and wellbeing of communities are assessed very soon after the project is completed and the project then declared a “success”. Follow-up assessments over time are almost never carried out and the local officials in the area are then left with coping as best they can in those cases where not all the predicted positive spinoffs actually materialized. Valuable lessons are thus lost, and the same mistakes tend to occur over and over again. Ways need to be found to improve on this state of affairs and that is what the capacity building workshop hopes to discuss.

Participants were shown actual examples where determining good health and wellbeing turned out to be more complex than originally envisaged in the project or program. After this orientation there was ample opportunity for the participants to engage in discussion on what specific essential points the meeting wants to carry forward to the Working Group on SDG 3 session, together with any recommendations to improve the disconnect between planning and outcome determination in this field.

SDG 3: Good Health and Wellbeing – a convenient motivation or a neglected outcome assessment?

Organized and presented by Dr. Jo Barnes, Senior Lecturer Emeritus, Department of Global Health, Stellenbosch University.

Good health and wellbeing are cross-cutting conditions underlying almost all improvements in living conditions for communities. Many project proposals or preambles to laws or statutes on water, sanitation, energy, etc. contain statements on improving the health and wellbeing of people. This phrase is used as a motivation for the action proposed in the text that follows. Unfortunately, that is also sometimes the last that health and wellbeing are considered in any real or practical way.

Traditional and Innovative Government Funding for Sustainable International Cooperation – Potential, Pitfalls and Strategies

Organized by Joy Owango, TCC Training Centre in Communication, Kenya, International Science Council, Joseph Njogu, Chief Executive Officer, Research Beeline, Kenya and Julia Wiethüchter, Program Manager, WAITRO Office Germany, Fraunhofer Gesellschaft.

This session started from SDG17, which emphasizes the importance of partnerships for sustainable development, but asked how can these be successfully funded in the context of international research collaboration?

Access to funding and funding regulations play a significant role in international cooperation. In this interactive workshop we want to discuss how access to information, finding partners to apply for grants and the funding regulations that the researchers need to follow impact international collaboration. While the session looks at traditional funding in the form of grants, awards and calls it will also highlight innovative ways to acquire resources by working with industry or forming innovation hubs. The workshop looked at every step of the process of a project:

1. Applying for funding: Who has access to information? Who can apply? Which types of funding are there?
2. Once funding is acquired: How do funding regulations affect the partnership?
3. After the funding ends: What are the results not just on the scientific level, but for the researchers and their careers? How sustainable are the partnerships and can they create long-term collaborative structures?
Industry 4.0 Technologies as a Lever for Fostering Competitiveness in Industry

Organized by Sergio Ibañez Perez, Leitat Technological Center and Paul Burrows, JITRI, WAITRO Office China.

Industry 4.0, to show success stories of companies that have adopted or are key players in these technologies (external speaker), as well as to inform about new business models generated to promote the adoption of these technologies. We hope that participants will understand that 4.0 technologies are an essential asset to be competitive today and that there are facilitating agents that can help them to adopt these technologies.

At the end of the presentation there was a discussion between the speakers and the audience to discuss how WAITRO should encourage the promotion of these technologies and generate international cooperation aimed at the development of cross-border projects.

Enabling Small-Scale Spare-Parts Production in Developing Countries

Organized by Prof. Dr. Emad Ewais of the Central Metallurgical Research and Development Institute (CMRDI)

A poster for the Central Metallurgical Research and Development Institute in the Members’ Poster Session included various activities starting from enhancing the value of local ores and processing them to manufacture of spare parts using traditional technologies, up to precise digital manufacturing and 3D printing of various materials. CMRDI also organized this unique workshop that included four talks.

Dr. Emad opened the session with the importance of scientific research for the advancement of industry, especially in developing countries. Prof. Ewais shared a talk relating to the huge facilities existing at CMRDI in the field of metallurgical aspects that can be very useful in developing the African countries. He gave many examples of industrial research projects that have already been applied and achieved an economic return for the beneficiaries, including the production of high-manganese slag from low-value local manganese ores for the benefit of the Sinai Manganese Company. As well as the Centre’s contributions in manufacturing emergency spare parts for various sectors, rehabilitating boilers, dilapidated equipment, and others.

The Egyptian experience was narrated by taking advantage of the ongoing research at the Central Metallurgical Research and Development Institute (CMRDI) and converting it into an industrial product, for example the body of a 4-cylinder diesel car engine, which is the first engine that was manufactured locally in Egypt as a result of scientific research and experiments that were carried out at the centre to reach the zero sample and then mass production of this product.

The president of CMRDI also referred to the long and continuous history up to the present time in enhancing the capabilities of African countries by holding constant training courses for engineers and technicians in the field of raw materials technology, welding, plumbing, and others.

Prof. Khaled M. Ibrahim, head of casting technology Dept. at CMRDI, presented two talks about helping the African countries in producing spare parts for the mining, cement industries as well as military sector.

Prof. Dr. Shaima Al-Haddad, a member in casting Dept. gave a talk on transferring cathodic protection anodes manufacturing technology from (CMRDI) as one of the important examples of spare parts to other African countries. The Metal casting department is currently considered the main source to which the various authorities in general and the electricity sector in particular resort to supplying them with cathodic protection anodes of aluminum, zinc and magnesium ores that conform to international standards. The Metal Casting department also succeeded in changing the damaged anodes of the buried lines in the power stations and replacing them with new magnesium anodes entirely manufactured at CMRDI. This is because CMRDI is the only entity locally that owns the technology of melting and casting magnesium alloys. It is worth noting that CMRDI has a corrosion and surface protection department, which is concerned with designing various cathodic protection systems and evaluating their performance, as well.

CMRDI also greatly appreciated the support of WAITRO during the summit as well as advertising and promoting to the summit through many channels, which in turn increased the number of participants in the session. Therefore, a large number of participants from different countries participated in this session. There were also intensive discussions after finishing the talks in the session which were related to the sustainable development in mineral resources and advanced manufacturing involving; casting technology, laser welding technology, digital manufacturing and manufacturing of spare parts. Also, advanced materials including recent trends in magnesium, aluminium, ultrahigh steel and titanium alloys was included.

Attendees praised the CMRDI achievements in the field of deepening local industrialization. Others suggested strengthening cooperation between the CMRDI and other African countries in the field of metallurgical industries in light of the economic crises that many of these countries are going through at the present time. This is in addition to the agreement with some of the workshops attendees from African countries to make a cooperation protocol aimed at benefiting from the center’s expertise in spare parts manufacturing by conducting joint industrial research projects that benefit all concerned parties.
Participants of this workshop heard from three experts that shared their practical experience, empirical findings and theoretical knowledge on the matter. Participants played an active role in the workshop and were invited to engage in discussion, reflect on their own experiences and ideas and take away tips and strategies for everything that comes with acquiring resources for international collaboration.

Industry 4.0 Technologies as a Lever for Fostering Competitiveness in Industry

Organized by Sergio Ibañez Perez, Leitat Technological Center and Paul Burrows, JITRI, WAITRO Office China.
part of Industry 4.0, to show success stories of companies that have adopted or are key players in these technologies (external speaker), as well as to inform about new business models generated to promote the adoption of these technologies. We hope that participants will understand that 4.0 technologies are an essential asset to be competitive today and that there are facilitating agents that can help them to adopt these technologies.

At the end of the presentation there was a discussion between the speakers and the audience to discuss how WAITRO should encourage the promotion of these technologies and generate international cooperation aimed at the development of cross-border projects.

Enabling Small-Scale Spare-Parts Production in Developing Countries

Organized by Prof. Dr. Emad Ewais of the Central Metallurgical Research and Development Institute (CMRDI)

A poster for the Central Metallurgical Research and Development Institute in the Members’ Poster Session included various activities starting from enhancing the value of local ores and processing them to manufacture of spare parts using traditional technologies, up to precise digital manufacturing and 3D printing of various materials. CMRDI also organized this unique workshop that included four talks.

Dr. Emad opened the session with the importance of scientific research for the advancement of industry, especially in developing countries. Prof. Ewais shared a talk relating to the huge facilities existing at CMRDI in the field of metallurgical aspects that can be very useful in developing the African countries. He gave many examples of industrial research projects that have already been applied and achieved an economic return for the beneficiaries, including the production of high-manganese slag from low-value local manganese ores for the benefit of the Sinai Manganese Company. As well as the Centre’s contributions in manufacturing emergency spare parts for various sectors, rehabilitating boilers, dilapidated equipment, and others.

The Egyptian experience was narrated by taking advantage of the ongoing research at the Central Metallurgical Research and Development Institute (CMRDI) and converting it into an industrial product, for example the body of a 4-cylinder diesel car engine, which is the first engine that was manufactured locally in Egypt as a result of scientific research and experiments that were carried out at the centre to reach the zero sample and then mass production of this product.

The president of CMRDI also referred to the long and continuous history up to the present time in enhancing the capabilities of African countries by holding constant training courses for engineers and technicians in the field of raw materials technology, welding, plumbing, and others.

Prof. Khaleel M. Ibrahim, head of casting technology Dept. at CMRDI, presented two talks about helping the African countries in producing spare parts for the mining, cement industries as well as military sector.

Prof. Dr. Shaima Al-Haddad, a member in casting Dept. gave a talk on transferring cathodic protection anodes manufacturing technology from (CMRDI) as one of the important examples of spare parts to other African countries. The Metal casting department is currently considered the main source to which the various authorities in general and the electricity sector in particular resort to supplying them with cathodic protection anodes of aluminum, zinc and magnesium ores that conform to international standards. The Metal Casting department also succeeded in changing the damaged anodes of the buried lines in the power stations and replacing them with new magnesium anodes entirely manufactured at CMRDI. This is because CMRDI is the only entity locally that owns the technology of melting and casting magnesium alloys. It is worth noting that CMRDI has a corrosion and surface protection department, which is concerned with designing various cathodic protection systems and evaluating their performance, as well.

CMRDI also greatly appreciated the support of WAITRO during the summit as well as advertising and promoting to the summit through many channels, which in turn increased the number of participants in the session. Therefore, a large number of participants from different countries participated in this session. There were also intensive discussions after finishing the talks in the session which were related to the sustainable development in mineral resources and advanced manufacturing involving; casting technology, laser welding technology, digital manufacturing and manufacturing of spare parts. Also, advanced materials including recent trends in magnesium, aluminium, ultra-high steel and titanium alloys was included.

Attendees praised the CMRDI achievements in the field of deepening local industrialization. Others suggested strengthening cooperation between the CMRDI and other African countries in the field of metallurgical industries in light of the economic crises that many of these countries are going through at the present time. This is in addition to the agreement with some of the workshop attendees from African countries to make a cooperation protocol aimed at benefiting from the center’s expertise in spare parts manufacturing by conducting joint industrial research projects that benefit all concerned parties.
Project Cycle Management/Results Based Management- A focus on Monitoring and Evaluation in the context of the Inter-Connectivity of the Sustainable Development Goals and the Rights Based Approach. A South African Case Study.

Organized by Roger Short, Former WAITRO Secretary-General.

Although there is a universal approach to PCM-LFA-RBM methodologies there are subtle differences between international agencies and the types of project/programs. The UN 2030 Development Agenda and the associated Sustainable Development Goals are applicable globally and are to be implemented adhering to the Rights Based Approach. These concepts may be alien to technically oriented staff, but the principles will have an impact on their work, in particular how to design, monitor and evaluate projects and how to appreciate the inter-connectivity within and between SDGs and their targets. Concrete examples of approaches and methods will be drawn from the Danida supported Integrated Water Resources Management (IWRM) program in South Africa.

Participants to this workshop were able to interact with stakeholders and principal actors of the Integrated Water Resources Management (IWRM) program that ran from 2000-2010 which, in addition to water conservation and ground water policies, implemented over 100 community driven projects utilizing the principles of the rights-based approach.

Benchmarking to Identify Best RTO Management Practices

Organized by Knud Erik Hilding-Hamann, Senior Specialist of DTI, David Grier, Chief Strategist (Retired), Innovation Saskatchewan, and Chuqiao Dong, Project Support, WAITRO office China, JITRI.

Since the start of 2022, the WAITRO team has been working on an online benchmarking system to enable WAITRO members to improve their RTO management processes and performance. The Summit workshop was the first of several knowledge exchange events to build on data submitted from RTOs with the aim of helping members to improve their practices and performance.

The value of the benchmarking system is directly correlated to the number of RTOs that participate. The higher the number of participating RTOs, the better the practice and performance comparisons available to all RTOs will become. With good performance comparisons, RTOs will receive vital process and practice improvement recommendations covering those process areas with the most potential to improve their own management.

The workshop covered the eight main process areas that are benchmarked: RTO Governance, Financial Management, RTO Service, Business Development, Organizational Management, Project Management, Capacity Building, and Personnel Management. New elements have been introduced, however, to mirror technological developments, and current realities and requirements for RTOs, a total of 12 performance indicators have been developed, many of which carry over from the original model.

It is the combination of performance indicator data and process practice selections that will allow us to compare practices across participating RTOs. This allows us to indicate for individual processes which practices deliver the best performance, and to consequently recommend to participating RTOs which processes they should consider adjusting their practices to achieve better performance.

JITRI and a software development team built an online version with all the necessary logic and integrated calculations required for a coherent, well-performing benchmarking system that will deliver clear but anonymous comparisons of RTO data according to types. Preliminary testing of the new online version of the benchmarking system before the workshop led to valuable feedback from the WAITRO Regional Focal Points (RFPs) and members including LEITAT, TISTR, CTA, DTI, RSS and SIRDC. This feedback led to significant adjustments and improvements to the online benchmarking system which is now being implemented.

The workshop, therefore, was planned to introduce and motivate as many RTOs as possible to grab the opportunity to use the online benchmarking system as an important tool in their process improvement plans.
The Summit workshop was the first of several knowledge exchange events to build on data sub-
tired), Innovation Saskatchewan, and Chuqiao Dong, Project Support, WAITRO office China, JITRI. 
Organized by Knud Erik Hilding-Hamann, Senior Specialist of DTI, David Grier, Chief Strategist (Re-
to water conservation and ground water policies, implemented over 100 community driven 
been working on an online benchmarking system to 
since the start of 2022, the WAITRO team has 
Integrated Water Resources Management (IWRM) program that ran from 2000-2010 which, in addi-
to rights-based approach to PCM-LFA-RBM methodologies there are subtle differ-
ences between international agencies and the types of project/programs. The UN 2030 Develop-
ment Agenda and the associated Sustainable Development Goals are applicable globally and are 
to be implemented adhering to the Rights Based Approach. These concepts may be alien to tech-
nically oriented staff, but the principles will have an impact on their work, in particular how to 
design, monitor and evaluate projects and how to appreciate the inter-connectivity within and be-
 tween SDGs and their targets. Concrete examples of approaches and methods will be drawn from 
the Danida supported Integrated Water Resources Management (IWRM) program in South Africa. 
Participants to this workshop were able to interact with stakeholders and principal actors of the 
Integrated Water Resources Management (IWRM) program that ran from 2000-2010 which, in addi-
to water conservation and ground water policies, implemented over 100 community driven 
projects utilizing the principles of the rights-based approach. 

**Organized by Roger Short, Former WAITRO Secretary-General.**

Although there is a universal approach to PCM-LFA-RBM methodologies there are subtle differ-
ences between international agencies and the types of project/programs. The UN 2030 Develop-
ment Agenda and the associated Sustainable Development Goals are applicable globally and are 
to be implemented adhering to the Rights Based Approach. These concepts may be alien to tech-
nically oriented staff, but the principles will have an impact on their work, in particular how to 
design, monitor and evaluate projects and how to appreciate the inter-connectivity within and be-
tween SDGs and their targets. Concrete examples of approaches and methods will be drawn from 
the Danida supported Integrated Water Resources Management (IWRM) program in South Africa. 
Participants to this workshop were able to interact with stakeholders and principal actors of the 
Integrated Water Resources Management (IWRM) program that ran from 2000-2010 which, in addi-
to water conservation and ground water policies, implemented over 100 community driven 
projects utilizing the principles of the rights-based approach. 

**Benchmarking to Identify Best RTO Management Practices**

Organized by Knud Erik Hilding-Hamann, Senior Specialist of DTI, David Grier, Chief Strategist (Re-
tired), Innovation Saskatchewan, and Chuqiao Dong, Project Support, WAITRO office China, JITRI. 
Since the start of 2022, the WAITRO team has been working on an online benchmarking system to 
enable WAITRO members to improve their RTO management processes and performance. 
The Summit workshop was the first of several knowledge exchange events to build on data sub-
mitt ed from RTOs with the aim of helping members to improve their practices and performance. 

Why is this important? RTOs (Research and Technolo-
gy Organizations) are special in their construction and 
offen it is not relevant to compare their processes 
and performance with private businesses, universities, 
or public institutions. WAITRO members benefit more 
from a comparison with similar RTOs in their region 
and/or in other countries. This is what the WAITRO 
Benchmarking Project supports. 
The project builds on the work conducted by David 
Grier, Chief Strategist (Retired), Innovation Saskatchewan and colleagues between 1994 and 1998, with 
subsequent updates in 2003 and 2008, and is an upgraded online version of the paper-based version 
used then. David has played a vital role in the updating of the RTO management structure, process, 
and practice descriptions as well as performance indicator descriptions and instructions for RTOs. 

The workshop covered the eight main process areas that are benchmarked: RTO Governance, 
Financial Management, RTO Service, Business Development, Organizational Management, Project 
Management, Capacity Building, and Personnel Management. New elements have been introduced, 
however, to mirror technological developments, and current realities and requirements for RTOs, a 
total of 12 performance indicators have been developed, many of which carry over from the origi-
nal model. 

It is the combination of performance indicator data and process practice selections that will allow 
us to compare practices across participating RTOs. This allows us to indicate for individual pro-
cesses which practices deliver the best performance, and to consequently recommend to partici-
pating RTOs which processes they should consider adjusting their practices to achieve better per-
formance. 

JITRI and a software development team built an online version with all the necessary logic and 
integrated calculations required for a coherent, well-performing benchmarking system that will 
deliver clear but anonymous comparisons of RTO data according to types. Preliminary testing of 
the new online version of the benchmarking system before the workshop led to valuable feedback 
from the WAITRO Regional Focal Points (RFPs) and members including LEITAT, TISTR, CTA, DTI, 
RSS and SIRDC. This feedback led to significant adjustments and improvements to the online 
benchmarking system which is now being implemented. 

The value of the benchmarking system is directly correlated to the number of RTOs that partici-
pate. The higher the number of participating RTOs, the better the practice and performance com-
parisons available to all RTOs will become. With good performance comparisons, RTOs will receive 
vital process and practice improvement recommendations covering those process areas with the 
most potential to improve their own management. 

The workshop, therefore, was planned to introduce and motivate as many RTOs as possible to 
grab the opportunity to use the online benchmarking system as an important tool in their process 
 improvement plans. 

**Moderators: Dr Sandi Darniadi and Theresia Ningsi Astuti.**

The moderators started off by reviewing the SDG 2 targets. BRIN suggested a list of sub-topic (20 
items). One participant suggested to pick ‘low hanging fruit’ to start. Others suggested to vote for 
3 topics or agree on criteria first. Participants discussed the relevance of topics to them and 
picked the following: 

- **Modern agriculture:** urban farming, smart farming 
- **Novel Food:** new resource of protein, low GI, fiber 
- **Food/agriculture waste** 
- **Post harvesting:** food technology and processing
Soil science: eco-friendly biofertilizer | Plant protection: Biopesticides - can both be put under Biorefineries and circular bioeconomy
- Traditional/Ethnic Food

The group started merging, summarizing and re-structuring the sub-topics. It was noted that the SDG Working Group should address cross-cutting issues.

One participant proposed the following 3 main categories for food:
- Processing
- Production Technology
- Loss and Waste

The group was split into three sub-groups to identify SMART objectives for each category that can be achieved in the next 2 years. The following objectives were proposed by the sub-groups:

1. Food Processing
   - Identify the best procedure to food processing (new technologies) to prevent the loss of nutrition.
   - To obtain food products include high nutritional level.

2. Food lost and waste
   - To utilize waste products from food processing (Scalable)
   - Maximization of the usage (develop new value-added) product with waste
   - Increase shelf life by using smart packaging
   - Messaging/ influence perception of processing of waste as hi-tech
   - Consumer education

3. Food production technology
   - Prepare a systematic review of food production technologies in WAITRO Member Countries (through questionaries, data collection, baseline study)
   - Formulate recommendations, policy brief, white paper on sustainable food production and smart.

The group agreed to use MS Teams (for meetings and sharing files) and WhatsApp (for quick communication) in future work.

Working Group on SDG6, “Clean Water and Sanitation” Kickoff Session

Moderators: Ursula Schließmann and Almoayied Assayed

Among the items collected from the introduction round, common overarching topics for the working group were identified:

- WEF (Water-Energy-Food)-Nexus including the impacts of climate change, transparency and a circular water economy. During discussion, it was noted that economy might (in practice) conflict with the concept of nexus. Also, it was argued that the often-used silo-based approach needed to be replaced with an integrated approach. ‘Water re-use’ seemed to be a more appropriate term in this context.
- Digital Water
- Water Quality & treatment. During discussion, it was highlighted that technology was not the issue. The real issue was that ‘water is too cheap’ leading to a problem of more social and behavioural nature
- Circular Water Economy/Water use, including social aspects and behavioural change
- Water supply and transboundary water management. Discussion focused on what are the drivers to make the how happen? Water is political, which quickly turns into human rights discussion.

In the next step, the group was tasked to agree on one objective for each topic that the working group can achieve in the next 2 years. One participant suggested to use the WG to share their experience working in this sector and focus on how to make water more valuable.

The group was broken into 3 smaller groups to each focus on one of the first 3 topics and discuss for 5 min specific, SMART objectives.

- The first group proposed 3 objectives for topic (1):
  a. at least one workshop to get the issue to policy makers,
  b. position paper about our experiences,
  c. becoming active in a relevant forum

- The second group identified 3 foci for topic (2):
  a. sensors,
  b. digitalization needs,
  c. AI. They asked the group what objective could be expected from them in these areas.

- The third group suggested 2 objectives for topic (3):
  a. assessments,
  b. review paper

The group agreed to use MS Teams (for meetings and sharing files) and WhatsApp (for quick communication) in future work.
Soil science: eco-friendly biofertilizer | Plant protection: Biopesticides - can both be put under
Biorefineries and circular bioeconomy

Traditional/Ethnic Food

The group started merging, summarizing and re-structuring the sub-topics. It was noted that the SDG Working Group should address cross-cutting issues.

One participant proposed the following 3 main categories for food:
- Processing
- Production Technology
- Loss and Waste

The group was split into three sub-groups to identify SMART objectives for each category that can be achieved in the next 2 years. The following objectives were proposed by the sub-groups:

1. Food Processing
   - Identify the best procedure to food processing (new technologies) to prevent the loss of nutrition.
   - To obtain food products include high nutritional level.

2. Food lost and waste
   - To utilize waste products from food processing (Scalable)
   - Maximization of the usage (develop new value-added) product with waste
   - Increase shelf life by using smart packaging
   - Messaging/ influence perception of processing of waste as hi-tech
   - Consumer education

3. Food production technology
   - Prepare a systematic review of food production technologies in WAITRO Member Countries (through questionaries, data collection, baseline study)
   - Formulate recommendations, policy brief, white paper on sustainable food production and smart.

Digital Water

Water Quality & treatment. During discussion, it was highlighted that technology was not the issue. The real issue was that ‘water is too cheap’ leading to a problem of more social and behavioural nature.

Circular Water Economy/Water use, including social aspects and behavioural change.

Water supply and transboundary water management. Discussion focused on what are the drivers to make the how happen? Water is political, which quickly turns into human rights discussion.

Moderators: Ursula Schließmann and Almoayied Assayed

Among the items collected from the introduction round, common overarching topics for the working group were identified:

- Working Group on SDG6, “Clean Water and Sanitation” Kickoff Session

  Moderators: Ursula Schließmann and Almoayied Assayed

  Among the items collected from the introduction round, common overarching topics for the working group were identified:

  - WEF (Water-Energy-Food)-Nexus including the impacts of climate change, transparency and a circular water economy. During discussion, it was noted that economy might (in practice) conflict with the concept of nexus. Also, it was argued that the often-used silo-based approach needed to be replaced with an integrated approach. ‘Water re-use’ seemed to be a more appropriate term in this context.
  - Water Quality & treatment. During discussion, it was highlighted that technology was not the issue. The real issue was that ‘water is too cheap’ leading to a problem of more social and behavioural nature.
  - Circular Water Economy/Water use, including social aspects and behavioural change.
  - Water supply and transboundary water management. Discussion focused on what are the drivers to make the how happen? Water is political, which quickly turns into human rights discussion.

  In the next step, the group was tasked to agree on one objective for each topic that the working group can achieve in the next 2 years. One participant suggested to use the WG to share their experience working in this sector and focus on how to make water more valuable.

  The group was broken into 3 smaller groups to each focus on one of the first 3 topics and discuss for 5 min specific, SMART objectives.

  - The first group proposed 3 objectives for topic (1): a. at least one workshop to get the issue to policy makers, b. position paper about our experiences, c. becoming active in a relevant forum.
  - The second group identified 3 foci for topic (2): a. sensors, b. digitalization needs, c. AI. They asked the group what objective could be expected from them in these areas.
  - The third group suggested 2 objectives for topic (3): a. assessments, b. review paper.

  The group agreed to use MS Teams (for meetings and sharing files) and WhatsApp (for quick communication) in future work.
Working Group on SDG7, “Affordable and Clean Energy” Kickoff Session

Moderators: Prof Ashmore Mawire, Prof Daniel A.M. Egbe

The moderators opened the session with an introduction and suggestion to use the working group to develop research proposals. To this end, Prof Egbe presented two ideas.

- **Idea 1**: Video presentation from Peter Schubert – Self-stoking energy development for rural remote communities

- **Idea 2**: Video presentation from Stefan Peter – Nathal Energy multipurpose supply container

Following the presentations, the moderators opened the group discussion. One participant shared the observation that nobody is interested in energy despite the crisis and emphasized the need to understand what to do with the solution, start with the social side of things, match demand and supply, identify what problems need to be solved as a first step. Another participant added that a lot of projects are struggling with who is going to pay for them; what is the business case behind shared outcomes, a focus on technological solutions over lack of holistic thinking and good design, means that inevitably most partnerships fail to achieve their full potential.

The approach to go out to the community first and find out what they need, find out how to finance and only then develop technology was advocated. Many argued that technology is not the real problem. The bigger challenge lies in finance and social services (uptake by the community). The question of whether there are any social scientists in the room came up. Three put up their hands. The crucial role of community engagement was highlighted.

There was a discussion on why the group should focus on Africa. The difficulties with ‘imported solutions’ were noted. One argued that a business model for the maintenance was also needed. RTOs can stimulate change but need investment and the importance of advocacy was stated by others. The moderators reiterated the question whether there was interest in partnering in a research proposal? The Horizon Europe was discussed. It was noted that the US would need to find their own funding. One participant suggested that instead of off-grid vs on-grid, a hybrid incl. all key factors (such as policy, funding, social & community, energy solutions) was needed.

Other suggestions included a feasibility study towards the accessibility of learning material or the focus on umbrella systems, e.g. developing a generic framework.

---

Working Group on SDG17, “Partnerships for the Goals” Kickoff Session

Moderators: James Devitt and John Allport

Organized and presented by James Devitt (University of Huddersfield, UK); Dr Colin Venters (University of Huddersfield, UK); and Dr Marcelo Prim (SENAI, Brazil)

‘Problems cannot be solved with the same mindset that created them.’ Albert Einstein

There is a paradox at the heart of many traditional research and innovation partnerships which claim to have sustainable development outcomes, and that is they are intrinsically unsustainable in design and execution. Unequal relationships, badly conceived placing individual interest before shared outcomes, a focus on technological solutions over lack of holistic thinking and good design, means that inevitably most partnerships fail to achieve their full potential.

A well-attended and interactive workshop was held during the WAITRO Annual Conference in South Africa. This was an opportunity for WAITRO members to explore core concepts of systems thinking and discuss the adoption of innovative approaches to partnership building using systems thinking techniques. This workshop introduced the core concepts of systems thinking to explore the adoption of innovative approaches to partnership building using systems thinking techniques.

The workshop explored the nature of research partnership working and the complexity of attempting to do this in a sustainable manner. This concept of interdependence and complexity was explored through practical exercises and discussion. The group learnt that to address complex problems, it is important to have tools and a framework that help make sense of this complexity. Systems thinking takes a holistic approach to understand how systems influence one another, it enables the practitioner to deal with this complexity.

It was agreed to take forward these concepts by forming a working group for WAITRO members who wish to look at sustainable ways to build better and more long-lasting partnerships to advance the SDGs, especially between partners in industrialised and developing countries and between industry and research organisations.

The mission of the SDG7 working group is to explore new ways to address this paradox and to place WAITRO at the centre of innovative thinking in relation to good practice in building truly sustainable partnerships for SDGs with an aim to help generate and lay the foundations for new models for SDG partnerships which will in turn attract new RTO and industrial members to join the network and to establish a path forward for funded research and maximum impact.

The working group will develop a Position Paper and action plan which will provide a roadmap that identifies the challenges and open research issues for WAITRO members to address.
Working Group on SDG7, “Affordable and Clean Energy” Kickoff Session

Moderators: Prof Ashmore Mawire, Prof Daniel A.M. Egbe

The moderators opened the session with an introduction and suggestion to use the working group to develop research proposals. To this end, Prof Egbe presented two ideas.

- **Idea 1:** Video presentation from Peter Schubert – Self-stoking energy development for rural remote communities
- **Idea 2:** Video presentation from Stefan Peter – Nathal Energy multipurpose supply container

Following the presentations, the moderators opened the group discussion. One participant shared the observation that nobody is interested in energy despite the crisis and emphasized the need to understand what to do with the solution, start with the social side of things, match demand and supply, identify what problems need to be solved as a first step. Another participant added that a lot of projects are struggling with who is going to pay for them; what is the business case behind shared outcomes, a focus on technological solutions over lack of holistic thinking and good design, means that inevitably most partnerships fail to achieve their full potential.

The approach to go out to the community first and find out what they need, find out how to finance and only then develop technology was advocated. Many argued that technology is not the real problem. The bigger challenge lies in finance and social services (uptake by the community). The question of whether there are any social scientists in the room came up. Three put up their hands. The crucial role of community engagement was highlighted.

There was a discussion on why the group should focus on Africa. The difficulties with ‘imported solutions’ were noted. One argued that a business model for the maintenance was also needed. RTOs can stimulate change but need investment and the importance of advocacy was stated by others. The moderators reiterated the question whether there was interest in partnering in a research proposal? The Horizon Europe was discussed. It was noted that the US would need to find their own funding. One participant suggested that instead of off-grid vs on-grid, a hybrid incl. all key factors (such as policy, funding, social & community, energy solutions) was needed.

Other suggestions included a feasibility study towards the accessibility of learning material or the focus on umbrella systems, e.g. developing a generic framework.

Working Group on SDG17, “Partnerships for the Goals” Kickoff Session

Moderators: James Devitt and John Allport

Organized and presented by James Devitt (University of Huddersfield, UK); Dr Colin Venters (University of Huddersfield, UK); and Dr Marcelo Prim (SENAI, Brazil)

‘Problems cannot be solved with the same mindset that created them.’ Albert Einstein

There is a paradox at the heart of many traditional research and innovation partnerships which claim to have sustainable development outcomes, and that is they are intrinsically unsustainable in design and execution. Unequal relationships, badly conceived placing individual interest before shared outcomes, a focus on technological solutions over lack of holistic thinking and good design, means that inevitably most partnerships fail to achieve their full potential.

A well-attended and interactive workshop was held during the WAITRO Annual Conference in South Africa. This was an opportunity for WAITRO members to explore core concepts of systems thinking and discuss the adoption of innovative approaches to partnership building using systems thinking techniques. This workshop introduced the core concepts of systems thinking to explore the adoption of innovative approaches to partnership building using systems thinking techniques.

The workshop explored the nature of research partnership working and the complexity of attempting to do this in a sustainable manner. This concept of interdependence and complexity was explored through practical exercises and discussion. The group learnt that to address complex problems, it is important to have tools and a framework that help make sense of this complexity. Systems thinking takes a holistic approach to understand how systems influence one another, it enables the practitioner to deal with this complexity.

It was agreed to take forward these concepts by forming a working group for WAITRO members who wish to look at sustainable ways to build better and more long-lasting partnerships to advance the SDGs, especially between partners in industrialised and developing countries and between industry and research organisations.

The mission of the SDG17 working group is to explore new ways to address this paradox and to place WAITRO at the centre of innovative thinking in relation to good practice in building truly sustainable partnerships for SDGs with an aim to help generate and lay the foundations for new models for SDG partnerships which will in turn attract new RTO and industrial members to join the network and to establish a path forward for funded research and maximum impact.

The working group will develop a Position Paper and action plan which will provide a roadmap that identifies the challenges and open research issues for WAITRO members to address.
The WAITRO Summit 2022 was built around the theme of “SDG17: Partnerships for the Goals.” To maximize the partnership potential, members were invited to contribute posters promoting their expertise and the areas in which they would like to collaborate. These are reproduced in miniature here as a tribute to the members who worked with us to generate the content. The full-size versions are in the permanent WAITRO exhibition at the Secretariat Headquarters in Jiangbei New Development Area, Nanjing. Why exhibit there? Well, JITRI often receives visits from multi-national companies, consulates and embassies from all over the globe and it is valuable for them to see their regions represented in WAITRO. If you don’t see your organization in the following pages, it is either because we did not receive a poster or it was missing details such as sufficient graphics resolution. Contact the Secretariat and we will work with you to add you to both the permanent exhibition and future Annual Reports so that you can take your place in the Global Innovation Family.
The WAITRO Summit 2022 was built around the theme of “SDG17: Partnerships for the Goals.” To maximize the partnership potential, members were invited to contribute posters promoting their expertise and the areas in which they would like to collaborate. These are reproduced in miniature here as a tribute to the members who worked with us to generate the content. The full-size versions are in the permanent WAITRO exhibition at the Secretariat Headquarters in Jiangbei New Development Area, Nanjing. Why exhibit there? Well, JITRI often receives visits from multi-national companies, consulates and embassies from all over the globe and it is valuable for them to see their regions represented in WAITRO. If you don’t see your organization in the following pages, it is either because we did not receive a poster or it was missing details such as sufficient graphics resolution. Contact the Secretariat and we will work with you to add you to both the permanent exhibition and future Annual Reports so that you can take your place in the Global Innovation Family.
If you don’t see your organization there, it is either because we did not receive a poster or the design was not appropriate for the format. Contact the Secretariat and we will work with you to add you to the exhibition.
Participants from the current WAITRO Board:

<table>
<thead>
<tr>
<th>Name</th>
<th>Position/role</th>
</tr>
</thead>
<tbody>
<tr>
<td>HRH Princess Sumaya bint El Hassan</td>
<td>President</td>
</tr>
<tr>
<td>Rubén Cruz (online)</td>
<td>First Vice-President</td>
</tr>
<tr>
<td>David Tveit</td>
<td>Second Vice-President (Chair)</td>
</tr>
<tr>
<td>Ndumiso Cingo</td>
<td>RR for Sub-Saharan Africa</td>
</tr>
<tr>
<td>Theresia Ningsi Astuti</td>
<td>RR for Asia and the Pacific</td>
</tr>
<tr>
<td>Emad Ewais</td>
<td>RR for MENA</td>
</tr>
<tr>
<td>Dirk Saseta</td>
<td>RR for Europe</td>
</tr>
</tbody>
</table>

Participants from the offices of the Secretariat:

<table>
<thead>
<tr>
<th>Name</th>
<th>Position/role</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eckart Bierdümpe</td>
<td>Secretary-General</td>
</tr>
<tr>
<td>Paul Burrows</td>
<td>Head WAITRO Office China</td>
</tr>
<tr>
<td>Dominik Reinertz</td>
<td>Head WAITRO Office Germany</td>
</tr>
<tr>
<td>Sira Englıbertz</td>
<td>WAITRO Office Germany</td>
</tr>
<tr>
<td>Andrea Santos</td>
<td>WAITRO Office Germany</td>
</tr>
<tr>
<td>Julia Wietkühct</td>
<td>WAITRO Office Germany</td>
</tr>
<tr>
<td>Jerome Harrison</td>
<td>WAITRO Office Germany</td>
</tr>
<tr>
<td>Dong Chuqiao</td>
<td>WAITRO Office China</td>
</tr>
<tr>
<td>Lilly Ye Liu</td>
<td>WAITRO Office China</td>
</tr>
</tbody>
</table>

Date
16th of November 2022

Time
9:00 – 12:30 h UTC+2

Venue
Lord Charles Hotel, Somerset West, South Africa

Returning Officer: Berenice Lue Marais

Official Delegates from WAITRO member organizations:

All WAITRO members in good standing (as defined by having updated their organizational data on the WAITRO online database) were asked to nominate one delegate to vote at the General Assembly and to represent their organization. The following delegates joined the General Assembly:

<table>
<thead>
<tr>
<th>Organization</th>
<th>Representative</th>
</tr>
</thead>
<tbody>
<tr>
<td>AINIA (Spain)</td>
<td>Carlos Enguix Nicolás (online)</td>
</tr>
<tr>
<td>BITRI – Botswana Institute for Technology Research and Innovation</td>
<td>Kgomotsu Radijeng</td>
</tr>
<tr>
<td>BNARI – Biotechnology and Nuclear Agriculture Research Institute (Ghana)</td>
<td>Michael Osae</td>
</tr>
<tr>
<td>BRIN – National Research and Innovation Agency/ Badan Riset dan</td>
<td>Theresia Ningsi Astuti</td>
</tr>
<tr>
<td>Innovasi Nasional (Indonesia)</td>
<td></td>
</tr>
<tr>
<td>BU - Busitema University (Uganda)</td>
<td>Ndanyimwa Kahili</td>
</tr>
<tr>
<td>CARIRI – Caribbean Industrial Research Institute (Trinidad and Tobago)</td>
<td>Dr. Hans-Erich Schulz</td>
</tr>
<tr>
<td>CCCEM – Centre for Climate Change and Environment Management</td>
<td>Martin Munkhody</td>
</tr>
<tr>
<td>(Malawi)</td>
<td></td>
</tr>
<tr>
<td>CeNAT – Centro Nacional de Alta Tecnologia (Costa Rica)</td>
<td>Emanuel Araya Valverde</td>
</tr>
<tr>
<td>CMRDI - The Central Metallurgical Research and Development Institute (Egypt)</td>
<td>Prof. Dr. Emad Ewais</td>
</tr>
<tr>
<td>CIDET - Centro de innovación y Desarrollo Tecnológico del Sector</td>
<td>Rubén Cruz (online)</td>
</tr>
<tr>
<td>Eléctrico (Columbia)</td>
<td></td>
</tr>
<tr>
<td>CSIR - Council for Scientific and Industrial Research (India)</td>
<td>Yatendra Kr Satia</td>
</tr>
<tr>
<td>CSIR - Council for Scientific and Industrial Research (Ghana)</td>
<td>Moses Mengu</td>
</tr>
<tr>
<td>CSIR - Council for Scientific and Industrial Research (South Africa)</td>
<td>Ndumiso Cingo</td>
</tr>
<tr>
<td>CSIRO - Commonwealth Scientific and Industrial Research</td>
<td>Patrick Dias</td>
</tr>
<tr>
<td>Organizations (Australia)</td>
<td></td>
</tr>
<tr>
<td>CTA - Centro de Ciencia y Tecnología de Antioquia (Colombia)</td>
<td>Jaime Arboleda</td>
</tr>
<tr>
<td>DTI - Danish Technological Institute (Denmark)</td>
<td>David Tveit</td>
</tr>
<tr>
<td>EAFIT - Universidad EAFIT (Colombia)</td>
<td>Maria Alejandra Salome</td>
</tr>
<tr>
<td>FhG - Fraunhofer-Gesellschaft (Germany)</td>
<td>Johann Feckl</td>
</tr>
<tr>
<td>FORTH - Foundation for Research and Technology (Greece)</td>
<td>Panagiotis Karioureas</td>
</tr>
<tr>
<td>INTI - Instituto Nacional de Tecnología Industrial (Portugal)</td>
<td>Ana Luisa Jegundo</td>
</tr>
<tr>
<td>IranDoc - Iranian Research Institute for Information Science</td>
<td>Azadeh Mohbati (online)</td>
</tr>
<tr>
<td>and Technology (Iran)</td>
<td></td>
</tr>
<tr>
<td>ITG - Galicia Institute of Technology (Spain)</td>
<td>Dr. Juan Luis Sobreira Seoane</td>
</tr>
<tr>
<td>ITI - Industrial Technology Institute (Sri Lanka)</td>
<td>Dr. Radhika Samarasekera</td>
</tr>
<tr>
<td>ITDI - DOST Industrial Technology Development Institute, Department of Science and Technology (Philippines)</td>
<td>Annabelle Flores</td>
</tr>
</tbody>
</table>
Participants from the current WAITRO Board:

<table>
<thead>
<tr>
<th>Name</th>
<th>Position/role</th>
</tr>
</thead>
<tbody>
<tr>
<td>HRH Princess Sumaya bint El Hassan (online)</td>
<td>President</td>
</tr>
<tr>
<td>Rubén Cruz (online)</td>
<td>First Vice-President</td>
</tr>
<tr>
<td>David Tveit</td>
<td>Second Vice-President (Chair)</td>
</tr>
<tr>
<td>Ndumiso Cingo</td>
<td>RR for Sub-Saharan Africa</td>
</tr>
<tr>
<td>Teresia Ningsi Astuti</td>
<td>RR for Asia and the Pacific</td>
</tr>
<tr>
<td>Emad Ewais</td>
<td>RR for MENA</td>
</tr>
<tr>
<td>Dirk Saseta</td>
<td>RR for Europe</td>
</tr>
</tbody>
</table>

Participants from the offices of the Secretariat:

<table>
<thead>
<tr>
<th>Name</th>
<th>Position/role</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eckart Bierdümpe</td>
<td>Secretary-General</td>
</tr>
<tr>
<td>Paul Burrows</td>
<td>Head WAITRO Office China</td>
</tr>
<tr>
<td>Dominik Reinertz</td>
<td>Head WAITRO Office Germany</td>
</tr>
<tr>
<td>Sira Engelbertz</td>
<td>WAITRO Office Germany</td>
</tr>
<tr>
<td>Andrea Santos</td>
<td>WAITRO Office Germany</td>
</tr>
<tr>
<td>Julia Wietkühler</td>
<td>WAITRO Office Germany</td>
</tr>
<tr>
<td>Jerome Harrison</td>
<td>WAITRO Office Germany</td>
</tr>
<tr>
<td>Dong Chuqiao</td>
<td>WAITRO Office China</td>
</tr>
<tr>
<td>Lilly Ye Liu</td>
<td>WAITRO Office China</td>
</tr>
</tbody>
</table>

Date 16th of November 2022
Time 9:00 – 12:30 h UTC+2
Venue Lord Charles Hotel, Somerset West, South Africa

Returning Officer: Berenice Lue Marais
Official Delegates from WAITRO member organizations:
All WAITRO members in good standing (as defined by having updated their organizational data on the WAITRO online database) were asked to nominate one delegate to vote at the General Assembly and to represent their organization. The following delegates joined the General Assembly:

<table>
<thead>
<tr>
<th>Organization</th>
<th>Representative</th>
</tr>
</thead>
<tbody>
<tr>
<td>AINIA (Spain)</td>
<td>Carlos Enguix Nicolás (online)</td>
</tr>
<tr>
<td>BITRI – Botswana Institute for Technology Research and Innovation (Botswana)</td>
<td>Kgomotsu Radijeng</td>
</tr>
<tr>
<td>BNARI – Biotechnology and Nuclear Agriculture Research Institute (Ghana)</td>
<td>Michael Osae</td>
</tr>
<tr>
<td>BRIN – National Research and Innovation Agency/ Badan Riset dan Inovasi Nasional (Indonesia)</td>
<td>Theresia Ningsi Astuti</td>
</tr>
<tr>
<td>BU – Busitema University (Uganda)</td>
<td>Ndamanywa Kalisiti</td>
</tr>
<tr>
<td>CARIRI – Caribbean Industrial Research Institute (Trinidad and Tobago)</td>
<td>Dr. Hans-Erich Schulz</td>
</tr>
<tr>
<td>CCCCEM – Centre for Climate Change and Environment Management (Malawi)</td>
<td>Martin Munkhondya</td>
</tr>
<tr>
<td>CeNAT – Centro Nacional de Alta Tecnologia (Costa Rica)</td>
<td>Emanuel Araya Valverde</td>
</tr>
<tr>
<td>CMRDI - The Central Metallurgical Research and Development Institute (Egypt)</td>
<td>Prof. Dr. Emad Ewais</td>
</tr>
<tr>
<td>CIDET - Centro de innovacióny Desarrollo Tecnológico del Sector Eléctrico (Co-lombia)</td>
<td>Rubén Cruz (online)</td>
</tr>
<tr>
<td>CSIR - Council for Scientific and Industrial Research (India)</td>
<td>Yatendra Kr Satija</td>
</tr>
<tr>
<td>CSIR - Council for Scientific and Industrial Research (Ghana)</td>
<td>Moses Mengi</td>
</tr>
<tr>
<td>CSIR - Council for Scientific and Industrial Research (South Africa)</td>
<td>Ndumiso Cingo</td>
</tr>
<tr>
<td>CSIRO - Commonwealth Scientific and Industrial Research Organisations (Australia)</td>
<td>Patrick Dias</td>
</tr>
<tr>
<td>CTA - Centro de Cienciay Tecnologia de Antioquia (Colombia)</td>
<td>Jaime Arboleda</td>
</tr>
<tr>
<td>DTI - Danish Technological Institute (Denmark)</td>
<td>David Tveit</td>
</tr>
<tr>
<td>EAFIT - Universidad EAFIT (Colombia)</td>
<td>Maria Alejandra Saleme</td>
</tr>
<tr>
<td>FhG - Fraunhofer-Gesellschaft (Germany)</td>
<td>Johann Feckl</td>
</tr>
<tr>
<td>FORTH - Foundation for Research and Technology (Greece)</td>
<td>Panagiotis Kariniouaras</td>
</tr>
<tr>
<td>INTI - Instituto Nacional de Tecnología Industrial (Portugal)</td>
<td>Ana Luisa Jegundo</td>
</tr>
<tr>
<td>IranDoc - Iranian Research Institute for Information Science and Technology (Iran)</td>
<td>Azadeh Mohebi (online)</td>
</tr>
<tr>
<td>ITG - Galicia Institute of Technology (Spain)</td>
<td>Dr. Juan Luis Sobreira Seoane</td>
</tr>
<tr>
<td>ITI - Industrial Technology Institute (Sri Lanka)</td>
<td>Dr. Radhika Samarasekera</td>
</tr>
<tr>
<td>ITDI - DOST Industrial Technology Development Institute, Department of Science and Technology (Philippines)</td>
<td>Annabelle Flores</td>
</tr>
</tbody>
</table>
1. Opening and Welcome

The Chair opened the 26th WAITRO General Assembly and gave an introduction. Raymond Tavares presented greetings from UNIDO emphasizing the collaboration of UNIDO and WAITRO. The President presented words of welcome by video as well as expressions of gratitude and pride for the term of her ending presidency.

2. Attendance and Quorum

The attendance and quorum were checked to ensure compliance with the constitution. The necessary quorum was reached, with 53 organizations out of 116 members represented.

3. Approval of the Agenda

The majority of the present delegates and representatives approved the provisional agenda of the 26th General Assembly by raising hands.¹

4. Approval of the 25th General Assembly Minutes

The minutes from the 25th General Assembly in 2030 were approved by the majority of the General Assembly.

5. Election of the Returning Officer & the Nomination Committee

As recommended by the WAITRO Executive Board, Berenice Lue Marais was elected as the Returning Officer in order to conduct the upcoming elections of the General Assembly. Secretary General Eckart BierdümpeI and the head of the WAITRO Office China, Paul Burrows, served as the Nomination Committee.


Various members of the Secretariat gave a tag-team presentation summarizing the achievements of the last two years. In brief:

- The WAITRO membership has grown significantly
- The WAITRO Capacity Development Program offered various workshops in different formats: panel discussions, trainings and workshops focused on specific research areas
- The Benchmarking project was introduced as an initiative that helps members identify best management practices and learn from each other

¹ Approval of the delegates participating online was indicated electronically using the Zoom platform's "raise hand" function.
1. Opening and Welcome

The Chair opened the 26th WAITRO General Assembly and gave an introduction. Raymond Tavares presented greetings from UNIDO emphasizing the collaboration of UNIDO and WAITRO. The President presented words of welcome by video as well as expressions of gratitude and pride for the term of her ending presidency.

2. Attendance and Quorum

The attendance and quorum were checked to ensure compliance with the constitution. The necessary quorum was reached, with 53 organizations out of 116 members represented.

3. Approval of the Agenda

The majority of the present delegates and representatives approved the provisional agenda of the 26th General Assembly by raising hands.1

4. Approval of the 25th General Assembly Minutes

The minutes from the 25th General Assembly in 2030 were approved by the majority of the General Assembly.

5. Election of the Returning Officer & the Nomination Committee

As recommended by the WAITRO Executive Board, Berenice Lue Marais was elected as the Returning Officer in order to conduct the upcoming elections of the General Assembly. Secretary General Eckart Bierdümpel and the head of the WAITRO Office China, Paul Burrows, served as the Nomination Committee.


Various members of the Secretariat gave a tag-team presentation summarizing the achievements of the last two years. In brief:

- The WAITRO membership has grown significantly
- The WAITRO Capacity Development Program offered various workshops in different formats: panel discussions, trainings and workshops focused on specific research areas
- The Benchmarking project was introduced as an initiative that helps members identify best management practices and learn from each other

---

1 Approval of the delegates participating online was indicated electronically using the Zoom platform’s “raise hand” function.
The WAITRO Innovation Awards rewarded project teams that are collaborating in the field of Water in 2020 and in the field of Sustainable Agriculture in 2021.

SAIRA’s users have been growing steadily and currently amount to over 900 from over 450 organizations.

SAIRA facilitated over 80 matches and over 50 projects.

An important relationship was built with G-STIC.

The performance of communication and outreach efforts has been improving consistently.

The number of people viewing and engaging with the WAITRO website and the social media channel has increased significantly.

For email marketing the number of subscribers has significantly increased (by 46.2%), but the open and click rate is still quite low (27.39% and 8.72% respectively).

Paul Burrows (JITRI) presented the draft Secretariat work program for 2023 – 24. The overall aim of the work program 2023-24 is to ensure more continuity, since the last years have been spent implementing new initiatives and changes. Specific goals of the work program are:

- Establish and staff a WAITRO Secretariat based at JITRI in Nanjing, China
- Seek a partner for Secretariat operations (hopefully Fraunhofer but uncertain due to financial constraints)
- Continue the Benchmarking project
- Establish WAITRO Working Groups
- Continue the publication of an annual report, holding a WAITRO Summit and Capacity Development events
- Strengthen the RFPs
- Remodel the Fellowship Program
- Formalize the Role of Associate Members
- Implement an Independent WAITRO Revenue Strategy

The work program was approved by the General Assembly with JITRI as the host of the WAITRO Secretariat for 2023 – 2026.

### 8. Nominations for the WAITRO Executive Board 2023-2024

- Eight positions needed to be filled
- The deadline for nominations had to be extended due to lack of responses (particularly for RR LAC and the first Vice President). All required nominations were received by the extended deadline.
- Members were allowed to register for remote attendance due to the ongoing difficulties in international travel caused by pandemic restrictions.
- The candidates and the results of the elections are reported below (Please note that there was fluctuation in online attendance which leads to a different number of people voting for different elections):

  **President:**
  - Two candidates: Hasan Mandal (TÜBİTAK) and Taha Matter (TIMS)
  - Result: Hasan Mandal won with 38 votes against 13 votes for Taha Matter and is the new WAITRO president

  **1st Vice President:**
  - Two candidates: Robson M Mafoti (SIRDC) and Hans-Erich Schulz (CARIRI)
  - Result: Hans-Erich Schulz won with 37 votes against 14 votes for Robson M Mafoti

  **2nd Vice President:**
  - One candidate: Dirk Saseta Krieg (LEITAT)
  - Result: Dirk Saseta Krieg was elected with 48 votes in favour and one vote not in favour

  **RR Sub-Saharan Africa:**
  - Two candidates: Paul Pinnock Bosu (CSIR Ghana) and Abukabar Shehu Kollere (RMRDC)
  - Result: Paul Pinnock Bosu won with 32 votes against 16 votes for Abukabar Shehu Kollere

  **RR Asia and the Pacific:**
  - One candidate: Theresia Ningsi Astuti (BRIN)
  - Result: Theresia Ningsi Astuti was elected with 45 votes in favour and one abstention

  **RR Europe:**
  - One candidate: David Tveit (DTI)
  - Result: David Tveit was elected unanimously (48 votes in favour)

  **RR Latin America and the Caribbean:**
  - One candidate: Jefferson de Oliveira Gomes (SENAI)
  - Result: Jefferson des Oliveira Gomes was elected unanimously (47 votes in favour)

  **RR MENA:**
  - Two candidates: Abeer Arafat (RSS) and Emad Ewais (CMRDI)
  - Result: Abeer Arafat won with 28 votes against 20 votes for Emad Ewais.
The WAITRO Innovation Awards rewarded project teams that are collaborating in the field of Water in 2020 and in the field of Sustainable Agriculture in 2021.

SAIRA’s users have been growing steadily and currently amount to over 900 from over 450 organizations.

SAIRA facilitated over 80 matches and over 50 projects.

An important relationship was built with G-STIC.

The WAITRO Summit 2022 was a success with 175 participants (123 Internationals, 52 Locals, 40 countries, 80 organizations).

The performance of communication and outreach efforts has been improving consistently.

The number of people viewing and engaging with the WAITRO website and the social media channel has increased significantly.

For email marketing the number of subscribers has significantly increased (by 46.2%), but the open and click rate is still quite low (27.39% and 8.72% respectively).

Paul Burrows (JITRI) presented the draft Secretariat work program for 2023 – 24. The overall aim of the work program 2023-24 is to ensure more continuity, since the last years have been spent implementing new initiatives and changes. Specific goals of the work program are:

- Establish and staff a WAITRO Secretariat based at JITRI in Nanjing, China
- Seek a partner for Secretariat operations (hopefully Fraunhofer but uncertain due to financial constraints)
- Continue the Benchmarking project
- Establish WAITRO Working Groups
- Continue the publication of an annual report, holding a WAITRO Summit and Capacity Development events
- Strengthen the RFPs
- Remodel the Fellowship Program
- Formalize the Role of Associate Members
- Implement an Independent WAITRO Revenue Strategy

The work program was approved by the General Assembly with JITRI as the host of the WAITRO Secretariat for 2023 – 2026.

Eight positions needed to be filled.

The deadline for nominations had to be extended due to lack of responses (particularly for RR LAC and the first Vice President). All required nominations were received by the extended deadline.

Members were allowed to register for remote attendance due to the ongoing difficulties in international travel caused by pandemic restrictions.

The candidates and the results of the elections are reported below (Please note that there was fluctuation in online attendance which leads to a different number of people voting for different elections):

**President:**
- Two candidates: Hasan Mandal (TÜBİTAK) and Taha Matter (TIMS)
- Result: Hasan Mandal won with 38 votes against 13 votes for Taha Matter and is the new WAITRO president

**1st Vice President:**
- Two candidates: Robson M Mafoti (SIRDC) and Hans-Erich Schulz (CARIRI)
- Result: Hans-Erich Schulz won with 37 votes against 14 votes for Robson M Mafoti

**2nd Vice President:**
- One candidate: Dirk Saleta Krieg (LEITAT)
- Result: Dirk Saleta Krieg was elected with 48 votes in favour and one vote not in favour

**RR Sub-Saharan Africa:**
- Two candidates: Paul Pinnock Bosu (CSIR Ghana) and Abukabar Shehu Kollere (RMRDC)
- Result: Paul Pinnock Bosu won with 32 votes against 16 votes for Abukabar Shehu Kollere

**RR Asia and the Pacific:**
- One candidate: Theresia Ningsi Astuti (BRIN)
- Result: Theresia Ningsi Astuti was elected with 45 votes in favour and one abstention

**RR Europe:**
- One candidate: David Tveit (DTI)
- Result: David Tveit was elected unanimously (48 votes in favour)

**RR Latin America and the Caribbean:**
- One candidate: Jefferson de Oliveira Gomes (SENAI)
- Result: Jefferson des Oliveira Gomes was elected unanimously (47 votes in favour)

**RR MENA:**
- Two candidates: Abeer Arafat (RSS) and Emad Ewais (CMRDI)
- Result: Abeer Arafat won with 28 votes against 20 votes for Emad Ewais.
CHAPTER 4 WAITRO ACTIVITIES In 2022

9. Administrative Matters

9.1 Proposal for Membership Fee

The General Assembly approved to continue waiving the membership fees for two more years, unless the Secretariat is unable to come up with the necessary funding, then the Board will be able to instigate the fees without asking the GA.

9.2 Proposal for Honorary Member

In the previous General Assembly 2020, it was decided by the members to implement an Honorary Membership category. The WAITRO Executive Board nominated Dr. Moses Mengu as the first WAITRO Honorary Member for his long-standing commitment and dedication to WAITRO. This was unanimously approved by the General Assembly. The Chair presented a plaque to Dr. Mengu.

10. Any Other Business

No other issues were raised

11. Close of the Meeting

The Chair closed the meeting
9. Administrative Matters

9.1 Proposal for Membership Fee

The General Assembly approved to continue waiving the membership fees for two more years, unless the Secretariat is unable to come up with the necessary funding, then the Board will be able to institute the fees without asking the GA.

9.2 Proposal for Honorary Member

In the previous General Assembly 2020, it was decided by the members to implement an Honorary Membership category. The WAITRO Executive Board nominated Dr. Moses Mengu as the first WAITRO Honorary Member for his long-standing commitment and dedication to WAITRO. This was unanimously approved by the General Assembly. The Chair presented a plaque to Dr. Mengu.

10. Any Other Business

No other issues were raised

11. Close of the Meeting

The Chair closed the meeting
Events

Online CBE-JU session on the new Circular Bio
Date: March 29th 2022
LEITAT hosted an online session on the new Circular Bio-based Europe Joint Undertaking (CBE JU) a €2 billion partnership between the European Union and the Bio-based Industries Consortium (BIC) that funds projects advancing competitive circular bio-based industries in Europe.

The agenda covered:
- CBEJU structure and difference with the BBIJU - Q&A - Francesco Sottile, BDM for Circular & Bio Economy in LEITAT
- How to address CBE-JU partnerships - Q&A - Francesco Sottile, BDM for Circular & Bio economy in LEITAT.
- SAIRA as a networking tool for CBE-JU - Q&A - Julia Wiethüchter, WAITRO German Secretariat
- Next steps - Laia Piñol, BDM for Circular & Bio economy in LEITAT

WAITRO members involved included TWI, Instituto Pedro Nunes (IPN), VITO NV.

Webinar on Small Things but Giant Steps to Bio-Circular-Green (BCG) and Resilient Economy
Date: March 25th 2022
Regarding the survey of member's capacity development demand in early 2022 and the voting result showed the members' interest on the technology trend for resilient economy in post-COVID19.

TISTR organized the Webinar on Small Things but Giant Steps to BCG and Resilient Economy: Food, Health, Wellness for the Future and Business Opportunity on 28 March 2022 by Zoom Webinar. There were speakers from WAITRO member organization within and across the regions e.g. Food Industry Research and Development Institute (FIRDI) of Taiwan, Aarhus University of Denmark, and Leitat Technological Center (LEITAT) of Spain, GreenAnt of the Netherlands, and TISTR of Thailand to sharing and discuss on the technology and utilization of microorganisms for food industries, and insects as a trend of alternative protein source.

During the webinar, TISTR promoted on WAITRO highlights in 2021 and showcase of winner of WAITRO Innovation Award 2021 to encourage the interest of participants on WAITRO.

The webinar was showcase the expertise of WAITRO member organizations in the technologies of such theme, including to showcase the SmartinFood, winner project of WAITRO Innovation Award 2021. The webinar opened publicly which finally could gather over 150 registered participants from 19 countries.

Workshop on Advanced Materials and Manufacturing Technologies for Africa and Middle East Development.
Date: 1-2 June 2022
The WAITRO member Central Metallurgical Research & Development Institute (CMRDI) organized the Regional Workshop on Advanced Materials and Manufacturing Technologies for Africa and Middle East Development. The hybrid event took place on June 1-2 in Cairo, Egypt and online and included a keynote address from Dr. Paul E. Burrows, Director of the WAITRO Secretariat China Office.

The workshop aims to optimize the development of Africa and the Middle East, establishing networks between representatives of science and industry. In the five sessions of the workshop, people can learn about:

- Session 1: Minerals, Recycling, 3D Printing
- Session 2: Heat Transfer, Energetic Materials, Wastewater Treatment
- Session 3: Fusion Welding, FSW, Metallic and Non-metallic Materials
- Session 4: Nano composites, Graphene, Materials Processing
- Session 5: Composites, Ferrous and Non-ferrous Alloys

The Horizon Europe Capacity Building & Networking Event
Date: 21-22 June 2022 in Barcelona, Spain.
Joint hosted by the WAITRO Office Germany and the Regional Focal Point for Europe. This event was addressed to Project and area managers, business development managers and/or researchers involved in projects and proposals preparation and interested in coordinating and participating in upcoming Horizon Europe calls. More than 50 attendees from 6 European and 10 international countries made the event a success.

The event started with a welcome coffee in LEITAT facilities (Terrassa) and the intervention of Dr. Eckart Bierdümpe (WAITRO Secretary General) and Dirk Saseta (WAITRO RR Europe) who thanked WAITRO partners for coming and open the event with the expectations of WAITRO and its activities post pandemics. Laia Piñol (WAITRO RFP Europe) followed with a presentation of the overall aim of the event, the agenda and an introduction of the first speakers.

The first keynote speech was given by Verena Fennemann (Head of Fraunhofer EU Office Brussel) who talked about the evolution of international cooperation in the different framework Programmes, Horizon Europe Work Programe general conditions, targeted international cooperation actions and initiatives at regional level (Africa, LAC, Asiapacific) and multilateral activities.

After the networking lunch, the following international WAITRO partners pitched on their organizations, capacities and interest in Horizon Europe topics: TISTR, RMRDC, CENAT, CENIBIOT, University of Yaoundé, IWARP, SENAI, JTRI and BRIN.

To conclude the event, Dominik Reinertz (Head of WAITRO Office Germany) presented the opportunities that SAIRA can provide to the WAITRO partners within and beyond WAITRO community and put some examples of collaboration. Paul Burrows (Head of WAITRO Office China) together with Dominik introduced the plan about Innovation Summit 2022. Speakers invited WAITRO partners to chair a session/workshop related to one of the Sustainable Development Goals.
Events

Online CBE-JU session on the new Circular Bio
Date: March 25th 2022

LEITAT hosted an online session on the new Circular Bio-based Europe Joint Undertaking (CBE JU) a €2 billion partnership between the European Union and the Bio-based Industries Consortium (BIC) that funds projects advancing competitive circular bio-based industries in Europe.

The agenda covered:
- CBEJU structure and difference with the BBIIJU - Q&A - Francesco Sottile, BDM for Circular & Bio Economy in LEITAT
- How to address CBE-JU partnerships - Q&A - Francesco Sottile, BDM for Circular & Bio economy in LEITAT
- SAIRA as a networking tool for CBE-JU - Q&A - Julia Wiethüchter, WAITRO German Secretariat
- Next steps - Laia Piñol, BDM for Circular & Bio economy in LEITAT

WAITRO members involved included TWI, Instituto Pedro Nunes (IPN), VITO NV

Webinar on Small Things but Giant Steps to Bio-Circular-Green (BCG) and Resilient Economy
Date: March 29th 2022

Regarding the survey of member’s capacity development demand in early 2022 and the voting result showed the members’ interest on the technology trend for resilient economy in post-COVID19.

TISTR organized the Webinar on Small Things but Giant Steps to BCG and Resilient Economy: Food, Health, Wellness for the Future and Business Opportunity on 29 March 2022 by Zoom. There were speakers from WAITRO member organization within and across the regions e.g. Food Industry Research and Development Institute (FIRDI) of Taiwan, Aarhus University of Denmark, and Leitat Technological Center (LEITAT) of Spain, GreenAnt of the Netherlands, and TISTR of Thailand to sharing and discuss on the technology and utilization of microorganisms for food industries, and insects as a trend of alternative protein source.

During the webinar, TISTR promoted on WAITRO highlights in 2021 and showcase of winner of WAITRO Innovation Award 2021 to encourage the interest of participants on WAITRO.

The webinar was showcase the expertise of WAITRO member organizations in the technologies of such theme, including to showcase the SmartinFood, winner project of WAITRO Innovation Award 2021. The webinar opened publicly which finally could gather over 150 registered participants from 19 countries.

Workshop on Advanced Materials and Manufacturing Technologies for Africa and Middle East Development.
Date: 1-2 June 2022

The WAITRO member Central Metallurgical Research & Development Institute (CMRDI) organized the Regional Workshop on Advanced Materials and Manufacturing Technologies for Africa and Middle East Development. The hybrid event took place on June 1-2 in Cairo, Egypt and online and included a keynote address from Dr. Paul E. Burrows, Director of the WAITRO Secretariat China Office.

The workshop aims to optimize the development of Africa and the Middle East, establishing networks between representatives of science and industry. In the five sessions of the workshop, people can learn about:

- Session 1: Minerals, Recycling, 3D Printing
- Session 2: Heat Transfer, Energetic Materials, Wastewater Treatment
- Session 3: Fusion Welding, FSW, Metallic and Non-metallic Materials
- Session 4: Nano composites, Graphene, Materials Processing
- Session 5: Composites, Ferrous and Non-ferrous Alloys

The Horizon Europe Europe Capacity Building & Networking Event
Date: 21-22 June 2022 in Barcelona, Spain.

Joint hosted by the WAITRO Office Germany and the Regional Focal Point for Europe. This event was addressed to Project and area managers, business development managers and/or researchers involved in projects and proposals preparation and interested in coordinating and participating in upcoming Horizon Europe calls. More than 50 attendees from 6 European and 10 international countries made the event a success.

The event started with a welcome coffee in LEITAT facilities (Terrassa) and the intervention of Dr. Eckart Bierdümpeil (WAITRO Secretary General) and Dirk Saseta (WAITRO RR Europe) who thanked WAITRO partners for coming and open the event with the expectations of WAITRO and its activities post pandemics. Laia Piñol (WAITRO RFP Europe) followed with a presentation of the overall aim of the event, the agenda and an introduction of the first speakers.

The first keynote speech was given by Verena Fennemann (Head of Fraunhofer EU Office Brus- sel) who talked about the evolution of international cooperation in the different framework Programmes, Horizon Europe Work Programe general conditions, targeted international cooperation actions and initiatives at regional level (Africa, LAC, Asia&Pacific) and multilateral activities.

After the networking lunch, the following international WAITRO partners pitched on their organizations, capacities and interest in Horizon Europe topics: TISTR, RMRDC, CENAT, CENIBIOT, University of Yaoundé, IWRP, SENAI, JITRI and BRIN.

To conclude the event, Dominik Reinertz (Head of WAITRO Office Germany) presented the opportunities that SAIRA can provide to the WAITRO partners within and beyond WAITRO community and put some examples of collaboration. Paul Burrows (Head of WAITRO Office China) together with Dominik introduced the plan about Innovation Summit 2022. Speakers invited WAITRO partners to chair a session/workshop related to one of the Sustainable Development Goals.
**WAITRO Exhibition at the IAPRI World Packaging Conference**

Date: 13-15 June 2022

TISTR organized the exhibition of WAITRO during the 23rd IAPRI World Packaging Conference or IAPRI Bangkok 2022 during 13-15 June 2022 in Bangkok. The President of IAPRI, President of World Packaging Organization (WPO), researchers and higher students in domestic and overseas visited the exhibition booth. The WAITRO exhibition included of leaflet, posters, and VDOs introduction of WAITRO and SARA tutorial. It could attract the interest in the WAITRO innovation ecosystem and services.

**Jiangsu-Thailand Seminar for Cooperation Projects of Agricultural Resources and Environment**

Date: July 11th 2022

JITRI together with TISTR organized the Jiangsu-Thailand Seminar for Cooperation Projects of Agricultural Resources and Environment on 11 July 2022. The seminar was the platform to learn new policy, actions, or trend of agriculture to achieve SDGs, including sharing of projects and separate room for discussion or matchmaking. There were speakers from WAITRO members e.g. JITRI, TISTR, and BRIN of Indonesia to deliver the keynote and project roadshow.

**International Workshop on Development of Ornamental Plant and Flower Clusters for Sustainable Careers and Competitiveness of SMEs in APEC**

Date: 19-20 July 2022

The workshop was organized by TISTR during 19-20 July 2022 as an APEC Project to promote exchange and learning on global trend of floriculture plants industry for commercial, e-commerce in this business, and sharing perspectives of APEC member economies. The event was open publicly for any WAITRO members to participate. Besides, the researcher from BRIN of Indonesia and JITRI of China were the speakers of the sharing session.

**APCTT Regional Conference**

Date: September 15th 2022

TISTR hosted APCTT Regional Conference on Energy Resilience through Decentralized Power Plants and Smart Grid Integration on 15 September 2022 in a hybrid. It was the regional event under the Asian and Pacific Centre for Transfer Technology (APCTT) of UN-ESCAP.

TISTR included a session for WAITRO members in the conference’s agenda, namely “Panel discussion - Regional cooperation for energy resilience through decentralized power plants and smart grids to advance Bio-Circular-Green (BCG) economy”. The session was moderated by the Head of APCTT, and there were panelists from JITRI, SIRIM, BRIN. The VDO clips of WAITRO Introduction, and SARA Tutorial were played during the conference. There was positive feedback found in the chat box saying that the VDOs were useful and interesting.

In the year 2023, TISTR has been approached by APCTT to conduct the project on air pollution. We aim to ask APCTT to invite WAITRO and the members in Bangladesh or India (the targeted countries) to engage in the project.

**WAITRO Executive Board - RFP meeting**

Date: 28-29 September 2022. Jakarta, Indonesia

In this meeting, Each RFP presented the progress and achievements obtained up to date in accordance with their work plan and in the construction of initiatives and also discussed a regional integration of all the RFP in order to have joint achievements. The RFPs also present and discuss best practices among other RFPs of how to dynamize RTOs interactions in the different regions. At the end of the event, RFP shared their strategies and activities to promote the WAITRO Summit 2022.

**Fostering collaborations and seeking collaboration opportunities in region**

Date: September 15th 2022

Leitat executed a commercial mission to Colombia and took advantage of this to meet CTA and CIDET, get to know their facilities and strengthen ties with their teams. During the visits, meetings were held to discuss on how could we could foster collaborations at both public and private level under the WAITRO umbrella. At the same time, Leitat together with CTA visited the Associate Member Empresas Publicas de Medellin, to find collaboration opportunities that could result in new R&D projects and initiatives.

**International Seminar on Food and Packaging Safety : Thailand – Japan Perspective**

Date: October 5th 2022

The seminar was hosted by TISTR in Bangkok. The seminar was part of Food Ingredient Asia Expo 2022. There were participants who are from ASEAN and Japan both research and technology organizations and private companies.

**WAITRO Exhibition at the TISTR Meeting with the Stakeholders**

Date: December 14th 2022

TISTR organized the WAITRO booth exhibition at the meeting with the stakeholders of TISTR on 14 December 2022 in Bangkok. The meeting attendees included of TISTR Executive Board Members, public organizations and state enterprises under the ministries of Thailand, private and industrial sector, academic universities.
### TISTR organized the exhibition of WAITRO during the 23rd IAPRI World Packaging Conference or IAPRI Bangkok 2022 during 13-15 June 2022 in Bangkok. The President of IAPRI, President of World Packaging Organization (WPO), researchers and higher students in domestic and overseas visited the exhibition booth. The WAITRO exhibition included of leaflet, posters, and VDOs introduction of WAITRO and SARA tutorial. It could attract the interest in the WAITRO innovation ecosystem and services.

### International Workshop on Development of Ornamental Plant and Flower Clusters for Sustainable Careers and Competitiveness of SMEs in APEC

**Date:** 19-20 July 2022

The workshop was organized by TISTR during 19-20 July 2022 as an APEC Project to promote exchange and learning on global trend of floriculture plants industry for commercial, e-commerce in this business, and sharing perspectives of APEC member economies. The event was open publicly for any WAITRO members to participate. Besides, the researcher from BRIN of Indonesia and JITRI of China were the speakers of the sharing session.

### APCTT Regional Conference

**Date:** September 15th 2022

TISTR hosted APCTT Regional Conference on Energy Resilience through Decentralized Power Plants and Smart Grid Integration on 15 September 2022 in a hybrid. It was the regional event under the Asian and Pacific Centre for Transfer Technology (APCTT) of UN-ESCAP.

TISTR included a session for WAITRO members in the conference’s agenda, namely “Panel discussion - Regional cooperation for energy resilience through decentralized power plants and smart grids to advance Bio-Circular-Green (BCG) economy”. The session was moderated by the Head of APCTT, and there were panelists from JITRI, SIRIM, BRIN. The VDO clips of WAITRO Introduction, and SARA Tutorial were played during the conference. There was positive feedback found in the chat box saying that the VDOs were useful and interesting.

In the year 2023, TISTR has been approached by APCTT to conduct the project on air pollution. We aim to ask APCTT to invite WAITRO and the members in Bangladesh or India (the targeted countries) to engage in the project.

### In this meeting, Each RFP presented the progress and achievements obtained up to date in accordance with their work plan and in the construction of initiatives and also discussed a regional integration of all the RFP in order to have joint achievements. The RFPs also present and discuss best practices among other RFPs of how to dynamize RTOs interactions in the different regions. At the end of the event, RFP shared their strategies and activities to promote the WAITRO Summit 2022.

### Fostering collaborations and seeking collaboration opportunities in region

**Date:** September 15th 2022

Leitat executed a commercial mission to Colombia and took advantage of this to meet CTA and CIDET, get to know their facilities and strengthen ties with their teams. During the visits, meetings were held to discuss on how could we foster collaborations at both public and private level under the WAITRO umbrella. At the same time, Leitat together with CTA visited the Associate Member Empresas Publicas de Medellin, to find collaboration opportunities that could result in new R&D projects and initiatives.

### International Seminar on Food and Packaging Safety: Thailand – Japan Perspective

**Date:** October 5th 2022

The seminar was hosted by TISTR in Bangkok. The seminar was part of Food Ingredient Asia Expo 2022. There were participants who are from ASEAN and Japan both research and technology organizations and private companies.

### TISTR organized the exhibition of WAITRO at the IAPRI World Packaging Conference during 13-15 June 2022 in Bangkok. The President of IAPRI, President of World Packaging Organization (WPO), researchers and higher students in domestic and overseas visited the exhibition booth. The WAITRO exhibition included of leaflet, posters, and VDOs introduction of WAITRO and SARA tutorial. It could attract the interest in the WAITRO innovation ecosystem and services.

### Chapter 4 WAITRO Activities In 2022

### WAITRO Exhibition at the TISTR Meeting with the Stakeholders

**Date:** December 14th 2022

TISTR organized the WAITRO booth exhibition at the meeting with the stakeholders of TISTR on 14 December 2022 in Bangkok. The meeting attendees included of TISTR Executive Board Members, public organizations and state enterprises under the ministries of Thailand, private and industrial sector, academic universities.
Capacity Development Program

Technology transfer in Latin America: opportunities and lessons learned.
Date: June 2nd 2022
Presented the technology transfer macro-processes to the different RTOs in the region; the opportunities for technology transfer in Latin America; the challenges in technology transfer offices and the lessons learned in transfer processes from the university perspective.

Roundtable on Managing Diversity in International Research
Date: June 2nd 2022
The first event of the WAITRO Event Series on Diversity in International Research Cooperation aims to unite different perspectives on the topic of diversity in international research. Speakers with different expertise will discuss the challenges of diversity and ways to overcome them. Potential areas that were explored in the context of diversity include:
- The Responsible Research and Innovation (RRI) Framework
- Female Entrepreneurship
- Fair Research Collaboration Practices
- Field Research

A Practical Introduction to Responsible Research and Innovation (RRI)
Date: June 15th 2022
Innovation is crucial to our future. But what kind of future do we want? Responsible research and innovation (RRI) answers this question with clear values designed to guide every research activity. The RRI framework helps to achieve a better alignment of research and innovation with societal and environmental needs.
The aim of the workshop is to introduce the principles of RRI and to discuss how they can be applied and considered in the field of application-oriented research.
The following topics were discussed in detail during the workshop:
- Mission Orientation
- Participation
- Sociotechnical Innovation
- Innovation Ecosystems
- SDGs (Sustainable Development Goals)
- Green Deal

Fair Research Partnerships and the Role of Intellectual Property (IP)
Date: June 28th 2022
Good partnerships in research lead to excellence and innovation. That is a fact that every researcher knows. However, good partnerships are not always easy to institute.
This practical workshop organized in collaboration with Research Fairness Initiative (RFI) will highlight ways to conduct fair research and specifically look at IP rights in this context. In addition, research fairness reporting standards will be presented. To provide real insights, researchers from the Global South and North will share their experiences with implementing these standards.

Digital Transformation: A management strategy for science, technology and innovation
Date: August 18th 2022
Provide WAITRO member institutions (RTOs) in Latin America and the Caribbean with the concepts, keys, and good practices so that digital transformation can become a management strategy for science, technology and innovation.

The Circular Economy as a tool for Sustainable Development
Date: September 29th 2022
Aims to help people know the importance of the circular economy as a strategy for the sustainable development of the territories.

Quality Management in RTOs: Best Practices for Knowledge Organizations
Date: October 27th 2022
It highlights the importance of quality management and the best practices in its implementation in knowledge organizations or RTOs for Latin America.

Online matchmaking session regarding the Smart IN FOOD
Date: November 22nd 2022
Leitat executed a matchmaking session regarding the SMART IN FOOD project that was awarded on the 2021 WAITRO Innovation Award. The session was oriented to finding potential partners to create a consortium to prepare a proposal for the program Horizon Europe. During the event, a presentation of WAITRO was made and the tool SAIRA was presented as an excellent tool to find opportunities within WAITRO members.
**Capacity Development Program**

### Technology transfer in Latin America: opportunities and lessons learned.
**Date:** June 2nd 2022

Presented the technology transfer macro-processes to the different RTOs in the region; the opportunities for technology transfer in Latin America; the challenges in technology transfer offices and the lessons learned in transfer processes from the university perspective.

### Roundtable on Managing Diversity in International Research
**Date:** June 2nd 2022

The first event of the WAITRO Event Series on Diversity in International Research Cooperation aims to unite different perspectives on the topic of diversity in international research. Speakers with different expertise will discuss the challenges of diversity and ways to overcome them.

Potential areas that were explored in the context of diversity include:

- The Responsible Research and Innovation (RRI) Framework
- Female Entrepreneurship
- Fair Research Collaboration Practices
- Field Research

### A Practical Introduction to Responsible Research and Innovation (RRI)
**Date:** June 15th 2022

Innovation is crucial to our future. But what kind of future do we want? Responsible research and innovation (RRI) answer this question with clear values designed to guide every research activity. The RRI framework helps to achieve a better alignment of research and innovation with societal and environmental needs.

The aim of the workshop is to introduce the principles of RRI and to discuss how they can be applied and considered in the field of application-oriented research.

The following topics were discussed in detail during the workshop:

- Mission Orientation
- Participation
- Sociotechnical Innovation
- Innovation Ecosystems
- SDGs (Sustainable Development Goals)
- Green Deal

### Fair Research Partnerships and the Role of Intellectual Property (IP)
**Date:** June 28th 2022

Good partnerships in research lead to excellence and innovation. That is a fact that every researcher knows. However, good partnerships are not always easy to institute.

This practical workshop organized in collaboration with Research Fairness Initiative (RFI) will highlight ways to conduct fair research and specifically look at IP rights in this context. In addition, research fairness reporting standards will be presented. To provide real insights, researchers from the Global South and – North will share their experiences with implementing these standards.

### Digital Transformation: A management strategy for science, technology and innovation
**Date:** August 18th 2022

Provide WAITRO member institutions (RTOs) in Latin America and the Caribbean with the concepts, keys, and good practices so that digital transformation can become a management strategy for science, technology and innovation.

### The Circular Economy as a tool for Sustainable Development
**Date:** September 29th 2022

Aims to help people know the importance of the circular economy as a strategy for the sustainable development of the territories.

### Quality Management in RTOs: Best Practices for Knowledge Organizations
**Date:** October 27th 2022

It highlights the importance of quality management and the best practices in its implementation in knowledge organizations or RTOs for Latin America.

### Online matchmaking session regarding the Smart IN FOOD
**Date:** November 22nd 2022

Leitat executed a matchmaking session regarding the SMART IN FOOD project that was awarded on the 2021 WAITRO Innovation Award. The session was oriented to finding potential partners to create a consortium to prepare a proposal for the program Horizon Europe. During the event, a presentation of WAITRO was made and the tool SAIRA was presented as an excellent tool to find opportunities within WAITRO members.
Projects

Collaborative Research project: EASI Zero proposal

The EASI Zero proposal was submitted under the HORIZON-CL4-2022-RESILIENCE-01-16 on Building and renovating by exploiting advanced materials for energy and resources efficient management. EASI ZERo proposes a global system to cut the environmental impact by raising the thermal performance of buildings' envelope by 20% with bio-sourced and recycled materials. This includes grown mycelium, wood fibres, low carbon foam, recycled raw material for spayed renders, multifunctional building bricks, and healthy finishes. This unique portfolio of tailored components results from manufacturing and sourcing with reduced CO2 emission and embodied energy. The proposal was led by CEA with the participation of Fraunhofer, DTI and LEITAT (WAITRO members).

Collaborative Research project: NET-Fuels

The NET-Fuels proposal was submitted under the topic HORIZON-CL5-2021-D3-03 Hybrid catalytic conversion of renewable energy to carbon-neutral fuels further to an initiative from Fraunhofer through WAITRO. NET-Fuels develops a novel pathway to produce carbon-negative biofuels from low value biogenic residues through a combination of thermochemical conversion, separation of hydrogen from the syngas, oxy-fuel combustion of the tail gas, bioelectrochemical conversion of CO2 into methane and carbon sequestration in the biochar. The proposal is finally led by UNIBO with participation of Fraunhofer and LEITAT as WAITRO members among other partners.

Collaborative Research project: METAVERS

The METAVERS proposal was submitted under the topic HORIZON-CL5-2022-D2-01-02, led by LEITAT and with the participation of Fraunhofer. METAVERS will take the first step to bring the First Time Right process to battery development by combining: (1) on-the-fly simulation and machine learning for faster and more iterative development cycles, (2) a characterisation tool consisting of in situ & operando analytical techniques allowing new characterisation methods, and (3) a demonstration on the fully solid-state Li/S system and a range of other battery chemistries.

Collaborative research project: Recovery of agro-industrial residues - Evaluation of the methanogenic potential of banana peel for biogas production.

The project aims to carry out activities leading to the evaluation of the methanogenic potential of banana peel for biogas production, the analysis of the feasibility of the anaerobic digestion process using banana peel as a substrate, the discovery of optimal operating conditions of an anaerobic digester to maximize the production of biogas, and the evaluation of the quality of the biochar obtained through the pyrolysis process of the banana peel, among others.

The proposal is basically divided into two major stages: 1. Anaerobic digestion, and 2. Pyrolysis to obtain biochar, and for each of these stages two major activities are proposed: a) Pre-feasibility study; which includes research activities and analysis of trials and results of laboratory tests, among others; and b) Production scaling up to a technology development maturity level (TRL) between 4 and 5; which involves the stage of experimental development, leading to simulation with a close approximation to real operating environments, and involves activities related to the design, construction, commissioning, and optimization of an anaerobic digester and a pyrolizer at a later scale to that of laboratory tests. The project was designed and structured by LEITAT (Spain), CTA (Colombia) and a private company from Medellín (Colombia), it’s proposed for a duration of 18 months.

Collaborative research project: SUSI Consortium – Horizonte Europa CL4-2023-TWIN-TRANSITION-01-40

Consortium created to formulate and structure a project for the Horizon Europe call CL4-2023-TWIN-TRANSITION-01-40 (2023). This consortium was formed as a direct result of the networking and capacity building workshop; carried out in the month of June 2022 because of the WAITRO networking meeting in the city of Barcelona, Spain. WAITRO members: CTA (Colombia), LEITAT (Spain), Fraunhofer (Germany) were involved in this project and also with participation of Polytechnic of Milan (Italy) and other Institutions.
Projects

**Collaborative Research project: EASI Zero proposal**

The EASI Zero proposal was submitted under the HORIZON-CL4-2022-RESILIENCE-01-16 on Building and renovating by exploiting advanced materials for energy and resources efficient management. EASI ZERo proposes a global system to cut the environmental impact by rising the thermal performance of buildings' envelope by 20% with bio-sourced and recycled materials. This includes grown mycelium, wood fibres, low carbon foam, recycled raw material for spayed renders, multifunctional building bricks, and healthy finishes. This unique portfolio of tailored components results from manufacturing and sourcing with reduced CO2 emission and embodied energy. The proposal was led by CEA with the participation of Fraunhofer, DTI and LEITAT (WAITRO members).

**Collaborative Research project: NET-Fuels**

The NET-Fuels proposal was submitted under the topic HORIZON-CL5-2021-D3-03 Hybrid catalytic conversion of renewable energy to carbon-neutral fuels further to an initiative from Fraunhofer through WAITRO. NET-Fuels develops a novel pathway to produce carbon-negative biofuels from low value biogenic residues through a combination of thermochemical conversion, separation of hydrogen from the syngas, oxy-fuel combustion of the tail gas, bioelectrochemical conversion of CO2 into methane and carbon sequestration in the biochar. The proposal is finally led by UNIBO with participation of Fraunhofer and LEITAT as WAITRO members among other partners.

**Collaborative Research project: METAVERS**

The METAVERS proposal was submitted under the topic HORIZON-CL5-2022-D2-01-02, led by LEITAT and with the participation of Fraunhofer. METAVERS will take the first step to bring the First Time Right process to battery development by combining: (1) on-the-fly simulation and machine learning for faster and more iterative development cycles, (2) a characterisation tool consisting of in situ & operando analytical techniques allowing new characterisation methods, and (3) a demonstration on the fully solid-state Li/S system and a range of other battery chemistries.

**Collaborative research project: Recovery of agro-industrial residues - Evaluation of the methanogenic potential of banana peel for biogas production.**

The project aims to carry out activities leading to the evaluation of the methanogenic potential of banana peel for biogas production, the analysis of the feasibility of the anaerobic digestion process using banana peel as a substrate, the discovery of optimal operating conditions of an anaerobic digester to maximize the production of biogas, and the evaluation of the quality of the biochar obtained through the pyrolysis process of the banana peel, among others. The proposal is basically divided into two major stages: 1. Anaerobic digestion, and 2. Pyrolysis to obtain biochar, and for each of these stages two major activities are proposed: a) Pre-feasibility study; which includes research activities and analysis of trials and results of laboratory tests, among others; and b) Production scaling up to a technology development maturity level (TRL) between 4 and 5; which involves the stage of experimental development, leading to simulation with a close approximation to real operating environments, and involves activities related to the design, construction, commissioning, and optimization of an anaerobic digester and a pyrolyzer at a later scale to that of laboratory tests. The project was designed and structured by LEITAT (Spain), CTA (Colombia) and a private company from Medellin (Colombia), it’s proposed for a duration of 18 months.

**Collaborative research project: SUSI Consortium - Horizonte Europa CL4-2023-TWIN-TRANSITION-01-40**

Consortium created to formulate and structure a project for the Horizon Europe call CL4-2023-TWIN-TRANSITION-01-40 (2023). This consortium was formed as a direct result of the networking and capacity building workshop; carried out in the month of June 2022 because of the WAITRO networking meeting in the city of Barcelona, Spain. WAITRO members: CTA (Colombia), LEITAT (Spain), Fraunhofer (Germany) were involved in this project and also with participation of Polytechnic of Milan (Italy) and other Institutions.
Published by the WAITRO Secretariat with contributions from the Regional Focal Points.

Authors:
Dr. Eckart Bierdumpele, Dr. Paul E Burrows,
Her Royal Highness Princess Sumaya bint El Hassan,
Dominik Reinertz, Andrea Santos.

Editors:
Dr. Paul Burrows, Yiwen Jiang, Dominik Reinertz, Chuqiao Dong

Production By:
Luye Design Institute, Nanjing, China