

IMPACT: a strategic partnership for sustainable development in marine systems and robotics

Marine Systems & Robotics

Oceans and Sustainable Development

Prof. Dr. Francesco Maurelli & Dr. Wang Fei



<http://impact.uni-bremen.de/>



Why here?

- S&T innovation is great, but why?
- Link to **impact**:
 - on the environment
 - on the people / society
 - on economic development
- A glance at what happens at UN level
 - students
 - professionals



Outline

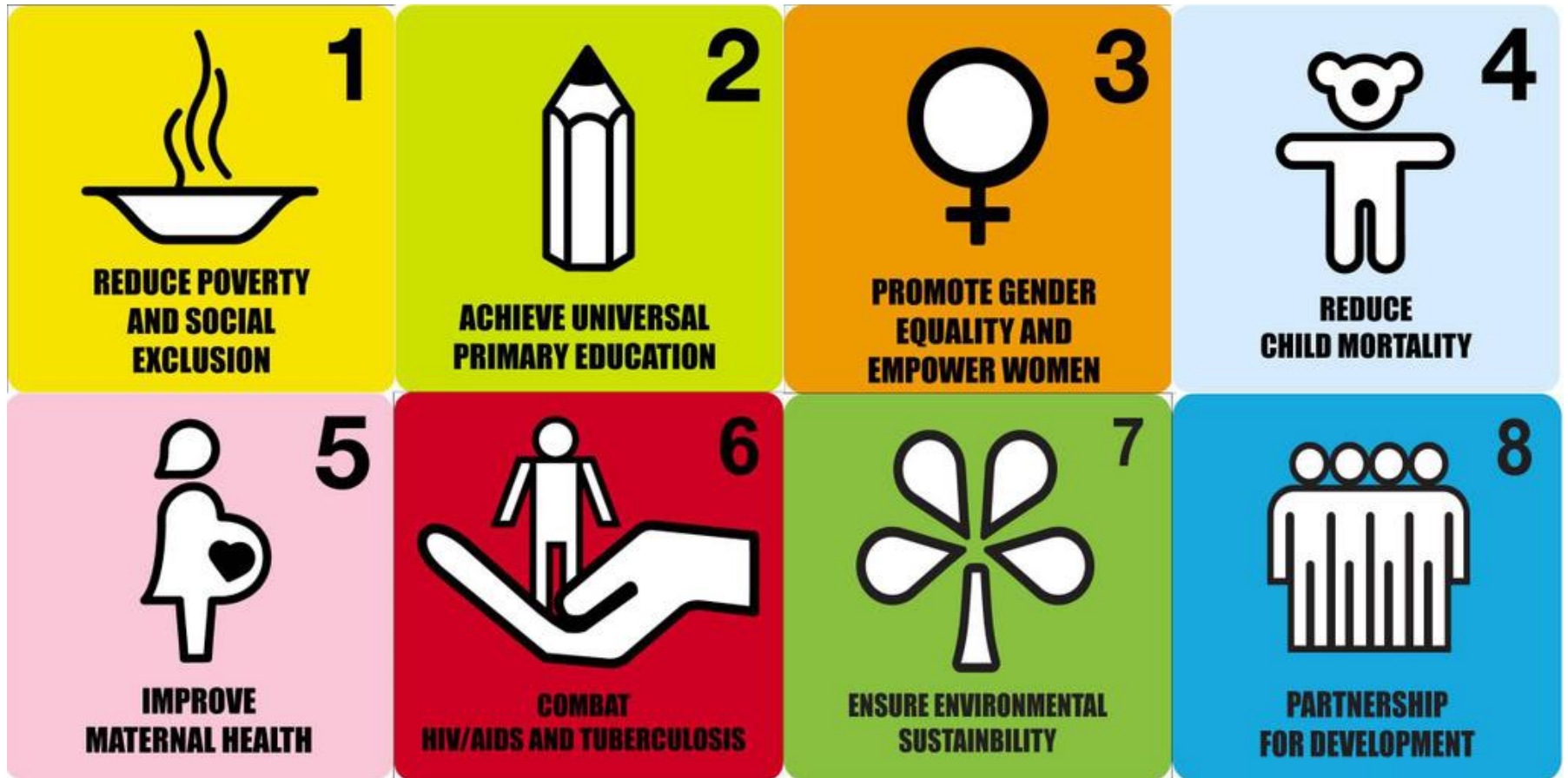
- UN Major Groups & Sustainability
- The UN Sustainable Development Goals (SDGs)
- SDG14 - Oceans
- Other SDGs relevant to our community
- UN MGCY
- UN MGST
- Engagement

UN & Sustainability – Major Groups



- It begins in 1992...
RIO Conference “*Earth Summit*”
→ Agenda 21
- RIO+20 (2012) → Resolution 67/290
- Process-specific resolutions
- Millenium Development Goals (2015)
- Sustainable Development Goals (2030)

UN & Sustainability – MDGs



UN & Sustainability – SDGs

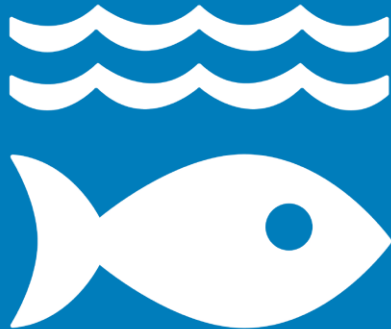


SDG14 Oceans



SDG14 Oceans

14 LIFE BELOW WATER



SDG 14 TARGETS:

14.1 By 2025, prevent and significantly reduce marine pollution of all kinds

14.2 By 2020, sustainably manage and protect marine and coastal ecosystems to avoid significant adverse impacts

14.3 Minimize and address the impacts of ocean acidification, including through enhanced scientific cooperation at all levels

14.4: By 2020, effectively regulate harvesting and end overfishing, illegal, unreported and unregulated fishing and destructive fishing practices

14.5: By 2020, conserve at least 10 per cent of coastal and marine areas

14.6 By 2020, prohibit certain forms of fisheries subsidies which contribute to overcapacity and overfishing, eliminate subsidies that contribute to illegal, unreported and unregulated fishing

14.7 By 2030, increase the economic benefits to Small Island developing States and least developed countries from the sustainable use of marine resources



SDG14 Oceans

- We can help!
- We must help!
- It pays back!



SDG14 Oceans – from UN

Gabriele Goettsche-Wanli
Director

Division for Ocean Affairs and the
(DOALOS)
United Nations



SDG14 Oceans – from UN

The Regular Process for Global Reporting and Assessment of the State of the Marine Environment, including Socioeconomic Aspects

regularly review the environmental, economic and social aspects of the world's oceans, both current and foreseeable

The Regular Process... (cont)

- supports **informed decision-making** by enabling Governments and other stakeholders to draw on the best scientific information available
- contributes to managing, in a sustainable manner, **human activities** which affect the oceans and seas.
- guided by **international law**, including the United Nations Convention on the Law of the Sea
- the first **World Ocean Assessment (2015)**
- the second WOA is on-going (2020)

The Regular Process... (cont)

- First Global Integrated Marine Assessment and the Technical Abstracts
http://www.un.org/depts/los/global_reporting/global_reporting.htm
- 5 Regional Workshops – Guidelines:
<http://www.un.org/Depts/los/rp>



Marine Scientific Research

- Capacity building activities for promotion of MSR
- United Nations Convention on the Law of the Sea (UNCLOS) → training programme for development of coastal States
- Castries, Saint Lucia, May 2017
- Busan, South Korea, December 2015



UN Headquarters – 5-9 June 2017



UN Headquarters – 5-9 June 2017



cooperation with M.I. [inaudible] autonomous and water manipulation. The Fourth Industrial Revolution in the ocean is coming it's a reality and can provide incredible resources and tools for all the stakeholders from local communities to modern scientist contributing to the blue sustainable economy. As a scientist, having worked in robotics for the past 10 years I could witness and contribute to a really remarkable progress.

cooperation with M.I. [inaudible] autonomous and water manipulation. The Fourth Industrial Revolution in the ocean is coming it's a reality and can provide incredible resources and tools for all the stakeholders from local communities to modern scientist contributing to the blue sustainable economy. As a scientist, having worked in robotics for the past 10 years I could witness and contribute to a really remarkable progress.



University of Zagreb



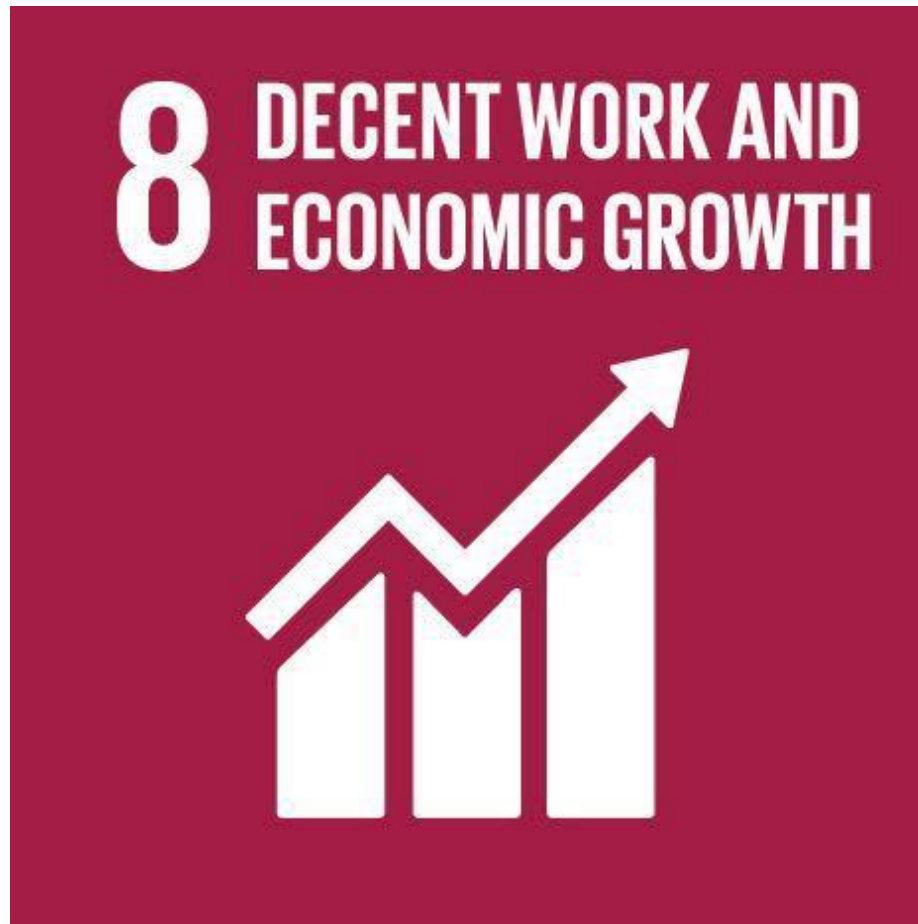
Other related SDGs



Other related SDGs



Other related SDGs



Other related SDGs



Other related SDGs



UN Major Group Children & Youth

The UN MGCY, is the United Nations General Assembly mandated official, formal and self organised **space for children and youth** to contribute to and engage in certain intergovernmental and allied policy processes at the UN.

What does the UN MGCY do?

Its primary purpose is **engaging communities of young people**, in the form of formal and informal child-led, youth-led, and child-and-youth-serving federations, unions, organizations, associations, councils, networks, clubs, movements, mechanisms, structures and other entities, as well as their members and individuals, in the

Design, Implementation, Monitoring, and Follow Up & Review of sustainable development policies at all levels.



UN Major Group Children & Youth

Areas of Work

Policy & Advocacy, Capacity Building, Youth Action, and Knowledge.

Policy and Advocacy

- Facilitate the collective and meaningful **participation** of young people in official and formal avenues of policy design, implementation, monitoring, follow-up, and review at all levels. These include *intergovernmental deliberations - negotiations, reviews and reporting, briefings, special fora, UN reports, and UN system wide policy, etc.*
- **Advise** entities in the UN system's engagement and thematic architecture across the scope of their activities on policy and substantive matters related to youth priorities and processes of meaningful engagement;
- Facilitate the participation of young people in existing stakeholder structures, partnerships, platforms, and mechanisms in the UN system.

UN Major Group Children & Youth

Capacity Building

Aimed at enhancing understanding, knowledge and skills in relation to sustainable development, meaningful engagement, the UN system and its various technical and political processes and organs.

Knowledge Platform

- Provide young people a **platform for dialogue** to create an evidence base for best practices in implementation, monitoring, follow-up, and review of sustainable development frameworks and affiliated processes.
- This includes the **assessment of existing knowledge**, generating new knowledge, identification of emerging issues, and effective use and dissemination of knowledge to inform policy processes. It should include inputs from various knowledge streams - formal, informal, traditional, and indigenous.



University of
Zagreb



UN Major Group Children & Youth

Youth Action

- Provide young people with a platform that encourages them to **lead, join, showcase, and share** innovative and effective actions aimed at addressing the needs of people and planet.
- Use **youth-led initiatives** to identify best practices, map sample activities across thematic and regional contexts, and exemplify how youth actions contribute to the implementation, follow-up and review of targets, indicators, and deliverables across various sustainable development frameworks.



Sample Engagement Avenues & Formal UN Processes



Transforming Our World: the 2030 Agenda for Sustainable Development



WORLD HUMANITARIAN SUMMIT



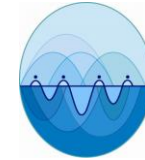
UN World Conference on Disaster Risk Reduction
14-18 March 2015, Sendai, Japan



United Nations FORUM ON FORESTS



Global Action for Sustainable Consumption and Production



ISLAND VOICES
GLOBAL CHOICES

UN Conference on Small Island Developing States
Apia, Samoa | 2014



THE OCEAN CONFERENCE
UNITED NATIONS, NEW YORK, 5-9 JUNE 2017



UNCTAD 14
Nairobi, 17-22 July 2016



UNEP



FINANCING FOR DEVELOPMENT
13-16 JULY 2015 - ADDIS ABABA - ETHIOPIA
TIME FOR GLOBAL ACTION



TECHNOLOGY FACILITATION MECHANISM

SUSTAINABLE DEVELOPMENT GOALS



Office of the Secretary-General's Envoy on Youth



Convention on Biological Diversity

UNITED NATIONS INTER-AGENCY NETWORK ON YOUTH DEVELOPMENT



HIGH-LEVEL POLITICAL FORUM ON SUSTAINABLE DEVELOPMENT



UN Major Group Children & Youth

Membership

Membership in UN MGCY is facilitated through an open process. Any formal and informal child-led, youth-led and child-and-youth-serving entities, as well as their members and individuals, may join.

All members of the UN MGCY must, first and foremost:

- AGREE to adhere to the Process and Procedures of the UN MGCY;
- AGREE with the principles of the UN Charter;
- AGREE with the values and principles of the UN MGCY as expressed in its vision - “the collective principles of solidarity, justice, equity, inclusion, human rights and the integrity of the planet”.



University of
Zagreb



- Science for policy (evidence-base)
- Policy for Science (capacities, investments, etc.)
- Science Diplomacy
- Science, Tech, Engineering, & Innovation as enablers



Donovan
Guttieres



Excerpt from the Global Sustainable Development Report (GSDR)

“Communication between scientists and policy-makers is one of the the critical factors impacting the effectiveness of SPIs. Scientific information is more likely to be used if it is delivered in appropriate formats at the right time and through the appropriate channels” (GSDR 2015)



Youth-led, peer reviewed compilation of policy briefs in the form of publications

Edition for Fall 2017:

- Environment/Human Systems (including Oceans)
- ICTs, Digital Technology and Tackling Inequity





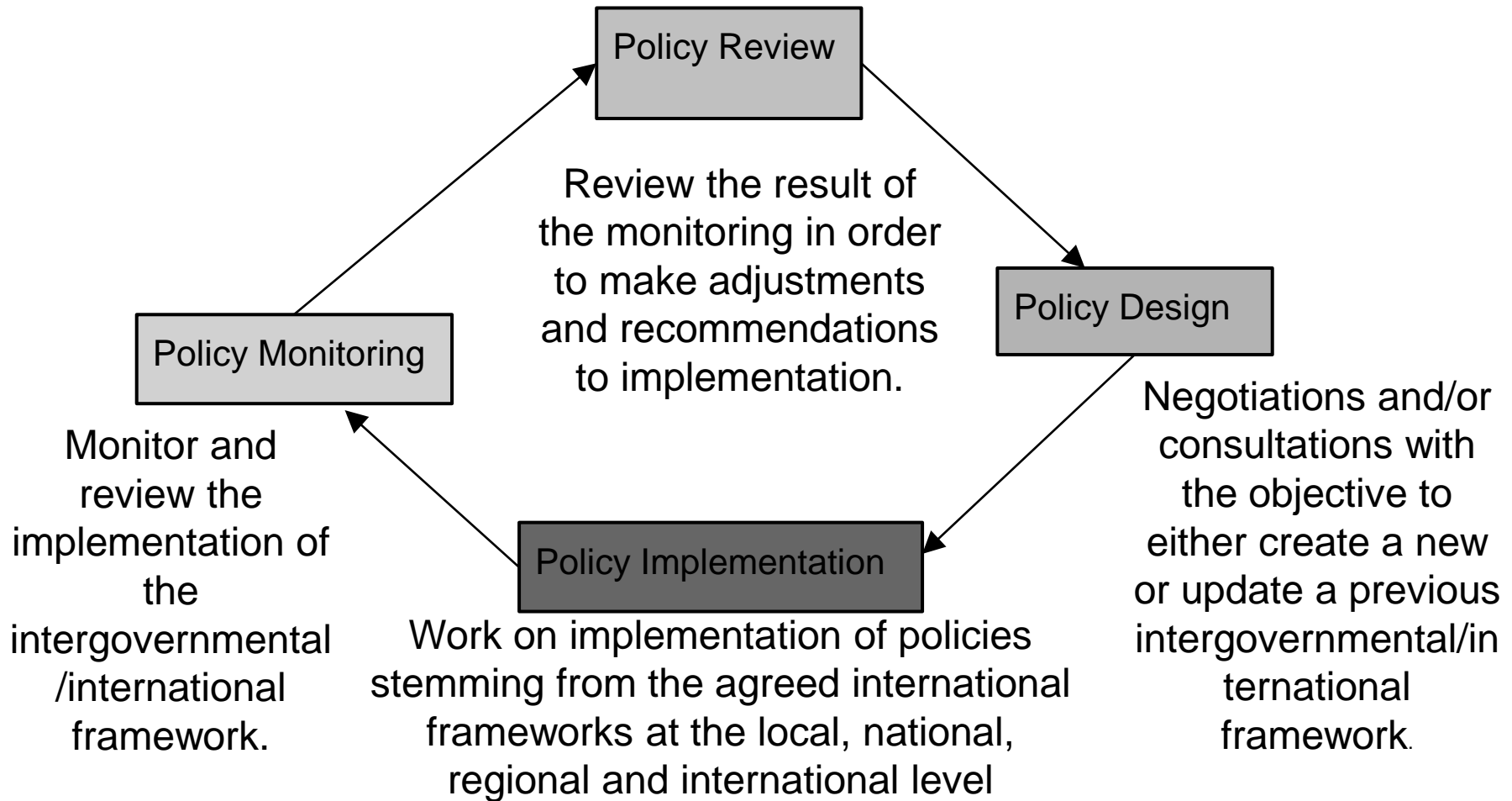
Youth Commission on Science, Engineering, & Technology for the Sustainable Development Goals: Effective Science Policy for Society

- **Engage** young practitioners in formal science-policy avenues within the UN system
- **Share** perspectives on the role of data, science-policy, technology, engineering, & innovation for achieving the SDGs
- **Identify** challenges and solutions towards implementation of the SDGs under review in 2018 (SDGs 6, 7, 11, 12, 15 & 17)
- **Explore** the role of ICTs, tech transfer, science communication, IP rights, innovation policy, and other cross-cutting topics
- **Map** implementation frameworks across different sustainable development agendas to promote coherence
- **Discuss** implications of ST&I and data from different contexts - humanitarian, territorial (urban/rural), disaster reduction, climate change

For more information, email: spiteam@childrenyouth.org

The Cycle of Engagement

The process of Engaging in an Intergovernmental/Multilateral Process



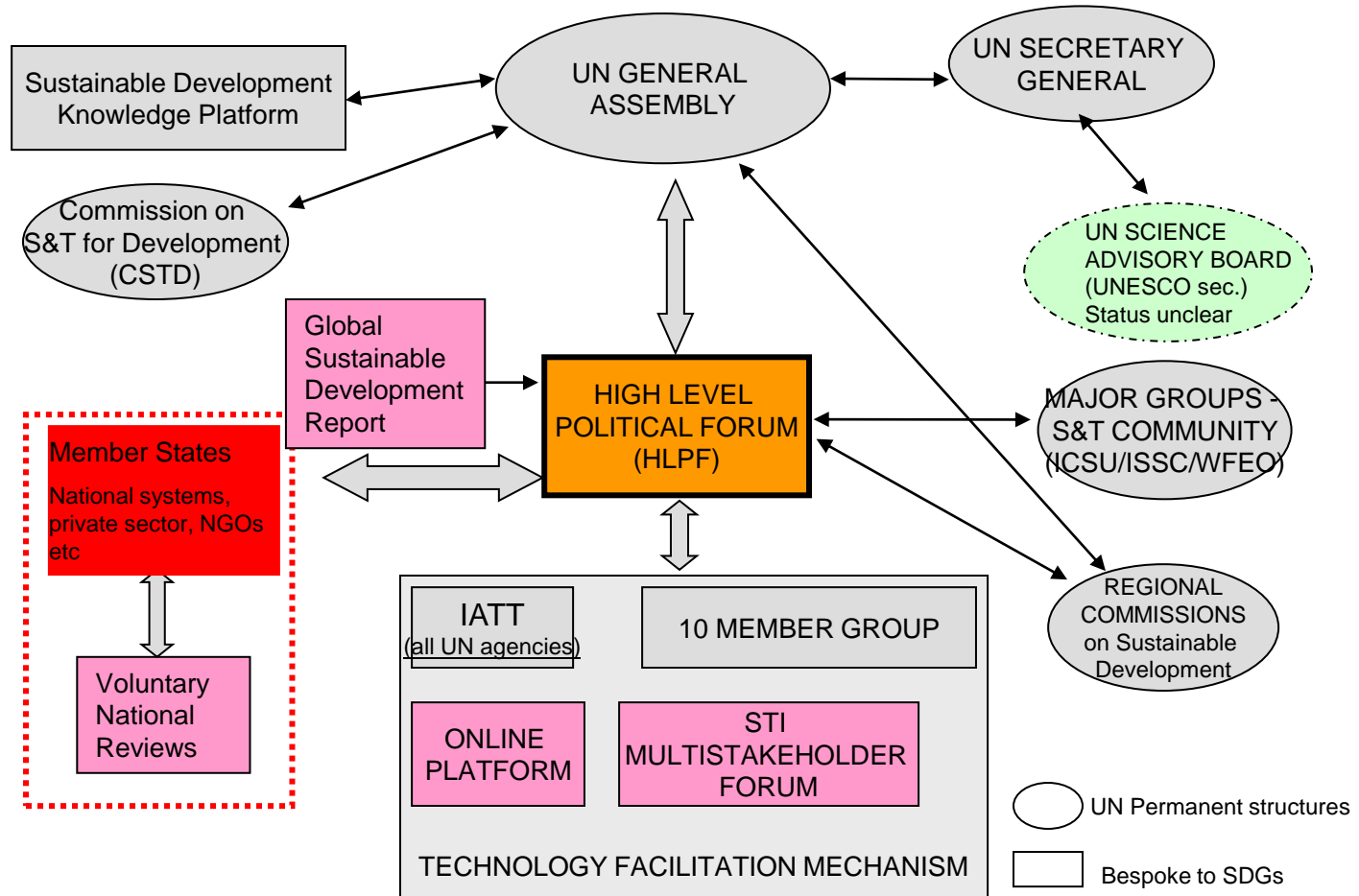
UN MGST

- International Council for Science
- World Federation of Engineering Organisations (WFEO)
- International Social Science Council

- Dr. Lucilla Spini



Mapping the S&T Architecture at the UN



Presented by IAP, WWM-NYAS Meeting, July 2017



University of Zagreb



Combination with HEI Priorities

Goal is to combine:

- International cooperation
- Performance for evaluation
 - Projects
 - Publications
 - Teaching



IMPACT

Intelligent **M**arine systems - a **P**athway towards sustainable education, knowledge and empowerment



University of Zagreb



University of Zagreb



IMPACT

- ~2 years – 28 months
- ~2 project meetings / year
 - each one focused on one SDG (Sustainable Development Goal)
 - exchange of ideas and best practices
- Development of study modules:
 - Marine Systems for students
 - Entrepreneurship for students
 - Marine Systems for industry



IMPACT

- 2 summer courses for students
- 2 dissemination events
- A special issue of journal about SDGs and Marine Systems

- Greater inclusion of sustainability topics in education and research



Associated Partners

- MARS d.o.o.
- Blue Oceans Robotics
- Kosmo Strategio Ltd.
- Iqua Robotics
- euRobotics Topic Group Marine Robotics
- UN Major Group Children & Youth



IMPACT – Transnational Meetings

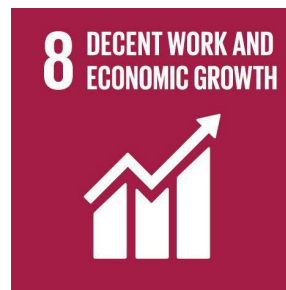
- **Goal:** cover one SDG per meeting, reinforce cooperation
- One Part about project progress, review, next steps
- Second Part about SDG:
 - Teaser video
 - current and target status in the institution
 - current activities dealing with the topic
 - ideas for additional activities
 - concrete action plans and recommendations for future actions



IMPACT – Transnational Meetings

- December 2018: Kick-off meeting in Bremen, Germany

Main Topic: **Employability** - how the current courses link the students to potential companies and employers



IMPACT – Transnational Meetings

- May 2019: project meeting in Tallinn, Estonia

Main Topic: **Education, Teaching & Research** - teaching modules and to identify synergies and best practices; ways to integrate the teaching and the research aspects



IMPACT – Transnational Meetings

- October 2019: project meeting in Zagreb, Croatia

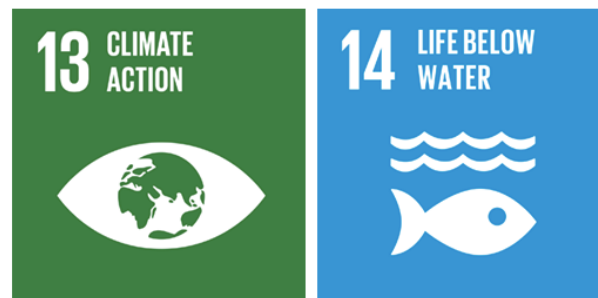
Main Topic: **Gender Equality** - current strategy and new options to reduce the gender unbalance



IMPACT – Transnational Meetings

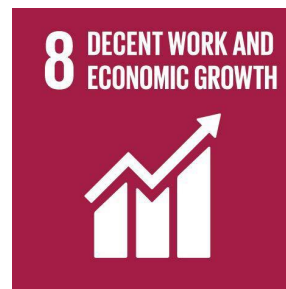
- May 2020: project meeting in Athens, Greece

Main Topic: **Environment and sustainability** - how to include sustainability aspects in marine systems curricula, and the role that marine systems can play for a sustainable planet



IMPACT – Transnational Meetings

- November 2020: project meeting in Lisbon, Portugal
Main topic: **Entrepreneurship**; give the right tools to students and empower them, drafting conclusions about the study module developed and its test trial as ISP



IMPACT – Intellectual Outputs

- **O1: Study Module Marine Systems** (material for 8 days) – link to SDGs, sustainability – UoZ leading (2019-12-31)
- **O2: Study Module Entrepreneurship** (5 days) – JUB leading (2020-03-31)
- **O3: Study Module Industry** (3 days) – IST leading (2020-12-31)
- **O4: Publications:** Marine Systems and SDGs, education, ISP results – UoB leading (2021-02-28)

IMPACT – Intensive Study Programs

learn-by-doing approach - student-centric activities

- **C1: Marine Systems** (8 days) – link to O1 – month 11 (September 2019 – BtS) - aim at independent discovery activities in the field
- **C2: Entrepreneurship** (5 days) – link to O2 – month 19 (May 2020 – *ad-hoc* event) - successful team-working simulations of entrepreneurial case studies

IMPACT – Multiplier events

- **E1: BtS 2019** – Croatia (O1, O2)
- **E2: Bremen**, November 2019 (O1, O2)
- **E3: BtS 2020** – Croatia (O1, O2, O3, O4)
- **E4: Lisbon**, November 2020 (O1, O2, O3, O4)
(linked to project meeting)



funding only for external people

In conclusion

- **Impact:** Small steps, but (hopefully) impactful steps
- We have no planet B: we all can take action – also during our main activity – to look for sustainability!

Thanks!



Questions ?

