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United Nations Educational, Scientific and Cultural Organization

UNESCO Chair on
Water-related Disaster Risk Reduction
University of Ljubljana, Ljubljana, Slovenia

WRDRR Chair and its recent activities

PRESENTATION OUTLINE

- **UNESCO WRDRR Chair Past and Current Activities**

- **UNESCO WCDRR Chair Targets**

- **Conclusions**

WCDRR Activities I

ULFGG Chair of Hydrology and Hydraulic Engineering was supporting UNESCO IHP activities for decades – applied hydrological studies: flood hazards & risks, statistical hydrology, and contributed especially by field work in experimental river basins: hydrometeorology (interception studies, rainfall erosivity, soil erosion), sediment transport (turbidity, suspended loads, granulometry,…), landslide hydrology, …


Šraj et al. (2016): „Review of Hydrological Studies Contributing to the Advancement of Hydrological Sciences in Slovenia", Acta hydrotechnica, 29/50, 47-71. (available: ftp://ksh.fgg.uni-lj.si/acta/a29ms.pdf)

WCDRR Activities II

- ❑ **COST ES0901: European procedures for flood frequency estimation (2010-2015).**

- ❑ **Past multilateral cooperation in the Sava River and the Danube River basins.**

- ❑ **International Sava River Basin Commission (ISRBC) – Estimation of Sediment Balance for the Sava River (2014) & Establishment of the Sediment Monitoring System for the Sava River Basin (2015).**

- ❑ **Hydrological Study of the Mura River (2012) & Study on Climate Change Impact on Flood Hazard in the Sava River Basin (2015).**

  Brilly et al. (2015): „Climate Change Impact on Flood Hazard in the Sava River Basin", In: R. Milačič et al. (eds.): „The Sava River", 27-52, Springer Verlag, doi: 10.1007/978-3-662-44034-6_2

- ❑ **The project NACER (Settlements & Corine Entity Results - Naselja & Corine Entitetski Rezultat) for Hrvatske vode, Croatia (2017).**

  Zabret et al (2018): „Development of model for the estimation of direct flood damage including the movable property". Journal of flood risk management, 11(S1), 527-540, doi: 10.1111/jfr3.12255

- ❑ **Flood Event Analysis in May 2014 in Bosnia and Herzegovina for the Bosna River in the Context of Supplementary Aid of the Republic of Slovenia (2014).**

  Kobold et al. (2015): „Development of the hydrological model for the Bosna River basin to simulate the flood event in May 2014 in Bosnia and Herzegovina", Acta hydrotechnica, 28/49, 77-100, ftp://ksh.fgg.uni-lj.si/acta/a49mk.pdf.

  Kobold et al. (2015): „Hydrological analysis of catastrophic flood that struck Bosnia and Herzegovina in May 2014", UJMA, 29, 252-263, http://www.sos112.si/slo/tdocs/ujma/2015/252_263.pdf.

  Vidmar et al. (2016): „The Bosna River floods in May 2014", NHESS, 16(10), 2235-2246, doi: 10.5194/nhess-16-2235-2016.

WCDRR Activities III

- Research Programme „Water Science and Technology & Geotechnical Eng." (since 2004) financed by Slovenian Research Agency (ARRS).

- ARRS project in debris-flow triggering mechanisms and modelling (2017-20).

- ARRS project on modelling of hydrological responses of non-homogenous catchments (2016-18).

- ARRS project on resilience of Alpine environment from the natural hazards perspective (2014-2017).

- ARRS project on developing of a unified method for estimation of cost-benefit of structural and non-structural measures for flood risk reduction (2018-19).

- Cooperation with UNITWIN Landslide and Water-related Disaster Risk Management at Kyoto University through the International Programme on Landslides (IPL).

- IPL World Centre of Excellence in Landslide Risk Reduction (WCoE: 2008-11, 2011-14, 2014-17, 2017-20) is focusing on landslide mechanisms in flysch formations.

- Cooperation with several UNESCO chairs in natural (hydrological) sciences. Newly: WENDI Chair on Water, Energy and Disaster Management for Sustainable Development at University of Kyoto, Japan (since 2018).

WCDRR Activities IV

This 2-year Master Programme (in 2011-2017 over 100 MSc; now new for 2019-2024) follows the holistic approach and is explicitly designed to cover a wide range of topics – from drivers and natural processes to different models, decisions and socio-economic consequences and institutional environment, and is therefore an important advance in water education for Europe.

Partners:
TU Dresden, Germany
IHE Delft, Netherlands
TU Catalonia, Barcelona, Spain
University of Ljubljana, Slovenia

http://www.floodriskmaster.org/
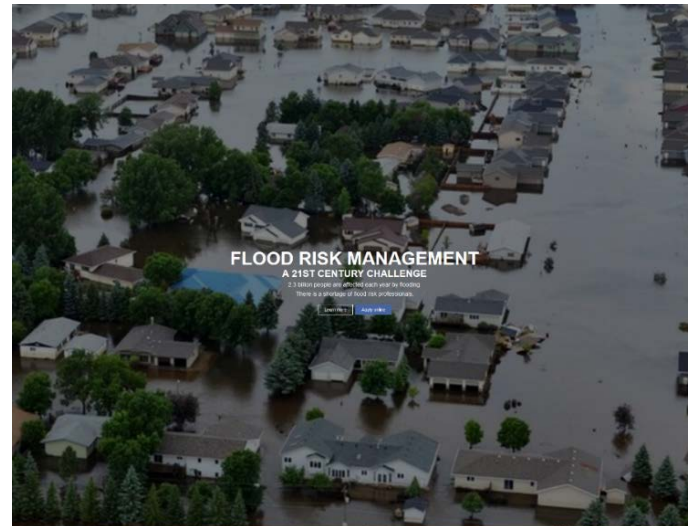
WCDRR Activities V

4th World Landslide Forum (May 29 - June 2, 2017, Ljubljana)

www.wlf4.org

3rd Regional Symposium on Landslides in the Adriatic-Balkan Region (October 11 – 13, 2017, Ljubljana)

World Construction Forum (April 8 – 11, 2019, Ljubljana)

www.wcf2019.org

WCDRR Targets I

WRDRR Chair is targeting below shown 5 SDGs.

Therefore, we are networking with other UNESCO Chairs in related fields – technical & natural sciences: U Brescia (Italy), U Florence (Italy), U Kyoto (Japan).

This year, at IHP meeting in Paris we launched the More-Room-for-Water (MR4W) Initiative that is in line with the world-wide efforts to reach five of the Sustainable Development Goals till 2030 and by Building Back Better (BBB) approach.

The idea is to give (back) more space for natural processes – through spatial planning procedures, and by nature-based solutions in order to increase society resilience against water hazards and to contribute to sustainable development.

https://sustainabledevelopment.un.org/sdgs

WRDRR Targets II
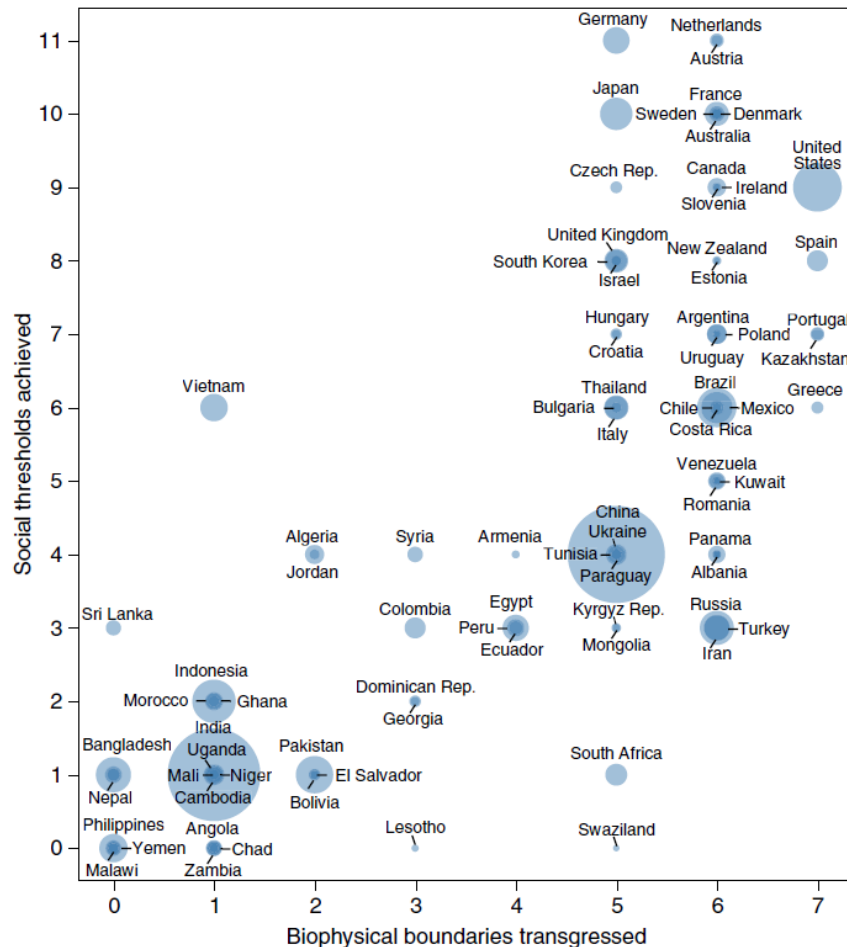
Table 2 | Country performance with respect to social thresholds

Social indicator	N	Threshold	Countries above threshold (%)
Life satisfaction	134	6.5 on 0–10 Cantril ladder scale	25
Healthy life expectancy	134	65 years	40
Nutrition	144	2,700 kilocalories per person per day	59
Sanitation	141	95% of people have access to improved sanitation facilities	37
Income	106	95% of people earn above US$1.90 a day	68
Access to energy	151	95% of people have electricity access	59
Education	117	95% enrolment in secondary school	37
Social support	133	90% of people have friends or family they can depend on	26
Democratic quality	134	0.80 (approximate US/UK value)	18
Equality	133	70 on 0–100 scale (Gini index of 0.30)	16
Employment	151	94% employed (6% unemployment)	38

Table 1 | Country performance with respect to per capita biophysical boundaries

Biophysical indicator	N	Planetary boundary	Per capita boundary	Countries within boundary (%)
CO_2 emissions	145	2 °C warming	1.61 t CO_2 yr⁻¹	34
Phosphorus	144	6.2 Tg P yr⁻¹	0.89 kg P yr⁻¹	44
Nitrogen	144	62 Tg N yr⁻¹	8.9 kg N yr⁻¹	45
Blue water	141	4,000 km³ yr⁻¹	574 m³ yr⁻¹	84
eHANPP	150	18.2 Gt C yr⁻¹	2.62 t C yr⁻¹	44
Ecological footprint	149		1.72 gha yr⁻¹	43
Material footprint	144		7.2 t yr⁻¹	44

N is the number of countries.

Fig. 2 | Number of social thresholds achieved versus number of biophysical boundaries transgressed for different countries (scaled by population). Ideally, countries would be located in the top-left corner. Only countries with data for all 7 biophysical indicators and at least 10 of the 11 social indicators are shown ($N=109$).

O'Neill et al.: A good life for all within planetary boundaries. Nature Sustainability 1, 88-95, 2018.

WRDRR Targets II – SDG Dashboard Report 2018

SDG INDEX AND DASHBOARDS REPORT **2018**

GLOBAL RESPONSIBILITIES

IMPLEMENTING THE GOALS
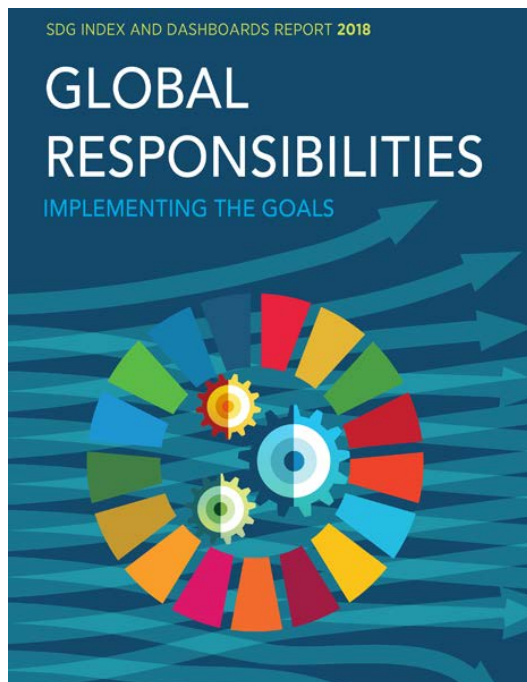
On track for the global goals:
Which country performs best to achieve the Sustainable Development Goals by 2030?

#	Country	Score
1.	Sweden	85,0
2.	Denmark	84,6
3.	Finland	83,0
4.	Germany	82,3
5.	France	81,2
6.	Norway	81,2
7.	Switzerland	80,1
8.	Slovenia	80,0
9.	Austria	80,0
10.	Iceland	79,7
14.	United Kingdom	78,7
15.	Japan	78,5
19.	Korea, Rep.	77,4
20.	Canada	76,8
29.	Italy	74,2
35.	United States	73,0
37.	Australia	72,9
53.	Argentina	70,3
54.	China	70,1
56.	Brazil	69,7
63.	Russian Federation	68,9
79	Turkey	66,0
86.	Mexico	64,8
98.	Saudi Arabia	62,9
99.	Indonesia	62,8
107.	South Africa	60,8
112.	India	59,1

G20

The Scores represent the overall rankings from the SDG-Index (157 country's) for individual countries. 100 is the maximum score.

SUSTAINABLE DEVELOPMENT SOLUTIONS NETWORK

BertelsmannStiftung

WRDRR Targets II – SDG Index

SLOVENIA
OECD Countries

▼ OVERALL PERFORMANCE

Index score — 80.0
Regional average score — 76.9

SDG Global rank

8 (OF 156)
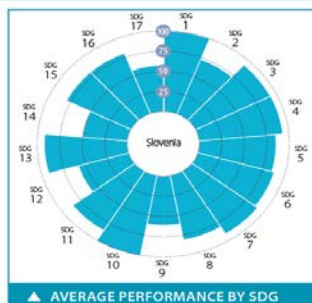
▼ CURRENT ASSESSMENT – SDG DASHBOARD

▼ SDG TRENDS

Notes: The full title of Goal 2 "Zero Hunger" is "End hunger, achieve food security and improved nutrition and promote sustainable agriculture".
The full title of each SDG is available here: https://sustainabledevelopment.un.org/topics/sustainabledevelopmentgoals

386 | SDG Index and Dashboards Report 2018 ○ Global Responsibilities

Conclusions

Universities in Europe and worldwide are more and more networking to get more research funds, attract new especially international students and to get higher on the exisiting university rankings.

At public as well as private universities, we should steer existing curricula towards new goals, incorporating new knowledge and give new competencies to students in the fast 21th century.

The Bologna process needs some rethinking. University of Ljubljana as the largest and oldest public university in Slovenia is a research oriented university, seeking wider internationalisation and excellence in higher education & research.

UNESCO chairs are a very good opportunity to enhance international cooperation in teaching and research, and to support internationalisation efforts at universities (e.g. ERASMUS in Europe).

Thank You for Your attention !