GENEVA TSINGHUA INITIATIVE
for the Sustainable Development Goals

UNIVERSITÉ DE GENÈVE
FACULTÉ DES SCIENCES DE LA SOCIÉTÉ

In partnership with

UNEP GRID Geneva

INNOVATION, HUMAN DEVELOPMENT AND SUSTAINABILITY

WORKSHOP 1

MEASURING AND MONITORING SUSTAINABLE DEVELOPMENT

(CODE: WP1 MPSD 2018)

2018 HANDBOOK

What do I need to know about the Innovation, Human Development and Sustainability Workshop 1?

OVERVIEW

Introducing workshop 1

The IHDS Workshop 1 gives students the opportunity to explore the essential questions, concepts and methods of measurement and monitoring in Innovation, Human Development and Sustainability.

Objectives

- IHDS Students are equipped to practice innovation in measuring and monitoring sustainable development.
- IHDS Students build their International Geneva networks in sustainable development.
- IHDS Students achieve interdisciplinary academic excellence through practical learning.

Learning outcomes

IHDS students will be able to:

1. **Diagnose** needs and opportunities for innovation in measuring and monitoring in localising the SDGs.
2. **Apply** Innovation, Human Development and Sustainability theory and concepts in creating practical and collaborative innovation projects on the theme of the 'global sand crisis'.
3. **Describe** why and how measurement and monitoring is a socially constructed activity in political, historical and technological contexts.

Main activities

- Engaging with Geneva-based International Organisations, private sector, research institutions and nongovernmental organisations through seminars, a roundtable, a field visit and research activities.
- Delivering 5-8 collaborative innovation projects on measuring and monitoring on sand and sustainability.
- Developing individual reflexive learning, collaboration and networking skills.

Who attends?

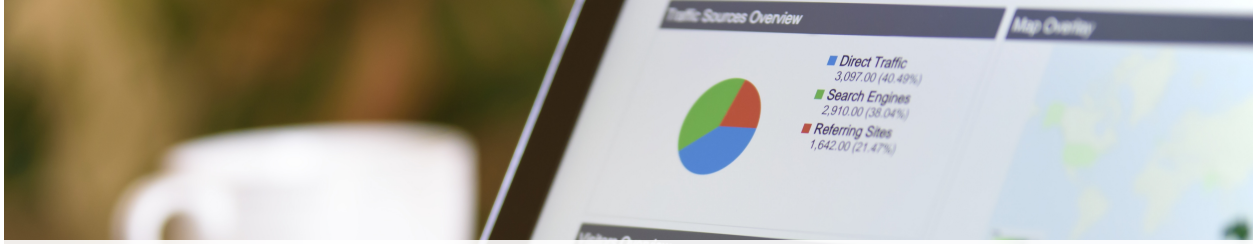
This workshop is a core element of the IHDS Masters programme, obligatory for all 2018 Dual Masters students during their first semester. While optional for students coming from Tsinghua University in the semester exchange programme, this workshop is highly recommended for its hands-on learning approach and introduction to International Organisations in Geneva. We are expecting approximately 40 students to participate in the 2018 workshop1 session.

When and where?

9-17h every Thursday and Friday, starting 4th October and ending 21st December 2018. Workshop sessions will take place at the SDG Solution Space, Campus Biotech.

Workshop team focal points

- Louise Gallagher, workshop 1 coordinator. louise.gallagher@unige.ch
- Charlotte Poussin, workshop assistant. charlotte.poussin@unige.ch
- Davide Fornacca, workshop assistant. davide.fornacca@unige.ch
- Thomas Maillart, advisor on innovation projects. thomas.maillart@unige.ch



MEASURING AND MONITORING SUSTAINABLE DEVELOPMENT: CONCEPTUAL FOUNDATIONS

Sustainability transformations at scale are urgently needed. Pathways for these transformations are being created under significant uncertainty about the future, what actions to take and their effectiveness. Addressing this challenge requires technological, institutional and organisational innovation to generate new capacity to anticipate, respond to and realise change. Measuring and monitoring sustainable development is an important mechanism to navigate this situation.

Technological, political factors and power dynamics all combine to set societal goals, clarify choices and explore alternatives for action in sustainable development. Target-setting and progress tracking can raise awareness, create incentives and generate momentum to tackle problems. From this perspective, measuring and monitoring sustainable development has the potential to drive innovation.

However, the scale of measurement and monitoring challenges is considerable. Measurement and data issues abound, even as we move into a new era of data availability. Moreover, there is no guarantee that measurement and monitoring will lead to improved governance and real sustainable development in practice. Where do we need innovation so that measuring and monitoring sustainable development be a catalyst and ongoing support for sustainability transitions?

IHSD Masters students will explore this central topic in Innovation, Human Development and Sustainability with three **guiding principles** in mind:

I. Complexity and emergence

Innovation in measuring and monitoring sustainable development is not about finding the single optimal path but uncovering the plurality of needs, pathways and options for action. Any proposed solutions must consider linkages across the 17 Sustainable Development Goals, real-world governance contexts, cross-scale social-ecological interactions and the perspectives of multiple actors. This means analysing problems critically and prototyping solutions early on, testing the validity of both to allow real innovation to emerge. IHDS Masters Workshop 1 emphasises reflexive practices in both group and individual learning activities.

II. Diversity and collaboration

Innovation processes start with the recognition any number of possible solutions exist to any problem. We are open-minded to different points of view, integrate different scientific disciplines and methods and 'all ways of knowing' as a means to innovate. IHDS Workshop 1 activities emphasise collaboration as a way to harness the power of diversity in creating innovation. IHDS Masters Workshop 1 aims for deep collaboration with respect for different perspectives.

III. Impact and learning through doing

Hands-on learning is key to developing practical innovation competencies and related skills for applied activities in the sustainable development field. IHDS Masters students will develop projects with a clear challenge in mind and a learning mindset that sees failure as an opportunity to develop workable solutions. This approach requires risk taking, new ways of working and enthusiasm. IHDS Workshop 1 is a supportive enabling environment for learning and innovation.

BACKGROUND LITERATURE FOR CONCEPTUAL FOUNDATIONS

Indicators in the science-policy-practice interface for sustainable development

Cash, D. W., W. C. Clark, F. Alcock, N. M. Dickson, N. Eckley, D. H. Guston, J. Jäger, and R. B. Mitchell. 2003. Knowledge systems for sustainable development. Proceedings of the National Academy of Sciences of the United States of America PNAS 100 (14):8086-8091. http://dx.doi.org/10.1073/pnas.1231332100.

Drucker, P. 1992. Planning for Uncertainty, Managing in a Time of Great Change Butterworth/ Heinemann, Oxford.

Folke, C., T. Hahn, P. Olsson, and J. Norberg. 2005. Adaptive governance of social-ecological systems. Annual Review of Environment and Resources 30(1):441-473. http://dx.doi.org/10.1146/annurev.energy.30.050504.144511.

Hezri, A. 2004. Sustainability indicator system and policy processes in Malaysia: a framework for utilisation and learning. Journal of Environmental Management 73:357-371.

Power, Michael. 2004. Counting, Control and Calculation: Reflections on Measuring and Management. *Human Relations* 57(6): 765–83. https://doi.org/10.1177/0018726704044955.

Rametsteiner, E., H. Pulzl, J. Alkan-Olsson, and P. Frederiksen. 2011. Sustainability indicator development - Science or political negotiation? *Ecological Indicators* 11(1):61-70.

Rijke, J., R. Brown, C. Zevenbergen, R. Ashley, M. Farrelly, P. Morison, and S. van Herk. 2012. Fit-for-purpose governance: a framework to make adaptive governance operational. Environmental Science & Policy 22: 73–84. https://doi.org/10.1016/j.envsci.2012.06.010.

Rittel, H.W.J, and M.M. Webber.1973. Dilemmas in a general theory of planning. Policy Sciences 4(2):155–169.

Young, O.R. 2017. Beyond regulation: innovative strategies for governing large complex systems. *Sustainability* 9(6): 938. https://doi.org/10.3390/su9060938.

Innovation studies / Innovation in sustainable development

Bergh, J.C.J.M. van den, E.S. van Leeuwen, F.H. Oosterhuis, P. Rietveld, and E.T. Verhoef. 2007. Social Learning by Doing in Sustainable Transport Innovations: Ex-Post Analysis of Common Factors behind Successes and Failures. *Research Policy* 36(2): 247–59. https://doi.org/10.1016/j.respol.2006.11.001.

Diaz Anadon, L., G. Chan, A.G Harley, K. Matus, S. Moon, S. L. Murthy, and W. C. Clark. 2015. Making Technological Innovation Work for Sustainable Development. *PNAS* 113(35): 9682–9690 https://doi.org/10.2139/ssrn.2707328.

Dziallas, M., and K. Blind. 2018. Innovation Indicators throughout the Innovation Process: An Extensive Literature Analysis. *Technovation XX(XX):XX-XX* https://doi.org/10.1016/j.technovation.2018.05.005 .

Keinänen, M., J. Ursin, and K. Nissinen. 2018 How to Measure Students' Innovation Competences in Higher Education: Evaluation of an Assessment Tool in Authentic Learning Environments. *Studies in Educational Evaluation* 58: 30–36. https://doi.org/10.1016/j.stueduc.2018.05.007.

Leach, M., J. Rockström, P. Raskin, I. Scoones, A. C. Stirling, A. Smith, J. Thompson, E. Millstone, A. Ely, E. Arond, C. Folke, and P. Olsson. 2012. Transforming innovation for sustainability. Ecology and Society 17(2): 11. http://dx.doi.org/10.5751/ES-04933-170211

Levitt Cea, J. and J. Rimington. 2017. Creating Breakout Innovation. *Stanford Social Innovation Review* Summer 2017. https://ssir.org/articles/entry/creating_breakout_innovation

2018 IHDS WORKSHOP 1 THEMATIC FOCUS:
THE GLOBAL SAND CRISIS

The IHDS Scientific Committee agreed on a single theme for Workshop 1 in 2018 to support cross-cohort learning and develop a set of rich and impactful projects.

Background

Human societies have been exceeding easily available sand resources at a continuously growing rate for decades. We are spending our global sand budget faster than we can produce it responsibly.

Sand is a key input to industrial production, land reclamation and cement and concrete production for the construction sector. Demand for these products is driven by growing populations, increasing urbanisation and the infrastructure development boom the world over. Supply is secured through traditional mining operations, but also more and more through environmentally damaging ocean, river and lake dredging and beach excavation. Impacts from these activities are growing more severe across developing, emerging and developed economies. Direct impacts attributed to sand extraction include landslides, fishing sector impacts and wildlife habitat destruction.

The challenge

Complex questions of how to deliver on ecosystem and biodiversity conservation goals in tandem with desired improvements in transport, infrastructure, housing and living standards currently supported by sand resources are looming on the horizon.

Currently, one key challenge to progressing on sustainable consumption and production of this vital resource is that there are missing institutions and political will in governments and the private sector to manage extraction and use of this vital resource sustainability.

How IHDS Workshop 1 will contribute

Our response is an inquiry into innovation in measuring and monitoring supply-demand dynamics, extraction impacts and development and spread of alternatives in partnership with UN Environment. This topic was chosen for IHDS Workshop 1 because:

1. Sand is an emerging issue in environmental governance with little active work on the topic to date.
2. The issues raised cut across the Sustainable Development Goals and is relevant to the 2019 UN Environment Assembly theme “Innovative solutions for environmental challenges and sustainable consumption and production”, as well as the High-level Political Forum themes in 2018 and 2019.
3. A diversity of measuring and monitoring challenges are involved that link to the Spring workshops on sustainable future cities, environmental standards and human development.
4. The topic has the scope for interdisciplinary questions and methodologies for students to explore.
5. Global governance of sand resources is in need of the type of innovative and scalable solutions that Workshop 1 projects can produce.

The theory of change behind choosing the global sand crisis as a focus is that synthesizing diverse existing knowledge to clarify a science-policy agenda on this issue for 2019 and demonstrating workable solutions in at least 5 innovation projects that implement that agenda in partnership with others will raise awareness and generate new capacities for addressing the emerging global sand crisis.

WORKSHOP 1 LEARNING APPROACH

The IHDS Workshop 1 aims to develop critical thinking, reflexivity and practical experience for innovation in sustainable development in our Masters students. The workshop enables this by emphasizing a hands-on challenge-based learning approach.

Learning in the 2017 IHDS Workshop 1

2017 was the first session of this workshop. Last year, the first half of the workshop emphasised seminars. In week 4, students were asked to identify compelling topics in monitoring the SDGs. They formed teams based on interest in relevant problems in measuring and monitoring sustainable development and developed six projects with concrete implications for sustainable development. Three projects continued after the Fall workshop into the Spring semester 2018 and the SDG Summer School. Two of these projects continue in China in Fall 2018 as the teams explore the potential for autonomous ventures like startups, non-profit organisations and programs in international organisations.

What you can expect in the 2018?

- **Student-led learning and autonomy** with teachers on hand for coaching, training and network-building as needed. Students will need to proactively seek support as they develop and promote their innovation projects in the Geneva ecosystem, China and globally.
- **Interactions with the United Nations and other International Organizations**, non-governmental organizations through a roundtable in October, a public hackathon in November, and regular informal meetups with the Geneva-SDGs community over the semester.
- **Fewer traditional seminars and a quick start on innovation projects compared to 2017**. Feedback from 2017 IHDS Masters Students suggested that the innovation projects were the most effective learning tool. To respond to this the 2018 session aims for project work to start from day one.
- **Strong emphasis on practical skills-building.** We will aim to equip IHDS students for collaboration, structured and comprehensive critical reflection and self-teaching of at least one new technical skill.
- **Collective intelligence and knowledge sharing.** It is expected that students help each other and circulate knowledge freely. Capacity to contribute positively to Workshop 1 community will be recognised and rewarded.
- **Regular reviews of individual and team progress** to ensure that all activities, and particularly the innovation projects, are on track to success.
- **Plagiarism will be punished** according to the ethical rules of the University of Geneva. Guidelines available at: https://www.unige.ch/universite/politique-generale/plagiat/.

WORKSHOP 1 LEARNING ACTIVITIES

Format	Description
Seminars	Policy, nongovernmental and academic experts from around Geneva will share their knowledge and insights on the big questions, concepts, methods and tools, and innovation challenges for measuring and monitoring sustainable development. Talks will be light, and designed for dialogue and encouraging critical thinking.
UN Expert Roundtable	On 11 October 2018, UN Environment and the University of Geneva are partnering to host global experts and Geneva-based organisations with interests and mandates to discuss "Sand and sustainability: Finding new solutions for environmental governance of global sand resources".
Innovation projects	**Main learning activity worth half available marks for this course.** Masters students will collaborate on an innovation project in teams of 4-6 people. IHDS innovation projects should be deeply grounded, provide surprising, innovative and pragmatic solutions with potentially scalable impact. The project must tackle some aspect of measurement and monitoring for global governance of sand resources in the context of sustainable development. IHDS Masters' students will develop project concepts based on their own interests, with input from the roundtable. Support and resources on project strategy and work planning, methodologies, access to International Geneva networks will be available.
Hackathon	A challenge-based hackathon will be organized by Thomas Maillart and the SDG Solution Space. The challenges will emerge out of student innovation projects and interactions with the Geneva sustainable development community.
Individual learning journeys	Individual learning journeys will help Masters students to cultivate a reflexive approach through self-assessment of innovation competencies, a learning journal and a thought piece. Self-teaching on one technical skill is strongly encouraged as part of the learning journal.
Project management support sessions	Weekly sessions will cover practical considerations for conceptualising, planning and executing collaborative projects. Examples: Scope setting; Theory of Change methods; Stakeholder mapping, analysis and interview techniques; Roles and responsibilities in collaborative teams; Science communication skills for non-academic audiences.
(On-request) Training	Training sessions will be organized on an ad-hoc basis depending on student interest, and on the skills, experience and availability of Masters students, workshop team and supporting partners.

WORKSHOP 1 2018 PROGRAMME OVERVIEW

Focus	Thursday session 9h00-17h00	Friday session 9h00-17h00
Week 1 – Orientation 4th & 5th Oct 2018	**Introducing Workshop 1** 3-month roadmap **Seminar**– Environmental sustainability in measuring and monitoring sustainable development. **Seminar**– Basic concepts in measuring and monitoring sustainable development. Q&A session	**Seminar** – Icebreaker activity for hands-on learning and collaboration **Training** – introduction to sand topic and preparation for the event, including roles/task assignments for the students.
Week 2 – Deep dive into Workshop 1 2018 thematic focus 11th & 12th Oct 2018 ** Non-participation excused if attending Dies Academicus*	**High-level roundtable** *Sand and sustainability: Finding new solutions for environmental governance of global sand resources*	**Seminar* –** Design thinking **1/2 day field trip** Exploring innovation in sand and sustainability around Geneva.
Week 3 – Innovation project concept development 18th & 19th Oct 2018	**Roundtable follow-up day** Sharing task outputs and reflection on priority challenges and opportunities Project concept pitches and final team forming….	Project concept pitches and final team forming…contd. **Project management support session –** Developing your project concepts
Weeks 4-9 – Innovation projects (& supporting activities) 25th Oct – 7th Dec 2018 **Study week:** 8th and 9th Nov 2018 **Final group presentations** to partners and external audiences: 7th Dec 2018	**Project management support session** **External speaker seminar** **Innovation project work** Training sessions will be organised on request. A hackathon will be hosted on 22/23 Nov**.** Other evening social events will be organised throughout this period.	**Innovation project work** **Individual learning journeys updating** **Weekly progress sharing**
Week 10 – Preparing all final deliverables 13th & 14th Dec 2018	**Finalisation day** Preparation of final deliverables for group and individual work.	**Finalisation day** Preparation of final deliverables for group and individual work.
Week 11 – Preparing final deliverables and closing 20th & 21th Dec 2018	**Learning festival** – a final day of reflection, evaluation and sharing lessons learned.	**Grading day** Workshop coordinators only.

WORKSHOP 1 LEARNING OBJECTIVES, PERFORMANCE ASSESSMENT AND IMPACT

Learning outcomes *By end-December 2018 IHDS students are able to:*	Learning activities *Intended learning outcomes supported by:*	Learning assessment *Achievements will be assessed through:*
1. Diagnose needs and opportunities for innovation in how International Organisations measure and monitor sustainable development.	Seminars Roundtable Hackathon On-request training	Attendance and participation at seminars, roundtable and other events / *measured by attendance records.* Participation in co-creating roundtable outputs / *measured by fulfilment of roles and responsibilities assigned in Week 3 by end-Week 10.* (see guidelines, pg. 10). Innovation project evaluation (see guidelines, pg. 11). Individual learning journey evaluation – (see guidelines, pg. 13).
2. Apply Innovation, Human Development and Sustainability theory and concepts in creating practical and collaborative innovation projects on the theme of the 'global sand crisis'.	Innovation projects Hackathon Project management support sessions On-request training	Innovation project evaluation (see guidelines, pg. 11). Individual learning journey (see guidelines, pg. 13).
3. Understand measuring and monitoring sustainable development as a socially constructed activity.	Seminars Roundtable Individual learning journeys	Individual learning journey (see guidelines, pg. 13).

GRADING AND CREDIT AWARDS

The IHDS Masters applies the European Credits Transfer Scale. Workshop 1 is worth 12 of the 60 credits for the 2018/9 session of the IHDS Masters. All 12 credits are awarded once the student passes the course. The minimum passing grade is 4.00 / 6.00.

Grade	Marks
6.00	93 - 100
5.50	85 - 92
5.00	77 – 84
4.50	63 - 76
4.00	61 – 68
3.50	53 – 60
3.00	43 – 52
2.50	35 – 44
2.00	29 – 36
1.50	21 – 28
1.00	<20

Deliverables	Notes	Marking scheme
1. Roundtable tasks	**Compulsory. Team performance grading.** See guidelines, pg. 10.	**10/100**
Deliverables submitted	Note taking tasks completed and submitted.	10/100
2. Innovation project	**Compulsory. Major workshop activity. Team performance grading.** See guidelines, pg. 11.	**50/100**
Weekly project progress reports and peer review	Compulsory. 5 progress reports of maximum 150 words each. Comment on other project progress reports. 5 reviews submitted.	10/100
Final project outputs	Presentation Final technical report Evidence of project impact	15/100 15/100 10/100
3. Individual learning journey	**Compulsory. Individual performance grading.** See guidelines, pg. 13.	**40/100**
Attendance rate	Attendance will be noted by workshop team at random times on workshop days. Marks are awarded when attendance is ≥90%.	5/100
Part A . – Self-assessment of innovation competencies.	A self-evaluation form will be provided. Your learning journal can take the format of your choice. High points earned for demonstrated technical skill development.	20/100
Part B. – Thought piece	The thought piece should take the format of an Op-Ed or policy brief and demonstrate a reflexive approach. Example structures will be provided.	10/100
Part C. – Learning festival contribution	A physical artifact to illustrate your personal learning journey.	5/100

1. ROUNDTABLE TASK TEAM GUIDELINES

Task objectives / Workshop team lead	Description	Expected Outputs
1. SDG linkages / Davide a) To produce a mapping of SDG linkages to analyse and include in the final synthesis report on sand and sustainability. b) To develop a base of knowledge on SDG linkages in support of IHDS WS 1 innovation projects.	• Note taking on SDG linkages mentioned during the roundtable discussion (11 Oct). • Follow up analysis on nature of the linkages and synthesis write-up (18 Oct).	1. Synthesis discussion notes 2. List of priority linkages
2. Actor and stakeholder mapping / Charlotte a) To identify key actors/stakeholders and their interests in sand and sustainability. b) To develop a comprehensive database of actors/ stakeholders for the 2018 masters group to identify additional partners for their innovation projects.	• Note taking on actors and their interests mentioned during the roundtable discussion (11 Oct) • Follow up discussions and synthesis write-up (18 Oct)	1. Synthesis discussion notes 2. Updated expert/actor/stakeholder database
3. Measurement issues / Thomas a) To identify measurement solutions and challenges in sand and sustainability. b) To develop expertise in the masters group on measurement challenges and priorities in support of innovation projects.	• Note taking on Measurement issues mentioned during the roundtable discussion (11 Oct). • Follow up analysis on nature of the challenges and priority actions and synthesis write-up (18 Oct).	1. Synthesis discussion notes 2. List of priority areas for innovation in measurement and monitoring for sand and sustainability
4. Impactful awareness raising / Pascal & Janyl a) To identify key target audiences for awareness raising and produce impactful messages on sand and sustainability for these actors. b) To develop expertise in the masters group on priority audiences and calls for action in support of innovation projects.	• Note taking on key target audiences and desired actions/behavior change mentioned during the roundtable discussion (11 Oct) • Follow up analysis on priority actions by which actors and synthesis write-up (18 Oct)	1. Synthesis discussion notes 2. List of priority audiences and calls for action
5. Synthesis analysis on sand and sustainability / Louise a) To capture overall expert discussions and produce final meeting synthesis report. b) To develop a first innovation project with external partners for the Fall semester workshop 1.	• Note taking of roundtable discussion against draft report outline (11 Oct) • Follow up re-structuring or reporting and collation of synthesis notes from across group (18 Oct)	1. Synthesis discussion notes 2. Collated synthesis notes in final report structure

2. INNOVATION PROJECT GUIDELINES

Project collaborative tasks

- ❑ Form a team of 3-5 people.
- ❑ Develop a project concept with a link to the 2018/9 theme: sand and sustainability. A project concept note should articulate the specific innovation in the project and be supported by a brief literature review. Give a clear articulation of the science in the innovation project as per the Science Council's definition of science https://sciencecouncil.org/about-us/. Training and templates will be provided.
- ❑ Identify a specific target audience (partner, end-users) with connection to a Geneva International or other organization. Engage with them early and as often as is reasonable.
- ❑ Conduct an analysis of needs and opportunities for innovation in how International Organisations measure and monitor sustainable development in the context of your project concept.
- ❑ Generate a Theory of Change for the *use case* of the project. The Theory of Change should include reference to enabling conditions for and potential scalability of project solutions.
- ❑ Develop a method to challenge assumptions underpinning the Theory of change and enable iteration in the project. One of those methods should be a verification and validation with project target audiences at a small scale. Undertake and show evidence of collaborative project planning, adaptive project management processes and team learning. Training and templates will be provided to help your group.
- ❑ Create a project presentation deck to develop and improve over Workshop 1.
- ❑ Organise roles and responsibilities, and a project workplan to deliver the final project deliverables.

Final project deliverables

Project presentation

- ❑ 10 minutes maximum. Formatted for public sharing on the 7th December.
- ❑ Coherent challenge - solution narrative. Explain why you think the project is relevant and the solution proposed is innovative and credible in this narrative.
- ❑ Explain how the solution was validated or invalidated and the type of results you can demonstrate. Non-technical, for a mixed audience.
- ❑ Clear conclusions, and/or recommendations for target audience.

Project technical report

- ❑ 15 pages maximum, not including references or appendices. Formatted for public sharing.
- ❑ Demonstrated critical reflection and analysis in problem identification, solution focus, objective setting and choice of methods to produce and test a working prototype.
- ❑ Strong coherence between problem analysis-proposed solution-prototyping approach-testing, verification and validation methodology-results.
- ❑ All sources and data cited clearly in APA format.
- ❑ Clear conclusions, and/or recommendations for target audience.

Project documentation

- ❑ Project collaboration, management and progress should be documented and shared with others. All project knowledge stored and managed in a shareable repository with version control (so history can be viewed).
- ❑ Each project will have a digital presence (e.g., own website, sand roundtable synthesis website (Wix website), or contribution to Solution Space website).
- ❑ A project bliography and high quality citation management are required in all final outputs.

Evidence of project impact

- ❑ Demonstrated novelty of the innovation proposed and its relevance to practical implementation of the SDGs, including positive and negative linkages.
- ❑ Demonstrated *use case* and potential for *impact* in the area of global sand governance and sustainable development.
- ❑ Demonstrated assessment of the potential for application in China
- ❑ Demonstrated growth in project networks / communities.
- ❑ Demonstrated engagement with at least one key target audience for the proposed solution.

A note on innovation project evaluation principles

Evaluators scoring innovation projects will be looking for **evidence** of:

- ✓ Personal pride in project achievements
- ✓ Good quality reflection in project concept development and implementation
- ✓ Capacity to promote project beyond academic sector
- ✓ Good quality collaboration, collective intelligence and open knowledge sharing
- ✗ Plagiarism

3. INDIVIDUAL LEARNING JOURNEY GUIDELINES

Part A. – Self Assessment on innovation competencies

- ❑ Complete self assessment questionnaire on Moodle at beginning (in week 1), middle (in week 6) and end (in week 11) of workshop 1. The workshop team will send reminders and links to the survey form.
- ❑ In Week 1 elect one technical skill that will contribute to your individual innovation competencies to develop through self-teaching. Document progress. Examples of some technical skills and resources for learning these will be shared on Moodle.
- ❑ Starting from week 1 journal your thoughts in a learning journal. Collect images, academic papers, technical reports, articles, videos, tweets, ...etc. to support your thinking. Note when your thinking changes or evolves and what triggered this change. Your journal can be created in any medium that you enjoy working in.

Part B. – Thought piece

Measurement and monitoring for sustainable development is an activity defined by natural, political, social, historical and/or technological contexts. What does this mean for innovation in measuring and monitoring sustainable development?

- ❑ In Week 1, write a short note on your thoughts regarding the statement above for your own notes.
- ❑ From Weeks 2-8, journal your thoughts on these questions as part of your learning journal.
- ❑ In Weeks 9-10 , prepare your final thought piece of maximum 1000 words.

Part C. – Learning festival contribution

- ❑ Identify any lessons learned to share in the learning festival, Thursday session in Week 11. Reflection: did your self-assessment and learning journal process change anything significant in your thought piece? How and why?
- ❑ Produce an artifact to support your learning festival contribution.

COMMUNICATION & SUBMITTING DELIVERABLES

All **Communications and announcements**, including schedule adjustments, will be done by **email**. Please make sure that your unige email address is correct and that you are receiving our communications.

We will use **Moodle** (https://moodle.unige.ch) to **share the workshop 1 calendar and documents with students** and **receive deliverable submissions, and any other ad-hoc assignments**. To connect to Moodle, enter your UNIGE credentials and search "Workshop 1: Measuring and Monitoring Sustainable Development" (code WP1 MPSD 2018) and enroll.

SDG in Progress platform (https://sdginprogress.com/)**.** This platform is a dedicated repository for documenting SDG projects. Training provided in week 4.

The SDG Solution Space Website (https://sdgsolutionspace.org/). This website is the virtual home of the SDG solution space.

Deliverables	Platforms	Key dates
1. Roundtable tasks		
Team notes	Moodle	Week 3/ Fri. 19 Oct. COB.
2. Innovation project		
Weekly project progress reports and peer reviews	SDGs in Progress.	Week 3/ Fri. 19 Oct. COB. – SDG in Progress page set up Week 4/ Fri. 26 Oct. COB – #1 Week 5/ Fri. 2 Nov. COB – #2 Week 6/ Fri.16 Nov. COB – #3 Week 7/ Fri. 23 Nov. COB – #4 Week 8/ Fri. 30 Nov. COB – #5
Final project outputs	Moodle	End week 8/ Fri. 30 Nov. COB- Presentation submitted Week 10/ Fri.14 Dec. COB -
3. Individual learning journey		
Part A . – Self-assessment of innovation competencies.	Moodle SDG SS website (optional)	Week 1/ Thurs. 4 Oct. – 1st assessment Week 6/ Thurs. 15 Nov COB – Mid-point assessment Week 11/ Thurs. 20 Dec COB – Final assessment
Part B. – Thought piece	Moodle	Week 1/ Fri. 5 Oct. COB – Short note on first thoughts. Week 10/ Fri.14 Dec. COB
Part C. – Learning festival contribution	Learning festival day	Week 6/ Thurs. 15 Nov COB – Artifact concept added to learning journey. Week 11/ Thurs. 20 Dec.

RESOURCES OVERVIEW

IHDS Masters students have a number of resources they can call upon for their intellectual exploration of measuring and monitoring sustainable development, their innovation projects and technical self-teaching activities.

RESOURCES FOR EXPLORING MEASURING AND MONITORING SUSTAINABLE DEVELOPMENT

General readings on the big ideas on measuring and monitoring sustainable development. Please see the 'Basic concepts' topic on Moodle for readings and videos

RESOURCES FOR INNOVATION PROJECTS

Global sand crisis information 'starter' resources. Please see the 'Global sand crisis – References and data' topic on Moodle.

Project management resources
Please see the folder 'IHDS WS1/ Project management resources' on Moodle.
To support students to manage their innovation project documents and data, every project group will have a dedicated folder to upload and manage their work documents. Important: refer to the workshop's File Naming Convention (shared on Moodle) for rigorous naming of your files. Keep your file size as small as possible.

Geneva-based methodological and technical expertise. The workshop 1 team will connect you to people who can help you with methods and skills like:

- Remote sensing
- Governance context analysis
- Actor/stakeholder mapping and analysis
- Interview / survey design and execution
- Geographic information systems
- Commodities trade data analysis
- Video editing
- Digital fabrication
- Website design and building
- Data science/data visualization

Technological resources available at SDG Solution Space

- 3D printer (Ultimaker 2+) using Cura software equipped to print PLA recyclable (corn, etc.) & ABS petrol
- Vinyl cutter (Roland CAMM-1 GS 24)
- Laser Cutter (TROTEC Speedy 360): Can engrave & cut plastic, glass (engrave only), acrylic, MDF, different plywood and denim among other things.
- CNC Milling Machine (Roland MDX40A) used for prototyping, molding & to make PCB Electronics
- 3D Scanner
- 4 Go Pros
- Two 4K Sony televisions (75 inches projector, surround sound.
- Plotter HP T790 A0 (see below)
- HP LaserColor A4 (see below)
- Arduino electronic prototyping platform
- General electronic equipment
- General prototyping kit

Financial resources
Please get in touch with Thomas Maillart.

RESOURCES FOR YOUR INDIVIDUAL LEARNING JOURNEY

Please see the topic 'Individual Learning Journey resources' on Moodle.

For any further questions, please get in touch with Louise Gallagher, workshop 1 coordinator (louise.gallagher@unige.ch)