

Bridging the Global and Local Needs for Sustainable Maritime Future Through a Capacity Building Training

Momoko Kitada, World Maritime University, Sweden
Johan Bolmsten, World Maritime University, Sweden

The Asian Conference on the Social Sciences 2018
Official Conference Proceedings

Abstract

This paper discusses the application of innovation tools and techniques to a training course for maritime and ocean professionals who are expected to contribute to sustainable development of their countries. In 2015, the 17 sustainable development goals (SDGs) were adopted by the United Nations (UN) to facilitate collaborative partnerships in achieving the prioritised areas of worldwide development by 2030. As a specialized UN university, the mandate of World Maritime University (WMU) is capacity-building through education and research. However, there was a gap between gained knowledge and its application to practice when the graduates go back to their countries. To bridge this gap, a training course was developed to teach how to transform their knowledge to practice and focus on practical methods for capacity building in developing countries. The training was designed to localise the SDGs and practising innovative thinking. Innovation tools and techniques were used during the workshops and the grouped students demonstrated their abilities of developing a project concept and identifying necessary resources to achieve their specific objectives. Audio-visual data were collected during the workshops and two focus groups were conducted after the training course. The paper concludes that innovation workshops have benefited the majority of participants in terms of internalising the global agenda and externalising the concept in its local contexts. The process of transforming knowledge to new practical solutions by using innovation tools and techniques reflects the idea of knowledge management. The course has proven the element of innovation as an important component to design such training.

Keywords: Capacity building, Sustainable Development Goals (SDGs), Innovation tools and techniques, Teaching and learning, Knowledge management, Maritime and ocean industries

iafor

The International Academic Forum
www.iafor.org

Introduction

The maritime industry is a backbone of critical economic activities to achieve sustainable development as ships carry the essential items to our life, such as food, goods, natural resources, and energy. The International Maritime Organization (IMO) is a Specialized United Nations (UN) Agency regarding ship safety, security, and environmental protection for clean oceans. By responding to the adoption of the 17 sustainable development goals (SDGs) by UN in 2015, IMO translates these goals to the maritime contexts (IMO, 2017). For example, the SDG 14 “Life below water” is relevant to marine and coastal ecosystems where IMO establishes the Particularly Sensitive Sea Areas (PSSAs) under its MARPOL convention¹. Other potential threats from shipping are, for instance, oil spills and untreated ballast water discharge². The IMO’s work also extends to education and training of seafarers under the STCW convention³, which is relevant to SDG 4 (quality education). Climate change (SDG 13: Climate action) makes pressure on the maritime industry to mitigate CO₂ emissions from ships through energy efficiency (SDG 7: affordable and clean energy). There are more areas where the maritime industry can contribute to the SDGs, such as promoting maritime women (as Goal 5: Gender equality), port and offshore infrastructure (as Goal 9: Industry, innovation and infrastructure), global supply chains and a transition from linear to circular economy (as Goal 12: Responsible production and consumption), combating against piracy and corruption (as Goal 16: Peace, justice and strong institutions), and cooperation and knowledge management (as Goal 17: Partnerships for goals).

To achieve the SDGs, all stakeholders have a role to play. In this context, the World Maritime University (WMU), as a specialized UN university, has the mandate of capacity building through education and research in the maritime sector. WMU was established by IMO in 1982 as a postgraduate university targeting at mid-career maritime professionals in developing countries. As of 2017, it has produced 4,654 alumni from 167 countries during its 35-year history. These alumni include the world top leaders, such as Mr. Kitack Lim, the Secretary General of IMO, and H.E. Binali Yıldırım, Prime Minister of Turkey. These examples give evidence to WMU’s mission of educating future global maritime leaders. On the other hand, those who can come and study the MSc programme at the WMU Malmö campus are annually 130-140 only, representing around 50 different countries. It corresponds to approximately two students per country.

The question is how much the country can benefit from the investment of sending their mid-career employees to WMU. In other words, how much impact can such small number of alumni make and transfer their gained knowledge to their professional community? Unlike other universities where it is up to individuals who decide how their new knowledge is used after graduation, WMU has a high expectation from the maritime community to its graduates to lead a positive change in their respective countries. Nevertheless, the current MSc curriculum focuses on knowledge creation through lectures, group work, field study, and dissertations. However, more practical skills on how to build capacity by using their gained

¹ International Convention for the Prevention of Pollution from Ships as modified by the Protocol 1978 relating thereto (MARPOL 73/78).

² Ballast water is used to stabilise a ship. The water often contains thousands of aquatic or marine microbes, plants and animals. If untreated ballast water is released at the ship's destination, it can introduce a new invasive marine species and damage the marine ecosystem. The International Convention for the Control and Management of Ships' Ballast Water and Sediments (BWM Convention) entered into force in 8 September 2017.

³ The International Convention on Standards of Training, Certification and Watchkeeping for Seafarers (STCW), 1978 as Amended.

knowledge in their home countries have not received sufficient attention. To bridge this gap, a training course was developed to teach the students how to transform their knowledge to practice and focus on practical methods for capacity building in developing countries. The training was designed to localise the SDGs and practising innovative thinking.

This paper discusses the application of innovation tools and techniques to a capacity building training course for maritime and ocean professionals who are expected to contribute to sustainable development of their countries. The paper is structured as follows: After the introduction, it discusses the relation between capacity building and sustainable development; To enable the effective training, the use of innovation tools and techniques is discussed; and the methods and results are presented and followed by conclusion and suggestions.

Capacity building and sustainable development

The United Nations Development Programme (UNDP) provides a definition of “capacity building” as ‘a process that supports only the initial stages of building or creating capacities and assumes that there are no existing capacities to start from’ (UNDP, 2009). The term, “capacity building” carries slightly different meanings by three levels, namely, individuals, institutions, and systems. United Nations Framework Convention on Climate Change (UNFCCC) differentiates them as follows: *Individuals* can be developed ‘through educational, training and awareness-raising activities’; *Institutions* can be strengthened by ‘fostering the development of organisations and institutions, for example, their missions, mandates, cultures, structures, competencies, and human and financial resources, as well as the cooperation between organisations, institutions and sectors’; and *Systems* can be designed to ‘create enabling environments through economic and regulatory policies and accountability frameworks in which institutions and individuals operate’ (UNFCCC, n.d.). Though WMU as a higher educational institution contributes to capacity building through education and research, the capacity building training mentioned in this paper refers to all the levels without limiting education and research.

Capacity building realises people’s full potential for sustainable development, hence it empowers people for their common benefit in a long-term scope. As a principle, building capacity leads development. The important thing is to find where capacity needs to be built in order not to waste time and resources but rather maximise the available resources to lead for change. The first step for capacity building is therefore to understand what the local needs are. Megee (2012) suggests the use of participatory needs assessment to explore the most wanted area for development by local people. Unlike a top-down approach, this method enables making locals involved in the process of capacity building. It is expected that local people will eventually build a sense of ownership, which has been proven to be a key for success.

To identify an appropriate and genuine need is also relevant to sustainable development. According to the World Commission on Environment and Development (1987), ‘sustainable development seeks to meet the needs and aspirations of the present without compromising the ability to meet those of the future’. Sustainable development itself envisions a long-term perspective. For example, the SDGs were developed by goal-based planning, stimulating policy coherence across government departments and agencies, reflexive and responsive policy-making to facilitate innovations with latest technologies, and multi-sectoral partnerships (UN SDSN, 2016). With the vision of what we want in our future, the goal-based planning enables us to think what we need to do today to achieve the vision. The 2030 Agenda for Sustainable Development is therefore guiding the way of transforming the world

towards the goals. It requires a new way of innovative thinking by breaking through a traditional development planning patterns which tend to be formulated for short- to medium-timelines, such as electoral cycles. But, the question is how to facilitate innovations in the process of building capacity in the community.

Innovation tools and techniques for capacity building training

Innovation usually takes a consecutive process of improvement. Lawson and Samson (2001) endorse this view by stating that an innovation capability is the ‘ability to continuously transform knowledge and ideas into new products, processes, and systems for the benefit of the firm and its stakeholders’. Such an innovation capability as well as the knowledge of how to put innovations into use are considered to be a learning process which is also constantly developing by itself.

Interestingly, many sustainability projects take the form of continuous learning and development. A user-centered design is known to be useful as its processes can contribute to innovation for sustainability (Davis, Öncel, & Yang, 2010). Hence, innovation is a critical component to achieve sustainability in the project. Bolmsten and Kitada (2018) acknowledge the success of using participatory design tools and techniques that focus on user-centered innovations and even a newer type of application of such tools and techniques on rapid innovation to transform from problem to solution.

UNESCO (2015) highlights that a participatory process is needed for developing training and solutions for SDGs. In this paper, the discourse of Participatory Design (Simonsen & Robertson, 2012) is used to frame the understanding of what a participatory process means. Two key considerations of a participatory process are taken into account in the capacity building workshop that is presented in this paper: inviting stakeholders with complementary perspectives is a base in a participatory process; and tools and techniques used in the participatory process advocate egalitarian principles, where it is important that all stakeholders participating are empowered in the process of developing knowledge to understand and innovate to solve the issues at hand.

In this study, the focus of the participatory process was to develop new knowledge in a workshop setting between maritime professionals with different and complementary backgrounds about practical solutions for SDGs. The participatory process implementing those solutions in practice is a topic for future research. The particular participatory tools and techniques and the design of the participatory process that were used in this research are presented in the following section.

Methods

The study looks into a pedagogical aspect of capacity building training among maritime professionals. In the course design, both theoretical and practical approaches were mixed to intentionally create a space for using the fresh knowledge learned in the workshop. Theories cover the topics of sustainability, capacity building, education and research, finance, and technology and innovation. Practices include two case studies from ship recycling and corporate social responsibility (CSR), and workshops on sustainability as well as writing a policy brief, concept note, and strategies. These small units (90 min) of learning in theories and practices are related with each other. A comprehensive workshop (2 days) on capacity building for sustainable development was the focus of this study. In this workshop,

innovation tools and techniques were employed to facilitate students' 'learning by doing' (Dewey, 1916, 1958). Yet, whether such tools and techniques are helpful requires verification. Therefore, this exploratory study aims to understand how innovation tools and techniques help the students to develop a skill of localising the global issues and finding a solution by examining the process of collaborative training as well as the feedback from the participating students.

To examine the usefulness of innovation tools and techniques for a capacity building workshop, combined methods were used in this study. To capture the process of training, observations were conducted during the duration of the course (2 weeks), including a two-day intensive capacity building workshop, in August 2017. Observations during the workshop were particularly helpful to capture the process of students' engagement in developing a capacity building concept and action plans. This ethnographic method enables the researchers to analyse how a community of practice (Lave and Wenger, 1991) was developed over time. In total, 46 participants enrolled the course, and of which, 38 students took part in the two-day workshop. The group was diverse, representing 6 African, 9 Asian, 2 Middle-Eastern, 2 Caribbean, 3 Central/South American countries and 1 Pacific Island state. By considering the balance of participants' diversity in nationality and gender, students were pre-divided into seven groups. The workshop was run by two facilitators who were the observers and authors of this paper.

Among the 17 SDGs, the Goal 13: Climate action was chosen as an overall theme of the workshop. It was because the SDG 13 was relevant to all the students' backgrounds and interests. In addition, the WMU's new mandate is to expand its maritime focus to oceans.

The first day of the workshop began by identifying the name of their imaginative country, its features and characteristics, visions, and long-term strategy (Fig. 1). Each group was given specific minutes to complete the tasks and made informal presentations to other groups. Then, innovation tool kits were provided to the groups (Fig. 2). Groups were asked to come up with a solution to their country-specific problem related to the SDG 13 and develop a prototype in group by using an innovation tool kit. Facilitators walked around the class and, if necessary, assisted the process of capacity building exercises.

On the second day of the workshop, all the seven groups made presentations about the prototype of their capacity building concept, action plans, and project sustainability (Fig. 3). All the presentations were filmed upon their permissions and a consent of using collected data for research was obtained from the participants. Video-documentation is one of the visual research methods and used as a descriptive tool to document social activities (Rose, 2016).



Figure 3: Presenting a prototype.

The study also adopted a participatory design approach where open innovation can be designed for the citizen of the country who are the users with ideas (Björgvinsson et al., 2010). To facilitate bottom-up and long-term collaborations among diverse stakeholders, we believe that it will be effective for young leaders to develop a way of building capacity in their home countries.

In addition to the data collection of live events, such as observations on students' learning process and video-recording of their group presentations, two post-workshop data collections were made: focus groups and student evaluation. A focus group is useful to gain an in-depth understanding of social issues, for example, how students felt group dynamics and negotiated their roles within the group. Two focus groups were conducted approximately 10 days after the workshop. The participants were recruited through an email invitation. The first focus group included 10 students from Bangladesh, Honduras, Jamaica, Nigeria, Philippines, Samoa, and Thailand (Fig. 4). The gender balance was equal. The second focus group was much smaller with three students from Honduras, Indonesia and Philippines (2 males and 1 female). Both focus groups took approximately two hours. We showed the participants their video-recorded group presentations to recall their memories and reflect on vividly what they have experienced. With the participants' consent, two focus groups were also filmed.

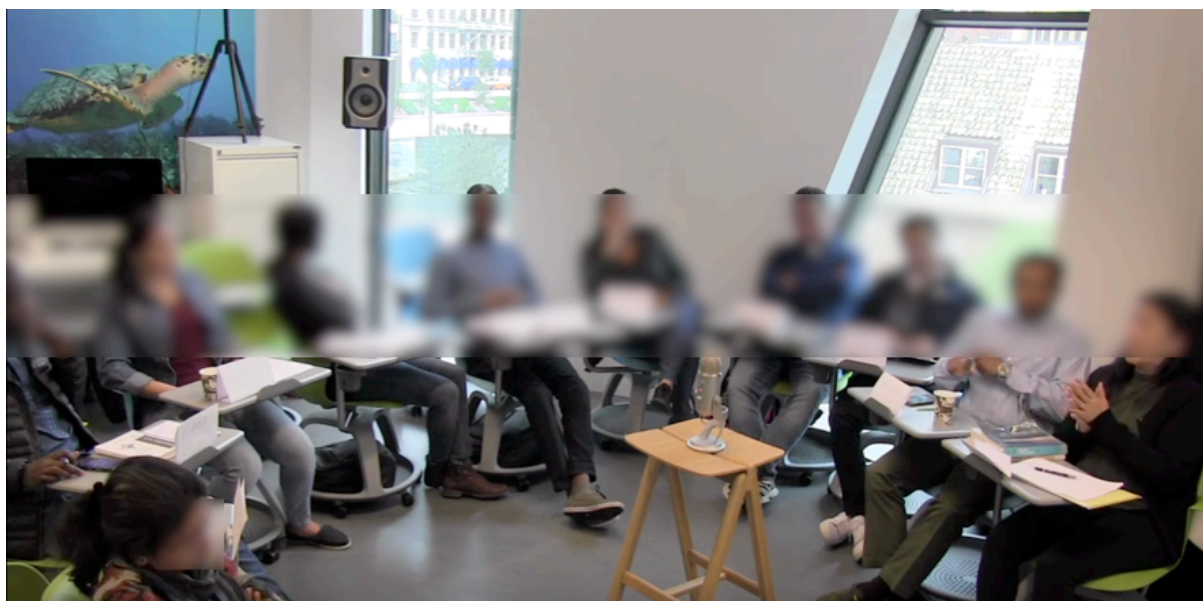


Figure 4: Focus group.

Student evaluation is part of the formal academic procedure that students can provide anonymous feedback to the lectures and course delivery. This internal information from the registry was also used as supplementary data to verify our research findings. In total, 24 responses out of 46 students were recorded in the database.

Results

Within a limited time to make the maximum effect on quickly forming the group and efficiently work towards the goal, innovation tools and techniques were found to be helpful. The usefulness of this approach can be characterised by four elements: Internalising global agendas; Externalising the concept in the local contexts; Transforming knowledge to new practical solutions; and Reflecting the idea of knowledge management.

Internalising global agendas

A scenario was given by the facilitators to the students that they need to come up with a solution to mitigate the impact of climate change as stated in the SDG 13. A relevance to this global agenda was sought after by each group to first internalise the global agenda. In fact, the innovation tools and techniques were received with confusion in the beginning. One student shared her feeling:

‘When first I saw this, I was also in some confusion. What is this? This is new. No, I cannot do this. But the way you taught us, it was simple. It is like a childish game. When we were children, we have done a lot of this type of games. Now I understand, because I have done. It is more easy compared to presentations, writing, chart... It has everything. It has every step. It is easy. You can draw some pictures. Whoever has a type of knowledge, he can understand this type of process.’

Interpretations of a global agenda can vary by person. It appears to be easier to reflect what is in one’s mind and reach a consensus as innovation tools and techniques were received as easy to use. In addition, the dimension of sustainability was emphasised from the start of the

training course. When internalising the global agenda like climate actions, students were encouraged to consider how their suggested actions will be sustainable. One student emphasised the importance of sustainability issues when internalising the global agenda and designing innovative solutions:

'The industry can benefit. People can benefit. It is not a temporal job for them.'

It helped the students to avoid seeing their problem in a short-term perspective but rather build sustainable structure to develop capacity in the community to allow them to move forward without constant interventions.

Externalising the concept in the local contexts

When students were asked to develop a concept and prototype of their capacity building project, innovation tool kits created a space for them to externalise their ideas to be visible artifacts which became part of their collaborative prototype. They related each single piece of contributions from group members to their local contexts. By doing, students were able to contextualise their agreed concept. One student described as:

'In the situation like this, you are free. You have spent so much time to your artifacts. Every time you put something on it, you know why you put it there.'

Another student also appreciated the innovation tools and techniques for externalising the concept in local contexts and found easier to describe what they have done:

'It often takes time to absorb. But if you are working with your hands on, you know it and you can describe.'

A participant from Bangladesh noted that a kind of innovation workshop does not exist in the culture of Bangladesh where people are not expected to express much their opinions in the class. Therefore, he appreciated an interactive experience of workshop in terms of helping students out of a monotonous way of learning. A similar issue was raised by a Filipino participant who said especially junior officers in her organisation would not express their ideas in front of seniors; but in this type of innovation workshop she believes that it will encourage everyone to speak regardless of their age and rank. This cultural aspect of applying innovation tools and techniques for capacity building in some countries like Bangladesh and Philippines would be interesting to investigate in the future research.

Transforming knowledge to new practical solutions

The innovation workshop challenged the conventional way of students to work on their project, which is to sit down with a computer to type their thoughts and create a nice document in the end. Several students mentioned that they were trapped by this way of working, for example by saying 'We were almost programmed to use the laptop and put the assignment on paper'. As a result, the innovation workshop itself was found to be innovative for many participants to leave away from computers. It took some time (even a day) to adopt to this new working style without computers. Participants also realised this change of behaviour within the group and said that some colleagues did not bring their laptops on the following day when finalising their project. One also described the experience was relaxing without computers:

'The atmosphere was kind of relaxing. With powerpoints, it is very tense. I think you can get better in as the scenario like this. (...) it really brings out what a person really has within.'

Students' collaborative work was stimulated with innovation tools and techniques used in the workshop. Students eventually discovered what they as a group want to express and observed themselves achieving the building of the common artifact together. The workshop exercise was found to be exciting and stimulating as stated:

'You are ready to go from the very beginning though you don't know what the outcome would have been. Whatever you have, let's put it down. Then we can compile and see from it. It was really good and exciting.'

The participatory tools and techniques used, furthermore, enabled the participants to combine and negotiate their perspective and knowledge to find new solutions. The workshop also helped the students to apply their theoretical and practical knowledge to find new solutions. The focus group participants agreed to the view expressed by the student who stated:

'This is the application of theoretical and practical, demonstration of what you have learned.'

Bridging the gap between the gained knowledge and the ability to find new practical solutions seems to be largely achieved through the innovation workshop.

Reflecting the idea of knowledge management

The workshop reflected a participatory process approach to manage the development of knowledge about solutions for SDGs. To find solutions to SDGs, it is important to question old assumptions and develop new innovative solutions. In fact, the majority of students expressed that they enjoyed "learning by doing" which was also commented during the focus group. Pedagogically, students mentioned that they felt effective learning through engaging and socialising with their colleague students.

The workshop provided an avenue for the participants to socialise with people with backgrounds and perspectives that complemented - and sometimes conflicted with - their own knowledge. Participants mentioned several times that all of them worked together even though their level of knowledge was different. The process did not exclude someone who arrived on board in the middle of the workshop or someone who is not good at expressing their views. This inclusiveness of knowledge creators was achieved by employing innovation tools and techniques. One participant explained:

'I see a beauty of this, because some people are not good at expressing what they want, but they are more visual. (...) Some of our members were reluctant to participate, because they are good at writing. So we encourage you just do what's in your mind. Someone made a coral reef. The other said what's the relevance. But at the end, she was able to see the process. And that coral reef became one of the wastes. It's still an added value. You just need to let it go. Let the process happen.'

With innovation tools and techniques, it is difficult to make a judgement on one's contribution whether it is worth or not as nobody has seen the final figure of their prototype. Students discovered that their assumptions did not have much sense in such a situation. The concept of innovation treats all ideas equally valued. The participatory tools and techniques used, then, enabled the participants externalise their understanding about sustainability issues beyond their own implicit understanding, and put assumptions on the table for common reflection and scrutiny. One participant described:

'It is a progression like starting with knowledge management and coming to this concept make it easy for you to understand what you read in the book to structure the concept and your practical experience or real-life situations. So everybody can easily relate to it, share their ideas and experiences. In lectures, this is the way to do this. It doesn't create a space for innovation. It was bringing our last memory (from the childhood) like I have built a ship.'

By recalling the memories of his childhood, he was able to connect his past with present and future when presenting a practical solution for sustainable development. It may be possible to address that innovation workshops potentially help participants stimulate an access to their (almost forgotten) knowledge repository and converting tacit to explicit knowledge.

Conclusion and suggestions

The element of innovation was found to be an important component to design such training. In summary, the workshop cultivated various social skills of students to innovate, for example, leadership, teamwork, and collaboration within the group. The majority of the students appreciated a participatory design approach with innovation tools and techniques to see their own progressions during the course.

While innovation was discussed as the key for sustainable development, the idea of sustainability appeared to support a capacity of the community to continue its development within the innovation process. Such a life-cycle perspective of project management is useful to train students to think in a long-term perspective when designing a project.

The research is limited to examine whether innovation tools and techniques are useful for capacity building training. Overall, it worked well but it was one time only. In the future, another study will be conducted to supplement the findings of this study and explore more on cultural aspects expressed by the participants of focus group. In addition, several students expressed their interest in implementing this participatory design approach in their home organisations. Further research ideas include a follow-up after their graduation through social media, like a facebook group which has been established.

Acknowledgements

The authors extend their appreciation to the participants of this study.

References

- Björgvinsson, E., Ehn, P., & Hillgren, P.-A. (2010). Participatory design and “democratizing innovation”, pp. 41–50. Presented at the Proceedings of the 11th Biennial Participatory Design Conference, PDC 2010. ACM, New York.
- Bolmsten, J., & Kitada, M. (2018). Cultivating Networked Innovation: Tools and Techniques for Innovation in Maritime Clusters. In: J.I. Kantola et al. (eds.), *Advances in Human Factors, Business Management and Leadership, Advances in Intelligent Systems and Computing* 594, doi: 10.1007/978-3-319-60372-8_47
- Davis, K., Öncel, P., & Yang, Q. (2010). *An Innovation Approach for Sustainable Product and Product-Service System Development*. Master’s thesis. Karlskrona: Blekinge Institute of Technology.
- Dewey, J. (1916). *Democracy and education: An introduction to the philosophy of education*. New York: Macmillan.
- Dewey, J. (1959). *Dewey on education: Selections*. New York: Bureau of Publications, Teachers College, Columbia University.
- IMO. (2017). *IMO and Sustainable Development*. London: International Maritime Organization.
- Lave, J., & Wenger, E. (1991). *Situated learning: Legitimate peripheral participation* (Vol. 521423740). Cambridge: Cambridge university press.
- Magee, T. (2012). *A Field Guide to Community Based Adaptation*. London: Routledge.
- Rose, G. (2016). *Visual methodologies: An introduction to researching with visual materials*. 4th ed. London: Sage.
- Simonsen, J., & Robertson, T. (eds.) (2012). *International handbook of participatory design*. London: Routledge.
- UNDP. (2009). *Capacity Development: A UNDP Primer*. New York: United Nations Development Programme.
- UNESCO. (2015). *Rethinking education*. Paris: UNESCO Publishing.
- UNFCCC. (n.d.) What is Capacity-building? <https://unfccc.int/topics/capacity-building/the-big-picture/what-is-capacity-building> Accessed on 10 July 2018.
- UN SDSN. (2016). *Getting Started with the SDGs in Cities: A Guide for Stakeholders*. New York: United Nations Sustainable Development Solutions Network.
- World Commission on Environment and Development. (1987). *Report of the World Commission on Environment and Development: Our Common Future*. <http://www.un-documents.net/our-common-future.pdf> Accessed on 10 July 2018.

Contact email: mk@wmu.se