What is Needed for Fostering Future Leaders of Risk, Crisis, Disaster and Development Management (RCDDM) in Higher Education Institutions

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論文

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Abstract

Disasters cause economic and human losses. In order to mitigate the impact of disasters, there is now a global consensus amongst national and international actors that policies and programmes must be linked to support human existence. This global consensus is reflected in the 'Sustainable Development Goals (SDGs) 2015-2030' and the 'Sendai Framework for Disaster Risk Reduction 2015-2030' (SFDRR). With this global consensus and the need to reduce disaster risks and disaster losses, there has been an increasing demand for specialised professionals and future leaders to understand the nuances of risk, crisis, disaster and development and their interfaces. However, what is yet to be seen is, how these global trends, national needs and everyday realities of the disaster-affected and vulnerable communities are integrated into professional development programmes taught within Higher Education Institutions (HEIs) in Japan and the UK, to build the capacity of students and their leadership skills.

The Universities of Kansai, Sheffield and Leicester undertook a joint research project (funded by Kansai University's *Grant-in-Aid for the Promotion and Upgrading of Education and Research*) from July 2017 to August 2018 to study and recommend a Future Leader Programme that might be required to improve students' learning and leadership skills for the effective management of risk, crisis, disaster and development. Three objectives were set for this study:

1) To identity and map the number of courses/programmes on risk, crisis, disaster and development management (RCDDM) offered by the HEIs in the UK and Japan.
2) To identify indicators for a quality Future Leader Programme in line with the SDGs and SFDRR.
3) To engage with key stakeholders to validate the indicators and explore the meaning of a future leader.

To realise these objectives qualitative methods were used to collect data from July 2017 to December 2018. This included mapping and reviewing of RCDDM Programmes and the Times Higher Education databases in the UK and the KAKEN database, developing indicators through a literature review on 'quality' education and a content analysis of the SDG and the SFDRR, and

gathering opinions through two key stakeholders' workshops and several formal and informal interviews with students and academics.

The findings suggest that as of October 2017, there were a total of 48 HEIs in the UK and 777 in Japan that offered courses/programmes in RCDDM. From the content analysis of the SDGs and the SFDRR, it was found that Goals 4, 11 and 13, and the SFDRR's Priorities for Actions 1 and 3 were the most relevant to identify indicators for a quality Future Leader Programme. These indicators were ratified by the stakeholders. The stakeholders defined a 'Future Leader' for RCDDM as an individual who brings about change to enrich life standards and communities' abilities to manage risks, crises, disasters and development through social influence. The findings also identify the topics and the type of courses that will be needed to develop a Future Leader Programme for RCCDM.

Keywords: Future leader, SDGs, Sendai framework for DRR, Japan, UK

1. INTRODUCTION

Disasters that are triggered by natural hazard are becoming more frequent due to global warming and climate change, causing huge human, social, financial, natural, and physical losses (UNDP, 2007; World Bank, 2013; Woodside, 2018). In order to mitigate the impact of disasters and climate change, there is now a global consensus amongst national and international actors that all plans, policies, programmes and strategies that support human existence and sustainable development must work in the interface with risk, crisis, disaster and development management (RCDDM). This global consensus is reflected in the: Sustainable Development Goals 2015-2030 (the successor of the Millennium Development Goals 2005-2015); Sendai Framework for Disaster Risk Reduction 2015-2030 (the successor of the Hyogo Framework for Action 2005-2015); Paris Climate Agreement 2015; Global Strategy for Women's, Children's and Adolescents' Health 2016-2030; and the Bangkok Principles on Health – amongst many others. For the purpose of this research project, we will focus on the Sustainable Development Goals (SDGs) and the Sendai Framework.

These global protocols have: informed both local and national advocacy, campaigns and policies; aided the creation of institutional building (such as the UN's International Strategy for Disaster Risk Reduction (UNISDR), Economic and Social Commission for Asia and the Pacific (ESCAP), Famine Early Warning Systems Network (FEWS Net)); and provided the rationale for series of research and development designed to promote resilience at both community and organisational/institutional levels (UNISDR, 2015). More importantly, these changes in both global and national mindsets have led to an increasing demand for specialised professionals and future leaders to understand the nuances of risk, crisis, disaster and development and their interfaces. However, what is yet to be seen is, how these global trends, national needs and everyday realities of the disaster-affected and vulnerable communities are integrated into professional development programmes taught within Higher Education Institutions (HEI) in countries such

as Japan and the UK, to build the capacity of these future leaders.

Today's HEIs cannot disentangle themselves from the socio-political-environmental-economic context in which they operate to develop future leaders. Listening to and learning from student cohorts (both actual and prospective) remains one of the most tried and trusted methods for ensuring that these institutions remain relevant in sectors such as risk, crises, disaster and development management. In light of this context, this research project, funded by Kansai University's Grant-in-Aid for the Promotion and Upgrading of Education and Research, was conceived to study and identify a Future Leader Programme to improve students' learning skills and improve teaching experiences for the effective management of risk, crisis, disaster and development. To study this, the following three objectives were set:

1) To identity and map the number of courses/programmes on risk, crisis, disaster and development management offered by the HEIs in the UK and Japan.
2) To develop indicators for a quality Future Leader Programme in line with the Sustainable Development Goals and the Sendai Framework for Disaster Risk Reduction.
3) To engage with key stakeholders to test the developed indicators and understand the meaning and feasibility of the UN's Sustainable Development Goal 4 and the Sendai Framework for Disaster Risk Reduction's Priorities with regarding to the existing and future courses/programmes.

This research project was fundamentally designed to learn from the existing courses that HEIs offer in the UK and Japan (Objective 1) and from prospective and current practitioners (Objective 3). In doing so, the overall goal of the project is to identify a future programme that might better suit the needs of future student-professional leaders in order to deal with contemporary challenges related to risk, crisis, emergency disaster and development. There is a real and increasing demand for this type of future programme and for specialised and educated professionals in the field of risk, crisis, disaster and development management, especially with the increase in frequency and severity of natural hazards and climate change.

Woodside (2018) claims that colleges and university can be part of the solution to the impacts of climate change through education, research and innovation. A number of HEIs across the globe have responded to this need by offering courses related to risk, crisis, disaster and development management; many of which are based in countries vulnerable to natural hazards, such as Japan and the United Kingdom (UK). However, in order to manage and mitigate the impact of natural hazards and climate change, the need for high-quality and more sophisticated courses and programmes in risk, crisis, emergency, disaster and development management is becoming ever more important (Alexander, 2013).

However, thus far there has been very little exploration of how these courses actually prepare professionals to respond to natural disasters and climate change. Therefore, it is important to determine what constitutes a 'high-quality' RCDDM course/programme, as well as what skills and knowledge a specialised professional in RCDDM should ideally have. Subsequently, this was explored as part of this research project through a desk-based review and through discussions with key stakeholders (i.e. students, graduates, course/module leaders and practitioners). Before presenting the findings of the desk-based review and the

discussions, this Chapter will first discuss the research focus and the importance of the Sustainable Development Goals and the Sendai Framework, followed by defining Future Leader.

2. Research Focus

The project focuses on Japan and the UK for its field research because both of these countries are vulnerable to natural hazards and a number of HEIs offer courses related to risk, crisis, emergency, disaster and development management. These HEIs have a major reach and attract students from home and abroad. Japan and the UK are both developed countries with a high amount of real-world advanced knowledge on managing disasters.

Japan is especially vulnerable to natural hazards due to its climate and topography. According to the Ministry of Foreign Affairs of Japan (2020), the main factors that contribute to a high incidence of natural hazards in Japan are: (i) the country is subject to extreme climatic variations (e.g. seasonal rain fronts and typhoons); (ii) Japan's topography is rugged and there are many faults and steep inclines; (iii) Japan is located in the Pacific earthquake belt and is frequently struck by earthquakes, while its complex coastline is vulnerable to tsunamis; and (iv) Japan is located in the circum-Pacific zone, in which almost all of the volcanoes of the world are concentrated (it has 83 active volcanoes, which is one-tenth of the world's total).

In contrast to Japan, the United Kingdom has a more temperate climate and stable geography. Yet, it is still susceptible to natural hazards; "these range from small-scale local occurrences (e.g. landslides), through regional incidents (e.g. flooding), to major high impact, low probability events (e.g. space weather)" (Stock and Wentworth, 2019, p: 3). These natural hazards can result in significant human, economic, environmental and infrastructure damage. For example, the winter flooding in 2015-2016 costed the UK economy approximately £1.6 billion (Stock and Wentworth, 2019).

According to WorldRiskIndex (Bündnis Entwicklung Hilft and Ruhr University Bochum, 2019), in 2019 the UK had a medium (12.60) exposure to natural hazards, while Japan has a very high (38.94) exposure to natural hazards. The median of the WorldRiskIndex's exposure in 2019 was 13.16. Exposure was calculated by exploring the amount of population exposed to earthquakes, cyclones, floods, drought and sea-level rise. This indicates that even though Japan and the United Kingdom are exposed to different natural hazards and at different levels, both countries have experience with managing natural hazards and their associated risks.

3. The Importance of the SDGs and the Sendai Framework

The United Nations (UN)'s Sustainable Development Goals 2015-2030, also known as the Global Goals, "are a universal call to action to end poverty, protect the planet and ensure that all people enjoy peace and prosperity" (UNDPa, 2017). The Sustainable Development Goals consist of 17 individual, but interconnected Goals. These 17 Goals are building on its predecessor, the Millennium Development Goals (2005-2015) but also includes "new areas such as climate change, economic inequality, innovation, sustainable consumption, peace and justice, among other priorities" (UNDPa, 2017). These Goals were

developed at the United Nations Conference on Sustainable Development in Rio de Janeiro in 2012. The purpose of this conference "was to produce a set of universal goals that meet the urgent environmental, political and economic challenges facing our world" (UNDPb, 2017). This purpose was indeed met as the 17 Goals were developed in partnership and "[t]hey provide clear guidelines and targets for all countries to adopt in accordance with their own priorities and the environmental challenges of the world at large. The SDGs are an inclusive agenda. They tackle the root causes of poverty and unite us together to make a positive change for both people and planet." (UNDPa, 2017).

Since the 2012 United Nations Conference on Sustainable Development, the Goals have informed both local and national advocacy, campaigns and policies in areas of sustainable development. Additionally, they have contributed to the creation of institutional building and contributed to the creation of institutions. Moreover, the Goals have provided the rationale for series of research and development designed to promote resilience at both community and organisational/institutional levels (UNISDR, 2015). More importantly, the Goals have impacted global and national mindsets, which have led to an increasing demand for specialised professionals to understand the nuances of risk, crisis, disaster and development and their interfaces.

Within the SDGs, education is emphasised primarily through Goal 4: 'Ensure inclusive and quality education for all and promote lifelong learning'. This Goal directly highlights that "Obtaining a quality education is the foundation to improving people's lives and sustainable development." (UNDPa, 2017). Goals 11 (Sustainable Cities and Communities), 12 (Responsible Consumption and Production) and 13 (Climate Action) also indirectly acknowledge the importance of education (see Table 1). For example, through one of its indicators, Goal 12 draws encourages mainstreaming global citizenship education and education for sustainable development within national education policies, curricula, teacher education and student assessment (Indicator 12.8.1). Global citizenship education, which is also part of the SDG's Target 4.7, is "a transformative, lifelong pursuit that involves both curricular learning and practical experience to shape a mindset to care for humanity and the planet, and to equip individuals with global competence to undertake responsible actions aimed at forging more just, peaceful, secure, sustainable, tolerant and inclusive societies" (Global Citizenship Foundation, 2020). This is very applicable for a Future Leader within RCDDM.

TABLE 1: Sections Related to Disaster Education within the SDGs

Goal No.	Direct Quotes
4: Ensure inclusive and quality education for all and promote lifelong learning	**Description:** Obtaining a quality education is the foundation to improving people's lives and sustainable development. **Target 4.3** By 2030, ensure equal access for all women and men to affordable and quality technical, vocational and tertiary education, including university **Target 4.4** By 2030, substantially increase the number of youth and adults who have relevant skills, including technical and vocational skills, for employment, decent jobs and entrepreneurship **Indicator 4.4.1** Proportion of youth and adults with information and communications technology (ICT) skills, by type of skill By 2030, eliminate gender disparities in education **Target 4.5** and ensure equal access to all levels of education and vocational training for the vulnerable, including persons with disabilities, indigenous peoples and children in vulnerable situations **Target 4.7** By 2030, ensure that all learners acquire the knowledge and skills needed to promote sustainable development, including, among others, through education for sustainable development and sustainable lifestyles, human rights, gender equality, promotion of a culture of peace and non-violence, global citizenship and appreciation of cultural diversity and of culture's contribution to sustainable development
11: Make cities and human settlements inclusive, safe, resilient and sustainable	**Target 11.5** By 2030, significantly reduce the number of deaths and the number of people affected and substantially decrease the direct economic losses relative to global gross domestic product caused by disasters, including water-related disasters, with a focus on protecting the poor and people in vulnerable situations **Target 11.b** By 2020, substantially increase the number of cities and human settlements adopting and implementing integrated policies and plans towards inclusion, resource efficiency, mitigation and adaptation to climate change, resilience to disasters, and develop and implement, in line with the Sendai Framework for Disaster Risk Reduction 2015-2030, holistic disaster risk management at all levels
12: Ensure sustainable consumption and production patterns	**Target 12.8** By 2030, ensure that people everywhere have the relevant information and awareness for sustainable development and lifestyles in harmony with nature **Indicator 12.8.1** Extent to which (i) global citizenship education and (ii) education for sustainable development (including climate change education) are mainstreamed in (a) national education policies; (b) curricula; (c) teacher education; and (d) student assessment
13: Take urgent action to combat climate change and its impacts	**Description:** People are experiencing the significant impacts of climate change, which include changing weather patterns, rising sea level, and more extreme weather events. The greenhouse gas emissions from human activities are driving climate change and continue to rise….Without action, the world's average surface temperature is projected to rise over the 21st century and is likely to surpass 3 degrees Celsius this century—with some areas of the world expected to warm even more. The poorest and most vulnerable people are being affected the most. **Target 13.1** Strengthen resilience and adaptive capacity to climate-related hazards and natural disasters in all countries **Target 13.3** Improve education, awareness-raising and human and institutional capacity on climate change mitigation, adaptation, impact reduction and early warning **Indicator 13.3.1** Number of countries that have integrated mitigation, adaptation, impact reduction and early warning into primary, secondary and tertiary curricula **Indicator 13.3.2** Number of countries that have communicated the strengthening of institutional, systemic and individual capacity-building to implement adaptation, mitigation and technology transfer, and development actions

The Sendai Framework for Disaster Risk Reduction 2015-2030 is a "15-year, voluntary, non-binding agreement which recognizes that the State has the primary role to reduce disaster risks but that responsibility has to be shared with other stakeholders including local government, the private sector and other stakeholders" (UN, 2015). This Framework was adopted by 185 UN member states at the 'Third UNs World Conference on Disaster Risk Reduction', which was held from 14 to 18 March 2015 in Sendai, Miyagi, Japan (UN, 2015). These member states have made a "commitment to address disaster risk reduction and the building of resilience to disasters with a renewed sense of urgency within the context of sustainable development and poverty eradication, and to integrate, as appropriate, both disaster risk reduction and the building of resilience into policies, plans, programmes and budgets at all levels" (UN, 2015: 9).

Within the Sendai Framework, education is emphasised throughout, specifically Priorities for Action 1 and 3 (see Table 2). This Framework was created 'to reduce disaster risk' and thus, covers main aspects from different levels (e.g. policy, global, regional, national, local, etc.). It does not specifically focus on disaster education; however, it encourages building "the knowledge of government officials at all levels, civil society, communities and volunteers, as well as the private sector, through sharing experiences, lessons learned, good practices and training and education on disaster risk reduction, including the use of existing training and education mechanisms and peer learning" (UN, 2015: 15). Education on disaster risk reduction at all levels has the ability to make a difference and in fact reduce some risk. This was already acknowledged by the Sendai Framework's predecessor, the 'Hyogo Framework for Action (HFA) 2005-2015: Building the Resilience of Nations and Communities to Disasters'. Specifically, the Hyogo Framework's third and fifth priorities for action highlight this: 3) use knowledge, innovation and education to build a culture of safety and resilience at all levels; and 5) strengthen disaster preparedness for effective response at all levels (UN, 2015: 11). To strengthen disaster preparedness, it all starts with building knowledge, which can be done through education.

TABLE 2: Sections Related to Disaster Education within the Sendai Framework

Section	Direct Quotes
Guiding Principles	**19 (k):** In the post-disaster recovery, rehabilitation and reconstruction phase, it is critical to prevent the creation of and to reduce disaster risk by "Building Back Better" and increasing public education and awareness of disaster risk;
Priority for Action 1: Understanding disaster risk	**23:** Policies and practices for disaster risk management should be based on an understanding of disaster risk in all its dimensions of vulnerability, capacity, exposure of persons and assets, hazard characteristics and the environment; **24 (g):** To build the knowledge of government officials at all levels, civil society, communities and volunteers, as well as the private sector, through sharing experiences, lessons learned, good practices and training and education on disaster risk reduction, including the use of existing training and education mechanisms and peer learning; **24 (l):** To promote the incorporation of disaster risk knowledge, including disaster prevention, mitigation, preparedness, response, recovery and rehabilitation, in formal and non-formal education, as well as in civic education at all levels, as well as in professional education and training; **24 (m):** To promote national strategies to strengthen public education and awareness in disaster risk reduction, including disaster risk information and knowledge, through campaigns, social media and community mobilization, taking into account specific audiences and their needs;

Priority 4: Enhancing disaster preparedness for effective response and to "Build Back Better" in recovery, rehabilitation and reconstruction	**32:** The steady growth of disaster risk, including the increase of people and assets exposure, combined with the lessons learned from past disasters, indicates the need to further strengthen disaster preparedness for response, take action in anticipation of events, integrate disaster risk reduction in response preparedness and ensure that capacities are in place for effective response and recovery at all levels. **33 (b):** To invest in, develop, maintain and strengthen people-centred multi-hazard, multisectoral forecasting and early warning systems, disaster risk and emergency communications mechanisms, social technologies and hazard-monitoring telecommunications systems; develop such systems through a participatory process; tailor them to the needs of users, including social and cultural requirements, in particular gender; promote the application of simple and low-cost early warning equipment and facilities; and broaden release channels for natural disaster early warning information;

4. Defining Future Leader

The definitions of a leader vary but overall, it can be summed up as a 'person who guides or directs a group to achieve a common goal' (Canton, 2013: 47). In this light, a 'Future Leader' is such a person who has the potential to be a leader in the future. This project focuses on 'Future Leaders' for risk, crisis, disaster and development management and thus, all the students currently studying RCDDM-related courses/programmes are potentially 'Future Leaders' in the context of this research.

Nevertheless, 'Future Leader' is a challenging term to define and in the context of risk, crisis, disaster and development management education this term has not been fully explored before. Yet, the importance of leadership in disaster and emergency management has widely been acknowledged (Waugh and Streib, 2006; Demiroz and Kapucu, 2012; Canton, 2013; Trainor and Velotti, 2013). According to Bahauddin and Iftakhar (2017: 31), "effective leadership is critical in order to make disaster response system operative in an effective and efficient manner". Boin et al. (2005, cited in Demiroz and Kapucu, 2012: 97) also agree with this and outline that effective and successful leadership involves five main tasks: sense making; decision making and coordinating implantation; meaning making; accounting and ending; and learning (see Table 3).

TABLE 3: Main Tasks and Responsibilities of Successful Crisis Leadership

Main Tasks	Leaders Have the Responsibility to:
1. Sense making	Look out for the possibility of crises and handle the preparation process to eliminate any factors that could have been avoided.
2. Decision making and coordinating implantation	Make final decisions and in doing so make sure that they reach out to the community and gather as many interested crisis responders as possible.
3. Meaning making	Direct the public in the right direction and motivate the community to believe that they will get through this situation.
4. Accounting and ending	Keep the effected parties on track to eventually achieve closure and an opportunity to move on past the crisis.
5. Learning	Evaluate the situation and come up with lessons that can be learned from either the shortfalls or the successes of the entire response efforts.

Adapted from: Boin et al. (2005, cited in Demiroz and Kapucu, 2012: 97).

Over the years, leadership has been shifting from an autocratic, hierarchical model towards an empowering, participatory model (Canton, 2013). However, the type of leader required depends on the situation. Thus, a good leader is one that can assess the situation, critically think, learn and adapt as needed. According to Manning and Curtis (2003), a leader should have the ability to affect social influence by initiating, guiding and subsequently, resulting in change. The abilities and skills required from a leader is debateable and depends on the type of leader needed and the conditions of the environment (Demiroz and Kapucu, 2012). However, based on Bahauddin and Iftakhar (2017: 31)'s qualitative in-depth study of 40 people who work in disaster management sectors in different NGOs and Governmental organisations in Bangladesh, it was revealed that some of the main essential leadership skills that disaster management leaders require are: "intuitiveness, decisiveness, communication, networking, accountability, and learning" (see Table 4). These skills, as well as others can be learnt through education. As a matter of fact, there is almost a universal agreement that leadership itself is a skill that can be learnt (McCrimmon, 2010).

TABLE 4: Essential Disaster Management Leadership Skills

Skills	**Leaders Have the Responsibility to:**
Intuitiveness	Understand and have insight into the situation based on feelings and experience.
Decisiveness	Make quick and effective decisions, as well as to execute plans in order to work towards achieving a goal.
Communication	Impart and exchange information well through both the appropriate means for the target audience.
Networking	Interact with key stakeholders to exchange and gain information, as well as to develop social contact and rapport building.
Accountability	Take responsibility and be able to justify ones actions and decisions.
Learning	Continuously learn new skills and knowledge, through education, experience, study and observation.

Adapted from: Bahauddin and Iftakhar (2017: 31).

Moreover, one of our main research findings indicated that RCDDM leaders have to be transformational. Transformational leadership is a theory of leadership where a "leader is charged with identifying the needed change, creating a vision to guide the change through inspiration, and executing the change in tandem with committed members of the group" (Ashton College, 2020). Transformational leaders are those who transform their followers. Through the use of inspiration and motivation, they motivate their followers to do more than was originally intended (Chandrayan, 2017).

The concept of 'transformational leadership' was first coined in 1973 by Dr James Downton, a sociologist known for his research on charismatic leadership (Hay, 2006). The concept was further developed in 1978 by a political scientist and authority on leadership studies called: James MacGregor Burns (Hay, 2006) Burns defined this type of leadership as those who "who engaged with followers, focused on higher order intrinsic needs, and raised consciousness about the significance of specific outcomes and new ways in which those outcomes might be achieved" (Hay, 2006, p. 2). More recently, it has been further developed by Chandrayan (2017), who argues that transformational leadership has four elements (see Figure 1). These

elements are inspirational motivation, intellectual stimulation, idealised influence and individualised consideration. Two of the greatest leader of their time Nelson Mandela and Mahatma Gandhi exemplified the transformational leadership. They motivated everyone who came in their influence to attain exceptional accomplishments, through charisma, inspiration, individualized attention and intellectual stimulation.

Based on the above literature a working definition of a Future Leader is proposed as an individual who can learn to guide, direct and influence social change towards achieving a common goal, while transforming and motivating their followers. This definition, as well as the type of skills and characteristics required from a Future Leader, will be further explored through the project. These findings are presented in the Results Chapter.

5. METHODOLOGY

Ethical approval was gained from the University of Leicester's Ethics Sub-Committee for School of Business on the 18th of December 2017. The research methodology was carefully and collaboratively designed to be exploratory, in-depth and to address the research objectives. The research design is explained through the three inter-related phases that the project went through (see Table 5).

TABLE 5: Phases of the Research Design

Phase	Research Objectives	Date	Details
1. Mapping RCDDM Courses/ Programmes	1. To identity and map the number of courses/programmes on risk, crisis, disaster and development management offered by the HEIs in the UK and Japan.	July 2017 – October 2017	- Mapping courses/programmes in the UK and in Japan - Development of a spreadsheet
2. Developing Indicators	2. To develop indicators for a quality Future Leader Programme in line with the Sustainable Development Goals and the Sendai Framework for Disaster Risk Reduction.	October 2017 – December 2017	Desk-based review Literature review on 'quality' education Systematic review of the SDGs and Sendai Framework
3. Engaging with Key Stakeholders	3. To engage with key stakeholders to test the developed indicators and understand the meaning and feasibility of the UN's Sustainable Development Goal 4 and the Sendai Framework for Disaster Risk Reduction's Priorities 1 and 4 with regard to the existing and future courses/programmes.	January 2018 – December 2018	Workshops (incl. focus group discussions) with practitioners and students in Osaka and Leicester to test the developed indicators and to identify the needs for future courses Interviews with students and course leaders/directors

Phase 1- Mapping RCDDM Courses/Programmes was conducted from July 2017-October 2017. This involved searching, identifying and mapping the number of courses/programmes on risk, crisis, disaster and development management (RCDDM) offered by the HEIs in the UK and Japan (Research Objective 1) by systematically searching each HEI in the UK and the KAKEN database (an academic research fund database) in Japan, as well as the Times Higher Education databases for the UK and Japan. The courses and

programmes were mapped out in a detailed Excel Spreadsheet (please see Appendix 2).

The courses/programmes in the UK were searched by going to the university's home page of each of the 166 recognised HEIs. On each of the university's pages, their course directory was searched using the following key words: risk, crisis, disaster, emergency, hazard and development. When a course or module that was RCDDM-related was found, it was recorded and further analysed. The syllabus of the course and the content of the module was explored to determine which parts covered risk, crisis, disaster and/or development. The details of the course were recorded (i.e. the type of course it is, the department it falls under and the duration of the course). Additionally, the rankings of the universities were recorded in accordance to the Times Higher Education, uniRank, The Guardian2017 and UNISTATS. All this information was recorded into the developed spreadsheet (please see Appendix 2).

In Japan, the courses/programmes were searched in a different manner. The methods of mapping was originally planned to be the same in the UK and Japan but there were two main difficulties: (i) the difference in the number of institutions (166 HEIs versus 777 universities); and (ii) the access to the information in Japan is more challenging since universities do not have a course directory or search mechanism on their websites. Subsequently, it was decided to use the KAKEN database, which is the biggest governmental, academic research fund administrated by JSPS in Japan. This database, provided by the National Institute of Informatics, includes the information of all successful projects, including the investigator's name, affiliation, project title, keywords, the scale of funds, and etc. Since the researchers on KAKEN database are active researchers, it is assumed that if a research institute has many staff members who have received KAKEN funds for RCDDM-related project, then the institute would generally offer a related programme/course.

The KAKEN database was searched for projects within the past five years (2013-2017). The search was conducted using the same key words as was used during the search for the UK course/programmes. These key words were translated into Japanese. Additionally, a few added keywords were added to ensure that no projects were overlooked; these were "bousai" (Disaster Risk Reduction) and "fukkou" (Recovery). The results of this search were carefully recorded.

Phase 2 – Developing Indicators was conducted from October 2017-December 2017. This involved a desk-based literature review on 'quality' education and a systematic review of the SDGs and the Sendai Framework to develop indicators for a quality Future Leader Programme (Research Objective 2). The systematic review was done by fully reading through the SDGs, Sendai Framework, their details targets and indicators in order to identify any relevant material of information. Additionally, thematic content analysis was undertaken, specifically in regard to key terms (i.e. education, disaster, risk, crisis and development).

Phase 3 – Engaging with Key Stakeholders was conducted from January 2018-December 2018. This involved engaging with purposively-selected key stakeholders (i.e. students, graduates, course and module leaders, and practitioners) to test the developed indicators and to identify the needs of future RCDDM-related courses in relation to the SDGs and Sendai Framework (Research Objective 3). To do this, two

workshops were conducted with key stakeholders; one in Osaka, Japan and the other in Leicester, UK (see Figures 2 and 3). The stakeholders were invited to attend the workshops based on their expertise. We ensured that the sample of stakeholders represented HEIs and international non-governmental organisations. The workshop in the UK was held in January 2018. A total of 26 stakeholders were in attendance from: University of Leicester, Kyoto University, Northumbria University, Coventry University, University College London (UCL), Center for Landscape and Climate Research (UoL), Department for International Trade, Foreign & Commonwealth Office and CIAT-Vietnam (see Table 6). The keynote speech at this workshop was delivered by Professor Norio Okada. The speech was titled: Living Small Fields are Excellent Showcases for Disaster Education-combined with Research: Case Station-Field Campus (CASiFiCA) Arrangement. Professor Heiko Balzter (Centre for Landscape and Climate Research, University of Leicester) provided the closing note, summarising the whole day and provoked our thinking about futuristic thinking.

TABLE 6: Number of Participants in Attendance from Institutions for the UK Workshop

Key Stakeholder Institutions	Number of Participants in Attendance
Students	6
Graduates	2
Academics	10
Research team members	4
Practitioners	4
Total:	26

The workshop in Japan was held in March 2018. Students, academics, researchers and practitioners were in attendance from the University of Leicester, Kansai University, Kyoto University. The keynote speech was delivered by Professor Yoshiaki Kawata, the Director of the Research Centre for Societal Safety Sciences at Kansai University. The speech was titled: What is asked from a social safe global leader education program?

TABLE 7: Number of Participants in Attendance from Institutions for the Japan Workshop

Key Stakeholder Institutions	Number of Participants in Attendance
Students	6
Graduates	0
Academics	3
Research team members	5
Practitioners	8
Total:	22

At both the workshops in the UK and Japan, group discussions were held with 4-5 participants. In the UK,

there were four groups, while in Japan there were three groups. They discussed the developed indicators one by one. These discussions were audio recorded and subsequently, analysed based on the common themes.

Moreover, the two workshops were followed-up by conducting six interviews in 2018. The interviews were with 1 student in Japan, 1 academic in Japan, 2 students in the UK and 2 academics in the UK. The sampling used was purposive as we were specifically looking for students and academics that were currently part of risk, crisis, disaster and development management - courses/programmes. Additionally, the availability of the students and academics was important. However, it was ensured that none of the students and academics were part of University of Leicester of Kansai University. The data of the interviews was analysed through thematic analysis and specifically to answer the research objectives.

FIGURE 1: Key Stakeholders at the Workshop in Japan

FIGURE 2: Group Discussion at the Workshop in Leicester

The findings of the literature review, workshop discussions and interviews were shared at a side event at the 4th Summit of Global Alliance of Disaster Research Institutes (GADRI) at Kyoto University on the 12th of March 2019. The side event, titled: Future Leaders for Risk, Crisis, Disaster and Development Management, encompassed the final dissemination of this project. The event was attended by 24 GADRI participants from across the world. During this event, an open discussion was held after the dissemination of findings in order to receive feedback and insight from GADRI professionals. These feedbacks and insights have assisted with formulating the recommendations of this project (please see the Disussion and Recommendations chapter). For more information on this event, please see the following website: http://gadri.net/summit/side-events/kansai-university/

6. RESULTS SPECIFIC TO EACH RESEARCH OBJECTIVE

Objective 1: To identity and map the number of courses/programmes on risk, crisis, disaster and development management offered by the HEIs in the UK and Japan.

Within the UK, there are 166 higher learning institution that can award degrees (Crown, 2017). These are

also known as 'recognised bodies'. Other institutions exist but they are known as 'listed bodies' as they cannot award degrees themselves. This means that students can study at one of the 'listed bodies' but will receive their degree upon completion from a different institution that is a 'recognised'. There are 657 'listed bodies' (Crown, 2017). For this project, we only focused on the 'recognised bodies' because within the UK it is important to receive a degree from them so that it is recognised when the student/graduate applies for a job.

Out of the 166 UK Higher Education Institutions recognised bodies, it was found that there are:

- 48 universities that have course/programmes in RCDDM
- 81 courses/programmes in RCDDM
- 17 BSc/BA degree level RCDDM courses
- 49 MSc/MA degree level RCDDM courses
- 8 long distance courses in RCDDM
- 10 short term courses relevant to RCDDM (FT: 1 day - 2 weeks, PT: 1 day - 12 weeks)
- 3 CPD certified courses in RCDDM

Please see Appendix 3 for the full list of mapped RCDDM courses.

In the UK, there are different types of universities. Currently, there are seven existing Ancient Universities, which are universities that were founded before the year 1600. These are among the oldest universities in the world. This typology of Ancient Universities was developed by George Maclean in 1917, where the universities were divided into five groups based on age and location. Another typology of universities is the Russell Group universities, which is a self-selected association that was formed in 1994. Russell Group consists of 24 public research universities. Furthermore, Post-1992 Polytechnic universities, also known as "new universities", is another typology. These are former polytechnics or central institutions that were granted university status through the 'Further and Higher Education Act of 1992'.

From this research, it was discovered that:

- 1 out of 7 Ancient Universities have RCDDM courses (i.e. University of Aberdeen)
- 10 out of 24 Russell Group HEIs have RCDDM courses
- 16 out of 33 Post-1992 Polytechnics have RCDDM courses

According to the Times Higher Education in 2017, the top university with RCDDM courses was the University College London, followed by London School of Economics and Political Science. Please see Table 4 for the top 10 universities with RCDDM courses according to the Times Higher Education in 2017.

TABLE 8: Top 10 Universities with RCDDM Courses in 2018

Overall Rank	University	Type of University
4	University College London	Russell Group
5	London School of Economics and Political Science	Russell Group
7	King's College London	Russell Group
8	University of Manchester	Russell Group
12	Durham University	Russell Group

16	University of Southampton	Russell Group
17	University of Exeter	Russell Group
19	University of Birmingham	Russell Group
25	University of East Anglia	
26	University of Leicester	

Table 4 shows that eight out of the top ten universities with RCDDM courses were from the Russell Group. The University of Leicester and the University of East Anglia are not in the Russell Group, nor are they Polytechnic universities. The University of Leicester gained university status in 1957 and the University of East Anglia was established in 1963.

In Japan, it was discovered that there are 777 universities and as mentioned earlier, the mapping of the Japan RCDDM courses was done differently due to such a large number of universities. From Japan's KAKEN database, it was seen that there were a lot of KAKEN funded projects at universities related to risk, crisis, disaster and development management. This was discovered by searching the key words in KAKEN database for the past 5 years. Please see Table 5 for the key words and the number of search results.

TABLE 9: Number of the KAKEN funded projects 2013–2017

Keyword (in Japanese)	**Number of the projects (2013-2017)**
Risk ("risuku")	3,375
Crisis ("kiki")	1,092
Hazard ("hazado")	276
Emergency ("kinkyuji")	128
Emergency ("hijyouji")	54
Disaster ("saigai")	2,336
Recovery ("fukkou")	1,136
Disaster Risk Reduction ("bousai")	233

Additionally, it was seen that the Disaster Prevention Research Institute at Kyoto University had the highest number of KAKEN projects that were related to RCDDM. Please see Table 6 for the other top ten universities that had the most RCDDM-related KAKEN funded projects:

TABLE 10: Top 10 KAKEN Institutions in Japan

Name	**Number of the KAKEN projects**
Disaster Prevention Research Institute, Kyoto University	88
International Research Institute of Disaster Science, Tohoku University	73

The University of Tokyo Hospital	58
Integrated Research Division, Yamanashi University	42
Graduate School of Environmental Studies, Nagoya University	39
Graduate School of Engineering, The University of Tokyo	38
School of Medicine, Tohoku University	36
Faculty of Engineering, Information and Systems, The University of Tsukuba	35
Faculty of Political Science and Economics, Waseda University	34
Graduate School of Human Sciences, Osaka University	33

Since there are a lot of KAKEN projects at the universities listed in the above table, it was concluded that those universities offer a related programme/course. Identifying the number of courses/programmes on risk, crisis, disaster and development management offered by the HEIs in Japan was not possible.

Education on risk or disaster management that incorporates the Sendai Framework is limited. Northumbria University provides an MSc in Disaster Management and Sustainable Development, which has a module titled: Integrated Emergency Management that introduces the Sendai Framework. Additionally, the University of Manchester does provide an MSc in International Disaster Management which covers the different policies at international and national levels, including the Sendai Framework for Disaster Risk Reduction and the Sustainable Development Goals. However, the Sendai Framework has not yet been used to inform and assist with developing a course's or programme's curriculum. Similar to the Sustainable Development Goals, it is still unclear how the Sendai Framework can be fully integrated into professional development programmes taught within HEIs to build the capacity of these future risk, crisis, disaster and development practitioners. Therefore, as part of this project, the Sustainable Development Goals and Sendai Framework were systematically reviewed to see how they can be integrated into programmes and courses within HEIs. Additionally, this review assisted with developing a set of indicators for a quality RCDDM-related Future Leader Programme (see the next section on the findings of Research Objective 2).

Objective 2: To develop indicators for a quality Future Leader Programme in line with the Sustainable Development Goals and the Sendai Framework for Disaster Risk Reduction.

As part of the desk-based review, a systematic review of the SDGs and Sendai Framework was undertaken to explore how they can be integrated into course/programmes to build the capacity of future leaders. This was done by fully reading through the SDGs, Sendai Framework, their details targets and indicators in order to identify any relevant material of information. Additionally, a search of key words (education, disaster, risk, crisis and development) was undertaken.

From this review of the SDGs and Sendai Framework, we identified targets of what a 'quality' Future Leaders RCDDM course/programme should have. For each of these targets we developed indicators to assess the 'quality' of a course/programme.

When reviewing the SDGs to identify indicators, it was seen that these three Goals were most relevant:

Goal 4: Ensure inclusive and quality education for all and promote lifelong learning

Goal 11: Make cities and human settlements inclusive, safe, resilient and sustainable

Goal 12: Ensure sustainable consumption and production patterns

Goal 13: Take urgent action to combat climate change and its impact

Goal 4: 'Ensure inclusive and quality education for all and promote lifelong learning' was clearly the most relevant to this project, especially since the overall research aim is to "identify a future programme to improve students' learning skills and improve teaching experiences for the effective management of risk, crisis, disaster and development". Quality education and promoting lifelong learning for all is key. This is particularly a global need in a disaster context because risks and disasters are ever increasing throughout the world. The management of risks and disasters are essential and thus, people need the understanding and knowledge that can be gained from a quality course/programme in risk, crisis, disaster and development.

Goal 11: 'Make cities and human settlements inclusive, safe, resilient and sustainable' encompasses many aspects but it also highlights the importance of reducing the number of deaths and the number of people affected by disasters, including water-related disasters (SDG Target 11.5). Reducing these number can indirectly be done through providing and enhancing education on RCDDM. Goal 11 (Target 11.b) also encourages countries to "adopt and implement national disaster risk reduction strategies in line with the Sendai Framework" to make cities and human settlements safer, more resilient and adaptive to climate change and disasters.

Goal 12: 'Ensure sustainable consumption and production patterns' is indirectly applicable to this project. However, this Goal (Target 12.8) does promote 'education for sustainable development (including climate change education)'. This is an element that the project can take forward and the project's end product of identifying and recommending a programme should acknowledge and include some education for sustainable development and on climate change.

Goal 13: Take urgent action to combat climate change and its impacts is very vital as "climate change is now affecting every country on every continent" (UNDPa, 2017). The management of climate change and its impacts (e.g. the increase in both frequency and severity of flooding, drought, storms, heat waves, etc.) is demanded worldwide. It is a global challenge. Thus, there is a need for more people with these management skills and knowledge, which this project is striving towards. Goal 13 lists numerous targets to work towards this goal of combating climate change and its actions but Target 13.3 interestingly highlights that one way this can be done is to "[i]mprove education, awareness-raising and human and institutional capacity on climate change mitigation, adaptation, impact reduction and early warning". The project is focusing on improving education on RCDDM, which are all elements that can assist with combating climate change.

Additionally, from the review of the SDGs, the Figure 3 was developed. This figure identifies the indicators for a quality RCDDM course based on the most relevant SDGs.

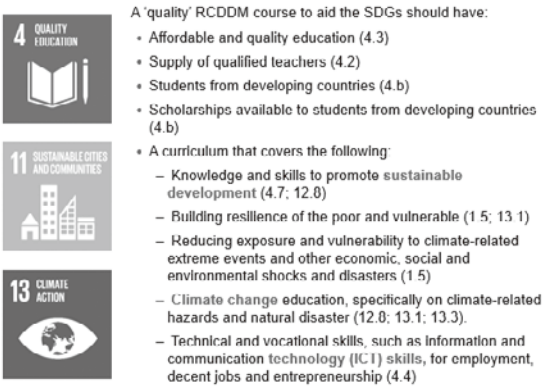

FIGURE 3: Indicators Developed From the SDG

When reviewing the Sendai Framework to identify indicators, it was seen that it advocates human development through education (such as vocational training, peer learning, formal and non-formal education) to "build the knowledge of government officials at all levels, civil society, communities and volunteers, as well as the private sector" (UN, 2015: 15) so that they are better able to minimise disaster risks. Additionally, it was seen that these three Priorities for Action were most relevant:

Priority 1: Understanding disaster risk

Priority 3: Investing in disaster risk reduction for resilience

Priority 4: Enhancing disaster preparedness for effective response and to "Build Back Better" in recovery, rehabilitation and reconstruction

Furthermore, our research's review of the Sendai Framework allowed us to identify a few indicators of a 'quality' RCDDM course/programme (please see Figure 4).

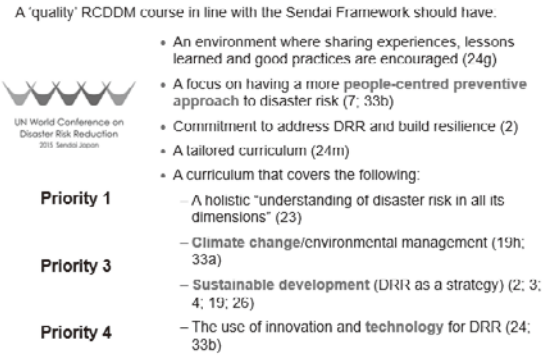

FIGURE 4: Indicators Developed From the Sendai Framework

Based on the reviews of the SDGs and the Sendai Framework, as well the literature review on 'quality' education, key targets were developed. Additionally, for these targets a few preliminary indicators were identified. These indicators aid with measuring the targets and can be used to determine to what extent an existing course/programme meet the targets required. These targets and indicators are an educational and evidence-based attempt to define the parameters of a 'good' RCDDM course/programme.

Table 11 identifies the targets and the preliminary indicators. Through colour coding, it can be seen which Sustainable Development Goal (SDG) Target and which Sendai Framework (SF) Number support the information provided. Similar to the coding presented above for the reviews, anything referenced from the SDG is in yellow, while anything referenced from the Sendai Framework is in pink.

TABLE 11: Target and indicators for RCDDM courses/programmes

The Targets	Indicators
1. Affordable education (SDG Target 4.3)	1.1 tuition fee 1.2 cost (tuition fee) versus benefit (job prospects) 1.3 number of available scholarships 1.4 price compared to other courses
2. Qualified teachers and faculty (SDG Target 4.2)	2.1 members with a PhD 2.2 members with a relevant degree 2.3 members with more than 10 years' work experience in a relevant field 2.4 members who are active in research 2.4.1 the number of research publications 2.4.2 number of recent publications 2.4.3 whether the publications are featured in reputable journals 2.4.4 conference attendance 2.4.5 externally-funding for their research 2.4.6 research income 2.4.7 number of times the university's published work is cited by scholars globally 2.5 faculty to student ratio 2.6 institutional income 2.7 international collaboration
3. Students from developing countries (SDG Target 4.b)	3.1 number of students from developing countries 3.2 international-to-domestic-student ratio
4. Scholarships available to students from developing countries (SDG Target 4.b)	4.1 number of students on scholarships 4.2 number of students from developing countries on scholarships 4.3 number of available scholarships for the next year
5. An environment that encourages learning (SF 24g; 25 f)	5.1 opportunity to share experiences, lessons learned and good practice 5.2 mutual learning 5.3 learning from past disasters and real-life examples 5.4 satisfaction rating from students
6. A tailored curriculum that takes into account the different audiences and their needs (SF 24m)	6.1 type of students 6.2 skills and knowledge that are required by potential job specs are taught 6.3 satisfaction rating of the students
7. Curriculum that covers relevant material:	7.1 climate change education, specifically on climate-related hazards and natural disaster (SDG Target 12.8; Target 13.1; Target 13.3) (SF 19h; 33a; 48c) 7.2 building resilience of poor and vulnerable people (SDG Target 1.5; Target 13.1) (SF 2; 29; 36a) 7.3 reducing exposure and vulnerability to climate-related extreme events and other economic, social and environmental shocks and disasters (SDG Target 1.5)

	7.4 knowledge and skills to promote sustainable development; more specifically, disaster risk reduction as a strategy for sustainable development (SDG Target 4.7; Target 12.8) (SF 2; 3; 4; 19h; 19j; 26) 7.5 people-centred preventive approaches to disaster risk (SF 7; 33b) 7.6 disaster risk reduction (SF 2; 7; 24g; 27a) 7.7 learning from disaster (SF 32) 7.8 a holistic "understanding of disaster risk in all its dimensions of vulnerability, capacity, exposure of persons and assets, hazard characteristics and the environment" (SF 23) 7.9 the disaster management cycle: 1) pre-disaster, risk assessment, prevention, mitigation and preparedness phase; 2) during disaster response phase; and 3) post-disaster recovery, rehabilitation and reconstruction phase (SF 19k; 24l) 7.10 the concept of "Building Back Better" (SF 19k; 32) 7.11 how to undertake multi-hazard and solution-driven research in disaster risk management (SF 24k) 7.12 how innovation and technology (e.g. social media, emergency communications mechanisms, forecasting and early warning systems, etc.) can be used to enhance disaster risk management (SF 24k; 24m; 33b) 7.13 National and local frameworks of laws, regulations and public policies (SF 27a) 7.14 Structural and non-structural measures that can be used to enhance disaster risk prevention and reduction (SF 29)
8. Practical applications governed by the current job market	8.1 skills required from job specs 8.2 graduates gaining a job after completing course/programme (SDG Goal 4) 8.3 demand for future RCDDM leaders and professionals
9. Modern and effective teaching	9.1 the use of interactive teaching methods 9.2 opportunity for students to provide feedback 9.3 the use of feedback to improve future teaching 9.4 range of teaching and learning material available 9.4.1 books in library to student ratio 9.4.2 number of e-journal subscriptions 9.4.3 access to internet 9.4.4 relevancy of core reading material 9.5 one-on-one opportunities available 9.6 improvement of grades and test scores 9.7 comparison of students' individual degree results with their entry qualifications 9.8 staff-to-student ratio
10. Satisfied students and alumni	10.1 rankings of the course (e.g. UNISTATS) 10.2 satisfaction with the course 10.3 satisfaction with teaching 10.4 satisfied with feedback

Objective 3: To engage with key stakeholders to test the developed indicators and understand the meaning and feasibility of the UN's Sustainable Development Goal 4 and the Sendai Framework for Disaster Risk Reduction's Priorities with regarding to the existing and future courses/programmes.

To test the indicators and to learn from practitioners, academics and students in the field of RCDDM, two workshops were held (one in the UK and one in Japan). From the group discussions held at these workshops, it was found that the discussions groups agreed with the identified indicators and targets of the SDG and Sendai (see Figure 3 and Figure 4). However, Group 2 in the UK recommended adding 'culture diversity' as a target.

In response to the indicator of "Scholarships available to students from developing countries" as per the SDG 4.b, Group 3 in the UK interestingly pointed out that scholarships tend to have conditions that may not always in line with the SDG and Sendai frameworks and thus, this needs to be recognised when designing a RCDDM course.

Everyone agreed that there was scope to include more ICT skills for risk, crisis, disaster and development management (as per SDG 4.4). However, one group said that it was not essential because ICT experts could be outsourced or worked in collaboration with.

7. Defining Future Leaders

During the workshops, the participants of the group discussions were also asked to define Future Leaders from their perspectives. In the UK, some of the answers provided were:

"a much more holistic approach to the issue than has been a traditionally considered from a very, either an economic sort of management or uh it should be something which includes a perspective from different disciplinary areas to be able to be actually be to take the leadership" (Discussion Group 1, Participant 1, Lines 61-65)

"people with the potential to become leaders tomorrow" (Discussion Group 3, Participant 3, Lines 88-89)

"an individual who appreciates and understands the language of different perspectives" (Discussion 1, Participant 4, Lines 109-111)

"one that could enrich better the life standards even within the width of a particular hazard" (Discussion Group 2, Participant 2, Lines 74-79)

"open, inclusive and consultative leadership" (Discussion Group 2, Participant 3, Lines 215-219)

"be proactive, be flexible" (Discussion Group 2, Participant 2, Lines 111-114)

The terms that were used most to describe future leaders throughout the discussions involved 'holistic' and 'transformational' (see the next Chapter, which discusses what transformational leadership is).

In Japan, some of the definitions of 'Future Leaders' were provided as:

8. Defining Quality Education

During the workshops, the participants of the group discussions were asked to define quality education from their perspectives. In the UK, some of the answers provided were:

"Well it's delivered by qualified people. It's current." (Discussion Group 2, Participant 4, Line 290)

"facilitates critical thinking, independent learning" (Discussion Group 3, Participant 1, Lines 300-301)

"is about imparting knowledge and developing skills" (Discussion Group 2, Participant 3, Lines 203-207)

"I think a quality education should try to teach problem solving to apply, to apply knowledge to maybe work on communicating a willingness to learn new things." (Discussion Group 3, Participant 4, Lines 296-299)

"So, that's where those Future Leaders will need to have that stepping stone from doing this lovely theory behind the risk disaster management and how you're going to now put that into practice." (Discussion Group 2, Participant 4, Lines 138-140)

“From an academic point of view, I’d say we actually want to create a population of graduates or post-graduates who have the skills and abilities to be future leaders, whatever you might want to define that and the practical tasks that you experience of doing it, self confidence of doing it, and the end of it I think time will tell when those people move into areas where they have some responsibility to take over leadership for certain tasks or certain departments inside organizations, you know, build up a cohort where you can say, well, the graduates have done these things, you know, and then hit up a network where other people can go in and do placements perhaps, and those organizations can learn from their experience” (Discussion Group 2, Participant 3, Lines 401-410)

“I think my education should be more about how do we become more resilient to these changes… how do we build the capacity of people so that they can cope with the changes.” (Discussion Group 1, Participant 1, Lines 492-495)

Other terms that were used to describe quality education throughout the discussions involved current, topical, comprehensive, inclusive and valuable.

In Japan, quality education was defined as:

Opinions Related to the Meaning and Feasibility of the Sustainable Development Goal 4 and the Sendai Framework’s Priorities for Action

The following common themes were identified throughout the workshops:

- The Sendai Framework emphases on building resilience to disaster risk through a people-centred preventative and pro-active approach.
- Within the Sendai Framework, there is an emphasis for merging sustainable development, climate change and disaster risk reduction. Interestingly, within the Sustainable Development Goals, disaster risk reduction cuts across ten of the 17 Goals. This clearly indicates that these two global frameworks are interconnected, and that disaster risk reduction is a key development strategy.
- Gender and culture are themes that were discussed throughout the workshops.
- “young people’s voices are not well reflected” (Discussion Group 2, Moderator, Lines 259-260)
- “sometimes as an expert, a disaster expert, you become aware that people are not so much aware about disaster risk” (Discussion Group 2, Moderator, Lines 267-268)
- Short courses (e.g. CPDs) are recommend.
- Finding a balanced course (i.e. one that incorporates theoretical and practical knowledge is important.
- The use of case studies, field trips, good examples, external guest lecturers or placements allow the course to be more practical/vocational.
- The use of ICT skills is valued within RCDDM studies, especially hazard mapping was often referred to.
- A range of guest lecturers/experts were recommended by key stakeholders for the Future Leader Programme.
- A course that introduces the relevance of the Sendai Framework, SDGs and ICPP reports in RCDDM would be useful. Currently, RCDDM courses/degrees do not address these frameworks/goals, despite them being essential in the real world.

During the interviews, the Sustainable Development Goal 4 and the Sendai Framework's Priorities for Action were also discussed, as well as the developed indicators.

From the interviews with the students, the main findings were that their courses did not cover the SDGs and Sendai Framework in detail. For example, Student No. 1 stated: "I'm interested in the SDGs, but I didn't have as much exposure to them [through their current course], as the Sendai Framework.". Student No. 2 also showed interest in the SDGs and Sendai Framework but also believed that disaster management "needs to be integrated in education in general so that it becomes more general knowledge rather than a specialist subject".

The student's current courses were heavily UK based, instead of focusing and using examples from international and developing countries (despite that there were students attending the course who were from a range of countries worldwide). This was emphasised by Student No. 1: "The integrated emergency management module [of the student's current course] is a lot about the UK contingencies act but a lot of the staff aren't actually involved in that as much as they in the international and developing countries side of things."

In regard to the indicators, one of the students believes that covering some general skills, such as communication, technical (e.g. ICT) and project management, would help improve a disaster management course. Another believed that climate change should be integrated throughout the entire course, which is done in some of the existing RCDDM courses. However, when interviewing one of the academics, they highlighted that "There are no absolute boundary between disaster studies and climate change...[but] it is simply that we have got to put a cut-off point somewhere…disaster studies involve many complex issues so we have to set artificial boundaries." (Academic No. 2).

Most of the student interviewees and the academic interviewees agreed that it was important for an RCDDM-related course to demonstrate how theories could be put into practice. For instance, Student No. 1 stated: "I think there is scope for it but there definitely needs to be more linkages between the two sides, so literature and practical there needs to be more of a connection there". However, the academics highlighted this was challenging to do, but they suggested that it could be done through the use of case studies, practice exercise and/or simulations. Academic No. 3 stated that "Quality education for disaster risk reduction should be fist knowledge based (correct, precise, basic knowledge of what you need) but the knowledge should be put into practice. Engage the students (e.g. through workshops, drills, exercises).". Another way that to connect theories with practice would be to engage with the global conventions, such as the Sendai Framework, SDGs and Paris Agreement.

9. DISCUSSION AND RECOMMENDATIONS

Based on our research findings, a future leader for risk, crisis, disaster and development management is an individual who brings about change to enrich life standards and communities' abilities to manage risks, crises, disaster and development through social influence. This future leader will have the following skills: critical thinking, problem solving, listening, effective communication, adaptability, sense making and learning (see Table 12 and Figure 5 for a visual representation). This future leader will do so by working with teams to identify needed change, creating a vision to guide the change through inspiration and then

executing the change in tandem with committed members of a group. This is also known as Transformational Leadership (Chandrayan, 2017).

TABLE 12: Characteristics and Skills of a RCDDM Future Leader

Characteristics	Skills
inspirational	critical thinking
decisiveness	problem solving
empathy	listening
ability to motivate others	effective and strong communication
influential	adaptability
resilient	sense making
proactive	learning

FIGURE 5: RCDDM Future Leader

Our project's overall aim was to study and identify a Future Leader Programme to improve students' learning skills and improve teaching experiences for the effective management of risk, crisis, disaster and development. Thus, based on our findings, our recommendation is:

- A course that is transdisciplinary because the boundaries between risk, crisis, emergencies, climate change, sustainable development and disaster studies are overlapping.
- A course that interconnects and demonstrates how disaster, risk, crisis and development management are overlapping.
- A short Continuing Professional Development course.
- A balanced course that incorporates theoretical knowledge and building of practical skills, perhaps through an exercise of drill situation.
- The use of case studies, field trips, good examples or placements will be considered when planning the course.
- A range of qualified guest lecturers/experts to teach the course.

Additionally, the Future Leader Programme should include the following topics in its curriculum:

- Disaster management cycle to receive a holistic understanding of disaster risk.
- Introduction of Sendai Framework, SDGs and ICPP reports and explanation of their importance in the real world.
- Climate change education and sustainable development in relation to disaster risk reduction.
- Building resilience of communities (including the poor and vulnerable).
- Vulnerability concepts because they are applicable to both development and disaster studies.
- A small element of basic ICT skills, such as hazard mapping.
- Critical thinking and analysis.
- Case studies with problem solving activities.

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