



- Types of actors involved in science and technology (S&T) for DRR
- Levels at which actors work
- Actors' general roles and responsibilities
- Interaction among actors
- Benefits of collaboration
- Main points

A Resilient Future: Science and Technology for Disaster Risk Reduction

As the UNISDR document, "Living with risk: a global review of disaster reduction initiatives" clearly states: "Disaster risk reduction concerns everyone, from the villagers, to heads of state, from bankers and lawyers to farmers and foresters, from meteorologists to media chiefs." The Sendai Framework for Disaster Risk Reduction recognizes that the state has the primary role to reduce the risk that disaster could occur but that the responsibility should be shared with other stakeholders, including local government and the private sector. In this video I will present the actors that are concerned by the application of science and technology for disaster risk reduction. I will start with a general presentation of the types of actors involved in science and technology for DRR and at what level we might find them. Then I will present the general roles and responsibilities of these actors with an emphasis on the importance of interaction among them.

Notes

Summary



0m 04s

Types of actors involved in S&T for DRR

- Public sector
- Academic and scientific institutions
- Private sector
- Communities
- Community-based organizations (CBOs) and non-governmental organizations (NGOs)
- Philanthropic institutions
- Multilateral organizations
- Volunteers



Some of these points will be illustrated by integrating excerpts from discussions we had with our partners. There are different types of disaster risk actors. Some of these actors come from very different sectors but they are also involved in the application of science and the development and use of technology for DRR.

Notes

Summary



1m 03s

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- Private sector
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- Philanthropic institutions
- Multilateral organizations
- Volunteers



For example, as you can see from this list, these might include academia, NGOs, and multilateral organizations. All of them, in one way or another, develop or use science and technology for disaster risk reduction.

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Summary



1m 21s

At what level do we find these actors?



- Local
- National
- Regional
- International

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We find these actors at different levels, from the local to the international level. For example, the Asian Disaster Preparedness Center is an important actor at the regional level. While many local actors are concerned with disaster risk reduction at the local level, their work might also include the national, regional and international level. Furthermore, many international actors involved in the development and use of technology for DRR, such as the Post-conflict and Disaster Unit of UNEP, also intervene at the local and national level.

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Summary



1m 37s

The actors and their roles and responsibilities

- Knowledge generation and dissemination
- Technology development
- Scientific knowledge application
- Technology deployment and uptake
- Science and technology investment
- Science and technology ethical concerns and accountability
- Advocacy
- Increase in synergies across actors



A non-exhaustive list presenting some of these actors can be found in the additional material section of this video. These actors may have similar or very different roles and responsibilities at one or several of the levels we presented before. To give you a few examples, the roles and responsibilities of these actors may include: knowledge generation and dissemination of that knowledge; technology development; technology deployment; or ethical concerns linked to science and technology.

Notes

Summary



2m 11s

The actors' roles and responsibilities



- Understanding disaster risk
- Enhancing disaster preparedness for effective response and for building back better in recovery, rehabilitation, and reconstruction
- Prevention
- Emergency relief
- Hazard assessment

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The role and responsibilities of these actors may also vary depending on the science they applied or the technology they developed. In the context of disaster risk reduction some actors may focus their work on science and technology for early warning and preparedness, while others may focus on understanding hazards. For example, the Sendai Framework for DRR indicates that academia, scientific and research entities, and networks should primarily focus on the disaster risk factors and scenarios, including emerging disaster risk, increase research for regional, national and local application, support action by local communities and authorities, and support the interface between policy and science for decision-making.

Notes

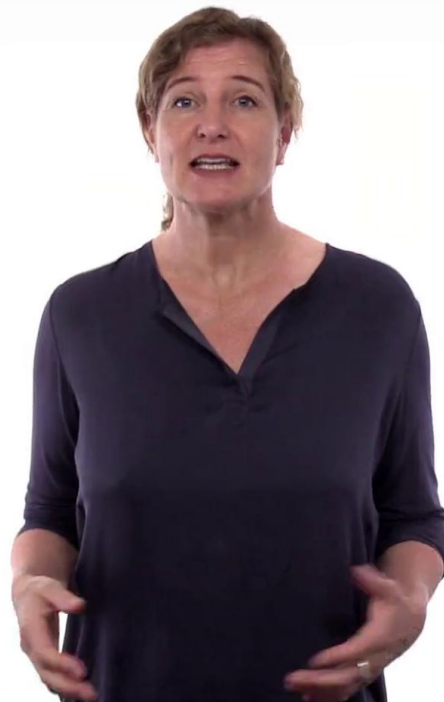
Summary



2m 40s

Collaboration among actors

- To improve dialogue and cooperation
- To facilitate science-policy interface for effective decision-making
- To be more efficient in the use of resources, mainly in post-disaster reconstruction
- To leverage international mechanisms and share experience and learning



You will now hear Professor Bresch, who is a specialist on risks related to climate, speak about a particular example that describes the role of academia in science and technology for disaster risk reduction. More and more, there has been this push towards the open-source story of things. The challenge is, developing this model is *many* years of investment. So for commercial players I fully understand that they are not so much in a position to just give away that all for free. I think that's where universities and university collaborations come in. Often, their access to also *large* amounts of data-- some of these models use now, *at least* terabytes to basically constitute the hazard component of it-- and they couple all of that and make it *easy* for the downstream, the user community, to deal with these things, and not having to download terabytes of data. Professor Bresch brings us also to another important aspect regarding the roles and responsibilities of DRR actors, namely, the crucial importance of collaboration. For example, in order to understand disaster risk at the national and local level, and to facilitate a decision policy interface for effective decision-making, collaboration between different groups of stakeholders is key.

Notes

Summary



3m 24s

Collaboration among actors

- To improve dialogue and cooperation
- To facilitate science-policy interface for effective decision-making
- To be more efficient in the use of resources, mainly in post-disaster reconstruction
- To leverage international mechanisms and share experience and learning



Under its Priority 4, the Sendai Framework seeks to enhance disaster preparedness for effective response and to "Build Back Better" in recovery, rehabilitation and reconstruction. For this it states that at the national and local level it is a priority to "promote the cooperation of diverse institutions, multiple authorities and related stakeholders at all levels, including affected communities and business, given the complex and costly nature of post-disaster reconstruction, under the coordination of national authorities." Collaboration takes place through communities of practice, local, national, regional, and international networks, platforms, and partnerships.

Notes

Summary



4m 41s

Collaboration among actors



- Communities of practice
- Local, national, regional, and international networks (e.g. PEDRR, UNISDR, national disaster risk management agencies)
- Platforms
- Partnerships

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For example, the Partnership for Environment and Disaster Risk Reduction is a global alliance of UN agencies, NGOs, and specialist institutes.

Notes

Summary



5m 25s



During the UNISDR Science and Technology Conference on the Implementation of the Sendai Framework for Disaster Risk Reduction, 2015-2030, that took place in Geneva in January, 2016, participants identified a series of benefits when collaboration happens among actors in the particular context of science and technology for DRR.

Notes

Summary



5m 35s

The benefits of collaboration

- Brings together knowledge and skills from all kind of actors
- Increases capacity through coordinated discussion and practice
- Leads to a higher use and standardization of data by adapting information to the needs of different partners
- Produces more robust recommendations



These include, for instance, the production of more robust recommendations as they are jointly developed by a group of actors, each with their own perspective.

Notes

Summary



5m 58s

The benefits of collaboration



- Bridges gaps as not all actors have the same tools, hardware and software capacity
- Strengthens coordination of science and technology activities which means that resources are used more efficiently
- Facilitates the mobilization of actors

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They also identified that collaboration helps exchange information and facilitates the mobilization of actors.

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6m 07s



Let us now listen to Marc van den Homberg from Cordaid, who will share with us an interesting example of the challenges of data collection which illustrates the benefits of collaboration. This interview was recorded during the 2016 UNESCO Technologies for Development Conference at EPFL in Switzerland in May 2016. Yes, technology is never a solution on its own. So it's very important to look beyond just the technology. To give an example, in Bangladesh, around data collection, the government has its own process to collect data after a disaster happens, but you also have all the different NGOs who have their own assessment methodology. So during the floods in 2014 we had the government collecting data-- paper-based, using a so-called D-form and SRS-form. And the different NGOs, they actually tried for the first time to combine their major needs assessments methodologies, and they did a joint needs assessment. But still, unfortunately, there were two different processes. So we had the government, on the one hand, and on the other hand we had all the national or international NGOs having their own process. So coordination is really key to bring those two actors, or actor groups, together.

- Notes

Summary



Drawbacks due to a lack of collaboration



- Science and technology just for the sake of science and technology
- Top-down development and application only
- Lack of participatory action research
- Inattention to potential conflicts that different actors may face and which could hinder development collaboration and exchange

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And we are actually working on this to work together with the government and to help them also in digitizing their process and also the NGOs should adapt to the processes that the government has put in place because that would be the most sustainable strategy. As you can see, there is still a lot left to do for science and technology, for DRR actors, to strengthen collaboration. Marc mentions one of the many drawbacks that may exist when collaboration is absent or limited. Or, on the other hand, he points out the many benefits of collaboration. He also emphasizes the importance of connecting science and technology to the needs of actors, for example, through rigorous needs assessments. Another danger to keep in mind is that top-down technology development will most likely be much less successful than bottom-up and horizontal development and application.

Notes

Summary



7m 37s

Main points



- There is a multitude of actors at the local, national, regional and global level that develop and use science and technology for DRR
- The roles and responsibilities of actors in DRR can be very different
- Collaboration among actors is essential and should be given priority when developing and applying technologies

In the following interview, Jacobo Quintanilla from the International Committee of the Red Cross, ICRC, gives further insight into the benefits of working in collaboration with communities to avoid a specific pitfall, such as the redundancy of projects and technology because of a top-down technology development. I think today there is still an important gap between technology groups, academia and communities on the ground. Sometimes, we have seen in a number of situations where we put technology first and after we tried to find a community to use that technology, or pilot it. I think there is a whole "piloted syndrome" within the development and humanitarian sectors that we need to be more serious and conscious about. I think the most important thing is to try to figure out what are the problems that we are looking answers for and try to figure out what are technologies that might or might not help us well address some of those issues. So it's important that both in our technology and academic community--working in collaboration with humanitarian and development partners--try to figure out some of those contextual challenges. Let us look at the main points we discussed in this video.

Notes

Summary



8m 36s

Main points



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- Collaboration among actors is essential and should be given priority when developing and applying technologies

First, we realized that there is a multitude of actors at the local, national, regional and global level that develop and use science and technology for disaster risk reduction. We also saw that the roles and responsibilities of actors in DRR can be very different, ranging from generating knowledge to assessing ethical implications. Most importantly, collaboration among actors is essential and should be given priority when developing and applying technologies for disaster risk reduction.

Notes

Summary



9m 51s

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10m 24s