United Nations | Department of Economic and Social Affairs

Training Toolkit on Government Innovation for Disaster Risk Reduction and Resilience

Frontier Technologies for Risk-Informed Governance

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United Nations Department of Economic and Social Affairs (DESA)

UN DESA/DPIDG Curriculum on Governance for the Implementation of the SDGs

Sri Lanka Island States Forum 20-24 August 2018

- SDGs and Sendai Framework – **Coherence**
- **Resilience to not reduce gains on SDGs**
- 14 country delegations called for training on how to better use frontier technologies and new innovations + online training
- Risk-informed governance,
- Data-driven decision-making,
- Evidence-based planning

UNISDR
United Nations Office for Disaster Risk Reduction

UNITED NATIONS
DEPARTMENT OF ECONOMIC
AND SOCIAL AFFAIRS

UNITED NATIONS ESCAP / APCICT

PULSE LAB JAKARTA

Webinar on
Government Innovation and Disaster Risk Reduction: Frontier Technologies for Resilience

Wednesday, 27 March 2019, 9:00 am GMT+9 (South Korea) /
12:00 pm GMT+12 (Pacific)
Tuesday, 26 March 2019, 8:00 pm GMT-4 (Washington DC, USA)

SUSTAINABLE DEVELOPMENT GOALS
17 GOALS TO TRANSFORM OUR WORLD

Watch the Webinar Recording

Multiple Data Sources

DISASTERMON

INDONESIA | PACIFIC ISLANDS

- Big Data Tool
- Natural Disaster Response
- Timely Logistics Insights

As a follow up…

Presentations

- Introductory Remarks by Mr. Chae Gun Chung, Head, UNPOG/DPIDG/UN DESA
- Presentation by Dr. Sanjay Srivastava, Chief, Disaster Risk Reduction, ICT and DRR Division, UN ESCAP
- Presentation by Dr. David Green, Programme Manager, Disasters, NASA, United States
- Presentation by Ms. Derval Usher, Head of Office, UN Global Pulse Lab
- Presentation by Mr. Koji Suzuki, Executive Director, Asian Disaster Reduction Center, Kobe University, Japan

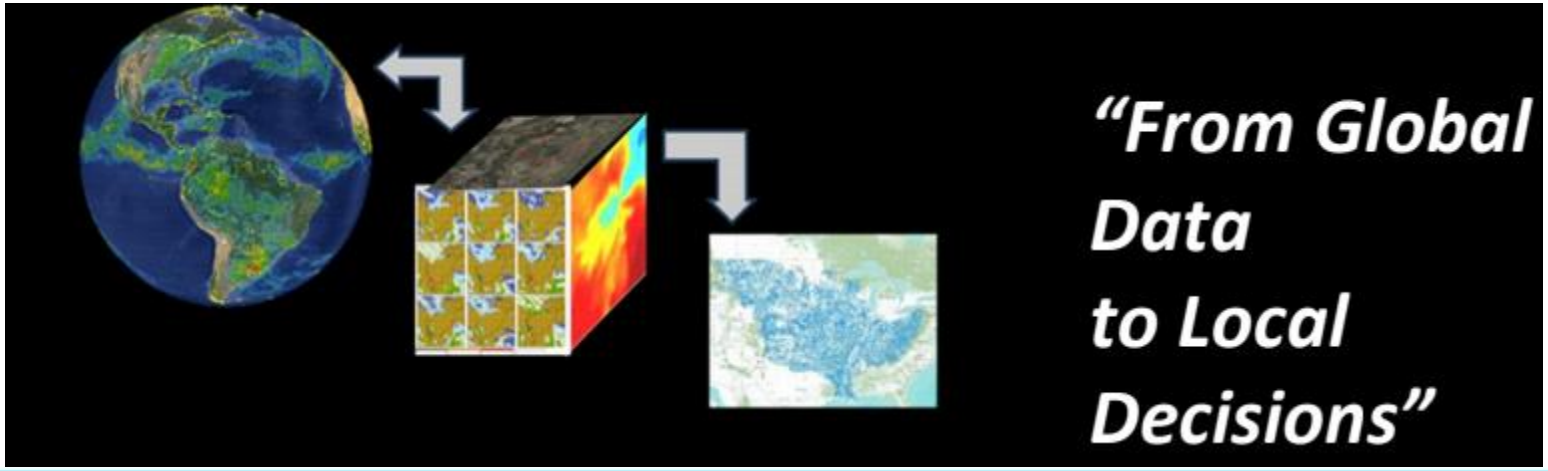
STI for Resilience + Risk-Informed Governance

https://vimeo.com/335384283

Training Objectives

Strengthen public sector capacity by:

1. Closing technology gaps and establishing public governance frameworks for DRR and SD in vulnerable states;
2. Promoting the adoption of digital government solutions and pursuing public service innovation for resilience;
3. Expanding the uptake of frontier technologies for DRR and resilience;
4. Enabling the means of implementation to leverage innovations in technology through public programmes and finance and technology transfer; and
5. Measuring progress on resilience for strengthened institutions through frontier technologies.



Target Audience

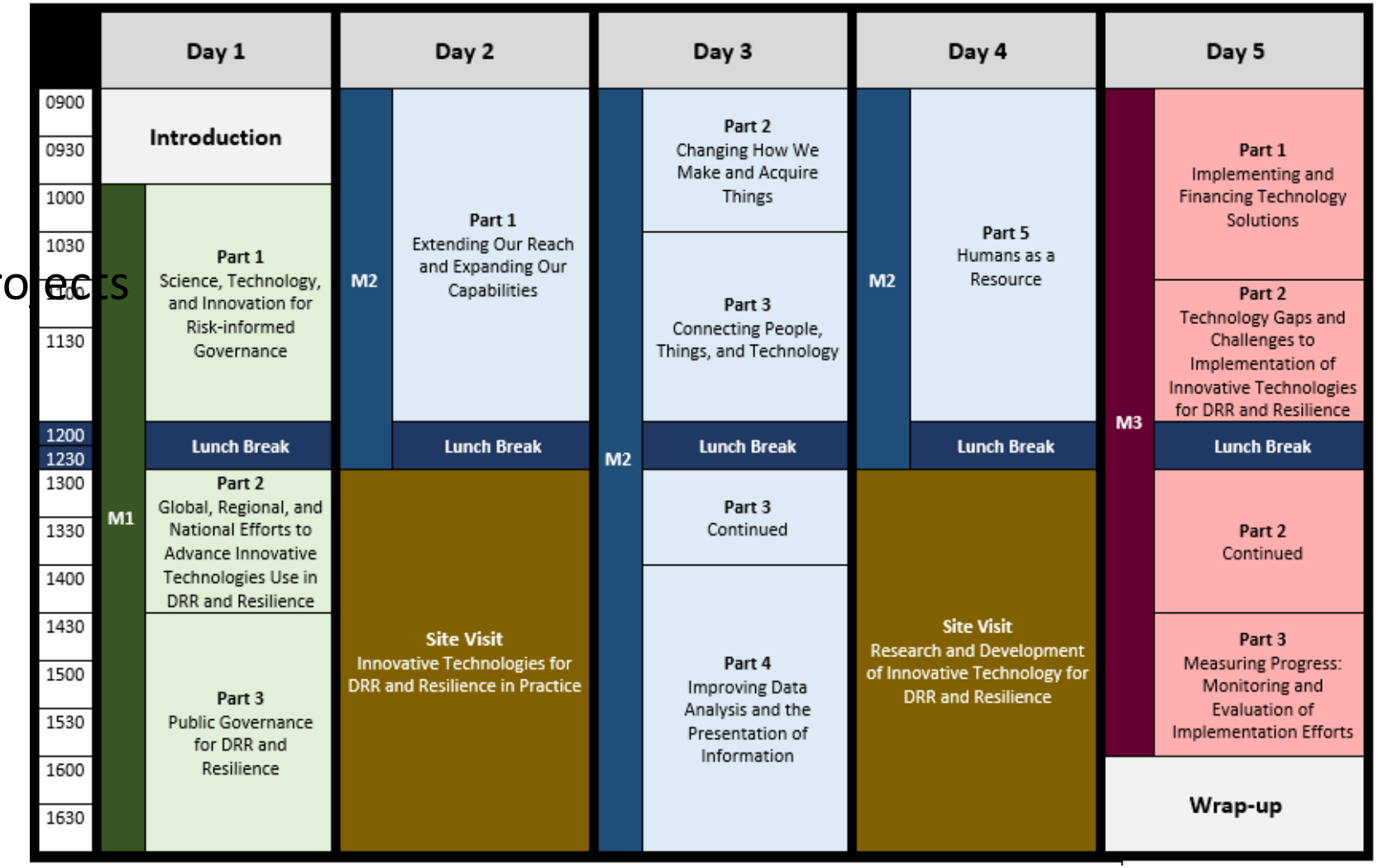
Schools of Public Administration – ***Training of Trainers***

Government – National to Local

Academia + Knowledge partners

Training Approach

- Flexible modules
- Lectures
- Discussions
- Group / Individual Projects
- Practical Exercises
- Case Studies
- Site Visits (2)



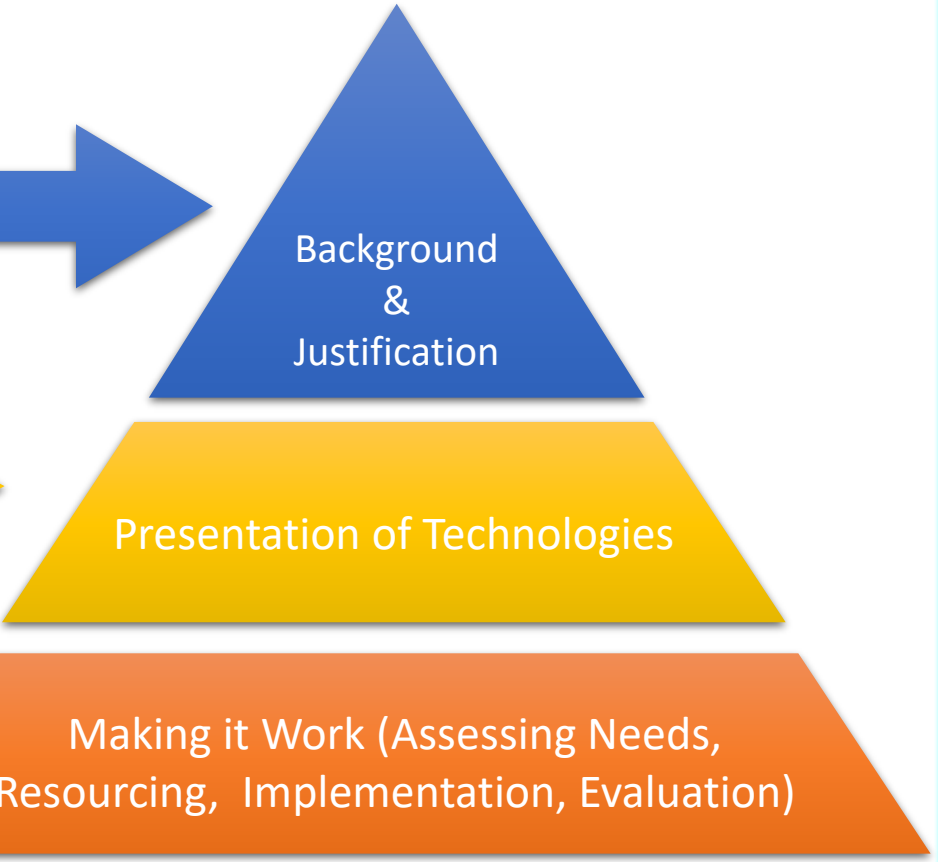
Modules Overview

Three Modules:

Module 1: *Science, Technology, and Innovation in Public Governance for DRR and Resilience for Risk-Informed Governance*

Module 2: *Practical and Planned Application of Emerging Technology and Innovation for DRR and Resilience*

Module 3: *Implementation of Emerging Technologies and Innovation for DRR and Resilience*



Module 2: The Technologies

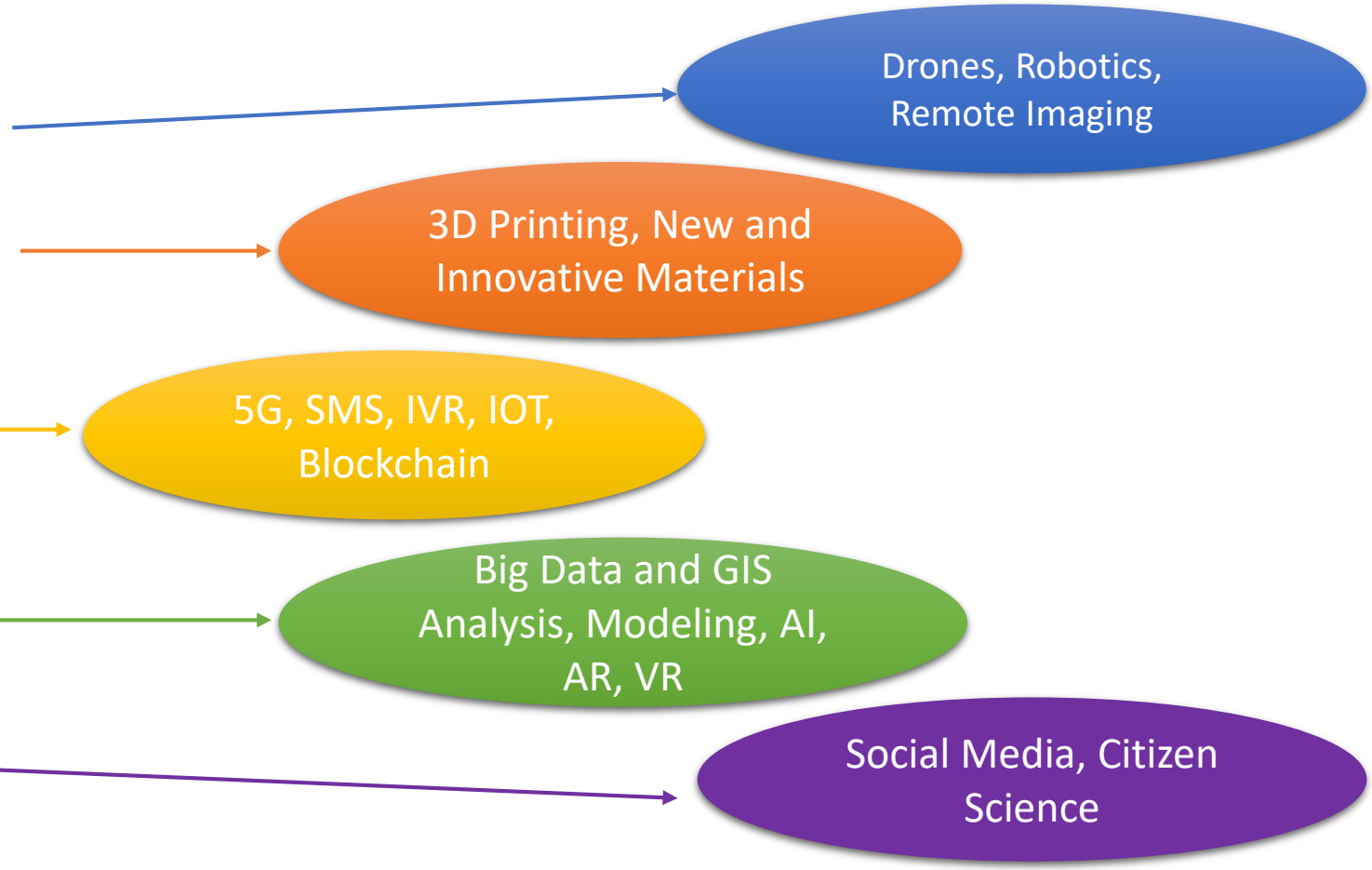
Session 1: *"Extending Our Reach, Expanding Our Capabilities"*

Session 2: *"Changing How We Build and Acquire Things"*

Session 3: *"Connecting People, Things, and Information"*

Session 4: *"Improving Data Analysis and the Presentation of Information"*

Session 5: *"Humans as a Resource"*



Theoretical/Practical Lectures

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Unmanned Vehicle Systems

System Components:

1. The Unmanned Vehicle
2. The Operator
3. The control Center
4. The Control Link
5. The Payload

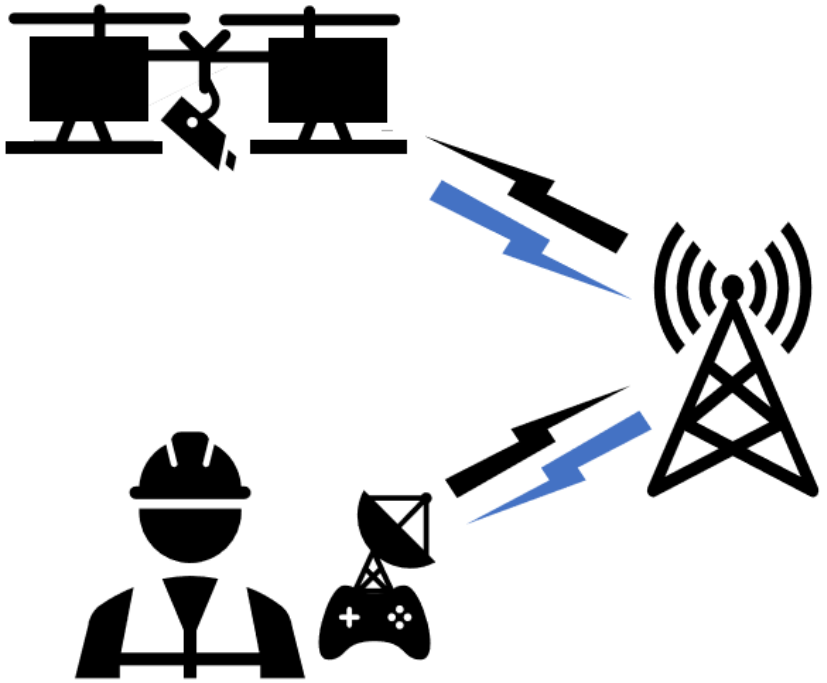

Image: Scientific research facility.
Image credit: Michael Pereckas, 2008.

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Case Study Examples

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Case Study: WALK-MAN

- **Problem**: Hazards exist in the post-disaster environment.
- **Need**: Access to the source of hazards, such as a gas shutoff valve in a damaged building
- **Obstacle**: Explosion hazards or debris
- **Solution**: Agile robot with human capabilities

Video: WALK-MAN Operating in a Damaged Building.
Image Source: IIT, 2018.

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Learning Assignments, Activities and Discussions

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Activity: Choose the Best UAV

	Pros	Cons
Multi-Rotor UAV 	• Accessibility • Ease of use • Vertical Takeoff and Landing • Hover flight • Good camera control • Can operate in a confined area	• Short flight times • Small payload capacity
Fixed-Wing UAV 	• Long endurance • Large area coverage • Fast flight speed	• Launch and recovery needs a lot of space • No Vertical Takeoff / Landing • No hover flight • Harder to fly, more training needed • Expensive
Single-Rotor UAV 	• VTOL and hover flight • Long endurance (with gas power) • Heavier payload capability	• More dangerous • Harder to fly, more training needed • Expensive

Source: Australian UAV. 2019. Types of Drones: Multi-Rotor vs. Fixed Wing vs. Single Rotor vs Hybrid VTOL. http://bit.ly/2MRuowg.

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Next Steps…

Partnerships

Consultations & Country pilots, Training of Trainers

Planning for Implementation – Online and In-country

Adapting to country contexts

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Thank you