Multi-year Expert Meeting
on Transport, Trade Logistics and Trade Facilitation:

Third Session:
Small Island Developing States: Transport and Trade Logistics Challenges

24 – 26 November 2014

An Approach to Building Resilience through Infrastructure Development

Presentation by

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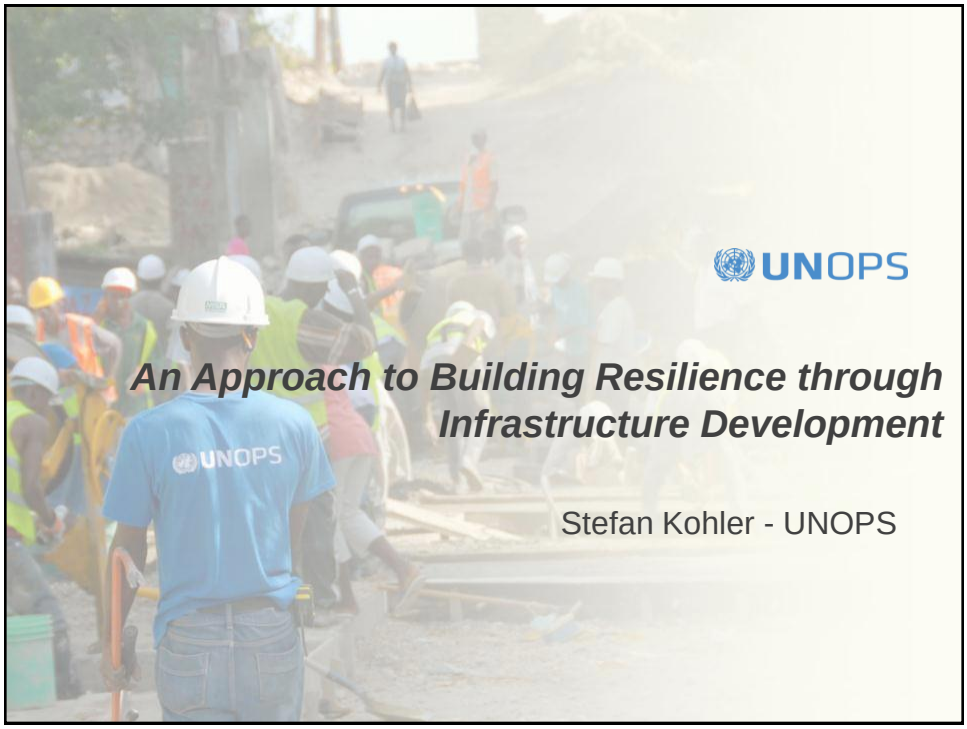
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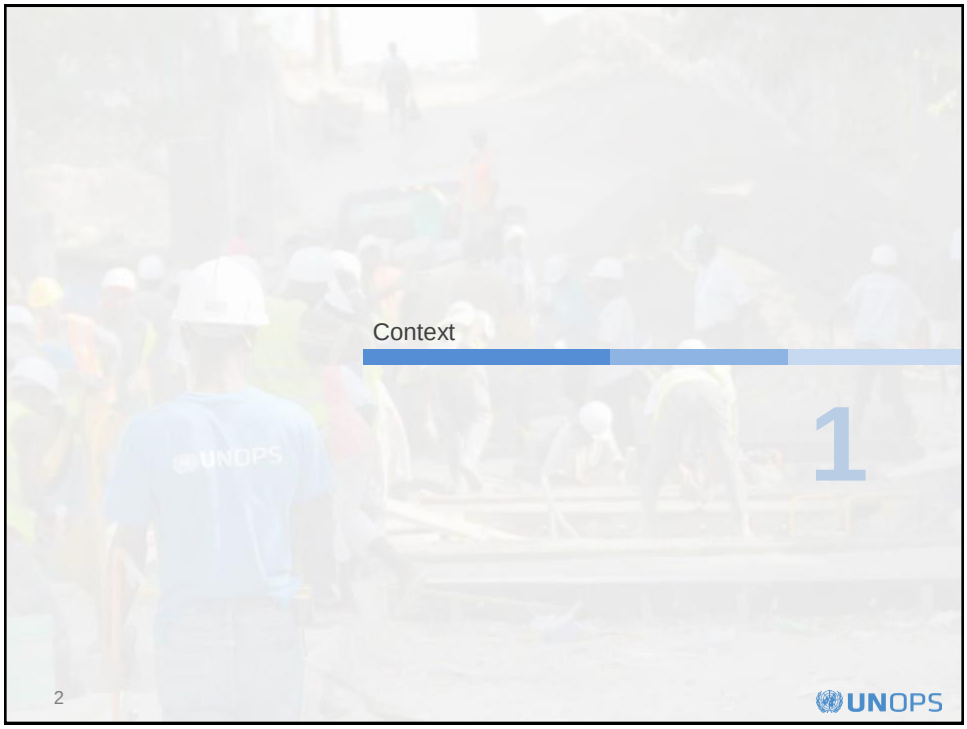
An Approach to Building Resilience through Infrastructure Development
Stefan Kohler - UNOPS


Context
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Infrastructure Development

UNOPS as the UN agency with an infrastructure mandate has committed to implementing and supporting :

- United Nations Plan of Action on DRR for Resilience
- DRR Framework for Action – Post 2015 (HFA2)
- Post 2015 Sustainable Development Goals

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Infrastructure Development

Key Questions?

How do these commitments impact on the way in which UNOPS implements it's infrastructure mandate?

Is the approach UNOPS is taking to delivery of infrastructure relevant to SIDS?

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Key Concepts

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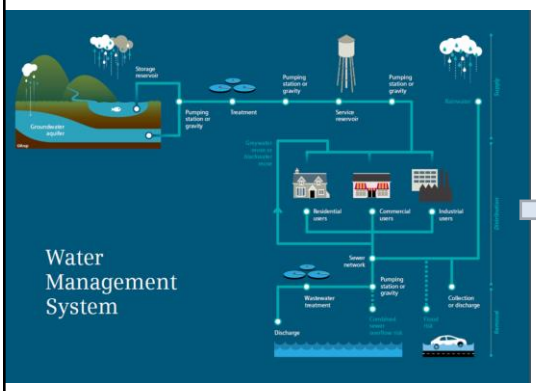
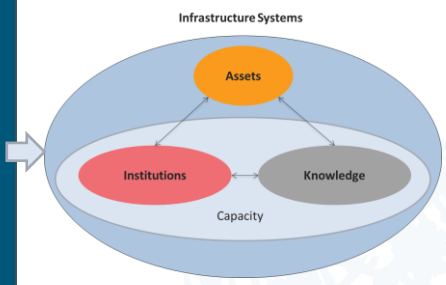
Infrastructure as Systems

Understanding infrastructure as **systems.**





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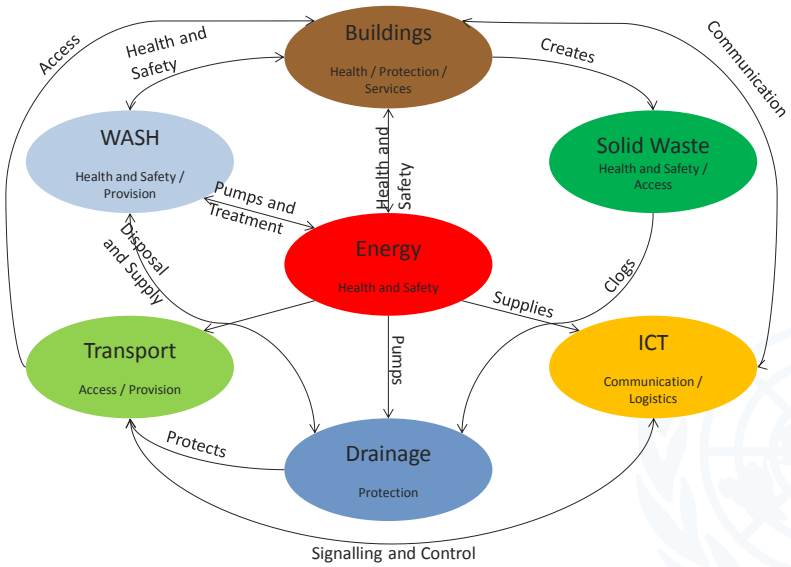
Network of Systems



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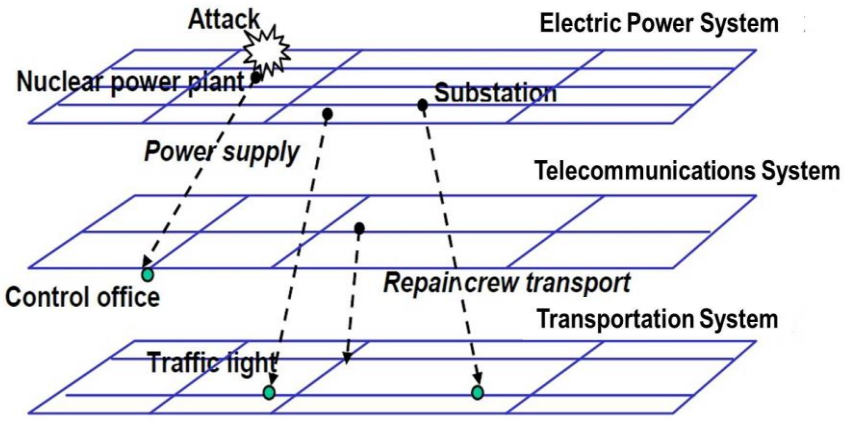
Networks and Failure



Mosehli, O. Hammad, A. Alkass, S. Assi, C. Debbabi, M. Haider, M. (2005). *Vulnerability Assessments of Civil Infrastructure Systems: A Network Approach*. Paper presented at the CSCE Speciality Conference on Infrastructure Technologies, Management and Policy, Toronto, Ontario, Canada.

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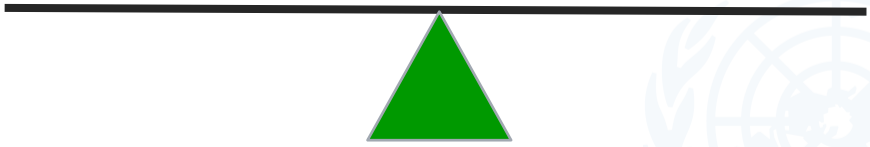
Sustainability and Resilience

Sustainability

Maximizing the efficiency of the system and reducing its impact **on** the environment

Resilience

Balancing efficiency with redundancy of the system to withstand impacts **from** the environment



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Key Concepts

"After 9/11, Lower Manhattan contained the largest collection of LEED-certified, green buildings in the world, but that was answering only part of problem. The buildings were designed to generate lower environmental impacts, but not to respond to the impacts of the environment — for example, by having redundant power systems."

Andrew Zolli – Learning to Bounce Back – NY Times

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Disaster Risk Reduction

Disaster Risk Reduction (DRR) is a systematic approach to identifying, assessing and reducing or eliminating the consequences of hazards that could occur.

DRR is thus a process, a systematic way of achieving the desired resilience outcomes by reducing risk through effective risk management and improving the way in which residual risks are managed.

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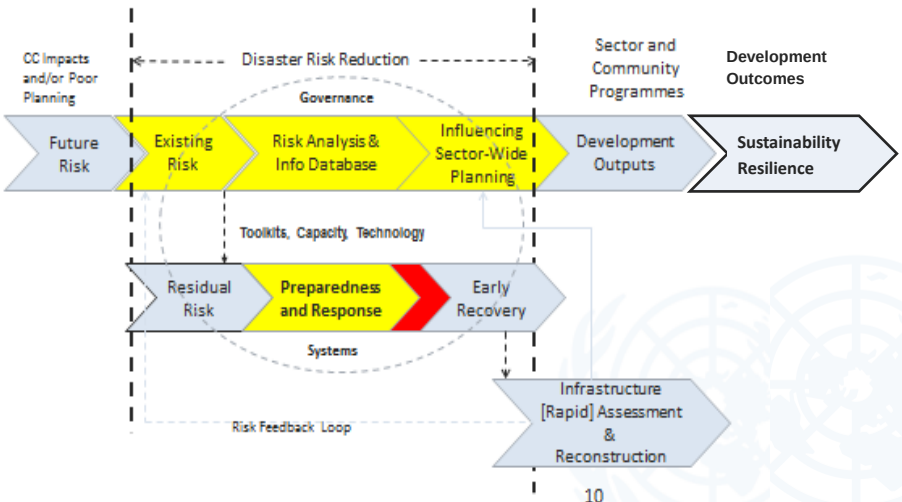
Setting the DRR Parameters



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DRR and Infrastructure Development

Applying DRR to infrastructure development

- Not simply viewing infrastructure as discreet assets but understanding them as components of a system and the function they perform in the system.
- This enables us to predict how hazards could impact on the performance of the assets themselves and then performance of the system as a whole.
- Cascading failure across interlinked systems needs to be recognised and understood from a risk management perspective to build resilience of systems.

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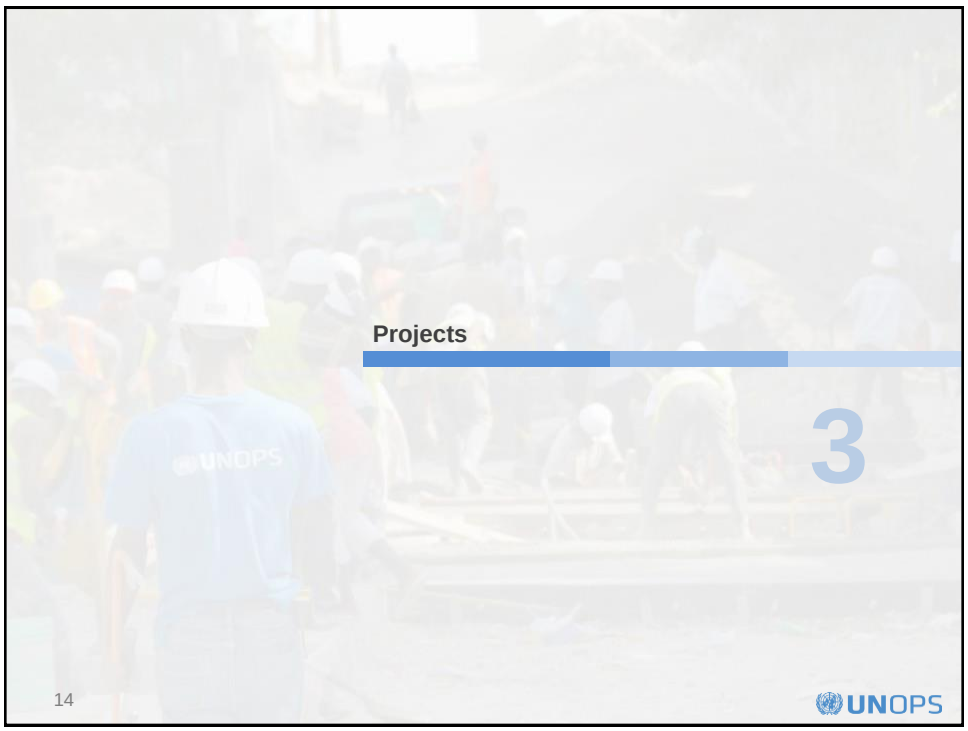

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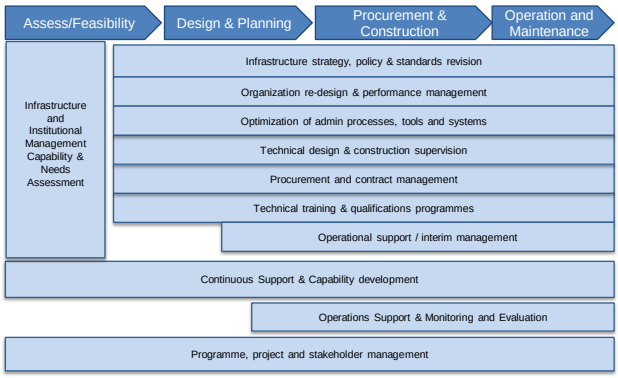
Case Study: Technical assistance for the modernization of ports and airports in El Salvador

00070736 Technical Assistance for Modernization of ports and airports

Partners:	**UNDG/UNDP**
Country of operation:	**El Salvador**
Area of work:	**Air transport – Technical Assistance**
Duration:	**Jan-2013 to Dec-2015**
Funded amount:	**USD 6,191,293**

Technical Assistance

- This technical assistance programme is the second phase of UNOPS support to the national ports authority of El Salvador (Commission Executive Port aria Autonomic/CEPA). The first involved the accompanying review of pre-investment studies, in this new phase UNOPS will provide assistance to CEPA for the implementation stage in the modernization and optimization of ports and airports. This project is for the modernization of the El Salvador International Airport. Other complementary projects for the modernization of the port at La Union and the port at Acajutla will be done



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Case Study: Technical assistance to UNDP Infrastructure Projects- reducing the vulnerability of urban areas

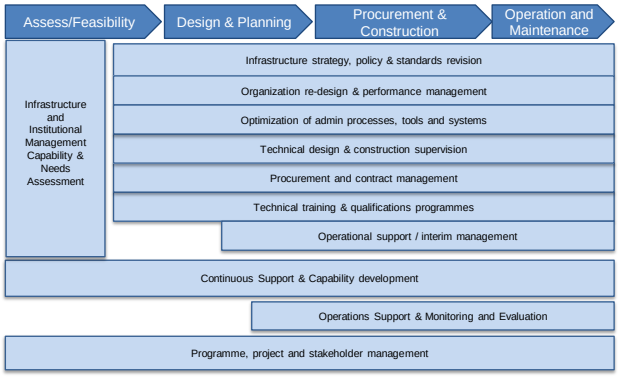
00074233 Technical assistance to UNDP Infrastructure Projects

Partners:	**UNDP**
Country of operation:	**El Salvador**
Area of work:	**21020 Road transport**
Duration:	**Mar-2010 to Dec-2013**
Funded amount:	**USD 3,918,675**

Technical Assistance

El Salvador is one of the most vulnerable countries to natural hazards in Latin America. The country is exposed to a growing number of hurricanes and tropical storms from the Pacific and Atlantic oceans. UNOPS is working with the Government and the United Nations Development Programme (UNDP) to reduce the vulnerability of urban areas to flooding, erosion and landslides created by extreme precipitation. This will be achieved by developing resilient infrastructure that can resist the impacts of large storms.

Current interventions to address rain flows are focused on downstream measures designed to prevent major erosion or flooding. Increasingly, however, such measures are becoming highly expensive and mostly ineffective. A broader watershed management approach that also addresses upstream measures is necessary to reduce peak flows and the stress on current drainage infrastructure. The approach focuses on managing flooding and erosion risks in the lower basin through infrastructure interventions in the upper basin. Such investments can be smaller and more cost effective, since they will protect houses, roads, bridges, and existing drainage. The project will also improve water management and diminish pressure on water resources.



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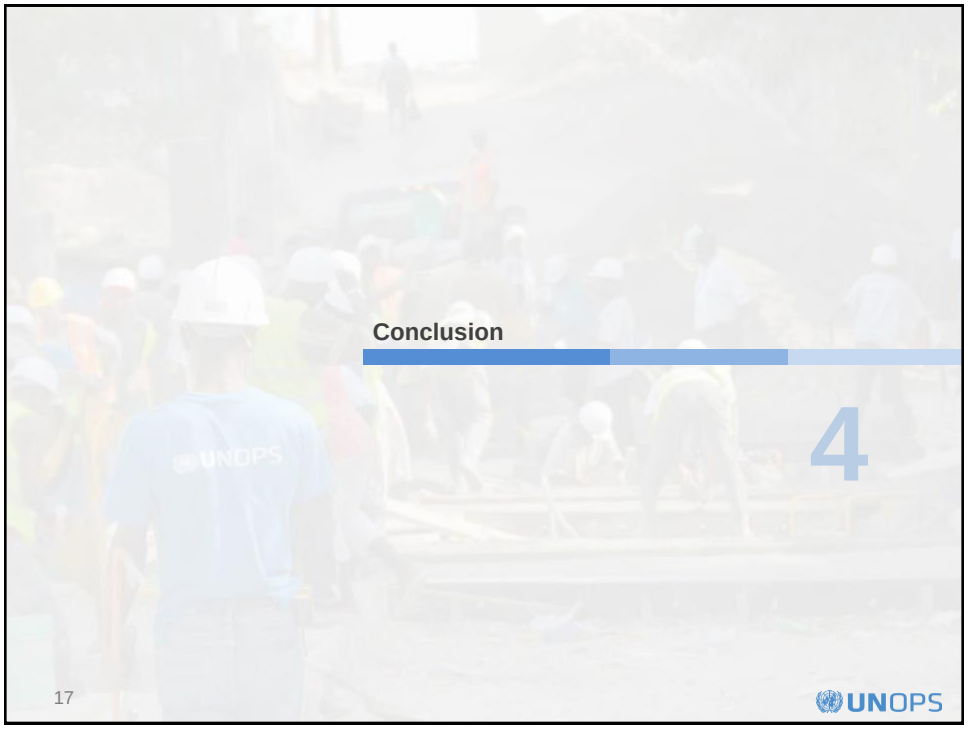

Conclusion

DRR is a process (not a product) that can be used to reduce the impacts of hazards and build resilience

The implementation of a risk based philosophy into the development of infrastructure is critical for building resilience

The outcome that this approach will achieve is to contribute to the resilience of infrastructure systems and thus SIDS as a whole.

Given the unique context, exposure to hazards and the fact that the severity of the impacts when they do occur tend to magnified significantly in SIDS, the DRR approach is considered vital to building resilience in the SIDS

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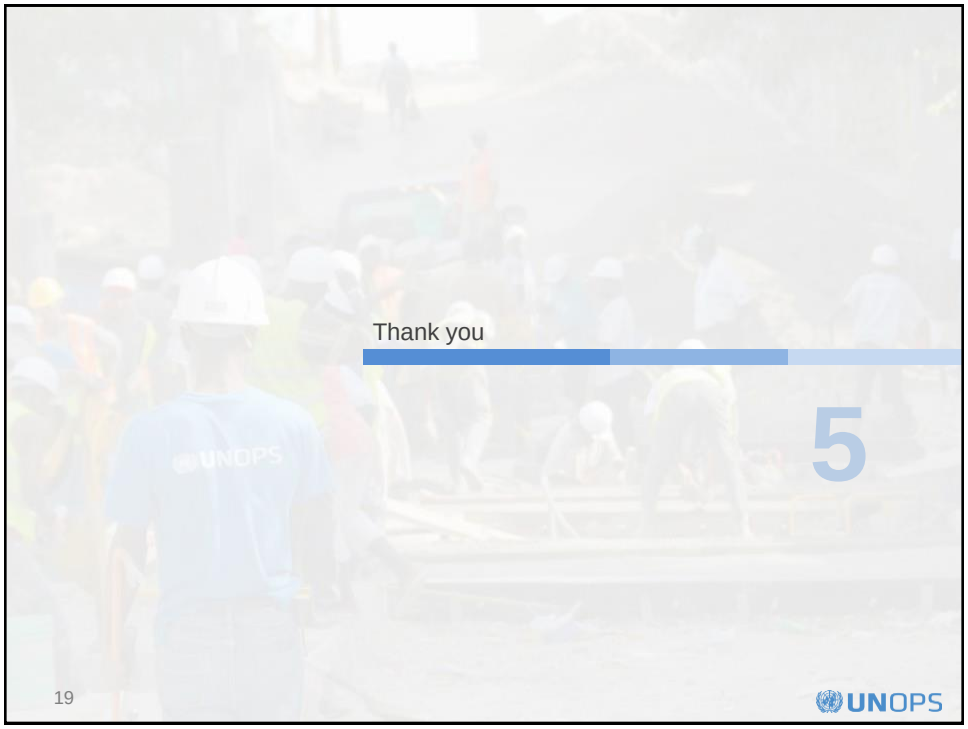
Thank you
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