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Session 3b: Discussion paper on coastal resilience

Discussion Paper

OECD Insurance and Private Pensions Committee
Ad Hoc Meeting: Coordinating Risk Management for Greater Resilience
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This note provides some brief context to inform the discussion during session 3b on building coastal resilience

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Building Coastal Resilience

1.1. Session objectives

1. This session will examine how governments, insurers and other stakeholders can collaborate to increase investment in risk reduction, redirect development from high-risk areas and strengthen resilience in coastal zones. It will explore the actions required to better understand, reduce and manage risks in coastal areas. A particular focus will be on understanding how insurance can be used to support recovery and reconstruction by encouraging risk reduction before an event occurs. It will also explore potential transition paths for coastal communities that are exposed to increasing levels of risk.

2. An accompanying scoping paper [ENV/EPOC/WPCID(2017)6] provides a more detailed analysis of a major issue in building coastal resilience: adapting to the consequences of rising sea-levels. Further relevant discussion can be found in the following OECD publications:

- Climate change risks and adaptation: linking policy and economics (link)
- Financial instruments for managing disaster risks related to climate change (link)
- Boosting resilience through innovative risk governance (link)

1.2. The challenge of building coastal resilience

3. This year's Atlantic hurricane season has illustrated the importance of building resilience in coastal areas against extreme events. However, in addition to large-scale events, such as Hurricanes Irma, Harvey and Maria, the costs of localised flooding are continuing to rise. This challenge is going to get more severe due to continued development in high-risk areas and the effects of climate change. The IPCC's Fifth Assessment Report estimates that global sea levels could rise by 1 metre by 2100 under a high emissions scenario. The consequences of this will include increased erosion combined with increased risks of flooding.

4. As risks increase, so will the economic and human costs. Looking at major port cities, Hallegatte et al (2013) found that average annual losses could increase from USD 6 billion in 2005 to USD 1 trillion per year by 2060 in the absence of adaptation. Investments in coastal defences could limit this increase to USD 60 billion per year by 2050. For those living in coastal areas, these trends could lead to increases in insurance premiums and uninsured losses. However, they could also have spill over effects through the financial system, supply chains and public sector liabilities.

5. The underlying policy challenge is to manage the accumulation of risks, while having mechanisms in place to recover quickly in the event of an extreme event. This occurs in the context of strong pressures in favour of continued development in coastal zones. For housing, there is the amenity value of being near the sea, while businesses and industry can benefit from maritime transport links and other logistical benefits.

6. In principle, the benefits and risks of being located in coastal areas should be considered by the relevant actors. Design, construction and resilience measures could be used to reduce the risk, while insurance could be purchased to transfer residual risk. However, a number of factors can encourage inappropriate development or hinder the implementation of cost-effective risk reduction measures. These factors include:

- Incomplete risk assessment: even in OECD countries, maps of risk exposure can be outdated or inaccurate, leading to a weak basis for informing decisions. Climate change brings a further challenge as historical record becomes an unreliable guide to future changes. Although there is a strong scientific consensus on the direction of change with sea level rise, the modelling of consequences for specific areas is inherently uncertain.
- Capacity and resource constraints: local governments are at the frontline of preparing for extreme events and responding when they occur. Lack of technical capacity and insufficient financial resources can hinder their ability to play this role effectively.
- Policy misalignments and market failures: Misaligned policy frameworks, such as distorting subsidies, can encourage development in the wrong areas and give rise to additional contingent liabilities. Externalities and the difficulties of coordinating the provision of collective goods can hinder investment in defences, or lead to solutions that increase the risk faced by others.

7. Co-ordinated action by all stakeholders is needed to overcome these challenges, building on relevant OECD guidance, including the OECD Recommendation on Disaster Risk Financing Strategies. For example, national governments can support this process through the provision of finance, capacity and suitable regulatory frameworks. Insurers have a key role through their data and expertise on risk exposure and ability to provide a price signal for risk. Property owners can make cost-effective investments in property-level resilience. Local governments have a key role to play in developing and enforcing land-use plans that guide development.

8. In making the necessary reforms, a key challenge is the complex political economy of transitional impacts. In the case of residential properties, existing policy inefficiencies can be capitalized into house prices if the risks are subsidised by taxpayers. Where this is the case, reforms to make insurance prices reflect risks will have significant financial impacts for those affected. This poses a political challenge for implementing and sustaining institutional reforms.

Questions for Discussion

1. What are the roles for different layers of government in encouraging coastal resilience?
2. How best can insurance and other risk transfer mechanisms be used to enhance resilience to coastal hazards?
3. What policy misalignments would need to be addressed to enhance the management of coastal hazard risks?
4. How can different funding sources be combined and leveraged to increase investment in risk reduction?
5. How can governments integrate the various policy objectives related to coastal resilience into an overarching framework to support policy progress in tackling this global challenge? How do governments address the potential tension between action to manage risk in the short term and building resilience over the longer term?