Developing Climate Risk Management Approaches for Flood Risks

AT A GLANCE

Name
Developing Climate Risk Management Approaches for Flood Risks

Duration
01.01.2018 – 31.12.2020

Focus area
Morocco, Aït Melloul Industrial Park / Souss Massa Region

Target group
300 Small and Medium Enterprises (SMEs) regrouped in the Aït Melloul Industrial Park, management of park, local authorities

Funds available
The project activities are jointly funded by the Public-Private Partnership program (developpp.de) of the Deutsche Gesellschaft für Internationale Zusammenarbeit GmbH (GIZ) on behalf of the German Federal Ministry of International Cooperation and Development (BMZ) and Allianz Climate Solutions GmbH (ACS).

The project is jointly implemented by …
GIZ and ACS are jointly implementing the project activities with the support of several local partners.

The overall aim of the project is …
The overall aim of the project is to prepare the ground for implementing risk transfer solutions within an integrated flood risk management approach for SMEs in an industrial park in Morocco, near Agadir.

giz Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH

Federal Ministry for Economic Cooperation and Development

Allianz

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BACKGROUND

The industrial zone in Aït Melloul lies in the Souss Massa region, 20km from the port of Agadir. The industrial zone is managed by the local government and hosts 300 enterprises, most of which are SMEs in the food processing industry. Overall, 25,000 employees depend directly or indirectly on business in the industrial zone.

The park was hit successively in 2010, 2014 and 2016 by major floods caused by heavy precipitation events in the zone. A badly maintained drainage system is essentially responsible for the damages and losses which occurred. In addition, a low level of risk awareness and prevention by the individual companies increased the impact. The plight of Ait Melloul is indicative of broader climate trends facing the country. Morocco has suffered greatly from flooding, with nine out of the top ten natural disasters in the years 2002–2011 being floods.

OUR APPROACH

An integrated Climate Risk Management (ICRM[1]) can improve the resilience of societies and promote sustainable development. ICRM improves resilience through a cycle of risk analysis, prevention and mitigation, preparedness and risk transfer solutions.

In practice, these steps can overlap and merge. For example, risk transfer solutions such as insurance can improve post-disaster damage and loss situations by providing timely financial resources directly to the affected. Also, they can provide a buffering capacity and prevent knock-on effects after an event to stop further losses. However, what is less evident is that insurance can support and incentivize risk reduction, provide leverage and synergy effects. At the same time, risk transfer solutions are not stand-alone remedies to manage climate risks but should form part of a holistic ICRM.

Industrial zones are not well prepared for disasters. Yet they are gaining importance rapidly as innovation hubs and cross-points for long value chains of local production and export leverage. The overwhelming majority of SMEs do not have a plan in place to deal with potential climate-related risk[2]. Across markets, SMEs' climate change-related activities are predominately focused on mitigation.

The ICRM under this project is structured in into six components:

1. **Risk analysis: Evaluate available data on hazard and exposure**
   Assess the SMEs' historic flood loss damages; create flood maps and vulnerability curves. Meteorological, geographical and financial data (e.g. by Met Offices, Emergency Offices, Ministry of Finance) will be analysed and if possible improved. This includes clarifying ownership and responsibility for maintaining and financing the reconstruction of the park infrastructure, as well as quantification of economic costs - availability of high quality hazard data like rainfall amounts and runoff volumes in a consistent manner.

2. **Assess demand-side**
   Assess the demand for risk transfer solutions among SMEs / park owner, as well as capacity to pay and whether any of the SMEs has already an insurance cover of some kind.

3. **Identify risk reduction measures and funding sources**
   Elaborate an ICRM concept with all key stakeholders (local agencies, cities, industrial park managements as well as their related companies, suppliers and employees). Identify funding sources for recommended measures including adaptation against climate change (prevention); preparation measures for emergency (preparedness), immediate relief measure (response) and preventive reconstruction (recovery / build back better).

4. **Design risk transfer solution, engage in capacity building and identify suitable distribution channels**
   Based on the existing data and preferences, different options of a risk transfer solution are elaborated, and presented to key stakeholders. Identify additional SME parks and industrial zones for awareness raising and conduct a roadshow at five existing and three planned parks.

5. **Structuring of risk transfer solutions and tender process**
   Preferred solution is brought to market for underwriting through an open tender process.

[1] For more details on the concept, see www.climate-insurance.org/projects/advancing-climate-risk-insurance-acri/
[2] 'Business unusual: why is the climate changing the rules for our cities and SMEs?' AXA Group, UNEP FI 2015.

CHALLENGES

- **Lack of historic hazard and loss data.** The available hazard data and sources do not allow for granular modelling and reliable monitoring of rainfall and flood events.
- **Lack of systematic risk mitigation.** No holistic ICRM approach for the park has been implemented. The project aims to translate the conceptual work by the predecessor project ACRi+[3] and propose concrete solutions to the Park management and the SME tenants.
- **Financing needs.** A lack of capacity for financing the premium might be a limiting factor. The size of the premium depends however on a number of factors including the success in implementing an ICRM approach and the structuring of the insurance cover.

OPPORTUNITIES

- **Support from Allianz Morocco** (Allianz HQ in Africa).
- **Builds on the preliminary works** of the ACRI+ project by the GIZ/Munich Climate Insurance Initiative (MCII)– ICRM approach for SME parks – as well on the Climate Adaptations Literacy work of Global Programme on Private Sector Adaptation to Climate Change (PSAAC)
- **New nation-wide natural catastrophe insurance** requirements will contribute to awareness and could help with the distribution process.

EXPECTED OUTCOMES

- **Understand and quantify the risks.** To understand and quantify flood risks in the participating industrial park(s). Meteorological, geographical and financial data will be analysed and improved.
- **Reduce the risk.** To improve the risk management of all stakeholders involved by encouraging cost-effective investments in risk reduction measures.
- **Transfer the residual risk.** To transfer the residual risk to the insurance sector, thereby providing financial stability to the stakeholders and a greater freedom of action when a catastrophe strikes.
- Further proof of the potential **of leverage and synergy effects of insurance products** as part of an ICRM approach.
- An **effective ICRM approach** for SME Parks.

[3] ACRi+ Advancing Climate Risk Insurance Plus.

WHY IS CLIMATE RISK INSURANCE RELEVANT FOR SMES?

Extreme weather events can roll back decades of economic progress in developing and emerging economies. Currently, weather-related disasters force an estimated 26 million people into poverty each year worldwide. The impacts of disasters on well-being is equivalent to a global annual consumption loss of about $520 billion (World Bank, 2016).

Climate change is exacerbating this situation. Extreme weather events are becoming increasingly common with a peak of 353 events in 2015 – the highest ever recorded in one year (UNISDR, 2016). Also, their impact is intensifying, esp. considering the accelerating urbanization and other socio-economic developments. Last year, the insurance industry experienced the highest ever weather-related losses.

Developing countries suffer disproportionally from disaster losses. Vulnerability to climate change and extreme weather events is highest in these countries, because of weak infrastructure and insufficient resources to assess and manage these risks. Furthermore, local authorities typically take an ex-post approach to disaster management, i.e. concentrated on emergency relief efforts and reconstruction of critical infrastructure after an extreme weather event. Chronic cash constraints means that reconstruction of non-critical infrastructure is often delayed or not undertaken at all. This often leads to a gap between economic losses and what is recovered ("protection gap").

The impacts of extreme weather events represent a significant challenge for the private sector and especially, for SME which constitute more than 90% of all businesses in Morocco. SMEs are particularly vulnerable because of their low awareness of climate related risks and their lack of knowledge of risk management strategies. While the impacts of climate change on the agriculture sector are obvious, the industry and service sectors are also highly exposed to adverse weather events. Flooding of premises, damages of transport routes, rising prices for energy and water are typical examples. Experience in other parts of the world show that a business that had to stop operation after a major natural disaster for more than one month is usually forced to declare bankruptcy. The impact can be direct through physical damage to business-relevant assets like buildings, machines, surrounding streets, etc. Oftentimes, indirect impacts have even more severe economic ramifications than the pure asset loss i.e. disruption of value chains, rising unemployment, health effects, and deterioration of housing infrastructure.

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DISCLAIMER
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