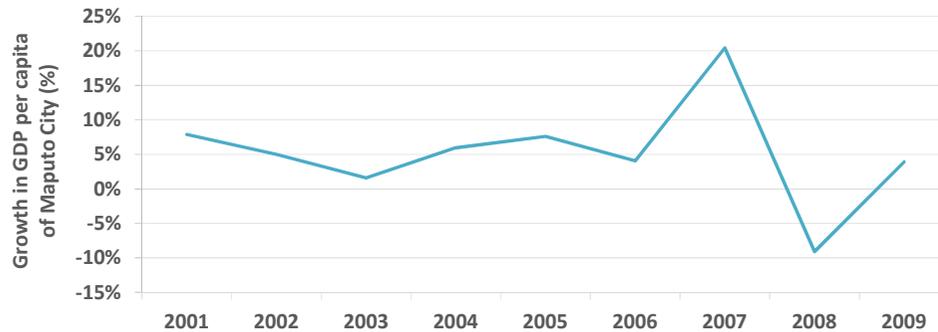


The direction and relative scale of the impacts presented in the scorecard below are subjective judgements based on quantitative data wherever possible. Due to the availability of credible and accurate data, approximations are used for each indicator which may vary by geographical focus or time period and others may draw from qualitative research. A full discussion of analytical constraints is given in the synthesis presentation.

Understanding patterns of climate-resilient economic development Maputo City: A case study

Maputo's high, albeit variable, economic development has continued to improve the climate resilience of the most developed and central parts of the city while providing little benefit to overcrowded, informal settlements in flood-prone marshlands. The high cost of living in low-risk areas has forced the poorest in Maputo to settle in areas exposed to flood risk and offering little infrastructure, public service provision or economic opportunity. As growth continued, this divide worsened and a higher population density has amplified the poor's vulnerabilities. Public efforts to address this have begun to improve sensitivity and adaptive capacity yet remain small-scale.



Maputo's GDP per capita grew at a relatively high rate to 2007 driven by external aid and FDI, increases in social infrastructure investment and liberalisation of the economy. Following a sharp 9 per cent contraction in 2008, economic growth quickly rebounded.

The case study addresses the question: 'To what extent has Maputo's traditional role as the epicentre of the Mozambican economy and hub of economic investment contributed to increases in the city's climate resilience, in particular of those living in the informal settlements?' over the 2000-2015 period. It drew from desk-based research and fieldwork including the review of technical reports, policy and legal documents, municipal and international databases and interviews.

Change in resilience

due to change in indicator

EXPOSURE

The presence of people and assets in places that could be adversely affected by climate change.



Informal settlements built in the marshlands experienced rapid population growth, construction of houses and informal infrastructure. As a result, these communities and structures are highly exposed to the risk of inland flooding. Average annual rainfall rose increasing the risk of inland flooding, though this is not attributable to economic development.

SENSITIVITY

The degree to which a system is affected by or responsive to a climate stimuli.



City-wide access to public amenities such as water, sanitation and health slightly improved alongside the quality of low-income housing, as indicated by a decrease in the percentage of informal structures. However, this was not true for the most vulnerable bairros which experienced rapid increases in population density. This worsened sensitivity to floods both in terms of the number of people affected and the severity of the damage due to the additional strain on public services and the spread of disease. Disaster risk reduction and management (DRRM) activities included the distribution of emergency readiness kits though only to a small number of bairros and not those at the highest risk of flooding.

ADAPTIVE CAPACITY

The potential or capability of a system to adapt to, or alter to better suit, climatic stimuli or their effects or impacts.



Wealth rose across the period, as reflected by an increase in the home ownership rate, while the high level of inequality remained relatively constant suggesting the rich benefitted the most from GDP growth. That said, both the poverty rate and the average income gap to the poverty line fell indicating a moderate increase in adaptive capacity across the city. Education and training improved as the secondary enrolment rate rose and climate change awareness programmes were established. DRRM committees in vulnerable bairros were also established to provide structure to DRRM activities.



Are impacts different for the poorest?

The emergence of informal settlements was partly due to the high cost of living in the ‘cement city’, the well-developed and central parts of Maputo. Financially constrained new migrants were forced to settle in ‘bairros’ where living conditions were cheaper but the risk of climatic impacts such as floods was higher. This led to **increased levels of exposure**.

Bairros are characterised by a lack of social infrastructure and poor provision of public services **worsening sensitivity to climatic impacts**. As there are few local medical centres, the cost of health care is heightened by transport and water prices are among the highest in the city due to poor distribution links.

Most bairro residents work in the informal sector and have not benefitted from the spur of economic growth seen in the the manufacturing and finance sectors. Moreover, entry opportunities into these industries are slim as local education suffers from insufficient resources **limiting the poor’s ability to build adaptive capacity**.

Gender disparities persist: rates of illiteracy, unemployment and dropping out of school are all higher among women. Women also tend to start work in the informal sector earlier than men. Together, **these factors severely hamper women’s ability to attain skilled, well-paid jobs, which in turn limits their access to finance and adaptive capacity**.



Are impacts locked in?

The Port of Maputo, its rail links and oil facilities are situated on an estuary, while the tourism industry and high-end dwellings are also concentrated close to the sea. Even in low sea level rise scenarios, these areas will be under threat from extreme weather events by 2030. **Assets in these areas have locked in exposure due to high fixed capital costs and long asset lifetimes**. The sensitivity of these assets could be reduced through protective infrastructure such as fortified seawalls, beach nourishment, or steep barriers along the coast, though all these measures are likely to be costly.

Despite steady economic growth, properties within the ‘cement city’ substantially exceed the financial capacity of the average Maputo dweller, let alone those in bairros; poverty incidence across the city is 51 per cent whereas average monthly rent in Municipal District (MD) I is US \$3,000. Land is also becoming scarcer in MDs II and III and population density in their bairros are at alarming levels. Due to these factors, **the poor in flood-prone bairros are subject to social lock-in of worsened exposure, sensitivity and adaptive capacity**. Government relocation programmes have moved residents to remote and underdeveloped MDs where exposure may be reduced but where limited job prospects, access to key markets and basic services do little to improve sensitivity or adaptive capacity. A resettlement plan including compensation combined with key infrastructure investments would be needed to reverse this trend.



What are the policy implications?

Sustained economic growth does not necessarily translate into increased adaptive capacity, particularly for women and the poorest. While the incomes of these communities rose slightly, they did not see significant benefits from the expansion of highly skilled sectors, such as finance and manufacturing. To help address this, income rises could be channelled into programmes that reduce reliance on informal livelihoods by supporting the development of new economic hubs across the city, or by improving transport linkages to existing hubs. This requires no change from standard economic development policy though it is important to account for the additional benefit of increased adaptive capacity.

Focussing on just one component of climate resilience can lead to unintended consequences and negative lock-in. The limited success of resettlement strategies in Maputo is likely due to the narrow focus on exposure when selecting resettlement locations. Considering all components of resilience together may have suggested that the lack of social infrastructure in, and remote location of, resettlement destinations would have detrimental impacts on residents’ sensitivity and adaptive capacity. Moreover, this could help identify steps to avoid negative lock-in; for example, if the strategy had been accompanied by investments in local infrastructure, transport links and public services, residents would have had better access to finance and the resources that they require to build their own resilience.