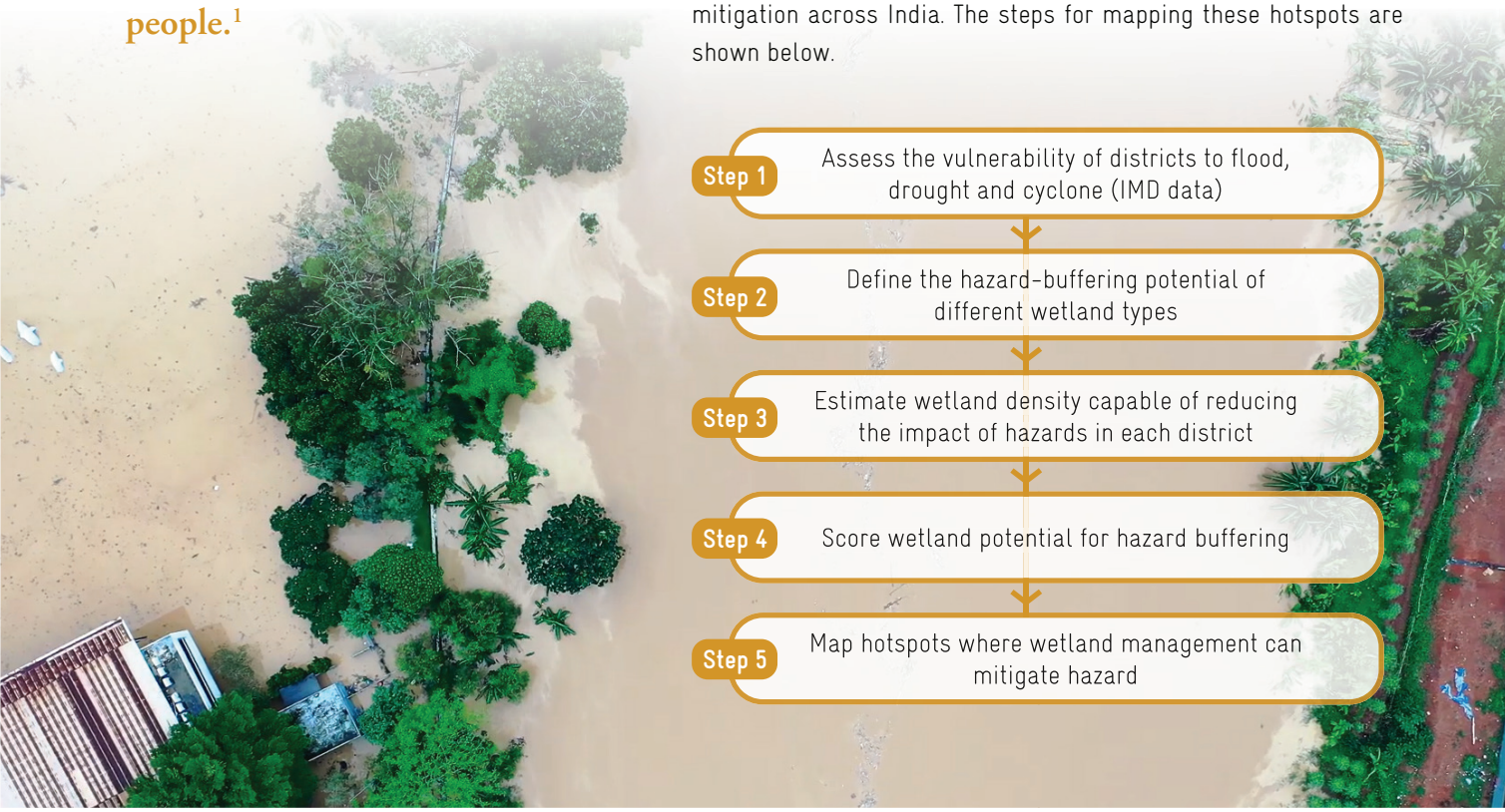
Wetlands for Climate Resilience

Adaptation and DRR Hotspots in India

Wetlands play a crucial role in India's fight against climate change. These ecosystems act as natural buffers, protecting communities from floods, droughts, and cyclones. By absorbing excess water, storing water for dry spells, and shielding coasts from storms, wetlands save lives, protect livelihoods, and boost resilience. As climate hazards intensify, with over 75% of India's districts facing extreme floods, droughts, or cyclones, wetlands are critical for building resilience.

In India, wetlands cover only about 5.12% of the geographic area (16.89 million hectares), yet they are critical for millions of people.[1]

To assess and map the potential of wetlands in mitigating climate hazards, a multi-step approach was used. This included classifying wetlands based on their ability to buffer climate risks and estimating their density across districts. These findings were then overlaid with climate vulnerability data for floods, droughts, and cyclones to identify priority hotspots for wetland-based hazard mitigation across India. The steps for mapping these hotspots are shown below.



- **Step 1** Assess the vulnerability of districts to flood, drought and cyclone (IMD data)
- **Step 2** Define the hazard-buffering potential of different wetland types
- **Step 3** Estimate wetland density capable of reducing the impact of hazards in each district
- **Step 4** Score wetland potential for hazard buffering
- **Step 5** Map hotspots where wetland management can mitigate hazard

Ministry of Environment, Forest and Climate Change

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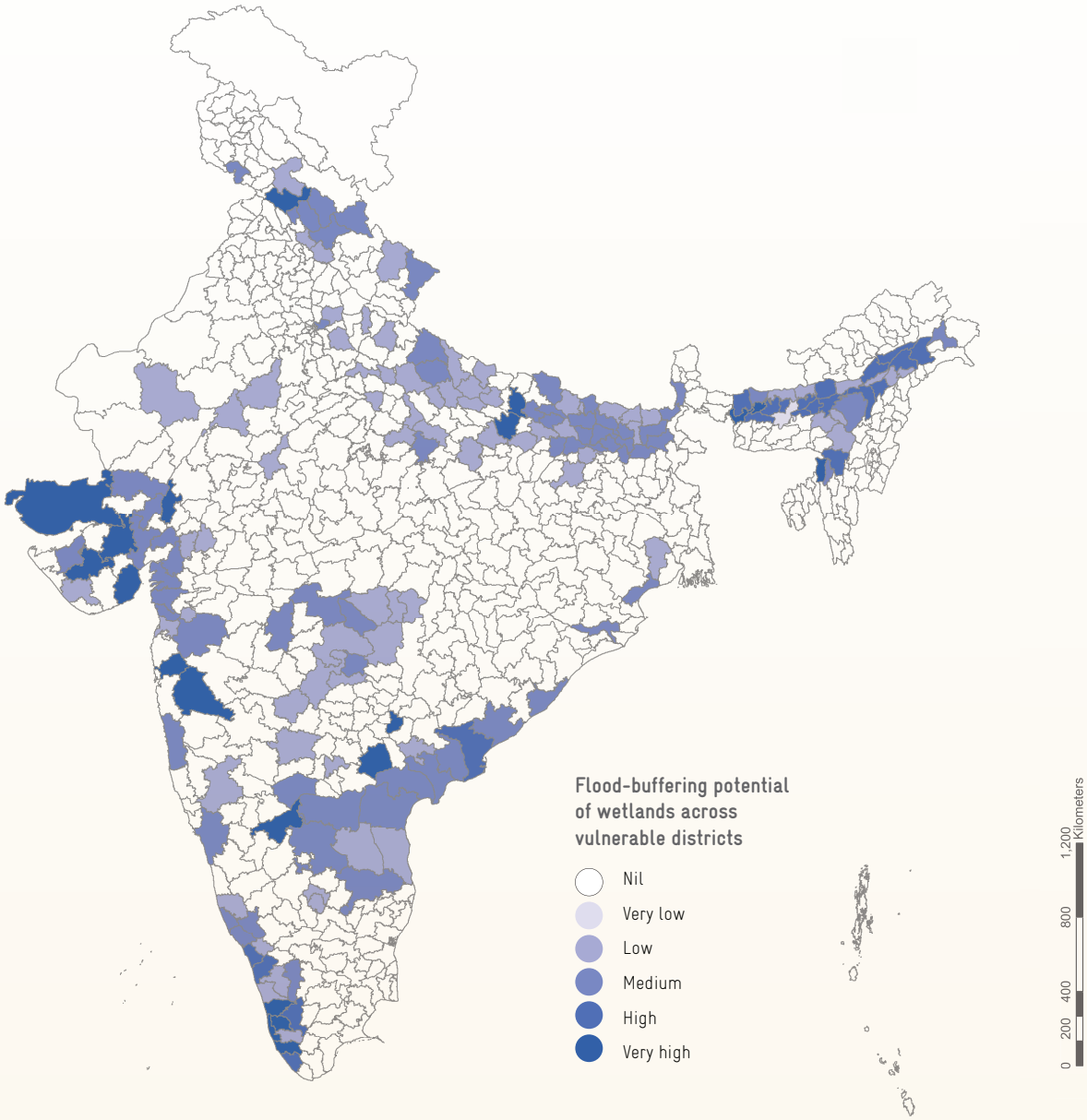
IKI INTERNATIONAL CLIMATE INITIATIVE INDIA

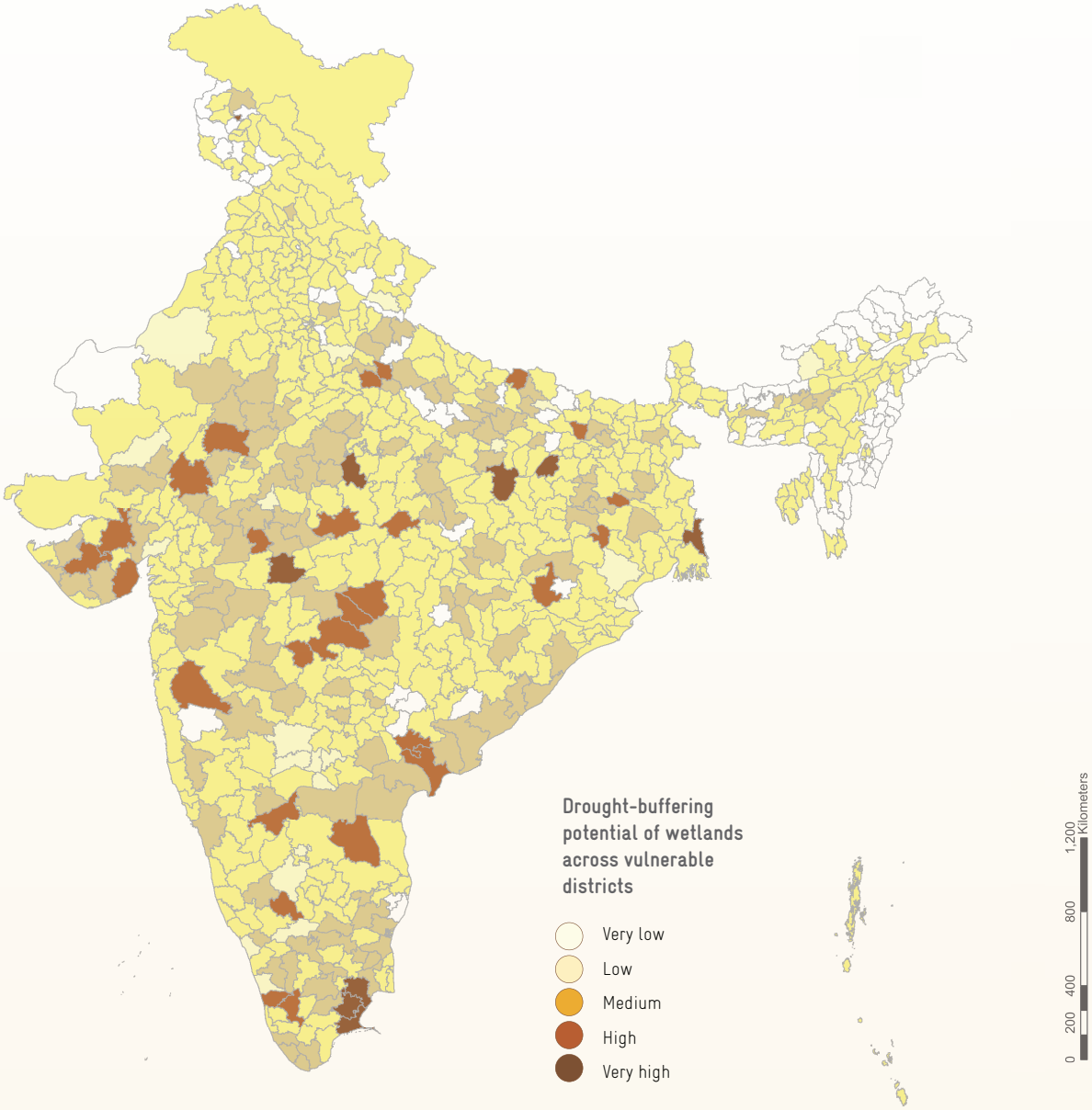
LiFE Lifestyle for Environment

Districts where high wetland density enhances **FLOOD MITIGATION**, guiding restoration efforts and protecting vulnerable communities



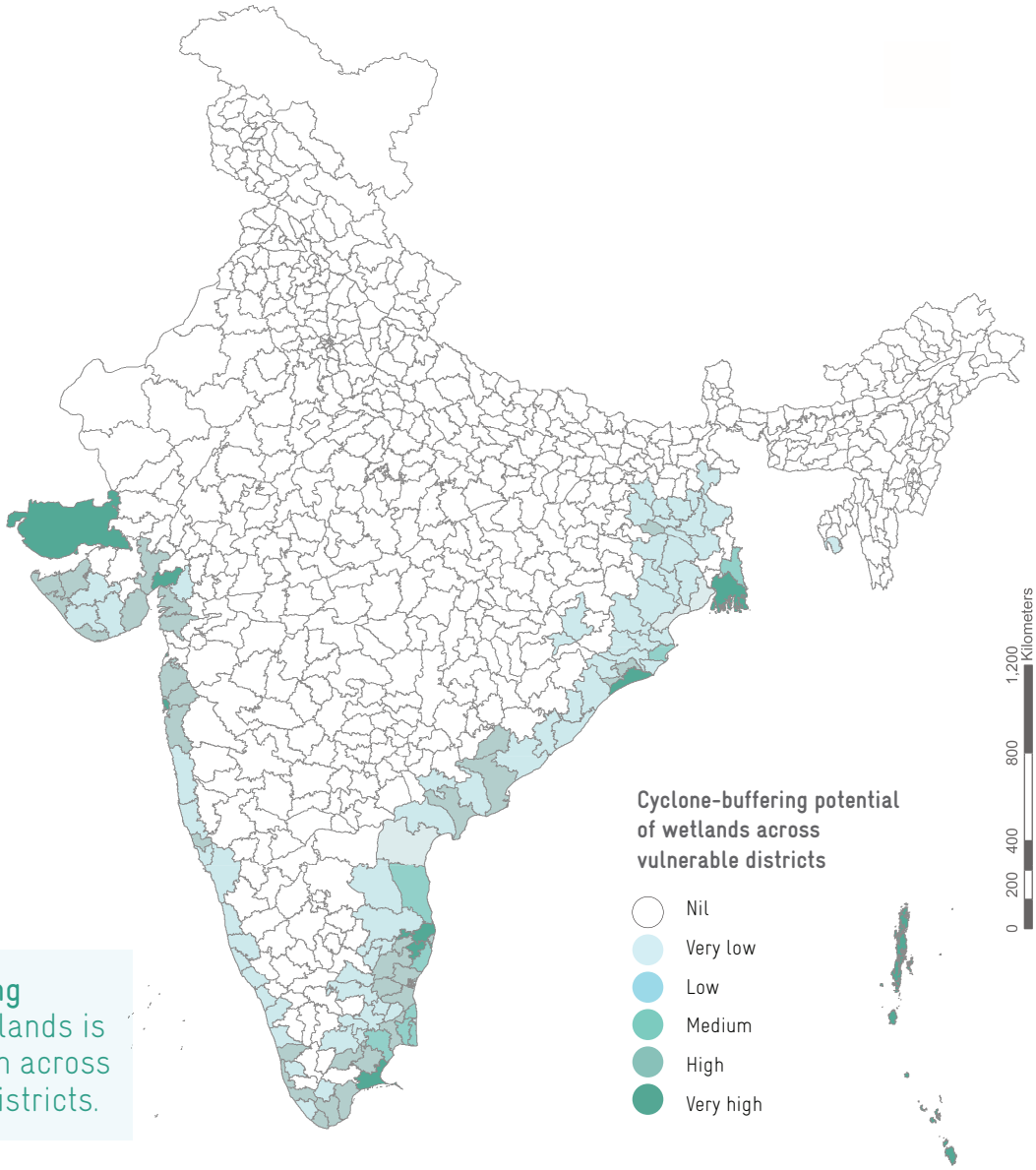
Flood buffering potential of wetlands is high to very high across **41** vulnerable districts.

Districts where strong wetland networks buffer against **DROUGHT**, highlighting the need for restoration to strengthen water security and climate resilience



Drought mitigation potential of wetlands is high to very high across **36** vulnerable districts.

Districts with dense wetlands that buffer **CYCLONE** impacts, protecting millions and strengthening climate resilience in coastal India



Cyclone buffering potential of wetlands is high to very high across **22** vulnerable districts.

This brochure is a part of, 'Indo-German Support Project for Climate Action in India', implemented by GIZ in partnership with Ministry of Environment, Forest and Climate Change under the International Climate Initiative (IKI). The climate adaptation co-benefit assessment methodology and the hotspot maps have been developed in collaboration with Perspectives Climate Group, Wetlands International South Asia and the Institute of Economic Growth, University of Delhi.

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References: 1 - Wetland Atlas, VEDAS, SAC, ISRO

Disclaimer: The geographical map is for informational purposes only and does not constitute recognition of international boundaries or regions; GIZ makes no claims concerning the validity, accuracy or completeness of the maps nor assumes any liability resulting from the use of the information therein.

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On behalf of: International Climate Initiative of the German Federal Government

For more information: The full report can be accessed at https://www.indo-germanbiodiversity.com/