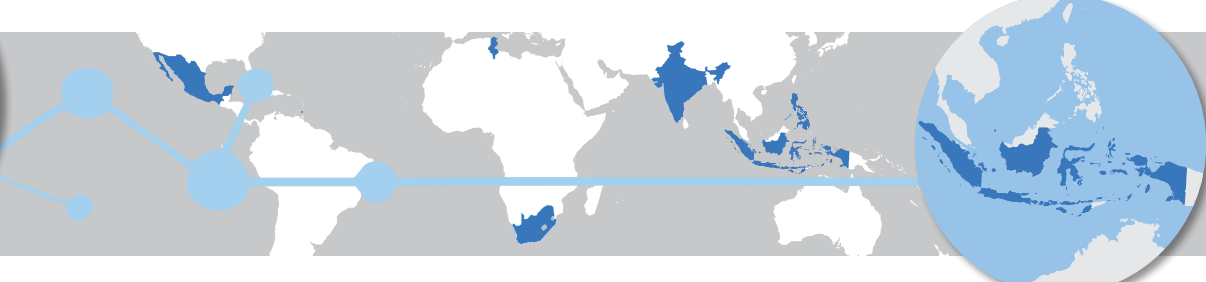


## MAINSTREAMING



## Method Brief

# Indonesia: Climate resilience strategies for cities

## The Approach

The Asian Cities Climate Change Resilience Network (ACCCRN) is a relatively advanced approach for integrating and mainstreaming climate change adaptation into city development planning through a Climate Resilience Strategy (CRS) and for building capacity of cities to plan and implement climate change resilience strategies. It was tested in 10 pilot cities in Asian countries (Viet Nam, Indonesia, India, Thailand). This Method Brief documents pilots in Indonesia (Bandar Lampung, Semarang City).

## Scope and entry points

The entry point for the approach is urban development and spatial planning. A CRS is being elaborated by a city working group and integrated into long-term, mid-term and annual urban development planning.

## How it works

The approach comprises an organised process of several steps as illustrated in the Figure. It starts with *identifying key government institutions* including available centres of excellence. This step aims at ensuring government support and developing a platform for civil society engagement, which then facilitates the integration of the CRS into mid-term city planning (RPJMD) and the elaboration of sectoral plans of relevance to city planning.

The next step is the establishment of a *City Working Group (CWG)* comprising government officials from different sectors, local NGOs and academics. CWG is divided into several teams with corresponding responsibilities for: identifying city profile and conditions, climate history and future, impact of extreme climate events; city vulnerability and adaptive capacity mapping; and analysing the government institutional system including effectiveness of current initiatives and programmes with relevance to adaptation.

The identified *city profile and conditions* are important for developing appropriate adaptation action. The profile includes geographic, resources, municipal administration, demographic, spatial, social, economic and livelihood infor-

mation. *Climate history and projected future development* are based on historical extreme climate and weather events, rainfall and temperature trends. Projection of climate development uses REGIONal Climate Model version 3 (RegCM3) and 14 Global Climate Models (GCM). Projected biophysical and socio-economic impacts are assessed as a basis for the subsequent climate risk analysis.

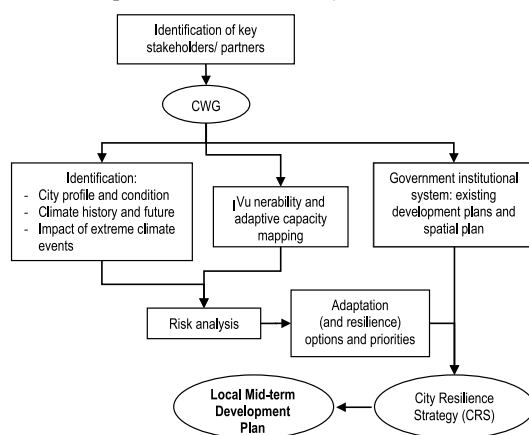


Figure. ACCCRN process scheme.

A further step includes *vulnerability and adaptive capacity mapping* based on vulnerability analysis from socio-economic and biophysical data at kelurahan (village) level. Future projections of vulnerability consider changes in population density, non-vegetated open land, and level of education (based on spatial planning) since other data is not available.

Climate risk analysis follows the definition by Beer and Ziolkowski (1995) and Jones (2004). Accordingly, risk is defined as a function of probability and impact of a climate event. Potential risks can be ranked in a risk matrix. *Adaptation and action planning* is based on the analyses of climate risk and the government institutional system. It will be synergised and integrated into RPJMD through the *City Resilience Strategy (CRS)*.

**Shared Learning Dialogues (SLD)** are an integral part of the ACCCRN processes. They are a forum for introducing, discussing and disseminating information. The forum's par-

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ticipants also include non-CWG members such as outside experts, and a broad representation of the city's stakeholders. SLDs should be designed with as much local input as possible.

## Specifics of application

### Stakeholders and institutional set-up

The City Working Group (CWG) leads the process. The Local Development Planning Board (BAPPEDA) or the Local Environmental Office (BAPPEDALDA) oversees CWG management and responsibilities in planning, as well as the use of public development funds. The CWG structure enables integration of ACCCRN activities into city planning processes and budget cycles.

### Input

The approach requires a number of sectoral experts such as disaster experts, and climatologists or meteorologists. The approach depends on a set of climate data for climate analysis, socio-economic data for vulnerability assessment, and standard topography maps (peta rupa bumi) for risk analysis and area typology assessment. Observed climate data are available at local meteorological offices or BMKG, and GCM data can be drawn from the IPCC Data Distribution Centre. Socio-economic data are available at government offices, e.g. Bureau of Statistics. The ACCCRN approach may require nine months to be completed, depending mainly on data availability.

### Output

The main output is the City Resilience Strategy (CRS).

### Capacity required and ease of use

The approach requires profound expertise and a large amount of data that may not always be available or accessible. The biggest concern remains the rotation of government staff, including key staff. Unless 'champions' are in place, there is always a possibility of programme interventions being cancelled and climate-related policies dropped.

## Conclusions for future application

### Outcome and added value

Despite successfully integrating CRS and climate change issues into the RPJMD, several concerns were raised on issues such as the remaining sectoral gaps. This was largely because CWG members lacked sufficient technical capacity to broadly assess vulnerability and to plan a resilience strategy.

### Cost-benefit ratio

Despite the relatively high cost and demand for resources, the cost-benefit ratio can be sufficient if the approach leads to significant improvements regarding climate change resilience of the City Plans. There is some indication that the expectations in this respect are realistic.

### Potential for replication

Successful implementation depends on data availability, experts to support the work, and funding. The integration of CRS into the development plan and budget currently depends on local government awareness and priorities. A good potential for replication can be assumed whenever there is outside funding such as the support of the Rockefeller Foundation in the case of the Indonesian examples.

## References

### Literature

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Jones, RN (2004): Managing Climate Change Risks, in Agrawal S and Corfee-Morlot J (eds.), The Benefits of Climate Change Policies: Analytical and Framework Issues, OECD, Paris, 249–298. <http://books.google.de/...>

Sutarto, R and Jarvie, J (2012): Integrating Climate Resilience Strategy into City Planning in Semarang, Indonesia, Climate Resilience Working Paper No. 2, 25pp, ISET-International: Boulder. [http://www.i-s-e-t.org/images/pdfs/WP\\_CityResilience\\_Semarang\\_Final.pdf](http://www.i-s-e-t.org/images/pdfs/WP_CityResilience_Semarang_Final.pdf)

### Website

<http://www.acccrn.org>

<http://www.rockefellerfoundation.org/what-we-do/current-work/developing-climate-change-resilience/asian-cities-climate-change-resilience>

### Reference person for further information

#### Budi Chairuddin

National Engagement Coordinator  
for Asian Cities

Climate Change Resilience  
Network (ACCCRN).

E: [bchairuddin@id.mercycorps.org](mailto:bchairuddin@id.mercycorps.org)



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Registered offices  
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Inventory of Methods for Adaptation  
to Climate Change – IMACC  
Dag-Hammarskjöld-Weg 1-5  
65760 Eschborn, Germany  
T +49 6196 79 - 0  
F +49 6196 79 - 1115  
E [info@giz.de](mailto:info@giz.de)  
I [www.giz.de](http://www.giz.de)

### Contact

Michael Hoppe, GIZ  
E [michael.hoppe@giz.de](mailto:michael.hoppe@giz.de)  
T +49 6196 79 - 2597  
I [www.giz.de/climate](http://www.giz.de/climate)  
[AdaptationCommunity.net](http://AdaptationCommunity.net)

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