

# Sustainable Water and Wastewater Management in Urban Growth Centres Coping with Climate Change - Concepts for Lima Metropolitana (Perú) -

## Situation in Lima and the integrated project methodology of LiWa

### Situation in Lima

- Lima and Callao: urban growth centre with more than 8 million inhabitants
- High population growth rate (approx. 2% p.a.), mainly in peri-urban areas
- Desert region, almost no rainfall (9 mm/a)
- Challenging situation for water supply, due to difficult boundary conditions (demography, geography, river flows)
- Climate change contributes to intensification of water crisis due to glacier melting and lack of rainfall in the Andean mountain ranges

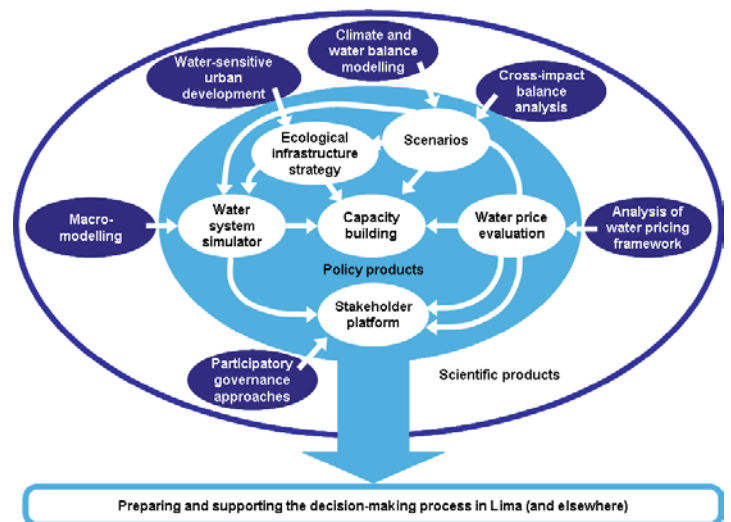


### The integrated methodology of the “LiWa” project

In addition to the numerous individual results of the work packages of the “LiWa” project (see flyer “Summary of the project”), also an integrated methodology has been developed, applied and tested within the project. The following figure summarises this methodology. It combines the individual results and the various scientific disciplines involved (e. g. Engineering, economics, urban planning, landscape architecture, social sciences) in order to obtain integrated and sustainable solutions.

The results of the regionalised IPCC global circulation models have been applied to define various scenarios (potential future developments) for water supply of the city. These results are combined with the potential developments of other driving forces, such as population development and governance structures. An application of the Cross-Impact Balance approach in participatory workshops in Lima led to the “Lima 2040” scenarios. Several workshops with experts and local actors have been held to evaluate these scenarios and to assess potential action measures (and combinations thereof).

The “LiWatool” system simulator has been applied in Round Table events for the analysis and discussion of the effects of the various measures on the water and wastewater system of Lima and Callao. As a key result of this process, an “Action Plan” for sustainable water management in Lima and Callao has been setup and signed by the various key actors on 16 April 2013.



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