HydroPredict'2012

3rd International Interdisciplinary Conference on Predictions for Hydrology, Ecology, and Water Resources Management:

Water Resources and Changing Global Environment **Climate Change Direct Human Interventions** (anthropogenic and natural a) Land use changes: b) Water use / exploitation: causes) - population growth - deforestation - inefficient water use - agricultural land use (practices, (change in precipitation and land degradation) - surface water (agriculture, municipal water, temperature) - river channelization supply, industry, (hydro)power production, ...) Theme - hydraulic infrastructure - groundwater abstraction (irrigation, Theme Downscaling - from global (reservoirs and dams) municipal water supply, industry, ...) C M climate models (GCM) to - urbanization & land surface sealing - in addition specific IWRM related adaptation Regional climate models - infrastructure development and mitigation strategies / measures (RCM) (road constructions, tourism, ...) FTheme **A2**, Theme M Theme A1, Theme M Result Water resources availability of water Hydrological cycle and other components of Earth system resources, in terms of quality, quantity, and in space and time Theme A1, Theme M Theme A2, Theme M Water-related changes at different scales **Impacts of water-related changes** i) Economic impacts: Long term trends and seasonal variability in: **IWRM** - agriculture (crop yield) (water resources) - evapotranspiration **Integrated water** - transportation (navigation) (water resources) **Theme** - soil moisture content - (hydro)power production (water resources) resources В - surface runoff - water quantity (water resources) management: Theme - effective precipitation (recharge to saturated groundwater) - water quality (water resources) - surface water discharge (river runoff) C - inundation (floods) **Design and** - groundwater baseflow - erosion (agricultural land, infrastructure, etc.) implementation of Theme - surface water levels - goods and services from ecosystems adaptation and mitigation - groundwater levels M strategies - water balance ii) Social impacts: **Theme** - extremes: magnitude and frequency - public health Resilient and robust ways to M - water availability / quality, quantity (water adapt to and mitigate impacts resources) on water resources systems - municipal water supply (water resources) (technological measures, - water supply for agriculture (water resources) Theme M: Methodology, modelling, prediction and institutional aspects) - food supply uncertainty: - political tensions - How can we discriminate among different influences? - restrictions on water use - What are appropriate modelling scales? - How can we quantify uncertainties? Version iii) Environmental impacts: - Regional climate models **11 September 2011** - ecosystem quality - Hydrologic models

- biodiversity

- Impact models