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VULNERABILITY AND ADAPTATION CAPACITY OF RIVER BASINS TO CLIMATE CHANGE: DIFFERENT APPROACH TO CLIMATE VULNERABILITY INDEX

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ABSTRACT: Based on the best of our knowledge the issues of climate change have already been well established. The impacts such floods, droughts, cyclones, and others, are visible. However, the challenge still on recovering. The process is complex, and require a huge structure. The solution has to come from better planning, improving the assessment tool for climate vulnerability to assist the decision-makers and reinforce the role of management institutions at the climate change issues. Therefore, the focus of discussions will be the susceptibility degree of the river basin to adverse effects of climate change, which as defined as, climate vulnerability. Here, the Climate Vulnerability Index will be assessed, taking into account four main components; Exposure, Sensitivity, Adaptive Capacity, and Governance, which require indicators. Those indicators will be defined using the Indicators Method and multi-criteria analysis. The sensitivity analysis will be taken producing different scenarios of vulnerability through Monte Carlo simulation, based on the number of extreme events and the effort given on adaptive capacity component, to each system. The result shows that Adaptive Capacity, specially Governance, are the crucial components in the process of reducing the Climate Vulnerability Index. Systems with a strong Governance component, become less vulnerable. These remarks, as a scientific contribution, brings a new approach of Climate Vulnerability Index definition. Will reinforce the role of management institutions (Governance), which is rarely considered in the component of adaptive capacity to evaluated of the vulnerability index.

Keywords: Climate Change. Adaptive Capacity. Governance. Climate Vulnerability Index.

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