

On the Economics of Climate-Proofing Infrastructure Projects: 7 Thoughts in 10 Minutes

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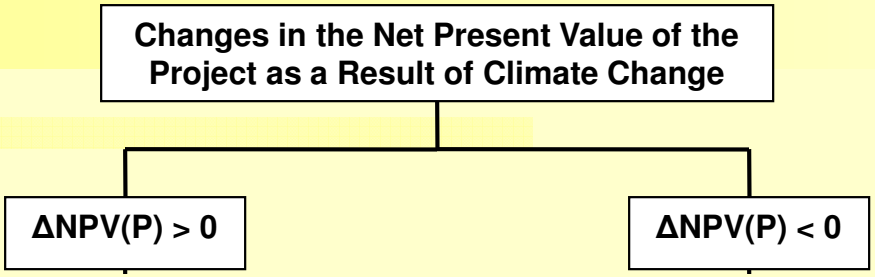
Thought 1

There is no need to adapt economic analysis to climate change. The general framework of analysis works just fine.

Simple framework



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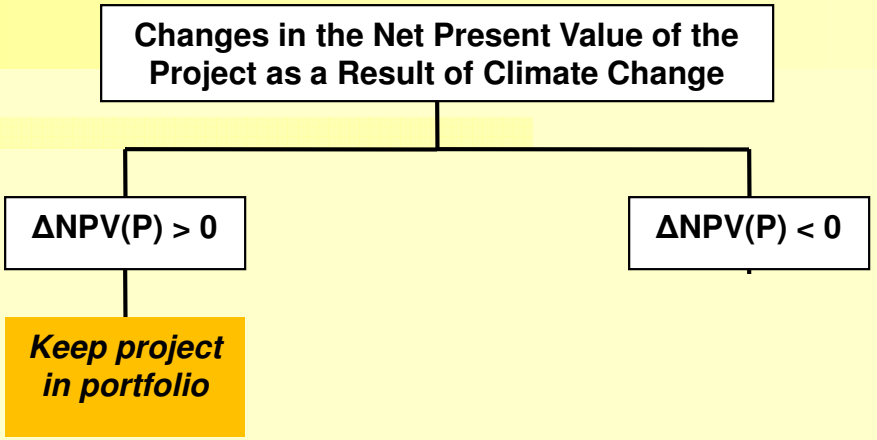

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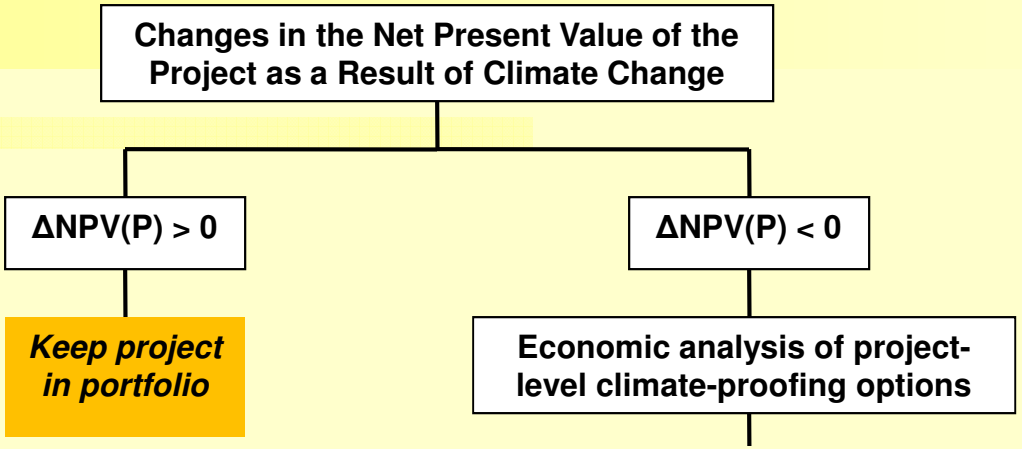

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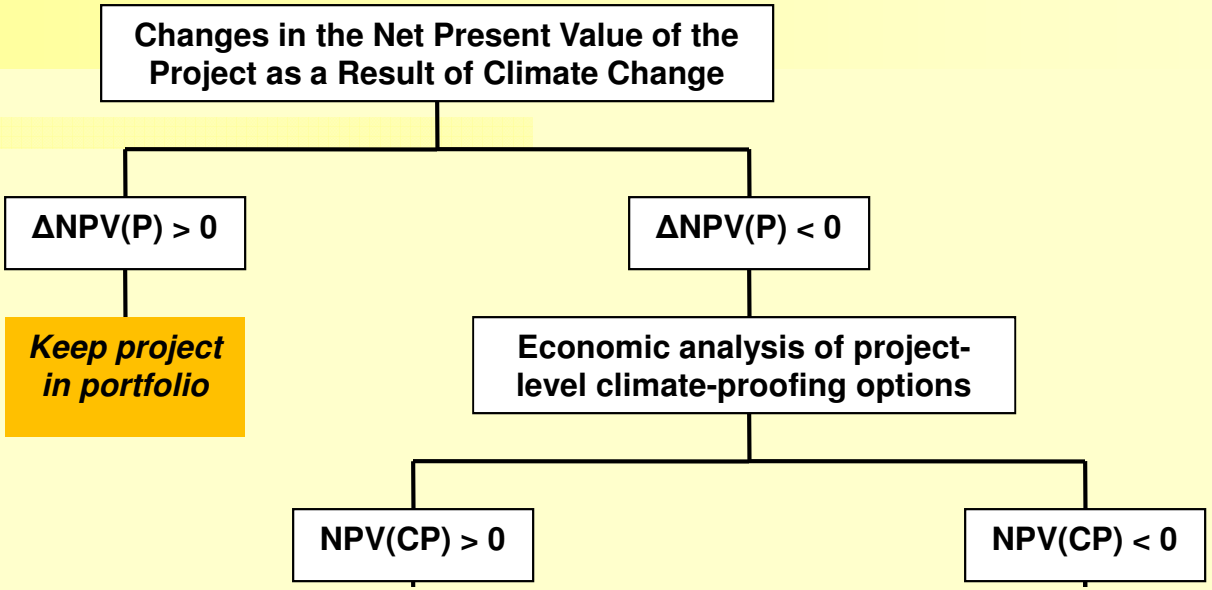

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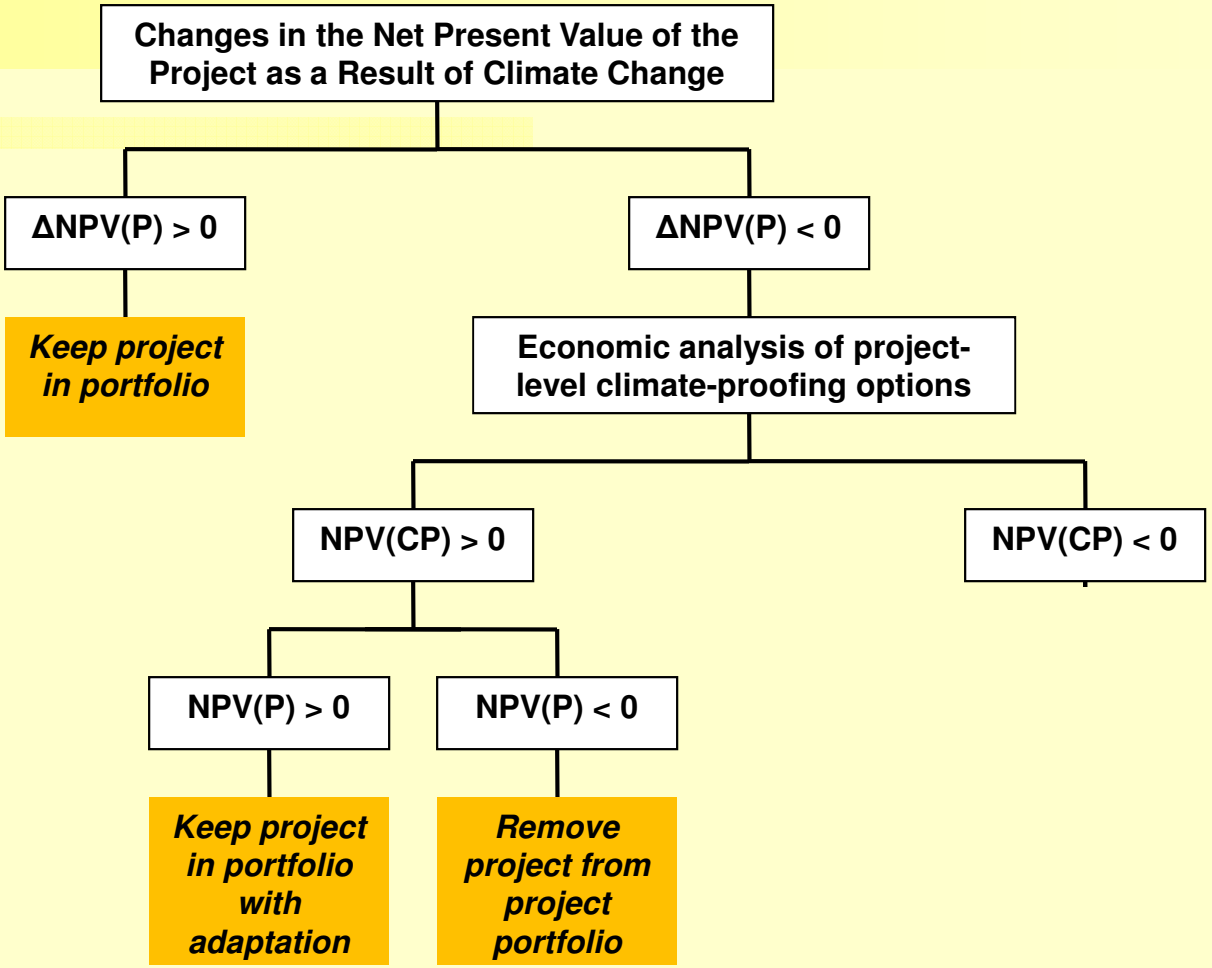

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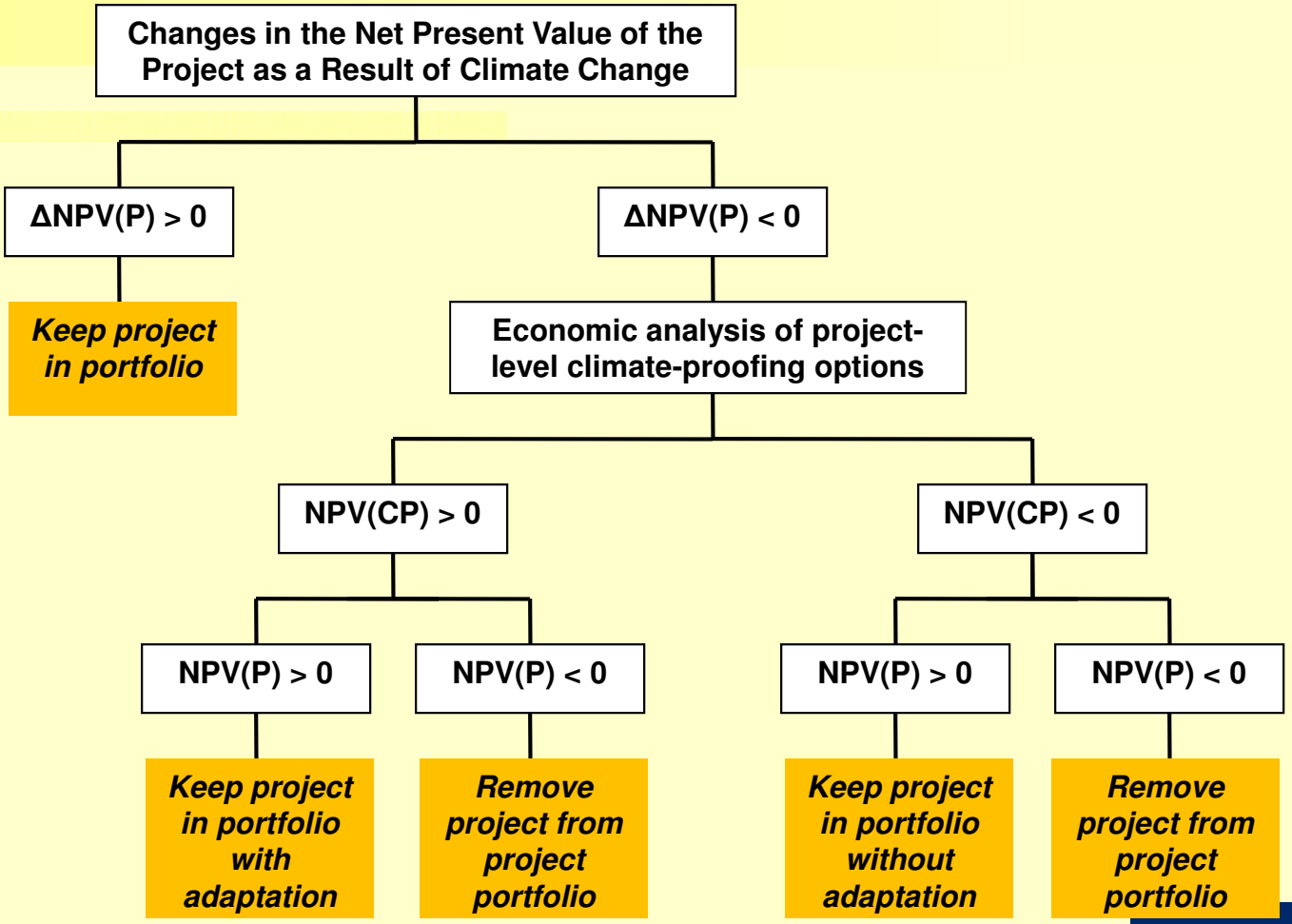

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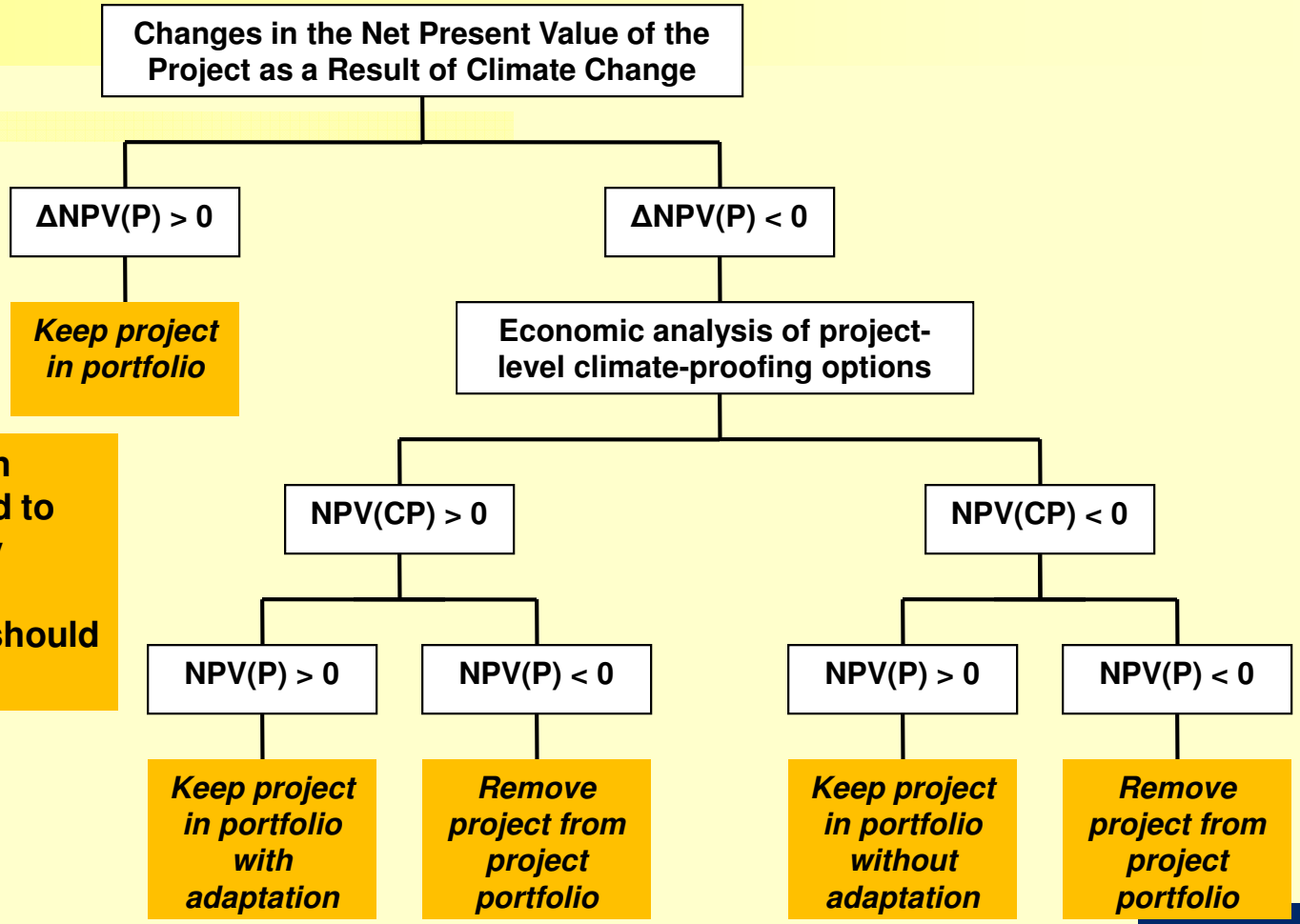
Simple framework



Corollary: The fact that an infrastructure is projected to be adversely impacted by climate change does not necessarily imply that it should be climate-proofed.

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Thought 2

The greatest difficulty in conducting an economic analysis of a climate-proofing investment is not with the economics.

The greatest difficulty is with the identification of projected changes in climate variables, and then of the physical impacts of these changes on infrastructure. Once these impacts are quantitatively identified, the economic analysis of climate-proofing investment is relatively straightforward.

As is ALWAYS the case, the economic analysis of an investment project is a multi-disciplinary exercise which requires the inputs of multiple experts.

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Thought 3

The type of (simplistic) sensitivity analysis typically conducted in an economic analysis is inappropriate to deal with the uncertainty associated with climate change.

There is a need to be considerably more sophisticated with the conduct of economic analysis (e.g. Monte Carlo simulation) to estimate not only the expected NPV of a project but to estimate the probability distribution of that NPV, and assess the risk (the probability) and circumstances under which the project NPV may be negative.

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Thought 4

We should not confuse the economics of climate-proofing with the financing of climate-proofing.

Thought 5

There is a great temptation to increase the capital costs of infrastructure projects to account for climate change by some standardized "climate change adaptation coefficients". This temptation should be avoided. Adaptation options and costs are specific to local circumstances.

Thought 6

International financial institutions require that specific discount rates be used to calculate the present value of costs and benefits. Given the required level of these discount rates, climate change (even in the not so distant feature) does not really matter (unless very large).

Thought 7

As for any investment project, decisions pertaining to whether or not to climate-proof infrastructure should not be based solely on the NPV of that investment (economic efficiency criterion).

Other criteria (social equity, gender, cultural values, etc.) should also be used. These criteria should be made explicit and their relative importance in the overall decision-making process be transparent.



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