Environmental Economics

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EPFL ENAC LEUrE

ENV-471

Master semester 2 or 4

INTRODUCTION TO FINANCIAL CALCULUS

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Discounted value and choice of projects

A town plans to build a bridge in five years, at a location where the river is eroding its banks. Consolidation work today for 500 kCHF would save 600 kCHF in construction costs in five years.

1. Should the town undertake the consolidation work if it borrows funds at 5%?
2. What is the break-even interest rate, i.e. the cost of funds for which it would just be worth doing the consolidation work?

Required rate of return

On a patch of land expecting construction, the local authority could plant a flower garden. Planting would cost 5 000 CHF. The local population would enjoy it for two years. Their benefit has been estimated at 2 600 CHF per year. To simplify, we assume that all benefits accrue 1, respectively 2 years after planting the garden. Recently, the local authority rejected by a tiny margin a project that would have cost 4 000 CHF for a unique benefit, one year later, of 4 160 CHF. Do you think that it would approve the flower garden project? *Justify your answer*