

Report on Bachelor / Master Thesis

Institute of Economic Studies, Faculty of Social Sciences, Charles University in Prague

Student:	Tomáš Baďura
Advisor:	Ing. Jan Melichar, PhD
Title of the thesis:	Combining carbon sequestration and biodiversity conservation: Possible way to protect rain forests Hybrid Model for Regulating Carbon

OVERALL ASSESSMENT (provided in English, Czech, or Slovak):

The bachelor thesis examines two specific benefits provided by forest –biodiversity and carbon sequestration and storage– by concluding about that reducing deforestation especially in rain forests might help to solve both of these problems. The thesis is quite descriptive, missing information and argument in the core chapter that is for me chapter 4. Some statements remain unexplained and arguments missing. In the case of successful defense, and after satisfactory explanation of some points I enclose below, I recommend grade “**velmi dobře**” (**good, 2**).

After introducing the subject, chapter 2 introduces the problem and describes functions provided by forest ecosystems. In 2.3.2, I would expect more is said about factors that determines a rate of extraction (starting, for instance, with Hotelling rule on the optimal rate of resource extraction which is not mentioned at all). Problem of valuation is only sketched. It is argued that CV is one of the most widely used technique for valuing forest services (page 11), while revealed preference based techniques (e.g. TCM) which have been in fact widely used in forestry functions valuation are not mentioned at all (chapter 2.3.4). I am also reluctant to agree with his statement that “...*the consensus [about the externality] and enough empirical coverage is still missing*” (chapter 2.4, page 13). First, there is a consensus in econ theory about the optimal level of externality, and, second, there are quite many (maybe not enough) empirical studies being carried out in last 10-15 years. I do not also agree with his statement that “...we cannot properly compare different approaches of ...policy... and choose the best solution...”. Either by using random utility framework (McFadden), or welfare measures which do not necessarily rely on knowledge of utility function (e.g. McKenzie and Pearce; Moorey; Hausman etc.), we can compute welfare measures and compare alternative states. Text also includes some incorrect definitions, e.g. Pareto criterion is about efficiency, and not about allocation effectiveness (page 15).

Chapter 3 discusses deforestation. I would expect to provide better argument, or at least explain, why higher discount rates favours early exploitation and what institutional/economic factors drives the rate up. Why higher inequality causes exacerbation of deforestation remain unexplained (page 24).

Chapter 4 is devoted to two specific functions, carbon sequestration and biodiversity protection. In my opinion, this chapter presents a core of the thesis, however, I was expecting more information provided and better explained arguments here. In fact, carbon changes due to land use conversion is very useful piece of information for further economic assessment, but the numbers here provided are only supported by one study. Are there more studies about this subject? I guess so (see e.g. RIVM IMAGE model, or CGE models that try extend their structure by land use changes and related carbon emissions, e.g. GTAPE-L model). In the biodiversity conservation part, first, the author might explain how value of biodiversity could be (“somehow”) incorporated into carbon markets (see page 34); second, better distinction between information and insurance value can be drawn and a link to economic value classification provided in one of the previous chapter shall be made; third, the values reported in Table 2 at page 38 shall be commented not only simply taken from, especially what valuation techniques were used, was there any meta-analysis, which would explain quite huge differences in these values and so on; fourth, does economics provide at all any suitable tool to value total value the ecosystems as a whole (page 39)?

Chapter 5 tries to provide possible solution of the problem which is seen in inclusion of REDD credits in well-designed carbon trading system. Being said this, I would expect to learn from the text what the proper design of REDD is? Some statement might require have stronger argument, e.g. why “...the

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WTP for tropical conservation might increase if biodiversity loss concerns are included in the climate mitigation activities...(page 45)? Why REDD+ might generate other benefits from sustainable forest use ranging from ecotourism to non-timber products (page 49)? What REDD+ is actually about?

I would also expect better and stronger argument about cost-effectiveness of proposed policy to provide or sustain both functions. I guess, since avoidance of deforestation might protect biodiversity too, afforestation need to bring fruits for biodiversity protection.

Some questions for a defence:

1. What is a proper instrument which would deliver benefits both discussed forest functions? What the proper design of REDD is?
2. Why higher discount rates favours early exploitation and what institutional/economic factors drives the rate up?
3. Why higher inequality causes exacerbation of deforestation remain unexplained how value of biodiversity could be ("somehow") incorporated into carbon markets?
4. Can economics provide at all any suitable tool to value total value the ecosystems as a whole?
5. Why "...the WTP for tropical conservation might increase if biodiversity loss concerns are included in the climate mitigation activities..."? (page 45) Why REDD+ might generate other benefits from sustainable forest use ranging from ecotourism to non-timber products? (page 49)

SUMMARY OF POINTS AWARDED (for details, see below):

CATEGORY	POINTS
Literature (max. 20 points)	13
Methods (max. 30 points)	15.5
Contribution (max. 30 points)	16
Manuscript Form (max. 20 points)	16
TOTAL POINTS (max. 100 points)	60.5
GRADE (1 – 2 – 3 – 4)	2

NAME OF THE REFEREE: Milan Ščasný

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Referee Signature

