

A proposal to increase the small scale limit for A/R Projects

B. Schlamadinger¹, M. Ratton², N. Bird¹

Executive Summary

At CoP 9 the certified emissions reductions generated by small scale A/R (SSC-AR) projects were limited to a maximum of 8,000 t CO₂eq./year. The aim of this analysis is to briefly demonstrate how this limit acts as a barrier to SSC-AR implementation.

Using Net Present Value (NPV) of project revenues and costs as a measure, we show that, at the current limit of 8,000 t CO₂e/year, the costs of implementing an SSC-AR project are a significant portion of the CDM revenues generated by the project, and as a result, very little annual income could reach the low income land owner within an assumed crediting period of 10 years. We suggest that the 8000 tonne limit represents a key barrier to make small scale AR projects a realistic option. As well, we suggest that they are less financially attractive than energy related projects under the simplified modalities and procedures of the CDM. We further investigate the attractiveness of raising the limit to 30,000 t CO₂eq./year.

We implore the CoP to consider increasing the limit for AR projects if it is considering raising the limit for small scale energy projects. Otherwise, there is a risk that the current situation, namely no occurrence of SSC AR projects, will continue. Increasing the limit would have significant impact in Africa due to its land tenure systems.

Carbon revenues

The main parameters used to calculate the carbon revenue stream in a typical AR project are:

1. Size limit for temporary CERs

Apart of the current limit of 8,000 tCO₂eq./year, a threshold of 30,000 tCO₂eq./year is considered in this paper.

2. Price for temporary credits

The World Bank's BioCarbon Fund is currently paying around US\$4 per t CO₂eq. for streams of temporary credits. This price is used for the current analysis. Adopting this price, a project under the current threshold that starts in the planting season of 2007 can create no more than 40,000 tCO₂eq./year of temporary carbon credits, and a total nominal revenue of \$160,000 by 2012. The cumulative nominal revenue by 2017 can be up to \$320,000.

3. Discount rate

Discount rates for appraising investment projects in most of developing countries are normally set around 12%. The use of this rate in this study reflects typical situations in developing countries for forestry investments. Given that in a SSC AR project the main costs associated with the CDM project design are at the project onset but carbon revenues occur later, the decision on which discount rate to adopt is important as it heavily influences the financial evaluation of the project. A particularly important aspect related to transaction costs within SSC AR projects is the fact that typically these projects are undertaken by small and medium sized enterprises with a low credit rating and high perceived risks, and which normally face high interest rates when raising capital.

Transaction costs for the CDM component of A/R projects

In the analysis, transaction costs include the main project-related costs arising from the CDM specific activities, which are listed in Table 1. It is important to note that conservative values were adopted and that other costs (i.e. brokerage of Emission Reduction Purchase Agreements, etc.) were not included in the

¹ JOANNEUM RESEARCH, Elisabethstrasse 5, A-8043, Graz, Austria. For more on the ENCOFOR project, please see <http://www.joanneum.at/encofor>

² International Institute for Industrial Environmental Economics (IIIEE), Lund University, Sweden

calculations. For reasons of simplicity, and because of the small amounts of credits, we assume verification only every five years (i.e. 2012 and 2017) and that transaction costs are the same for projects under the current and proposed limit. Except for monitoring, verification, issuance fee and adaptation fund levee, all other activities represent upfront costs.

Table 1: Conservative estimates of CDM transaction costs for SSC AR projects

Activity	Cost (\$)
PDD preparation including feasibility study, baseline development costs, legal fees, etc.	45,000
Validation	15,000
Registration	5,000
Monitoring (every 5 years)	20,000
Verification (every 5 years)	20,000
Total fixed transaction costs	105,000
Other Costs	
Issuance fee	free, if < 15,000 t CO ₂ e; \$1500 for the first 15,000 t CO ₂ e and \$0.02 / t CO ₂ e for the excess above 15,000 t CO ₂ e
Adaptation fund levee	No charge, Dec.14 / CP. 10

Results

The NPV for the carbon revenues and transaction costs were calculated separately for credit streams up to 2012 (5 years) and up to 2017 (10 years) and under two different risk scenarios: projects: no project risks and a 20% risk of project failure (Table 2).

With the limit of 8,000 t CO₂eq /year for a crediting period up to 2012, the transaction costs make up 71% of the potential carbon revenues. When typical project risks are considered, the transaction costs are higher than the potential carbon revenues. When the crediting period is extended up to 2017, transaction costs still represent a major share of the potential carbon revenue in both risk scenarios.

When a limit of 30,000 t CO₂eq /year is considered, the financial performance of projects is increased and the ratios NPV_{TC}/NPV_{CR} under the different risk scenarios become closer to the ratios normally found in energy related projects. Therefore, an increase in the limit would make projects more likely to be financially attractive as CDM projects.

It is important to note the carbon crediting period up to 2012 is to be considered the most relevant and realistic one, given that currently few investors choose to buy carbon credit streams to be generated beyond 2012.

For poor communities that could be project proponents, a more important measure is the average net income over the period (i.e. to 2012 or 2017), because they, in general cannot wait until the timber is harvested. As shown, the 8,000 t CO₂eq/year means that the annual income is small before 2012 but improves somewhat to 2017. When the average annual net income for raising cattle in southern Kenya is \$42 per hectare (Radeny et al., 2006), the SSC AR is not providing much incentive to change. Raising the SSC limit to 30,000 t CO₂eq/year allows the transaction costs to be distributed over a larger area and consequently poor communities receive a larger annual income between \$20 and \$30 per hectare.

Remembering that small scale projects are not really intended as commercial-style reforestation projects, it is worthwhile to note that for such projects, with establishment costs at \$1500/ha with a minimum rate of return of 10%, the inclusion of the SSC AR currently has little impact. It raises the rate of return from 10% to 11.6% in this example. Increasing the limit from 8,000 to 30,000 t CO₂eq/year the increases the rate of return to 12.3% which may be above an economic hurdle for project acceptance. The rate of return for these projects increases significantly if the price of carbon increases. This last result was also documented by Locatelli and Pedroni (2006).

Table 2: Typical NPV values for transaction costs and carbon revenues for SSC AR CDM projects

Temporary CER limit (t CO ₂ eq/year)	Carbon crediting period	NPV of carbon revenues (A)	NPV of CDM transaction costs (B)	Transaction costs as a percentage of revenues (B/A)	Average net carbon income (\$/ha/year)
8,000	Up to 2012 without project risk	\$91,000	\$88,000	97%	1
	Up to 2012 with 20% project failure risk	\$73,000	\$83,000	114%	-5
	Up to 2017 without project risk	\$142,000	\$101,000	71%	9
	Up to 2017 with 20% project failure risk	\$114,000	\$93,000	82%	5
30,000	Up to 2012 with project risk	\$340,000	\$95,000	28%	30
	Up to 2012 with 20% project failure risk	\$272,000	\$90,000	33%	22
	Up to 2017 without project risk	\$534,000	\$110,000	21%	26
	Up to 2017 with 20% project failure risk	\$427,000	\$102,000	24%	20

Note: For comparison, the average annual farm net income in southern Kenya in 2004 was \$42 / ha for raising cattle. To calculate the average net carbon income, the number of hectares is estimated assuming a growth rate of 10 t dry biomass / ha / year.

Conclusions

This analysis demonstrates that due to its current limit of 8,000 t CO₂eq /year for removal by sinks in A/R small-scale project, the CDM is not creating an incentives for the germination of such projects specifically by poor communities. Raising the threshold to 30,000 t CO₂eq /year is essential to get adoption by these communities and get the SSC A/R projects off the ground. In addition, given that low-income communities and individuals are most of the time unable to implement large-scale AR project activities, due to both financial and organizational reasons, the maintenance of the current limit will them virtually excluded from the CDM benefits.

Without an increased maximum limit, AR projects will continue to have significant disadvantage against energy related projects under the simplified modalities and procedures of the CDM. As energy related projects opportunities under the CDM are limited for several least developed countries, a review of the current threshold the AR project activities should be considered as a prerequisite for a more equitable global participation on the CDM. Considering that for energy related projects under SSC, the CER caps were initially set at 15 GWh and 15,000 t CO₂eq /year (under SSC type II and III) and are now proposed at 60 GWh and 60,000 tCO₂eq./year, it would be worthwhile to consider an increase in the threshold for AR projects by the same factor of four. . Otherwise, there is a risk that the current situation, namely no occurrence of SSC AR projects, will continue.

References

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