Ecological taxation
How can a fiscal bonus-malus (feebates) mechanism be implemented?

Alain Karsenty, CIRAD, March 2024

There is a need to clarify the distinction between revenue-generating taxation earmarked for environmental actions and environmental (or ecological) taxation proper. A harmonised definition of environmental taxation exists in the EU: "*A tax whose tax base is a physical unit (or an approximation of a physical unit) of something that has a specific and proven negative impact on the environment*". With this definition, the aim of an ecotax is to change behaviour through a price signal, so that it is more favourable to the environment. It is not the use made of the revenue that defines the environmental nature of the tax, but rather its basis.

Among the most interesting forms of environmental taxation (ecotaxes), particular attention should be paid to "bonus-malus" type mechanisms, which are attracting growing interest in both the forestry and agricultural sectors. The principle is to tax "non-sustainable" production more heavily (and often increasingly so) in order to be able to grant tax reductions to production deemed to be sustainable, while respecting a principle of budget neutrality (the bonuses being strictly financed by the malus). This principle of budget neutrality is particularly appropriate in the context of the budgetary tensions experienced by many developing countries.

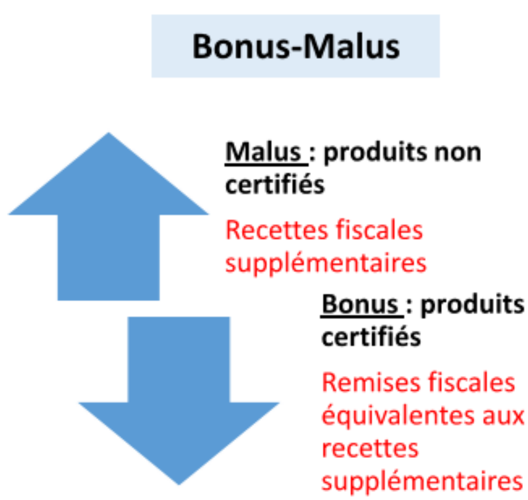


Figure 1. Diagram of a bonus-malus mechanism

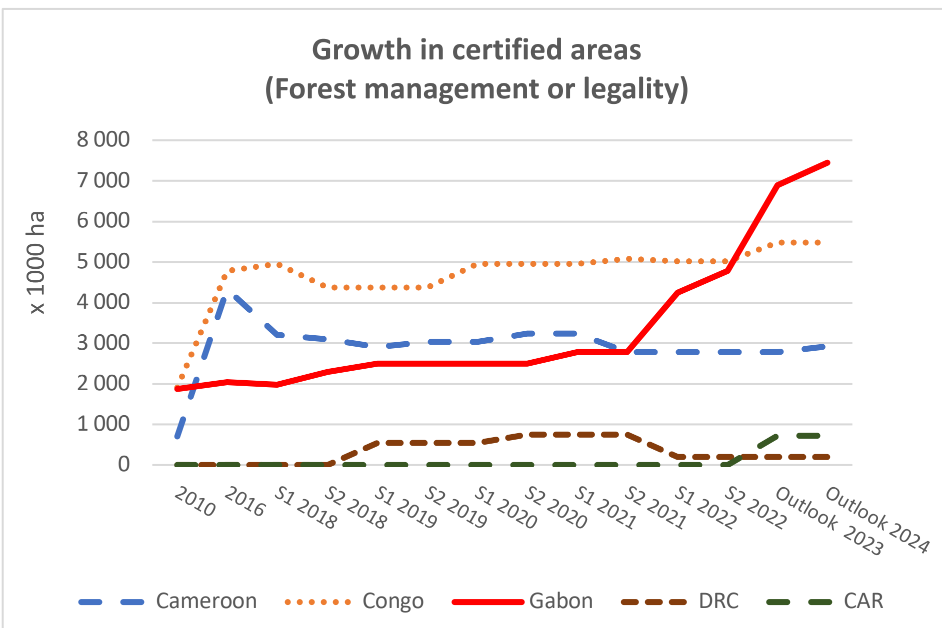
In Gabon, a differentiated tax system similar to a bonus-malus mechanism

In Gabon, the Amending Finance Law 2020 introduced a differentiated forest tax (three levels) for forest concessions, depending on whether or not they are certified. FSC - or PAFC - certified concessions benefited from a reduction in the area tax (tax increased from 400 to 300 FCFA/ha/year), concessions with legality certification underwent a moderate increase (to 600 FCFA) and non-certified concessions saw their tax double (to 800 FCFA). In 2024, this rate was increased to 1000 FCFA for non-certified concessions. This is not exactly a bonus-malus mechanism, as the objective was not budget neutrality, but the introduction of incentives combined with a desire to increase overall tax revenue.

Area tax (old tax system)	**FCFA 400/ha/year** *(USD 0.66)*
New tax system (since mid-2020)	
Non-certified	FCFA 800/ha/year **Since 2024: FCFA 1000** *(USD 1.65)*
Certification of legality	XAF 600/ha/year *(USD 0.99)*
Forest management certification (FSC or PAFC)	XAF 300/ha/year *(USD 0.49)*

Figure 2. Old and new tax arrangements for surface area tax in Gabon

The positive impact, measured in terms of the number of companies embarking on certification, can already be seen in the graph below, which shows a significant increase, in Gabon more than in neighbouring countries, in the number of hectares entering one of the two certification processes.

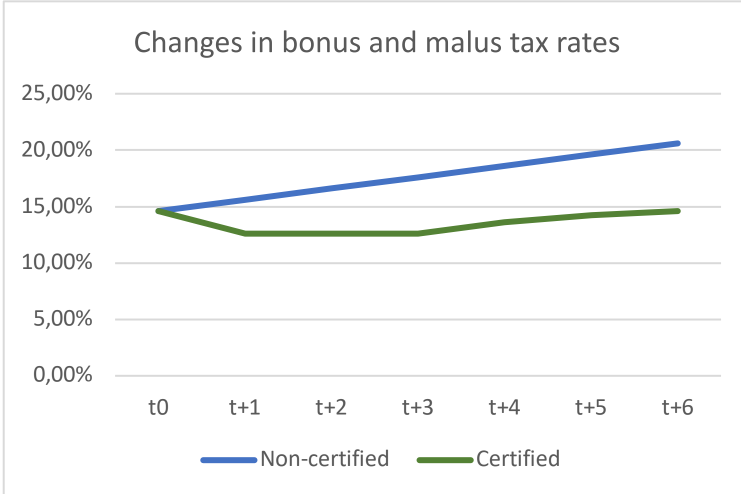


A single objective: to change behaviour

As the sole objective of the bonus-malus mechanism is to change producers' behaviour in favour of sustainability, the bonus-malus mechanism has a dynamic dimension: the bonus (or malus) rates must be revised to respect the principle of budget neutrality, as the greater the proportion of "sustainable" production (giving entitlement to a bonus), the less revenue the malus will generate as a result of the fall in "non-sustainable" production. An Excel simulator has been designed to model and manage this dynamic dimension of the mechanism.

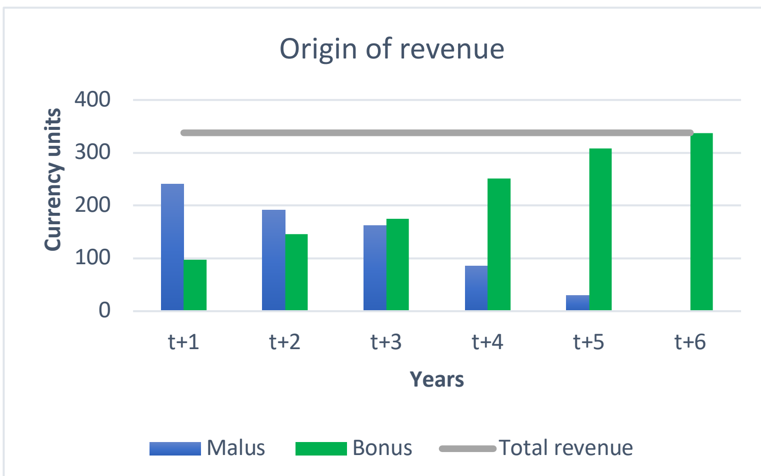
Clarification of the dynamics of the bonus-malus mechanism

1. One condition for adopting the mechanism is to ensure that there is no tax loss for the State, all other things being equal. Governments can also set up the mechanism to increase their tax revenues (this was the case in Gabon, where tax differentiation was introduced against a backdrop of an overall increase in tax pressure, except for FSC/PAFC certified timber).
2. The malus consists of an increase in the tax rate (for one or more taxes) over several years. This increase may be linear (an increase of 0.5% or 1% per year, for example) or gradual (a higher increase the last years). The additional revenue (compared with unchanged taxation) generated by the malus is used to finance the reduction in the tax rate for certified sustainable production, while respecting the condition of budget neutrality (no tax loss for the State, all other things being equal).
3. Ideally, the malus increase is planned (e.g. + 1% per year) over a period defined in advance (e.g. 6 years). The bonus (increased tax rate) should be announced at the beginning of each year, so that economic operators have a clear idea of the amount of tax they will have to pay. The only difficulty is to anticipate the number of units (volumes or surface areas) that will switch to certification from one year to the next, as this determines the amounts collected and the rebates to be granted.
4. A committee of experts including representatives of the corporations concerned will have to meet during the preparation of the Finance Law to forecast the respective quantities of non-certified and certified units for the coming tax year. This forecast will be used to set the bonus rate for the year (the increase in the malus rate being set independently and in advance).
5. If more units than expected become certified (which corresponds to the national ecological target), then there will not be enough tax revenue associated with the malus to cover the commitments to reduce taxes associated with the bonus. Conversely, if fewer units than expected switch to certification, there will be a surplus of tax revenue once the bonuses have been honoured. In both cases, the condition of budget neutrality is not met.
6. The State can accept a variation in its tax revenues linked to insufficiently accurate forecasts, insofar as, with updated forecasts, it can better adjust the bonus rates for the following year. However, some governments may not wish to take the slightest risk of a budgetary gap.
7. Development partners can provide a guarantee through a "zero net fiscal loss" financial facility associated exclusively with the bonus-malus scheme. The principle would be that if more bonus rebates have to be granted than the revenue from malus would allow (because of an overly "pessimistic" forecast, which underestimated the number of new units certified), the facility would compensate for the loss of tax revenue. Conversely, if more tax revenue than expected is collected (due to an over-optimistic forecast of the rate of uptake of certification), the Treasury pays the surplus to the Facility.
8. The State and the development partners may decide that in the event of a fiscal surplus (more malus than forecasted), the Treasury will keep these surpluses. In this case, it will be necessary for the partners to be represented on the committee of experts responsible for inter-annual forecasts, to avoid the most pessimistic forecasts (underestimation of the number of units certified from one year to the next) being systematically retained (to obtain compensation from the Facility).
9. As mentioned above, the State can calibrate the mechanism in such a way as to increase its overall tax revenue. It can simply under-index the bonuses, by not granting a reduction in the bonus rate in the proportion that the amount of the malus would allow.
10. Schematically, the evolution of the malus and bonus rates can take this form (simulation over 6 years, programmed increase in the malus of 1% per year):



At the end of the period, if the incentive has been effective, few or no non-certified units remain, and the bonus rate tends to return to the initial level. What is important, however, is the difference between the respective rates of the malus and the bonus, which tends to increase over time and deters operators who might be tempted to return to non-certified production.

From a budgetary point of view, the source of revenue is gradually shifting from malus to bonuses, with the total remaining stable:



11. Among the reservations expressed by some national authorities is the fear that certification systems may be too difficult for national operators or small producers to access. One possible solution would be for a small part of the sectoral tax (or a compulsory contribution from all economic operators) to be allocated to a special fund dedicated to the direct remuneration (but capped, to avoid abuse) of auditors. This would alleviate the financial obstacle of the cost of the certification audit for the smallest forestry structures, and would be useful in reducing the auditor's dependence on his client. It remains to convince the governments concerned to introduce such a measure (and for donors to include it in their political dialogue with partner countries).

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