

Member Profile

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Project Title: An attempt to determine the price of converting forest land into agriculture in rural area of Senegal

Project description : In the sahalian developing countries, like Senegal, one of the most environmental problems is the reduction of the forest land, especially in the rural zone. All the revenues of these people come from agriculture (this activity use more than 70% of the active population). These last years, we have noticed a reduction of agriculture rendement. There are many facts that cause this situation: rain reduction (about 90% of the activities use only water from rain), fertility reduction, soil degradation, techniques of agriculture, government policies towards agriculture, etc. In the same time, the increasing of the population reduce the surface per person. Their struggle to maintain or increase both their surface and their revenue conduce these population to earn new lands from the forest. The consequence is the reduction of the forest land.

Our study aim to understand the mechanisms behind the forest land conversion. We'll try to establish a demand function and a supply function of forest land conversion (relation between forest land converted into agriculture and a fictive price). >From this model, we'll know the dynamic of the forest land conversion and determine an optimal price (P_o) which respect the aims of sustainable development. We'll also try to determine the market price (P_m), i.e. the price the population are ready to pay to have one unit of forest land to converse (it's the average of willingness to pay in the contingent method of valuing the environmental resource). We'll compare these price: if $P_m \geq P_o$, the population demand is less important than the nature supply (or government supply: we'll consider that the policy of the environment authority is to manage sustainably the forest resource); in this market case, there no risk for the forest; but if $P_m < P_o$, the demand becomes more important than the government supply. This last case is very frequent in the reality, the people always consider the value of the nature is zero. To avoid the reduction of the forest land, the Government has to take some policies which will lay on the facts that conduce people to give such a value to forest land. We'll so regress the average of willingness to pay determined above to some social and economic variables, like agriculture techniques used, soil fertility, population increase, cultural representations (religion,

worship, etc.) in relation to the forest, some government policies towards rural activities, etc. The results of these regressions will help to determine optimal public policies for environment resource protection.