SOCIAL GOALS AND MECHANISMS OF CLEAN DEVELOPMENT

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INTRODUCTION

The ratification of the Kioto Protocol opened real perspectives for foreign resources that achieve sustainable development to be channeled to projects in Brazil, mainly those that contribute for the reduction of greenhouse effects through the Mechanism of Clean Development (MCD). It is important to recover the initial idea of this story. Through the MCD, projects with certified reduction of greenhouse effect of gases emissions (GEE) will generate carbon credits that can be negotiated with the developed countries. However, according to Article 12 of the Kioto Protocol, these projects have to achieve sustainability, which means attending to economical, environmental and social criteria. Certainly the social criteria have been little explored. Is it really possible to combine economically viable projects with environmentally sustainable and socially fair ones?

There is no general theory of sustainable development, but only partial ideas which are concentrated in specific aspects. In the case of economic theory, two schools of thought emphasize different problems of the production – allocation circuit, with asymmetric results for sustainable development problems.

In the neoclassic theory, the concern is in the search for the better possible allocation of scarce results, which in an implicit or explicit way are considered as data. The emphasis is in the best use of means considered as scarce, and due to this fact it is assumed that the production factors are always fully occupied. For this reason, the neoclassic theory deals well with the issue of natural means since these are, by definition, finite – although its value is not, since the value is socially defined as derived from utilities and preferences. The largest the utility, the larger will be the intention of the individual to pay for it (utility-value) and, thus, there is no limit for the value of the means.

However, the neoclassic theory works badly with the production issue, as it ignores the problem of effective demand. The neoclassical models of growth consider that economy converges inexorably to full employment, ounce "faults of market" have been corrected. There is little concern with the possibility of abundance of means, as the full non-utilization of the factors of production violates the premises of optimality required for the best possible allocation of the means. In other words, as employment is considered a "fault" of market, which naturally should converge to full employment, the neoclassical models that deal with natural means simply ignore the problem. Effects of environmental policies on employment are never discussed.

In contrast, the keynesian theory puts all the emphasis on the concern with aggregated level of economic activity, but ignores the problem of the best social allocation of means. That is why the environmental issue is never approached, although this school has a better explanation for issues like unemployment, uncertainties and expectations. In the typical Keynesian model, the question is how to increase the level of activity, without incorporating the social externalities that may eventually be caused by this.

In a certain way, the MCD bears the same kind of problem: which should be its emphasis? Augment the economic activity, reduce environmental problems or contribute to the social development?

While we do not have a General Theory of Sustainable Development, we go tapping in the dark, elaborating *ad hoc* models that always have a bias for one of these sides.

The conventional answer is that we should search for solutions that simultaneously contribute for the three goals: economic, environmental and social. Great, when it is possible, but when there are conflicts among these objectives? That is, in general, the objective of this paper: to show that not always "win-win" solutions are possible and thus, in the field of MCD, the social side has been the most neglected of all. Therefore, more efforts in researches should be channeled to this proposition.

WHEN THE "WIN-WIN" IS NOT POSSIBLE

On of the most important themes for the effective implementation of environmental goals, such as reduction in the concentration of greenhouse effect gases, is to know how the competitiveness of the companies will be affected. It is very common to find, from one angle, business men complaining that the environmental controls make the production more expensive. From another angle, many specialists defend that an improvement in the environmental management reduces the costs of production. Who is right?

The basic premise of those that argument that environmental improvement of a company augments its competitiveness subsists in the idea that this practice ends up reducing waste and inefficiency in the consumption of energy and prime materials. The great advantage of clean technologies subsist in the possibility of reversing a cost into benefit. What was treated before as a problem, like additional expenses to avoid emissions or to pay compensations, in case the emission reduction is not technical or economically viable, crosses over to be an advantage, like gains in performance or productivity. Therefore, the gain of economic efficiency occurs simultaneously to the improvement in the conditions of life of the population.

However, if clean technology is always the most desirable, both for the company as for the population, why has it not been adopted in large scale? Why is it necessary a government action to control pollution?

There are many answers to this question. First, it is fundamental to observe that the productive structures are very heterogeneous, moreover in the case of late industrialization, like Brazil. This structural difference is the result of a technological inequality among the various sectors. We find an example of this in the striking contrast among activities of the manufacturing sector which demands high incorporation of technology, as the case of durable means of consumption and of capital which incorporate microelectronic innovations, with others in which the dynamism in the incorporation of technology is less present, such as in many traditional areas that utilize natural means as prime material. Furthermore, it is possible to observe the coexistence, in the same sector, of technologically high advanced companies, like those turned towards exportation, or transnational branches that try to accompany- despite out phased- the technical progress generated in developed countries, with backward technology, acting in areas where the quality of the product is not important to competition.

The opportunities to propagate clean technologies are numerous. In sector where this technological contrast among companies is very significant there is much space to advance simply through the

improvement in out phased plants. In this case, the role of public politics is in assisting in the transference of these technologies, be it through diffusion or creating financing mechanisms and other incentives for technological improvement.

A still more complicated situation subsists when the sector in which the possibilities of "win-win" are very small, or else, in sectors where the adoption of clean technologies demand high investments on an installed industrial park which is not financially depreciated. The situation is more serious when the financing capacity of the company is minor, a typical condition of small and medium sized companies. Even if there is a knowledge of more efficient forms of productions, the restrictions of capital or scale impede its adoption, and the maximum achievement in terms of environmental management is the adoption of controls that simply avoid the emission to strike the ambience, the so called technologies of "end of the tube". This kind of technology represents only an increase on the production costs and, therefore, less competitiveness.

This limitation should be very clear in our reasoning. The improvement of environmental conditions is not always able to reduce the costs. And even in the cases in which it is possible to join the objectives of economic and environmental improvement, social aims may not be achieved. The circumstances that put clean technologies in practice are normally associated to industries of continuous process, where the reduction of effluents can represent a considerable economy of costs. However, these industries of continuous process tend to be less intensive in labor requirement. So, even if there are improvements in energetic efficiency of industrial sectors and most of the technologies for generation of renewable energy, both large fields forapplication of MCD , the social results may be of minor importance.

Therefore, there is no *a priori* reason to believe that MCD projects will always present an equilibrium among its financial, environmental and social aspects. As the more used parameters refer to the costs of the projects and avoided amounts of greenhouse effects of gases emissions, it is most probable that the social aspects be the less considered ones. Specific public policies should be necessary to treat with this issue and the mechanism of market should not be entirely responsible for the allocation of resources generated by the developed countries' non attendance of the goals established for their emissions.

FOR A SOCIAL CARBON

To what extent should the MCD projects with social content be stimulated? This is a very difficult question, however Brazil might be in a privileged situation to initiate this debate. Brazil has always played a detached role in the negotiations which resulted in the creation of MCD, and there are a few concrete options of projects that confer important social characteristics. An important example is the Project for Biogas Good Use in the Garbage Deposit of Adrianopolis, a pioneer in this mechanism that has as its objective the reduction of GEE emissions liberated in the decomposition of garbage, capturing the methane of the deposits (biogas) for the generation of electrical energy. In fact, the energetic good use of biogas is one of the most promising areas for MCD, and it is expected that a considerable number of similar projects be spread in Brazil for the next years.

Another area that has received much attention from the media is the use of biomass for the substitution of fossil combustible. Brazil has been a pioneer in the substitution of gasoline by sugar cane produced ethanol, and now there are great expectations circa the substitution of part of diesel oil by vegetal oils (biodiesel) from many cultures (being the mamona and the dende the most commented).

A third area, less quoted but not less important is the good use of degraded soils (abandoned or of low agricultural productivity) for reforestation projects. In this case, the acquisition of certified reductions of emissions occurs by the capture of carbon through forest restructure. Given its enormous forest vocation, Brazil offers many comparative advantages in this sector, although the volume of carbon credits thus generated has maximum limits established by the Kioto Protocol Regulation.

These three areas also present in common a high level of social importance. The management of solid residues is one of the great urban problems that are independent from the size of the municipality. Most of the residues are put in large unmanaged depositories in 64% of Brazilian cities (IBGE, 2000). This brings a series of environmental and social problems and finding an adequate destination, with the energetic good use of the garbage, would engender important positive externalities, further than the avoided emissions, both through the transformation of methane into carbon dioxide, of less influence on global warming, as by avoiding the burning of fossil combustible for the same destination. (Oliveira and Rosa, 2003, estimated in 50 TWh the energetic potential of solid residues in Brazil)

Programs of stimulation of small agriculture production units (small family farms), also have social positive effects, chiefly by mitigation of great unemployment in rural areas observed in Brazil in the last decades (Young 2004). In this sense, the stimulation towards small rural production, achievable both through biodiesel programs as forest culture, may have social positive impacts contributing to reduction of global warming.

However, these projects can also result in negative externalities. If badly managed, the burning of solid residues may generate atmospheric pollutants that affect the health of populations in the surrounding areas. Further, there is a contingent of people who find their subsistence in garbage selection – these elements should be considered in the evaluation.

The massive production of a combustible from an agricultural activity may bring serious social and environmental disturbance. There is always the risk of the biodiesel project to repeat the errors of the Pro-Alcohol, becoming a multiplier of land concentration, high mechanization and monoculture, which are elements that accentuate social exclusion on rural areas. There can also emerge an stimulus to deforestation, a particularly serious problem as the expansion of the culture of the main vegetal oil (soybean oil), produced in the country occurred to a great extent at the cost of the use of native areas of the “cerrado” and even of the Amazon forest, as shows the study done by the Work Group on Forests of the Brazilian Forum of NGOs and Social Movement for Environment and Development (FBOMS,2005). Although there is a certain controversy on the subject (Brandão et alli, 2005, argument the opposite), there is little doubt that a disorganized expansion of a monoculture will certainly cause serious pressures onto the conservation of native forests, damaging the biodiversity and even for global warming (if the conversion is carried out by forest slash and burn).

A similar problem may occur with the expansion of reforestation with the monoculture of exotic species, As shows Carpio and Ramirez (2001), in spite of the great potential of forests for MCD projects, little attention has been given do its indirect effects. One of these problems can be the increase of land concentration, due to scale economies of large plantations. Furthermore, there is the risk of loss in biodiversity, given the minor cycle of rotation in exotic species cultures (like the Pinus and Eucalyptus).

These issues, therefore, also deserve more profound studies. The technocratic vision tends to concentrate its efforts on technical and financial viability of the projects, but it cannot be assumed that other problems will find “natural” solutions. To measure the social aspects is as important as advancing in the analysis of technical and economical aspects of the considered projects.

CONCLUSION

It is necessary to highlight the comparative character of the benefits and economic costs, both environmental as social of the various options of MCD projects. Many sector studies have been made, separately analyzing each of these options and the bibliography is extensive. However the MCD tries to introduce market components in the search of more efficient solutions and few works have analyzed in a comparative manner the different possibilities that the investors will confront with. What lacks is to take a step forward and compare the returns expected from each project, avoiding to be restricted only by "traditional" aspects – amount of avoided emissions and necessity of financing – also considering its capacity of social inclusion.

The construction of indicators that are able to compare economic and social aspects is not necessary only for mitigation projects, but also to a more efficient allocation of the means for projects of adaptation to global warming. It is, therefore, a prior item for the future rounds of negotiation in the field of Climate Convention.

In the same way, other aspects related to sustainable development, like protecting biodiversity and opposing desertification should be taken into consideration in these negotiations. "Fragmented sustainability" cannot be considered if environmental themes (water, biodiversity, carbon, etc) are distinct manifestations of the common problem of inadequate use of natural means. Further, actions that accomplish more than one of the proposed objectives, as avoiding deforestation (which, simultaneously reduces carbon emissions and protects biodiversity and hydro-resources) should be prioritized. The allocation of the resources should not be based only on economic cost-effectiveness and in criteria of relative improvement. Further than mechanisms of flexing, mechanisms of direct transferences should be implemented, based on social and environmental criteria that go far beyond the least cost per unit of avoided carbon emission.

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