

Poverty, Reforestation, Energy and Climate Change - PROEZA PARAGUAY

By FAO & World Bank

Commentary to the Green Climate Fund Board by the Global Forest Coalition, Heñoi-Paraguay, Iniciativa Amatocodie-Paraguay and Sobrevivencia/Friends of the Earth-Paraguay

Heñoi-Paraguay, Iniciativa Amatocodie-Paraguay, Sobrevivencia/Friends of the Earth-Paraguay and the Global Forest Coalition, a coalition of 86 NGOs and IPOs from 56 countries, are concerned about recent funding project proposals to the Green Climate Fund (GCF) that could exert the inverse effect of what they are aimed at. If these projects are to enhance climate resilience and the livelihoods of vulnerable households and contribute to climate change mitigation there needs to be a serious evaluation of their potential risks and impacts, and effective mitigation measures need to be proposed to avoid negative impacts. Moreover, if the cultures, traditions, and real needs of the assumed beneficiaries are not properly assessed and the projects are imposed on them without their free prior and informed consent, projects could backfire.

These concerns are particularly relevant for the Poverty, Reforestation, Energy and Climate Change (PROEZA) project that has been proposed by the Government of Paraguay, through FAO and the World Bank, for GCF funding. The project will be discussed at the Board meeting in July. While some of the proposed components of the project, like supporting small-scale agroforestry, could be beneficial from both a social and an environmental perspective, other components, especially the component that supports the establishment of monoculture eucalyptus tree plantations to provide bioenergy for the soy sector, would trigger significant negative environmental and social impacts, increase Paraguay's vulnerability to climate change, and form a de facto subsidy to one of the main drivers of deforestation and forest degradation and GHG emissions in Paraguay. That is why we recommend the GCF Board to postpone the decision on this project proposal, and ask the responsible accredited entities and the Paraguayan government to particularly reconsider component 2 (Sustainable Landscapes and Responsible Markets) of the project in light of its potential negative impacts.

Using Eucalyptus Species in Agroforestry

While Component 1, which includes 50.700 ha of agroforestry and close-to-nature planted forests on an average of 0.8 ha/family, could potentially have beneficial impacts, we are concerned about the continued notion of reforestation or afforestation with alien tree species such as Eucalyptus as an 'inclusive' economic solution for communities. One of the main risks is the allelopathic effect of Eucalyptus,¹ which can be a primordial cause of land degradation, through jump-starting the process by which the land is exposed to erosion, compaction and excessive solar irradiation. A study by Chanie (2009) in Ethiopia using key informants'

¹ See for example a report on a regional expert consultation organized by FAO on the Biophysical and Environmental Impacts of Eucalyptus Plantations:
<http://webcache.googleusercontent.com/search?q=cache:E3VjCzPaii8J:www.fao.org/docrep/005/ac777e/ac777e0a.htm+&cd=2&hl=en&ct=clnk&gl=th&client=firefox-b>

interviews indicated that almost all local farmers perceived that Eucalyptus trees are exhausting their once productive land.²

Therefore, the proposal in PROEZA to combine Eucalyptus and other native tree species and even crops, to be planted next to each other, disregards scientific proof that Eucalyptus trees have negative effects on sustainable cropping, soil, and water conservation systems,³ which in turn affects the growth of other crops, trees or understory vegetation.

The Impacts of Monoculture Tree Plantations for Biomass

However, our main critique is on component 2 of the project, which proposes to use GCF funds to contribute to the formal government objective of establishing of up to 450.000 ha in monoculture tree plantations. The project aims to finance at least 32.500 ha of these plantations, on top of the small-scale agroforestry plantations supported through component 1, with the primary objective of providing bioenergy for the soy sector. There is no analysis of the potential negative impacts the medium- to large-scale and primarily industrial tree plantations promoted under component 2 might have on the economic viability of wood production by small-scale producers under component 1. However, the environmental and social framework of the PROEZA project identifies a significant amount of other social and environmental risks of component 2, including:

- potential violations of labor laws,
- risks related to the security and hygiene of workers, including when applying agrochemicals,
- risks associated to the use, storage and application of pesticides, herbicides and other chemical applications,
- risks of forest fires,
- risks regarding the inadequate use of security agents for the protection of properties and related conflicts with communities,
- the risk of involuntary replacements of Indigenous peoples and other communities,
- land conflicts in general,
- the risks of badly planned monocultures and bad forestry practices having negative impacts on ecosystems,
- the risk of propagation of exotic species, and
- the risks of plantations being established without FPIC on Indigenous territories.

The mitigation measures proposed to address these risks are highly artificial. They merely suggest the need to try to avoid these risks through compliance with the GCF standards and supervision and monitoring, disregarding the serious challenges with forest law enforcement and governance that Paraguay has been facing for the past decades. No indications are made how these challenges could be overcome in this project.

² Chanie, T., 2009. The Effect of Eucalyptus on Crop Productivity, and Soil Properties in the Koga Watershed, Western Amhara Region, Ethiopia. A Thesis Presented to the Faculty of the Graduate School of Cornell University in Partial Fulfillment of the Requirements for the Degree of Masters of Professional Studies.

³ Chanie, 2009, *ibid.*

A large number of scientific studies have concluded that monoculture tree plantations have a clear negative impact on biodiversity.⁴ There also is a significant risk that monoculture tree plantations are established on lands that were in process of restoring into fully grown natural ecosystems again.⁵ The social-economic impacts of monoculture tree plantations are often negative too, as monoculture tree plantations are, per definition, a very labor extensive form of land use, so they provide very few jobs per hectare of land, triggering rural unemployment and depopulation.⁶ Tree plantations have been associated with increased levels of poverty in rural areas.⁷ Of the employment promises that come from the companies, only a few reach the local population at a high price on their labor rights. In Espirito Santo, Brazil for example, Plantar SA began a women's worker program in 2008 to supposedly "empower women" from Quilombola communities by employing them as "guardians" of the plantations. The work came with long hours, direct contact with dangerous pesticides and little to no support from the company.⁸ Frequently, companies hire workers from other regions leaving the local economy virtually without benefits.⁹

Lastly, it is worth noting that the gender assessment of the PROEZA proposal is weak, while women can face significant negative impacts from monoculture tree plantation expansion as they are usually restrained from accessing the wood and other natural resources like water, nuts and other non-timber forest products they used to access to free. Failing to recognize such gender aspects not only contributes to the feminization of poverty but also perpetuates inequalities.

⁴ See for example: Bekessy, S.A. and Wintle, B.A., 2008. Using carbon investment to grow the biodiversity bank. *Conservation Biology* 22(3), 510-513; German, L., Villamor, G., Twine, E., Velarde, S.J. and Kidane, B., 2009. Environmental services and the precautionary principle: Using scenarios to reconcile conservation and livelihood objectives in upper catchments. *Journal of Sustainable Forestry* 28(3-5), 368-394; Putz, F.E. and Redford, K.H., 2009. Dangers of carbon-based conservation. *Global Environmental Change* 19(4), 400-401; Adekunle, V.A.J., Olagoke, A.O. and Ogundare, L.F., 2010. Logging impacts in tropical lowland humid forest on tree species diversity and environmental conservation, *Journal of Sustainable Forestry*, 29(5), 517-538; Crossman, N.D., Bryan, B.A. and Summers, D.M., 2011. Carbon payments and low-costs conservation. *Conservation Biology* 25(4), 835-845; Barr, C.M. and Sayer, J.A., 2012. The political economy of reforestation and forest restoration in Asia-Pacific: Critical issues for REDD+. *Biological Conservation* 154, 9-19; and Leimona, B., Van Noordwijk, M., de Groot, R. and Leemans, R., 2015. Fairly efficient, efficiently fair: Lessons from designing and testing payment schemes for ecosystem services in Asia. *Ecosystem Services* 12, 16-28.

⁵ Bekessy, 2008, *ibid*.

⁶ See Smith, S and Scherr, S.J., 2003. Capturing the value of forest carbon for local livelihoods. *World Development* 31(12), 2143-2160; Charnley, S., 2005. Industrial plantation forestry, *Journal of Sustainable Forestry* 21(4), 35-57; and Grieg-Gran, M., Porras, I. and Wunder, S., 2005. How can market mechanisms for forest environmental services help the poor? Preliminary lessons from Latin America. *World Development* 33, 1511-1527.

⁷ Andersson, K., Lawrence, D., Zavaleta, J. and Guariguata, M.R., 2015. More trees, more poverty? The socioeconomic effects of tree plantations in Chile, 2001–2011. *Environmental Management* DOI 10.1007/s00267-015-0594-x, 14 pp.

⁸ <http://www.carbonradewatch.org/multimedia/photo-essays/like-oil-and-water/green-deserts/part-3-eucalyptus-plantations.html>

⁹ Charnley, 2005, *ibid*.

Negative Impacts from tree plantations as carbon sinks

Since 2008, NGO Timberwatch reported about the negative impacts from ‘reforestation/afforestation’ as part of the Clean Development Mechanism, carried out by the company in Tanzania[1]. Later in 2011, and as part of its mandate to combat global climate change, the Swedish Energy Agency entered into a 20-year contract agreement with the company; the Agency is buying so-called ‘carbon credits’ from a tree plantation in Kachung, Uganda where there are documented cases of forced evictions of farmers, pesticide pollution of adjacent watercourses, and instances where indigenous peoples’ rights to land, consultation and project consent were not considered. Since the trees are planted on land formerly used by communities, the families now allegedly have less land to grow food on and cannot access grazing land for their cattle [2]. The Swedish University for Agricultural Sciences, reported that in Kachung, the term ‘land degradation’ was misused for creating a win-win narrative where the plantation itself was presented as contributing both to ‘sustainable development’ and carbon emission reductions, given that plantations can also obtain carbon credits. Besides, the same report mentions that it was actually the company who proposed the investigation proving degradation, since that company stood to gain from proving it by having the ‘green light’ to establish the plantation in the territory. Thus, the report concludes that the CDM process currently provides no safeguards against the use of sweeping degradation narratives and that, in practice, there is a serious risk of ‘local sustainable development’ not weighing equally with the aim of emissions reductions in forest carbon projects. [3]

[1] [http://timberwatch.org/uploads/TW%20Tanzania%20CDM%20plantations%20report%20low%20res%20\(1\).pdf](http://timberwatch.org/uploads/TW%20Tanzania%20CDM%20plantations%20report%20low%20res%20(1).pdf)

[2] <http://www.swedwatch.org/en/2015/11/05/lessons-learned-kachung>

[3] https://www.slu.se/globalassets/ew/org/inst/_sol/forskning/lag/final_report.pdf

Bioenergy and Carbon Emissions

As described in the project framework, the monoculture plantations will be used for bioenergy production, which nowadays recognized as a highly questionable energy source. In many accounting systems a large part of the emissions coming from woody biomass are not accounted for, including the emissions which occur during the supply chain, e.g. harvesting, processing, transportation, of the wood pellets, which are reported, but not accounted, under the land use sector. But the emissions coming from the combustion are accounted as carbon neutral under the energy sector, based on the simplified assumption that the carbon released during the combustion process will be offset when planting new trees. However, the amount of carbon released cannot be taken up by newly planted trees immediately. Instead, it takes years to neutralize the emissions also because young trees take up only a fraction of the CO₂ compared to older trees.¹⁰ Furthermore, it has been proven that Eucalyptus plantations reduce carbon storage in soils, whereas other nitrogen-fixing tree species help to fix more carbon.¹¹ Taken all these emissions into account, biomass emits more carbon per unit of energy than most fossil fuels.¹²

In the Paraguayan case, the carbon emissions of bioenergy are even more problematic as most of the energy in the country is provided by existing hydro-electric dams. So proper rural

¹⁰ Stephenson, N. et al. 2014. Rate of tree carbon accumulation increases continuously with tree size. *Nature* 507, 90-93.

¹¹ Resh, S., Binkley, D. & Parrotta, J., 2002. Greater Soil Carbon Sequestration under Nitrogen-fixing Trees Compared with *Eucalyptus* Species.. *Ecosystems* (2002) 5: 217.

¹² <https://www.chathamhouse.org/sites/files/chathamhouse/publications/research/2017-02-23-impacts-demand-woody-biomass-climate-forests-brack-final.pdf>

electrification and other uses of the existing hydro-electric capacity, which is disproportionately underutilized by the country, would provide far more carbon benefits than bioenergy, which is a recognized cause of forest degradation.

In addition, studies have shown that burning biomass has considerable impact on public health, including in particular the health of women and children, as burning wood emits similar levels and a similar range of pollutants as burning coal, albeit smaller quantities of certain pollutants (mainly sulphur dioxide and mercury) and greater quantity of others (such as Volatile Organic Compounds and, generally, small particulates, i.e. PM2.5).¹³

Using GCF Funding to Subsidize a Major Driver of Deforestation

Last but not least, a profound critique on component 2 of the proposal is that the biomass production it aims to support is primarily needed to dry soy. Hence funding biomass plantations with GCF funds basically entails a subsidy to the soy industry. For small-scale farmers in Paraguay the escalation of soy monocultures - mostly processed into animal feed for the livestock sector in other parts of the world, like Europe, China and Russia – has meant hunger, displacements, poor health and even death. Paraguay is a nation currently facing extreme food vulnerability. Business conglomerates own most of the agriculturally productive land in Paraguay and foreign tenure is an increasing phenomenon.¹⁴ The vast majority of the best soils in Paraguay, representing some 3.300.000 of the 5.500.000 ha of available agricultural land, is dedicated to soy production.¹⁵ In addition, the soy industry is widely associated with contamination of agrochemicals: Paraguay applies some 2.000.000 lt. of 2,4D and some 9.000.000 lt. of Paraquat on its farmland per year.¹⁶

In Eastern Paraguay, where most of commercial soy plantations are found, close to 400,000 ha/year have been deforested since 2005, when a zero deforestation law was in put into place. This law has clearly not been able to counter the huge incentive for soy expansion, which can be found at a price of USD500/ton.¹⁷ As mentioned above, lack of proper governance and law enforcement is a major challenge in Paraguay.

An elaborate overview by the Union of Concerned Scientists (UCS) of the root causes of forest loss has revealed that soy production is one the main drivers of global deforestation. More in general, both UCS¹⁸ and Chomitz (2007)¹⁹ emphasize that small-scale subsistence farmers with little connection to markets play a much smaller role in deforestation than wealthy farmers that

¹³ <http://www.biofuelwatch.org.uk/wp-content/uploads/Biomass-Air-Pollution-Briefing.pdf>

¹⁴ <http://globalforestcoalition.org/wp-content/uploads/2016/11/whats-at-steak-web-English-low-res.pdf>

¹⁵ Based on data from the Agriculture and Livestock Ministry (2015)

¹⁶ Calculations based on statistical newsletters of the National Service of Plant and Seed Quality and Health, SENAPE. .html" <http://senape.gov.py/boletin-estadistico.html>

¹⁷ Lovera, M. 2017. Monsanto und die Macht des Soja. Rosa-Luxemburg-Stiftung.

¹⁸ Boucher, D., Elias, P., Lininger, K., May-Tobin, C., Roquemore, S., and Saxon, E., 2011. The Root of the Problem, What's Driving Tropical Deforestation Today? Union of Concerned Scientists, Cambridge, USA

¹⁹ Chomitz, K. M., Buys, P., De Luca, G., Thomas, T. and Wertz- Kanounnikoff, S., 2007. At loggerheads? Agricultural expansion, poverty reduction, and environment in the tropical forests. A World Bank Policy Research Report. The World Bank, Washington, DC

cater for commercial markets. The expansion of these commodities is partly incentivized by public subsidies for meat, dairy and bioenergy. That is why one of the most important targets of the Strategic Plan of the Convention on Biodiversity calls for the elimination, phase out or reform, by 2020, of subsidies and other incentives that are harmful to forests and other ecosystems.²⁰ With deforestation currently contributing an estimated 10% to global greenhouse gas emissions, it would be highly problematic if the GCF would provide an indirect subsidy to increasing soy production in this respect.

Conclusion: PROEZA ignores the need for genuine Transformative Projects

While the Paraguayan PROEZA project includes a few potentially beneficial elements, component 2 of the project, and the use of Eucalyptus species in component 1 of the project, entail a broad range of environmental, social and economic risks. Many of these risks have been identified by the project developers themselves, but the mitigation measures proposed are artificial and do not take into account the current Paraguayan governance context.

It is particularly important to highlight the well identified risk of increased forest fires in this respect. The recent fires in Chile, which devastated more than 600.000 hectares of tree plantations and other land and caused 11 deaths, have demonstrated how large-scale monoculture tree plantations do not only undermine the climate resilience of countries, but also form a serious risk to the lives and livelihoods of local communities nowadays, as they are far more vulnerable to droughts, fires, pests, and wind damage than biologically diverse forests.

It is of utmost importance that the GCF does not provide financial support to projects like PROEZA that significantly undermine the climate resilience of developing countries. Moreover, GCF should not fund projects that provide direct or indirect financial support to economic sectors that are publicly recognized sources of greenhouse gas emissions like the soy industry. The quest for transformative change that is embedded in the GCF mandate and the Paris Agreement itself means that GCF should shy away from funding projects that clearly support highly polluting business as usual, but fund genuinely transformative initiatives instead. For that reason, we call upon the GCF Board to postpone the decision on the Paraguayan PROEZA project and to request the relevant accredited agencies and the Paraguayan government to reconsider, especially, component 2 of the project.

²⁰ Aichi Target 3 of the Strategic Plan of the CBD 2011-2020. UNEP/CBD/COP/DEC/X/2, see <https://www.cbd.int/doc/decisions/cop-10/cop-10-dec-02-en.pdf> (last visited 20 July 2016).