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Item 9 (b) of the provisional agenda

Methodological issues under the Kyoto Protocol

Implications of possible changes to the limit for small-scale afforestation and reforestation clean development mechanism project activities

Views on the implications of possible changes to the limit established for small-scale afforestation and reforestation clean development mechanism project activities under decision 6/CMP.1

Submissions from Parties and intergovernmental organizations

1. The Conference of the Parties serving as the meeting of the Parties to the Kyoto Protocol, by its decision 1/CMP.2, requested Parties, intergovernmental organizations and non-governmental organizations to submit to the secretariat, by 23 February 2007, their views on the implications of possibly changing the limit established for small-scale afforestation and reforestation (A/R) project activities, under the clean development mechanism, for consideration by the Subsidiary Body for Scientific and Technological Advice (SBSTA) at its twenty-sixth session.
2. The SBSTA, at its twenty-sixth session, took note of the submissions referred to in paragraph 1 above and requested Parties, intergovernmental organizations and non-governmental organizations to submit to the secretariat, by 21 September 2007, their views on the implications of a possible change to the limit established under decision 5/CMP.1 for small-scale A/R project activities (FCCC/SBSTA/2007/4, paras. 77–79), based, inter alia, on national experiences, to include social, economic and environmental effects, including estimation of leakage, and requested the secretariat to compile these views for consideration by the SBSTA at its twenty-seventh session.
3. The secretariat has received three such submissions. Two of these are from Parties, and one is from an intergovernmental organization. In accordance with the procedure for miscellaneous documents, these submissions are attached and reproduced* in the languages in which they were received and without formal editing.

* These submissions have been electronically imported in order to make them available on electronic systems, including the World Wide Web. The secretariat has made every effort to ensure the correct reproduction of the texts as submitted.

FCCC/SBSTA/2007/MISC.19

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CONTENTS

	<i>Page</i>
1. CHILE (Submission received 21 September 2007)	3
2. PARAGUAY (Submission received 21 September 2007)	7
3. THE WORLD BANK (Submission received 21 September 2007)	9

PAPER NO. 1: CHILE

Submission by Chile

Implications of possible changes to the limit for small-scale AR Clean Development Mechanism project activities

The 26^o session of SBSTA agreed to invite Parties to submit to the secretariat their views on the possible change to the limit of 8 kilotons CO₂ per year for small scale AR-CDM projects, with a maximum of 40 kilotons CO₂ per verification period, considering national experiences, and including the following issues:

- a) Social effects;
- b) Economic effects and;
- c) Environment effects, including estimation of leakage.

Chile has a long tradition in afforestation and reforestation activities that has led to a surface of more than 2 million hectares afforested with planted forests in 2006. Nevertheless, more than 90% of the planted area is owned by big forest enterprises or large land owners. The Chilean government has made efforts to foster the incorporation of small land owners in afforestation activities, but there are several barriers that hinder the participation of small land owners in these activities.

There have been several attempts in order to formulate AR-CDM project activities involving small land owners in Chile, that have been hindered by the barriers related to the limited surface and dispersal of the properties, scarce knowledge of the technical aspects of afforestation and the forest business, limited access to loans and other barriers such as the well-known complicated and expensive procedures of the AR-CDM projects formulation.

In the case of small scale AR-CDM project activities the limit of 8 kilotons CO₂ per year constitutes a very important additional barrier that has discouraged several attempts made by a number of public and private organizations, among which the following issues can be mentioned.

1. Economic effects of the limit of 8 kilotons CO₂ per year, with a maximum of 40 kilotons CO₂ by verification period in the small scale AR-CDM project activities

Several exercises have been made to forecast the economic effect of the mentioned limit, and some conclusions can be observed in the following case.

A typical AR-CDM project in Chile could be a radiata pine plantation with small land owners, which generally correspond to degraded and bare lands with dispersal properties.

Radiata pine is a species that resists bad quality sites that are common in small land properties, and grows at a rate of about 15 tCO₂ per hectare and per year, including above and below biomass. The measurable annual current increment begins on year 5 with 5 tCO₂ per hectare and per year, and increases year by year to arrive to about 30 tCO₂ per hectare and per year at age of 16 years and forward.

The average rotation is 20 years, including a thinning at the age of 14 years, reaching to a total absorption of about 300 tCO₂ per hectare. Considering the rule of verification periods of 5 years after the first verification action, incomes from tCER could begin only around the year 2017.

Considering the expected measurable annual current increment, an exercise of probable absorption of CO₂ by different afforestation areas was made in order to fulfill the rule of the limit of 8 kilotons CO₂ per year, with a maximum of 40 kilotons CO₂ by verification period, adjusted to the envisaged commitment periods in order to make good use of the volume annual increment, in the small scale AR-CDM project activities.

It was supposed a gross price of US\$4 per tCER. After expiring, the tCER can be resold in the next commitment period, subtracting a 10 per cent loss due to natural or anthropogenic damage, up to the moment the plantation is harvested at the age of 20 years. Three afforestation calendars of 5 years each were considered starting in 2007: 500 ha with 100 ha planted annually during the first 5 years; 400 ha with 80 ha planted annually during 5 years and; 300 ha with 60 ha planted annually during 5 years, and the results are showed in the following table.

Total area planted	Total tCO ₂ by Commitment Periods			Total tCO ₂ absorbed	Total tCO ₂ allowed	Total income in 25 years, US\$
	Second 2013-2017	Third 2018-2022	Fourth 2023-2027			
500	12,800	46,100	58,400	117,300	92,800	441,000
400	10,300	36,900	46,700	93,900	87,200	353,000
300	7,700	27,600	35,000	70,300	73,300	264,000

The table shows that the afforestation project of 500 hectares exceeds the allowed acreditable tCER amount in 24,500 tCO₂, equivalent to 21 per cent of the real CO₂ absorption. Otherwise, the 300 hectares schedule misuses the possibilities of tCER allowed by the established cup in decision 14/CP.10. Therefore, the maximum small scale AR-CDM project size recommended is about 400 hundred hectares under the Chilean forest circumstances for radiate pine.

At the same time, asuming that small land owners are at the same time low income individuals and as such, eligible for SSC AR CDM projects, participation requirements translate in the following barriers. In average, it is estimated that a small land owner is able to plant about 10 hectares per property. This means that in a 400 hectares project could participate from 40 low income individuals and up, which means a lot of organizational and administration rrangements and costs.

The main issues in this case are the transaction and administration costs, which amounts to about US\$120,000 for transaction costs and about US\$300,000 for administration costs, with a minimum cost of US\$420,000 in the project life, considering project formulation, DOE evaluation and Executive Board registration, small land owners' organization, administration and technical support, monitoring, and tCER commercialization.

The total income from tCER expected for a 400 hectare project is reduced from US\$353,000 to less US\$67,000 in nominal terms. This means a hypothetical money loss for each of the 40 participants. Taking into account the extensive pasture and agriculture tradition of the small land owners, this situation cannot be bore.

In consequence, in the case of Chile, it is assumed that the minimum cap for small scale AR-CDM project activities should be 32 to 40 KtCO₂ per year, in order to interest and convince small land owners to get involved in AR activities, mainly because of the high fixed transaction and administration costs valid at present.

However, since it is inherently very difficult to organize the rather large number of small-land owners needed to effectively take advantage of the increased scale, it is considered an additional barrier the reference to low income communities or individuals.*

2. Social effects

The social effect of the scarce or null participation of small land owners in small scale AR-CDM projects in Chile is important, especially because the lands they own are mostly degraded and with very low agricultural productivity. The continued plowing or pasture of these lands worsen the land's degradation process, and reduces the livelihood of the owners to such a point that they have to sell their proprieties and migrate to towns or cities, worsening the poverty slums.

The rural emigration is an issue the Chilean government has been dealing with for a long time, and the AR-CDM projects were considered an opportunity to hold it. Nevertheless, the present limit of 8 kilotons CO₂ per year constitutes a serious constraint that prevents the implementation of these projects.

3. Environment effects

Firewood is the main energy source the small land owners can accede to, and they obtain it from cutting down bushes or trees in their proprieties or the neighborhood in a process that worsen land degradation. Afforestation constitutes a renewal source of firewood that is time persistent, and that prevents the destruction of native forest and woody vegetation.

Small scale AR-CDM project activities could be an important way to reduce land degradation in areas with small land proprieties, increasing native woody vegetation conservation and wildlife development.

Leakage caused by small scale AR-CDM project activities is negligible, since most of the woody vegetation cut down for site preparation can be used as firewood by the small land owners during the first years, and later firewood can be obtained from branches and deadwood from the new planted forests.

** Allowing all kind of individuals or communities to participate would make small-scale AR projects similar to other small-scale projects that do not face this extra barrier.*

Conclusion and recommendation

The limit of 8 kilotons CO₂ per year for small scale AR-CDM projects, with a maximum of 40 kilotons CO₂ per verification period prevents the implementation of such projects in Chile, according to the experience at present.

Chile recommends that the limit of 8 kilotons CO₂ per year should be increased to 40 kilotons CO₂ per year, with a maximum of 200 kilotons CO₂ per verification period.

PAPER NO. 2: PARAGUAY

Submisión de la Republica del Paraguay
Implicancias de un posible cambio en el límite establecido por la Decisión 5/CMP1 para actividades de proyectos forestales de pequeña escala, incluyendo las siguientes cuestiones sobre los efectos sociales, económicos y ambientales

Paraguay posee un gran potencial para el MDL forestal pero debido a barreras metodológicas y de financiamiento entre otras ha visto dificultado su acceso a este mecanismo. Es por ello que se vio con gran entusiasmo la ventana abierta para las modalidades y mecanismos simplificados para los proyectos forestales de pequeña escala, no obstante según estudios realizados en la región y en función a los precios de mercado para los tCERS y ICERS el límite de 8 kton hacen prácticamente inviable este tipo de proyectos a nivel nacional.

Las implicancias del aumento del límite tendría efectos en los aspectos:

Económico:

Las pequeñas comunidades rurales no poseen; ni los conocimientos ni recursos financieros para desarrollar este tipo de proyectos, por lo que necesariamente deben recurrir al apoyo de organizaciones con mayor conocimiento, esto hace que los costos de transacción se incrementen significativamente, teniendo que hacer que los proyectos tengan que generar un gran volumen de tCERS o ICERS.

Social:

En el Paraguay hasta la fecha solo se ha generado un proyecto SSC con la ayuda de técnicos foráneos, el mismo ha identificado barreras que deben ser superadas como el caso del número de propietarios a ser involucrados el cual es limitado por la restricción de que un proyecto SSC no puede exceder de las 8 kton, al resultar poco atractivo en términos económicos.

Ambiental:

El aumento del límite a 32 kton hará más atractivo a un mayor número de propietarios a involucrarse a este tipo de proyectos y de este modo lograr una mayor participación de las comunidades locales que generen un incentivo positivo para desarrollar actividades de reforestación, con múltiples beneficios tales como la restauración de ecosistemas forestales degradados, producción de productos forestales maderables y no maderables de manera sostenible, además de la generación de servicios ambientales por recuperación y conservación de suelos, recursos hídricos, mantenimiento de la biodiversidad, etc.

Debemos tener en cuenta además que las actividades de forestación y/ o reforestación pueden convertirse en estrategias de mitigación y adaptación por el múltiple rol que juegan los bosques con su entorno.

Las implicancias de aumentar el parámetro permitido para proyecto de pequeña escala, permitirá además de aumentar el número de proyectos potenciales y generar los co beneficios mencionados en el párrafo anterior a que efectivamente podamos contribuir al fin último de la CMNUCC.

PAPER NO. 3: THE WORLD BANK

Rationale for Increasing the Size Limit of Small Scale Afforestation and Reforestation Projects

In rural areas of least developed countries, small-scale A/R projects represent a unique opportunity for low income communities and individuals to participate in the CDM considering the limited opportunities that these countries have in implementing the energy sector CDM projects. However, non-registration of small scale AR CDM projects so far reflects the challenges associated in implementing these projects under the current size limit. The following sections highlight the significance and implications of implementing small-scale AR projects and the need for increasing their size limit.

Social effects

The World Bank experience of analyzing small scale AR project proposals indicates the positive role of these projects in enhancing social capital and empowering poor rural communities through direct transfer of revenue from market in exchange for the global public good benefits of biologically sequestered carbon. These projects also complement the programmes on livelihoods, poverty reduction and community development.

Empirical experience indicates that small scale AR projects contribute to preservation of local and indigenous land tenures and farming systems. These projects also facilitate the pooling of household and community resources and create incentives for community-based land and infrastructure initiatives and investments.

Economic effects

In addition to carbon benefits, small-scale AR projects have potential to implement payments for other environmental services. However, transaction costs of implementing the projects under current limit of 8 kilotonnes CO₂e yr⁻¹ are significantly large in relation to the anticipated benefits from such projects. Moreover, economic benefits from timber and non-timber products of the projects would be insufficient to persuade poor and low-income communities to change the prevailing land use in favor of such projects. Evidence from studies¹ shows that the threshold of 8 kilotonnes CO₂e yr⁻¹ would not result in economically viable projects as at least 30 kilotonnes CO₂e yr⁻¹ at 12% discount rate is required to make them viable.

Using an area threshold model, Locatelli and Pedroni (2006)² show that even under optimistic assumptions on carbon price and transaction costs, small-scale AR project activities are not feasible under the existing size limit. Results of the study further show that simplified modalities and procedures could only confer benefits from an increase in the size limit over and above 8 kilotonnes of CO₂e per year.

Considering the requirements of land, upfront investment and working capital requirements in implementing AR projects, the current size limit of 8 kilotonnes falls short of the expectations of economically viable investment even after the inclusion of carbon revenue. The significantly low rates of

¹ <http://www.joanneum.at/encofor/publication/SSCARlimit.pdf>

² Locatelli, B. and Pedroni, L., 2006. Will Simplified Modalities and Procedures Make More Small-Scale Forestry Projects Viable Under the Clean Development Mechanism?, *Mitigation and Adaptation Strategies for Global Change*, 11(3): 621-643.

return of AR projects, often below the benchmark rates highlight the need for adopting a threshold limit that can be justifiable on the scale and scope economies.

The CDM Executive Board at its 26th meeting recommended an increase in the threshold limit for small-scale type-II energy project activities to 60 GWh yr⁻¹ and small scale type-III project activities to 60kt CO₂e yr⁻¹. Considering the need to provide equal opportunities for project participants in different sector scopes under the CDM, an increase in the size limit of small-scale AR-CDM projects becomes pertinent. In the absence of an increased size limit, small scale AR projects will continue to face disadvantages in attracting investment compared to the other CDM project categories even under the simplified modalities and procedures of the CDM.

Additionally, limiting small-scale AR-CDM project activities to low income communities and individuals restricts the replicability of such projects because low income communities often are land less or have small holdings that are required to support household food requirements precluding the use of the lands for AR activities. Low-income communities and individuals are the most likely beneficiaries of AR CDM projects considering the labor-intensive nature of the project activities. Allowing the participation of non-poor in small-scale AR CDM project activities would provide additional scope for improving the rural employment and cost-effective supplies of renewable biomass energy and other forest products. Therefore, removing the restriction of AR-CDM activities limited to low-income communities would enable all communities and individuals to equitably participate in these projects so that the true potential of the projects could be realized.

Environmental effects, including estimation of leakage

Small scale AR projects ensure supplies of renewable sources of biomass, which is an important source of cooking energy in most countries and prevent the use of non-renewable biomass and unsustainable harvests of biomass resources. The CDM EB34 recommendation to CoP/MoP3 for approval of small scale methodologies for non-renewable biomass also implies the need for supporting project activities to promoting sustainable sources of biomass supplies, which is a major objective of the small scale AR projects.

The decentralized implementation of small scale AR projects significantly contributes to improvement of microclimate of degraded lands and catchments. These projects also contribute to the restoration of soil productivity of degraded lands without involving direct market payments for soil carbon as monitoring and measurement of changes in the soil carbon is excluded under the simplified methodologies. The small scale AR projects are also the least cost opportunities for promoting biodiversity initiatives, sustainable land management, and conservation of threatened indigenous flora at the local level.

Leakage assessment

The leakage implications of small scale AR projects are likely to be small considering that these are often implemented as community and rural development projects and in close cooperation with rural communities. Therefore, existing leakage provisions of small scale simplified AR methodology are adequate to address the leakage assessment of these projects even under the increased size limit.

Recommendation:

The above considerations demonstrate a need for increasing the current 8 kilotonne CO₂e yr⁻¹ limit at least four-fold to 32 kilotonnes CO₂e yr⁻¹.