

小規模農家を対象とした植林CDM事業の実施手法の確立

Establishment of an implementation methodology for a reforestation clean development mechanism project targeting small-scale farmers

JIRCASが実施した植林CDM事業に対し、平成25年8月に国連CDM理事会から6,819tCO₂の炭素クレジット(CER)が発行された(表1、図1)。これは、中南米初の小規模農家を対象とする植林CDM事業へのCERである。本事業では、小規模農家のニーズに基づき、アグロフォレストリー(林地と農地を組み合わせた生産体系)や林間放牧(林地と家畜の放牧を組み合わせた生産体系)を実施し(図2)、小規模農家の土地の有効利用を実現している。中南米は世界で最も森林消失が大きい地域であり、JIRCASの確立した手法は中南米での小規模農家を対象とした森林関連の炭素隔離事業に適用可能である。

The Clean Development Mechanism (CDM) Executive Board of UNFCCC issued 6,819 tCO₂ of carbon credit (CER) to the reforestation CDM project of JIRCAS in August 2013 (Table 1, Figure 1). The CERs were the first in Latin America issued to the forestry CDM project targeting small-scale farmers (SSFs). This CDM project realized the effective use of SSFs' lands through introducing agro-forestry and silvo-pasture based on SSFs' needs (Figure 2). The methodology established by JIRCAS can be applied to various types of forestry carbon projects targeting SSFs in Latin America.

表1 GHG吸収増加量
Table 1. Increase of GHG removals by sinks in the A/R CDM project in Paraguay

Item	Tree species	Carbon stock (tC)	Baseline (tC)	Leakage (tC)	Net carbon stock increase (tC or tCO ₂) ⁽¹⁾
Carbon stocks					
	<i>Eucalyptus grandis</i>	882.2	263.2	132.3	486.7
	<i>Eucalyptus camaldulensis</i>	2,471.2	557.6	370.7	1,542.9
	<i>Grevillea robusta</i>	74.5	57.7	11.2	5.6
	Sub total	3,427.8	878.5	514.2	2,035.2
	Deduction ⁽²⁾	Δ 205.9	-	Δ 30.6	Δ 175.3
	Total				1,859.8
	Convert to tCO ₂ ⁽³⁾				6,819.4

Note (1) Net carbon stock increase = Carbon stock - Baseline - Leakage.
 Note (2) Deduction rate is determined according to margin of error. The margin of error of the project is 11.4%, which is corresponding with 6% of deduction rate.
 Note (3) The conversion rate of tC to tCO₂ is 44/12 (or 3.667).

表2 計画及びモニタリングの植林地面積
Table 1. Comparison of planned reforestation area with monitored reforested area

Stratum	Tree species (Planted year)	Plan (2009)		Monitoring (2012)		Baseline (2009)	
		Planted Area (ha)	No. of Parcel	Crediting Area (ha)	No. of Parcel	Cropland (ha)	Grassland (ha)
S1	<i>Eucalyptus grandis</i> (2007)	30.05	56	13.59	23	11.61	1.99
S2	<i>Eucalyptus grandis</i> (2008)	31.17	41	9.59	15	3.80	5.79
	Sub total	61.22	97	23.18	38	15.41	7.78
S3	<i>Eucalyptus camaldulensis</i> (2007)	16.36	17	7.71	9	2.75	4.96
S4	<i>Eucalyptus camaldulensis</i> (2008)	64.48	21	45.63	17	1.91	43.72
	Sub total	80.84	38	53.34	26	4.66	48.68
S5	<i>Grevillea robusta</i> (2007)	5.59	9	0.67	2	0.67	0.00
S6	<i>Grevillea robusta</i> (2008)	15.16	14	2.13	1	2.13	0.00
S7	<i>Grevillea robusta</i> (AF) (2007) ⁽¹⁾	14.05	28	1.13	1	1.13	0.00
S8	<i>Grevillea robusta</i> (AF) (2008)	38.30	54	1.06	2	0.08	0.97
	Sub total	73.10	105	4.99	6	4.01	0.97
Total		215.16	240	81.51	70	24.08	57.43

Note (1) AF: Agroforestry

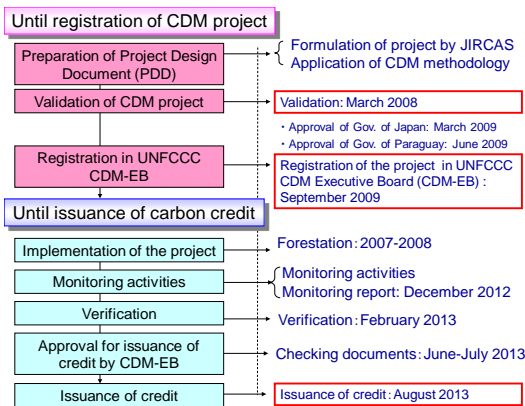


図1 CDM事業の実施手順
Fig. 1. Flow of processes from the start to the acquisition of CER of the A/R CDM project in Paraguay



図2 植林CDM事業で整備された森林
Fig. 2. Photographs of established forest in the A/R CDM project in Paraguay

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