





1964-2023

59 años

FSC® Forest Stewardship Council ® 100 %

Grandis Eucalyptus and Elliotti Taeda Pine

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Forestal Caja Bancaria es una inversión de la Caja de Jubilaciones y Pensiones Bancario de Uruguay, una institución de seguridad social creada el 14 de mayo de 1925.

En la actualidad se desarrollan actividades forestales, industriales y ganaderas en un total de 18.000 hectáreas, dando así trabajo a más de 300 colaboradores entre directos e indirectos.


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Tecnología de Dron aplicada a la Gestión Forestal en FCB





Usos de Dron en la Gestión Foresto Industrial de F.C.B.

Tareas y Actividades:

1. Plantaciones
2. Cosechas
3. Monitoreos
4. Ganadería
5. Seguridad
6. Control de Incendio
7. Medición de área
8. Infraestructura
9. Medición de volumen
10. Fotos y videos





Registro de Vuelo



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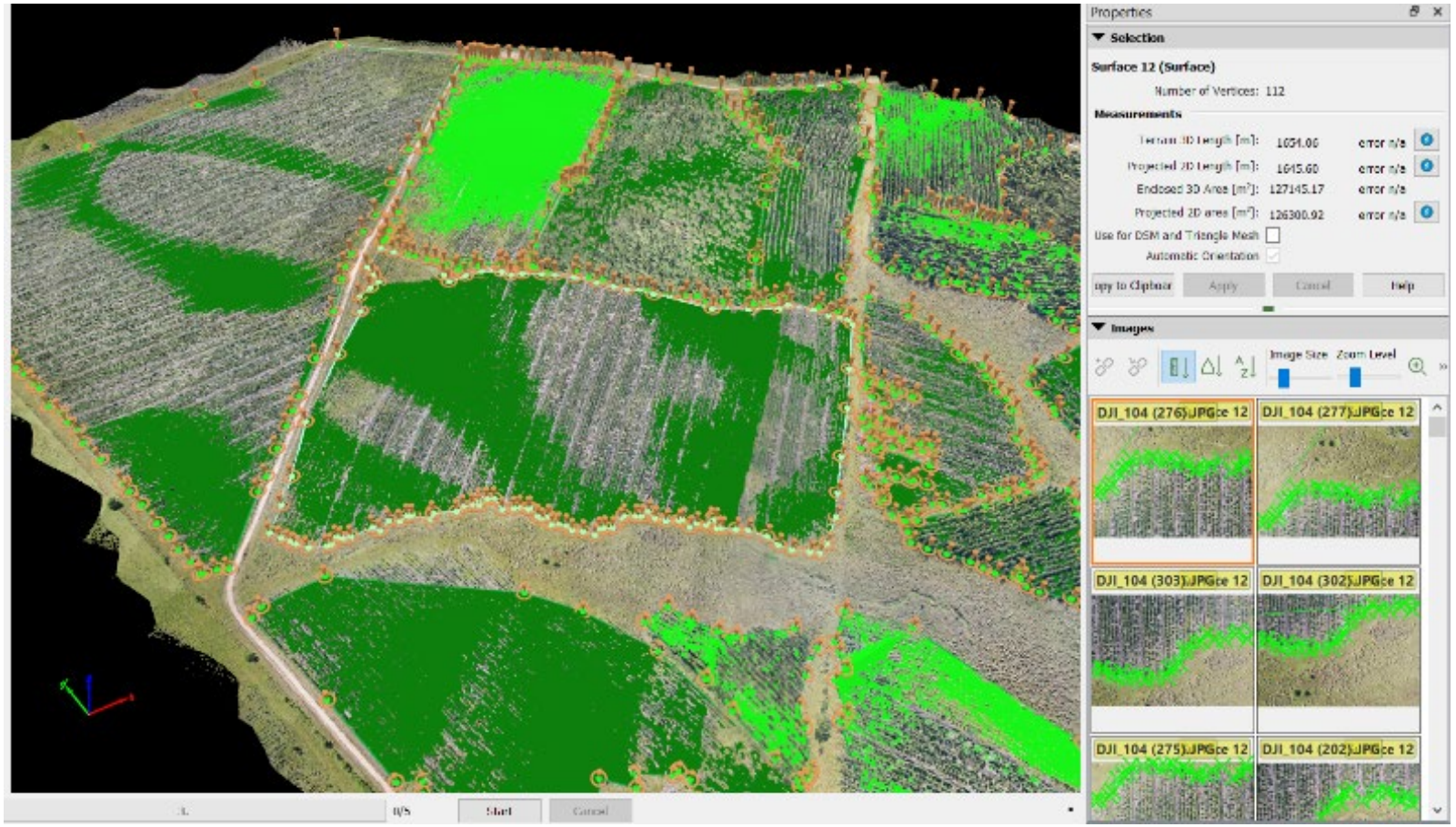


Imagen Real de Vuelo

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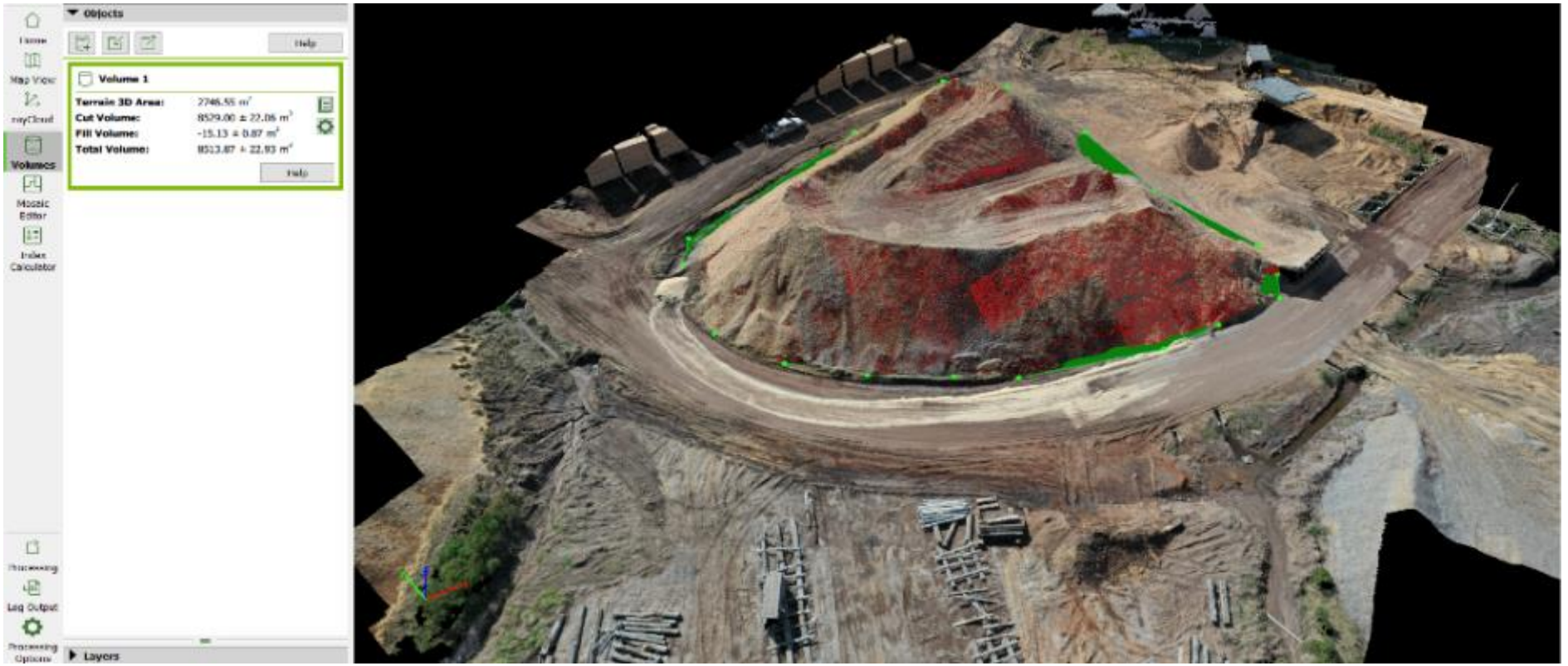
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Calculo de Superficie



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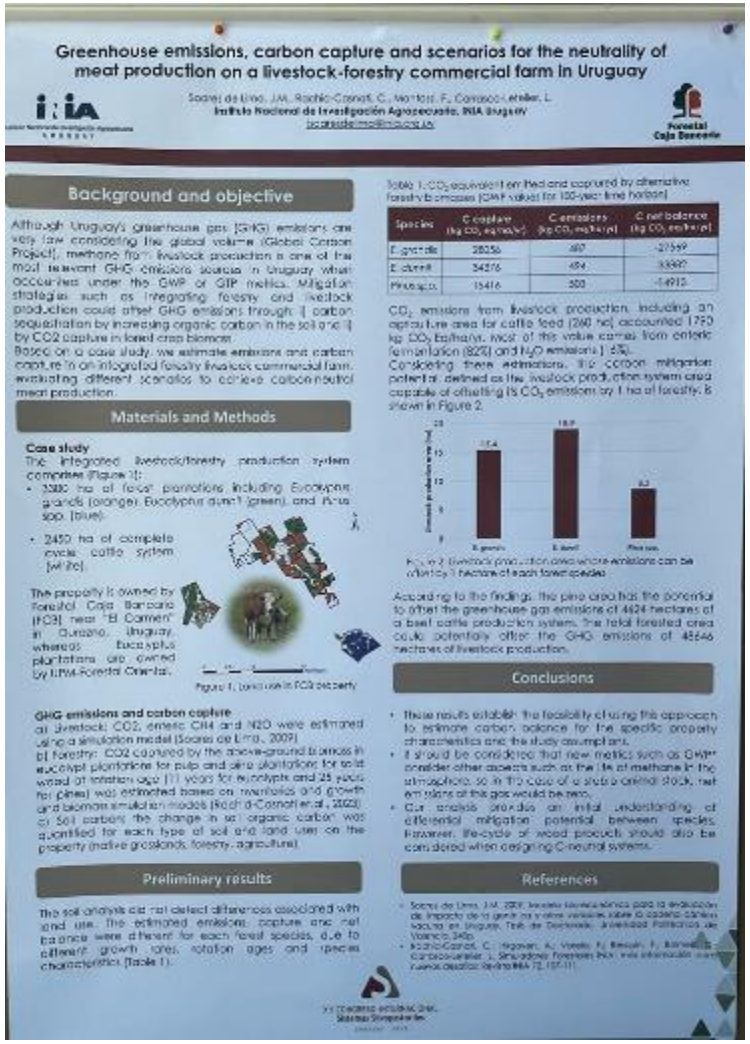
"INTEGRACION DE LA FORESTACIÓN Y LA GNADERÍA PARA UNA PRODUCCIÓN SOSTENIBLE"

INIA y la Forestal Caja Bancaria firmaron en 2021 un acuerdo de cooperación bilateral que apunta a profundizar líneas de trabajo conjuntas en aspectos técnicos vinculados a la integración productiva de la forestación y la ganadería de manera sostenible en el Uruguay.



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Emisiones de efecto invernadero, captura de carbono y escenarios para la neutralidad de la producción de carne en un establecimiento Forestal - Ganadero en Uruguay.



Greenhouse emissions, carbon capture and scenarios for the neutrality of meat production on a livestock-forestry commercial farm in Uruguay

Soares de Lima, J.M., Rachid-Casnati, C., Montossi, F., Carrasco-Letelier, L.

Instituto Nacional de Investigación Agropecuaria, INIA Uruguay

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Background and objective

Although Uruguay's greenhouse gas (GHG) emissions are very low considering the global volume (Global Carbon Project), methane from livestock production is one of the most relevant GHG emissions sources in Uruguay when accounted under the GWP or GTP metrics. Mitigation strategies such as integrating forestry and livestock production could offset GHG emissions through i) carbon sequestration by increasing organic carbon in the soil and ii) by CO2 capture in forest crop biomass.

Based on a case study, we estimate emissions and carbon capture in an integrated forestry-livestock commercial farm, evaluating different scenarios to achieve carbon-neutral meat production.

Materials and Methods

Case study

The integrated livestock/forestry production system comprises (Figure 1):

- 3080 ha of forest plantations including Eucalyptus grandis (orange), Eucalyptus dunnii (green), and Pinus spp. (blue).
- 2450 ha of complete cycle cattle system (white).

The property is owned by Forestal Caja Bancaria (FCB) near "El Carmen" in Durazno, Uruguay, whereas Eucalyptus plantations are owned by UPM-Forestal Oriental.

Figure 1. Land use in FCB property

GHG emissions and carbon capture

a) Livestock: CO_2, emeric CH_4 and N_2O were estimated using a simulation model (Soares de Lima, 2009).

b) Forestry: CO_2 captured by the above-ground biomass in eucalypt plantations for pulp and pine plantations for solid wood at rotation age (11 years for eucalypts and 25 years for pines) was estimated based on inventories and growth and biomass simulation models (Rachid-Casnati et al., 2022).

c) Soil carbon: the change in soil organic carbon was quantified for each type of soil and land use on the property (native grasslands, forestry, agriculture).

Preliminary results

The soil analysis did not detect differences associated with land use. The estimated emissions, capture and net balance were different for each forest species, due to different growth rates, rotation ages and species characteristics (Table 1).

Table 1. CO_2 equivalent emitted and captured by alternative forestry species (GWP value) for 100-year time horizon)

Species	C capture (kg CO_2 eq/ha/y)	C emissions (kg CO_2 eq/ha/y)	C net balance (kg CO_2 eq/ha/y)
E. grandis	28056	497	-27559
E. dunnii	34376	494	-33882
Pinus sp.	15416	503	-14913

CO_2 emissions from livestock production, including an agriculture area for cattle feed (240 ha), accounted 1750 kg CO_2 eq/ha/yr, most of this value comes from enteric fermentation (CH_4) and N_2O emissions (~ 6%).

Considering these estimations, the carbon mitigation potential, defined as the livestock production system area capable of offsetting its CO_2 emissions by 1 ha of forestry, is shown in Figure 2.

Figure 2. Livestock production area whose emissions can be offset by 1 hectare of each forest species

According to the findings, the pine area has the potential to offset the greenhouse gas emissions of 4624 hectares of a beef cattle production system. The total forested area could potentially offset the GHG emissions of 46546 hectares of livestock production.

Conclusions

- These results establish the feasibility of using this approach to estimate carbon balance for the specific property characteristics and the study assumptions.
- It should be considered that new metrics such as GWP* consider other aspects such as the life of methane in the atmosphere, so in the case of a stable animal stock, net emissions of this gas would be zero.
- Our analysis provides an initial understanding of differential mitigation potential between species. However, life-cycle of wood products should also be considered when designing C-neutral systems.

References

- Soares de Lima, J.M. 2009. Modelo tecnico-físico para la evaluación de impacto de la ganadería sobre el cambio climático: Aplicado en Uruguay. Tesis de Doctorado. Universidad Politécnica de Valencia. 240p.
- Rachid-Casnati, C., Nogueira, A., Viveros, Y., Bentancur, F., Bentancur, O. 2022. Simuladores Forestales INIA: una herramienta para el manejo adaptativo. Revista INIA 72, 157-161.

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Del 18 al 20 de octubre 2023
Montevideo / Uruguay
II Congreso de la Red Global
de Sistemas Silvopastoriles
IV Seminario Nacional de Sistemas Silvopastoriles

ORGANIZAN:

"Hacia una diversificación sostenible"

En el marco **del XII CONGRESO INTERNACIONAL** Sistemas Silvopastoriles se presentaron los avances de dicho Proyecto.

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Acuerdo

AGENCIA NACIONAL DE INVESTIGACIÓN E INNOVACIÓN

Forestal Caja Bancaria

“Inteligencia artificial y energías renovables aplicadas al secado”

El Directorio de la Agencia Nacional de Investigación de Innovación (ANII) y Forestal Caja Bancaria ha través del Fondo de Investigación e Innovación en Cambio Climático desarrollan este Proyecto.

Forestal Caja Bancaria

FCB ha incorporado la gimnasia laboral desde 2009 con el objetivo de mejorar la salud y el desempeño laboral de sus trabajadores. Se lleva a cabo diariamente al inicio de la jornada laboral en una rutina de 15 minutos.







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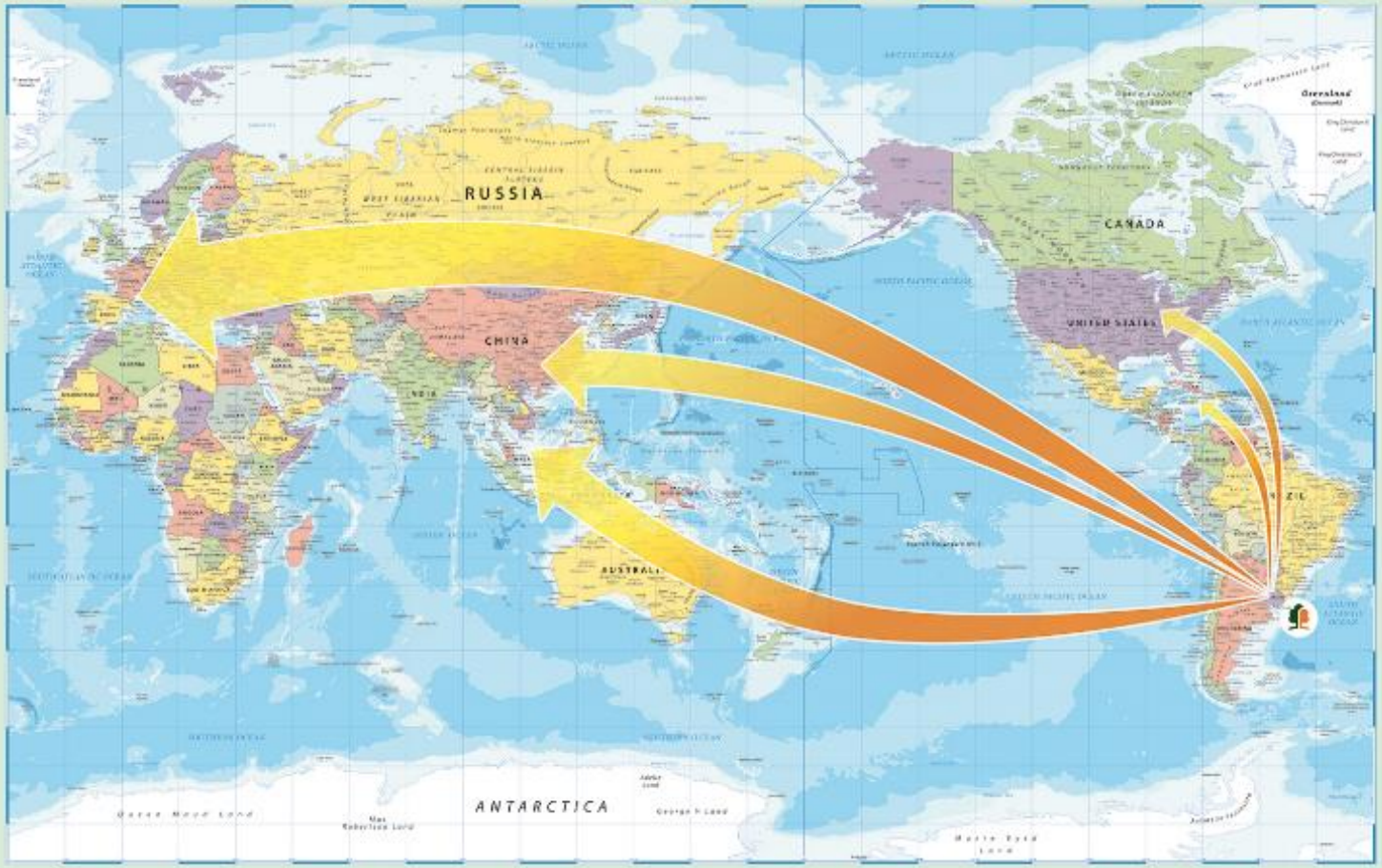
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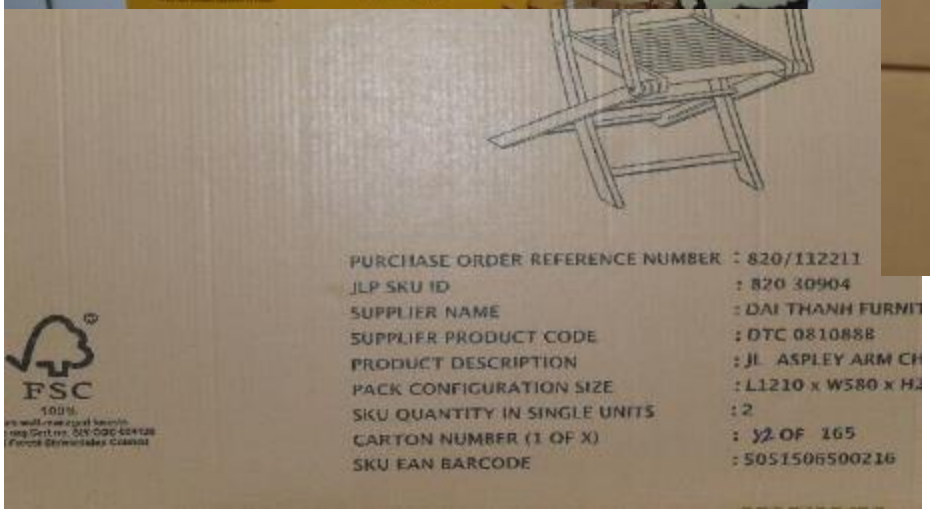




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Empaque de producto final fabricado por nuestros clientes







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MUCHAS GRACIAS!!

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