

**Waste Paper Recycling Unit (WPRU – Egg Tray) Carbon Calculations
(Environmental Impact)**

Year	2019		2020	
	(Pcs)	(Kg)	Production (Pcs)	Wastepaper used (Kg)
Total	472484	63372	566770	52470
Average (Production, pcs)	519627			
Average (Wastepaper, kg)	57921			

Parameter	Numbers	Source
1 Production Related		
Carbon footprint of virgin paper (tCO ₂ e/t paper)	115	Source: Cushman-Roisin & Tanaka Cremonini,
No. of trees required for 1 t paper	17	
No. of trees saved per year due to recycling 57.921 t paper	985	Source: Cushman-Roisin & Tanaka Cremonini,
Avoided GHG Emission/year due to recycling 57.921 t paper (tCO ₂ e)	67	IPCC 2006 Guidelines
2 Transport Related		
Assuming import of egg trays from India, transport emissions are as follows:		
No of trips from P/ling to Thimphu per year	26	
Fuel use for 172 km (single trip)-L	19	
Total fuel consumed per year	497	
	Diesel density of 0.85	
Mass of diesel used per year (kg)	422 kg/L	Source : IPCC 2006
Energy used per year (TJ)	0018148262	
GHG Emission from transport per year (Kg CO ₂ e)	1344786189	IPCC 2006 methodology with default NCV and emission factor
	1.34 t CO₂e/year	
3 Total GHG avoided per year (tCO₂e)	68 tonnes	
		Source: Richa Sharma,, Lolita Pradhan , Maya Kumari and Prodyut Bhattacharya, Assessment of Carbon Sequestration Potential of Tree Species in Amity University Campus Noida(2021)
4 CO₂ sink saved per year (kg)	73849275	74 tonnes
THEREFORE,		
a) Total GHG emission avoided and sink protected	142 t/year	
b) No of trees saved due to recycling of paper	985 trees/year	