遊戲介紹

**Project: Earth Chicken- Carboin 地球趣墾-碳幣大富翁**

Goal: Use Carboin as the new currency in agricultural activities to earn a fortune!

Activity: You will need to find out how to accumulate a large fortune through balancing your capital profit ($P) and carbon reduction ($C) in harvesting timber or crop and reducing carbon footprint.

**目標:  找尋適合的氣候、土地條件，種植適合的物產，過程中累積碳足跡與金錢，尋找單位金錢最小碳足跡的勝利方程式。**

Introduction

Carbon is the foundation for food, structure, and life on Earth. One major constituent of carbon, carbon dioxide, is the air we respire and the air we produce through burning fossil fuel. In recent decades, carbon dioxide is the major factor to this changing environment. Many scientific reports show the high level of CO2 we have now is less likely caused by natural events but by anthropogenic ones. One reason is because the level has far exceeded that of ancient records in the last 8 million years. In order to reduce CO2 in the air, many movement and methods have been provided. One of them is carbon trade. Carbon trade is to give a price to activities and compensate with products that can reduce carbon dioxide. However, pricing on activities or products can potentially fall into the fallacy in producing more carbon if the pricing market becomes unfair.

碳是地球上最重要的元素之一,  他是食物, 結構, 生命的基礎. 其中一個由碳構成的重要分子, 二氧化碳, 是我們呼吸排出的, 也是燃燒化石燃料的產物. 在近幾十年間, 二氧化碳已成為改變氣候環境的重要因子. 很多科學報告顯示現在空氣中二氧化碳的濃度中, 有很大一部份並不是來自自然因素而是人為影響. 其中一個理由是過去八百萬年之間的大氣濃度都沒有如現在這麼高的濃度. 為了降低二氧化碳濃度, 大家集思廣益想了很多方法, 其中一個即是碳交易. 碳交易是針對任何活動都評量造成的碳釋出(或可稱為碳足跡), 並購買能夠減碳的方式來作為補償. 雖然針對活動或物產進行評價碳價值的作法可能導致反效果, 例如當評價系統不公平的時候就購買減碳的量, 卻沒有中和碳排放, 反而變相鼓勵更多消耗.

In an effort to highlight the importance of plants for carbon fixation and the feedback some cultivation activities may cause to the environment, we design Earth Chicken (as interesting farming in mandrain) game and introduce currencies for carbon (Carboin, $C) and economical trading (capital profits, $P). We estimate the impact of the above activities with carbon budget partly on several scientific reports. Two scientific models are: one tights together growth of crops with its consumption for water and nutrients (GAEZ) and another model provides a larger view on ecosystems and show tree's dependency on environment (ORCHIDEE). Many environmental factors constrain plant growth, such as temperature, water, light, and nutrients. We know that natural ecosystem provides various environments for diverse plants and animals, such as ecoregions. When you log onto the current view of the modern Earth, you will see information extracted and modeled from satellites of NASA (GLDAS-NOAH025). You will begin to observe how different it can be within a few years! Now, you are on a mission to earn profits on both sides while reducing the environmental stress across these years. Will you be able to save the Earth?

為了能夠讓玩家能更理解植物固碳的功能以及買賣作物當中對環境做的影響, 我們設計了這個地球墾趣遊戲, 以種植植物來獲取碳幣($C)與賣出獲取金錢($P) 的活動, 套入各種活動引起的環境變異, 來理解這兩種貨幣系統的特色與糾葛. 遊戲中引用的兩種科學估算模式一是由聯合國農糧署針對經濟作物所作的估算 (GAEZ), 另者由科學家發表的生態系統對養分的使用效率以及初級生產量進行的估算(ORCHIDEE). 影響植物生長的重要環境因素包括氣溫, 水環境, 陽光, 與養分. 同時我們也知道原始氣候條件已提供生態系統的多樣性, 例如植物群系(Ecoregions). 當你登入這個遊戲, 你會先看到從衛星(NASA-GLDAS-NOAH025)實際觀測與推估出的狀況如何. 你會開始注意到遊戲的時間內, 環境狀況在這幾年的變化! 現在, 你有任務了, 你要怎麼同時積累碳幣與貨幣呢? 你能減少這幾年之間環境的變化嗎？你可以拯救地球嗎？