WELCOME TO OCELOTS STUDY CASE

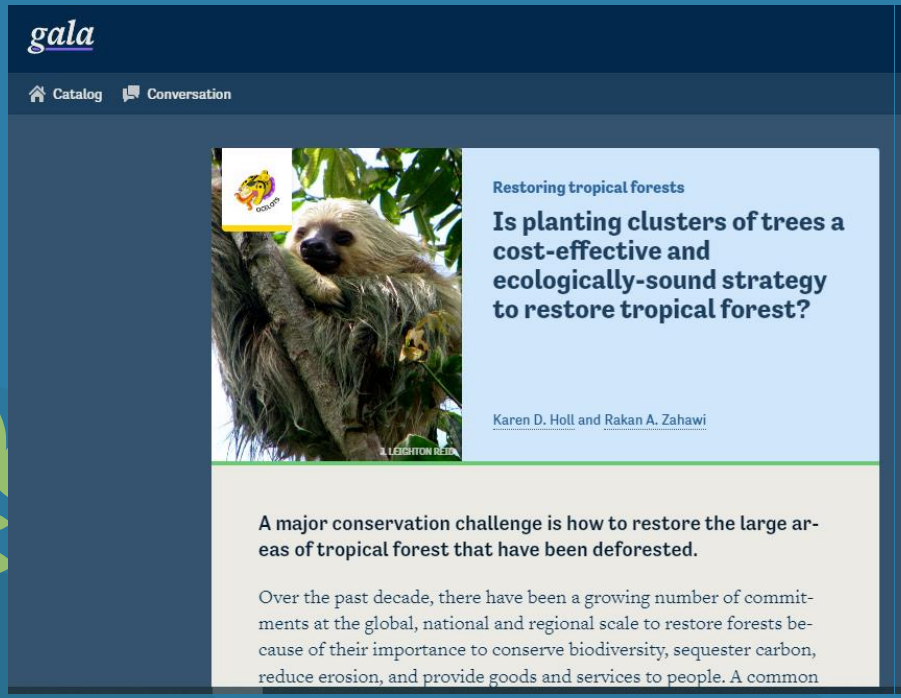
OCELOTS SHORT INTRO

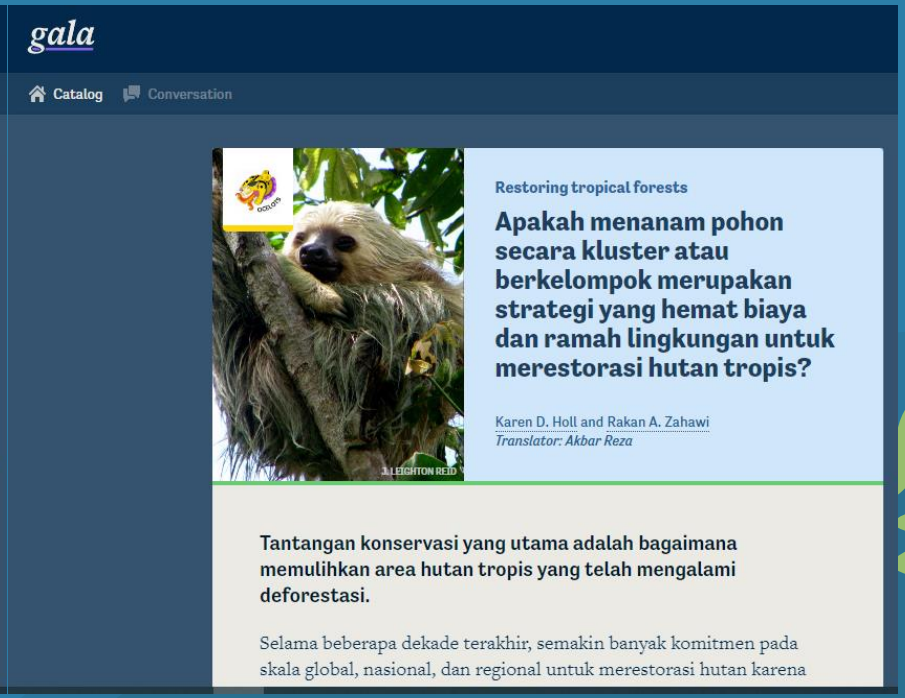
1. The **OCELOTS** (Online Content for Experiential Learning of Tropical Systems) Network brings together tropical ecology researchers with the vision of creating an open-access, online resource library of learning modules in tropical ecology. The goal of these modules is to enhance principle-based reasoning and quantitative skills in ecology, and changing the way that students learn biology.

2. With funding from the **National Science Foundation's Program in Research Coordinated Network in Undergraduate Biology Education**, OCELOTS organizes and leads workshops that enable network participants to bring tropical biology into the undergraduate biology curriculum in an accessible way and adapted around the world.

For Further information - OCELOTS (iastate.edu)

STUDY CASE – RESTORING TROPICAL FORESTS





Link: https://www.learngala.com/cases/restoring-tropical-forests -
The study case available in English, Bahasa Indonesia, and Spanish

INSTRUCTIONS

March 2023

Preparation or Pre-Implementation (Mind Map, Role Play, Roundtable, Peer Assessment)

22/03/23 – 28/03/23

Read the module and supplementary materials

Submit the Quiz by 10.00 pm

29/03/23

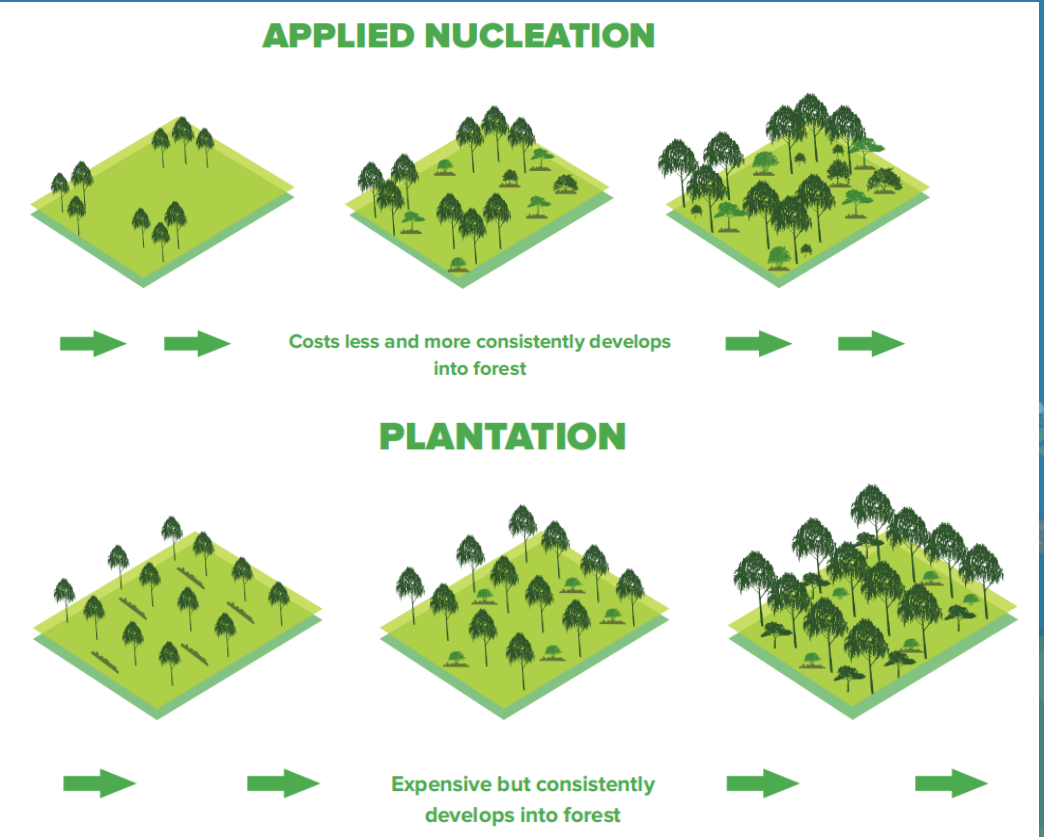
Class Discussion & Group Discussion

05/04/23

Mind Map

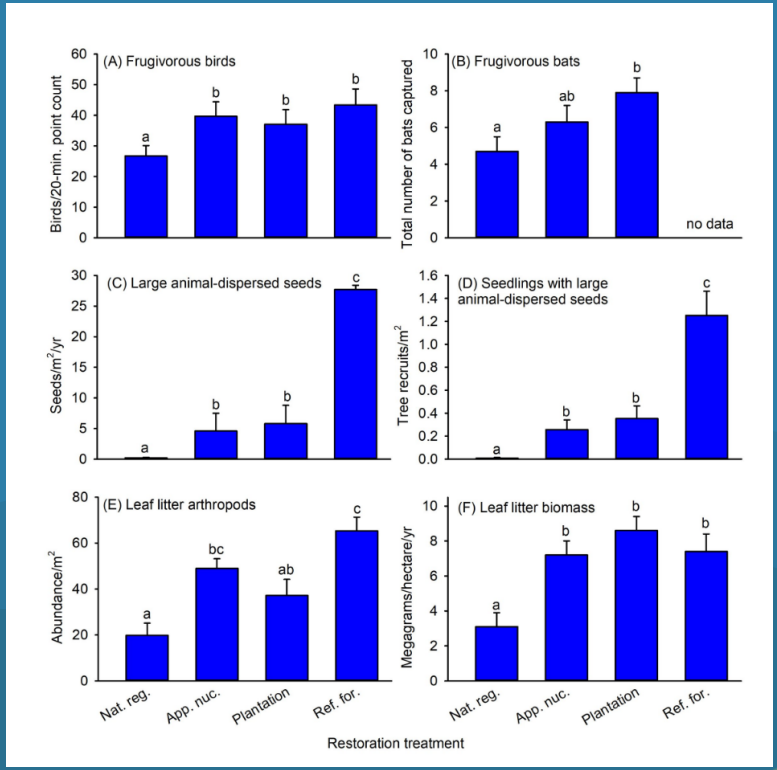
15 YEARS EXPERIMENT KEY FINDINGS

Planting costs for the applied nucleation treatment were **a third** of the plantation treatment



15 YEARS EXPERIMENT KEY FINDINGS

In general, Applied Nucleation produce similar results with plantation, even though more time is needed for the forest to recover to the reference site level.



15 YEARS EXPERIMENT KEY FINDINGS

There are variations across sites → Justify the importance of replicating restoration studies or projects at multiple sites

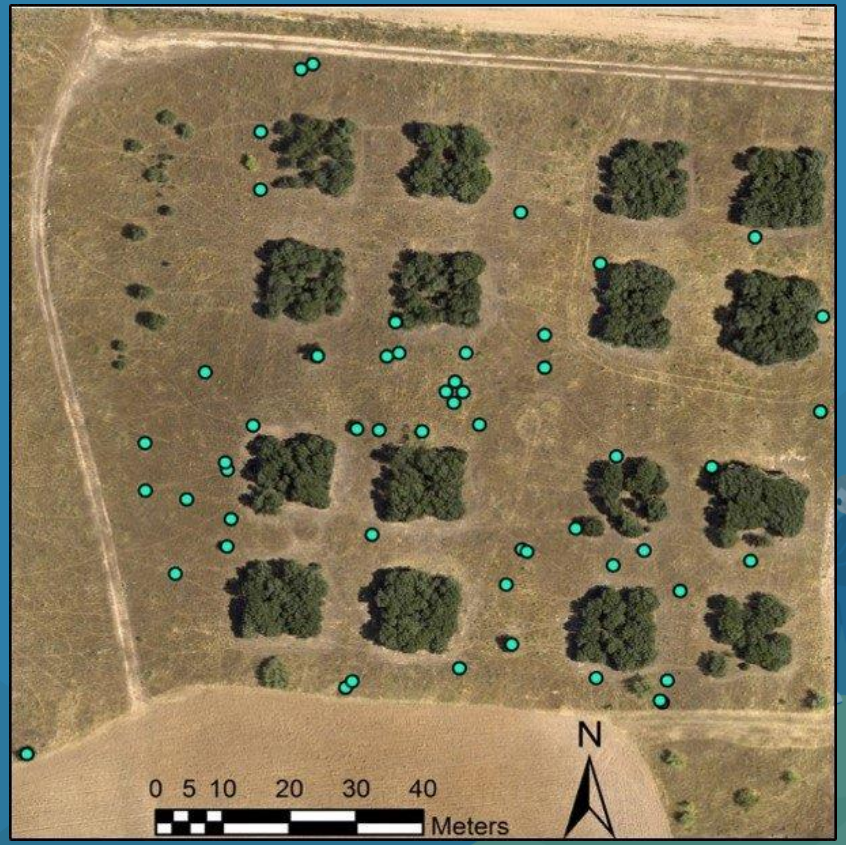
A typical 9-year old plantation with an 12-15-meter tall canopy.

6 year old tree plantation with very slow tree growth rates

15 YEARS EXPERIMENT KEY FINDINGS

Applied Nucleation not always success

Tree islands in Spain which have not expanded much in size after 21 years. Blue dots show the 58 new seedlings that have recruited over more than two decades.



15 YEARS EXPERIMENT KEY FINDINGS

Socioeconomic considerations is inevitable

- On the flip side, since **fewer trees are planted**, there is **less potential** for landowners to earn income over time by selectively logging trees to sell for timber when they mature.
- We found that most landowners had **different perceptions** of the three restoration treatments, and that influenced which approach they preferred

SUPPLEMENTARY MATERIALS I

OBJECTIVES

1. Students understand the **restoration technique** developed by the government
2. Students understand the **Socio-Economy-Culture** standard mapping

KEY QUESTIONS

1. What are the **restoration techniques** developed by the government? Natural regeneration (NR), Plantation (P), AN (Applied Nucleation), or others?
2. Why we need to understand**:1). Demographic data; 2). Accessibility; 3). Livelihood; 4). Labour force; 5). Community institutions; 6). Potential community conflicts**, to create a successful restoration program

PRIMARY SOURCES (not limited to)

Standar restorasi hutan tropika basah (tropical wet forest restoration standard) – the Ministry of Environment and Forestry of Indonesia,

1. Objective 1 - Gambar 4. Desain pola tanam campuran jenis dipterokarpa dan non dipterokarpa
2. Objective 2 - A.3.3.1.3. Kondisi Sosial, Ekonomi, dan Budaya

link: https://bsilhk.menlhk.go.id/standarlhk/wp-content/uploads/2022/10/2.-STANDAR-RESTORASI-HUTAN-TROPIKA-BASAH.pdf

SUPPLEMENTARY MATERIALS 2

OBJECTIVES

1. Students understand **community-based forest management** in Indonesia and its pivotal role in restoring the forest

KEY QUESTIONS

1. What is the definition of **Perhutanan Sosial (*Social Forestry*), Hutan Desa (*Village Forests*), Hutan Kemasyarakatan (*Community Forests*), Hutan Tanaman Rakyat (*Community Plantation Forests*), Hutan Rakyat (*Community Forest*), Hutan Adat dan Kemitraan Kehutanan (*Customary Forests and Forestry Partnerships*)**?
2. Why are those **Social Forestry strategies** important for a successful restoration program?

PRIMARY SOURCES (not limited to)
Permen-lhk-no-83-tahun-2016
link: https://peraturan.bpk.go.id/Home/Details/163479/permen-lhk-no-83-tahun-2016

SUPPLEMENTARY MATERIALS 3

OBJECTIVES

1. Students understand the role of a **community-based agroforestry approach to conserving the forest and people livelihood**

KEY QUESTIONS

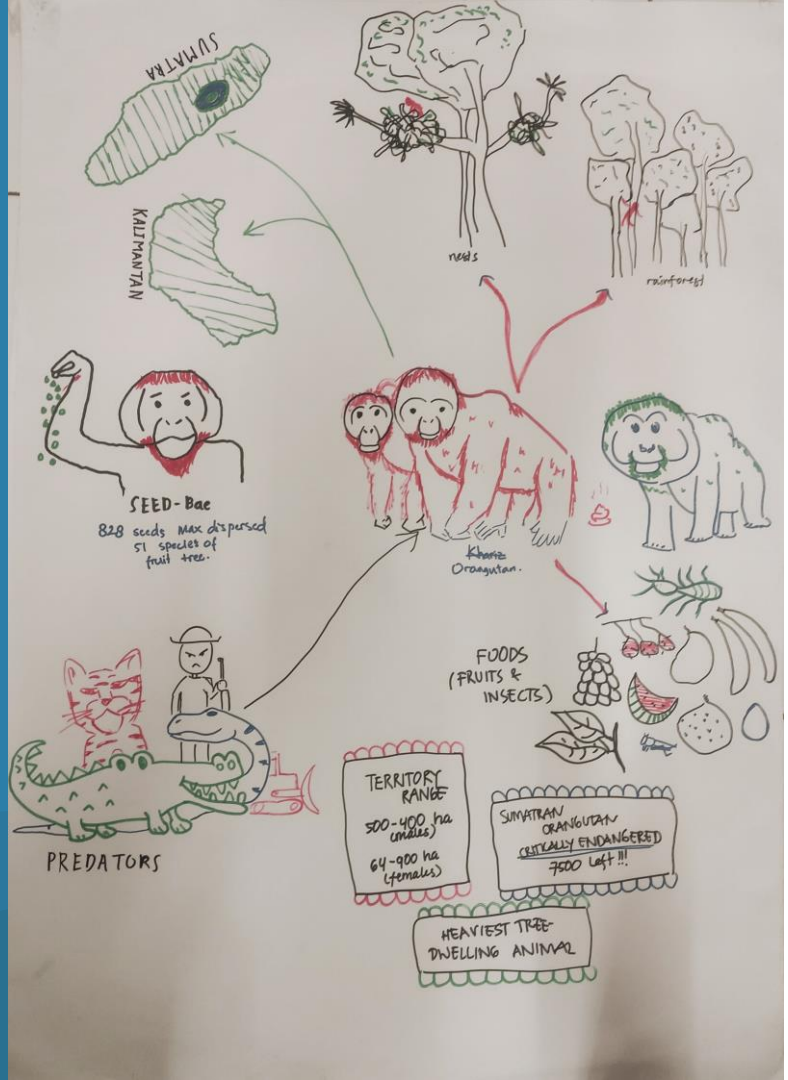
1. What do you learn from **Swara Owa Foundation strategies** to conserve The Petungkriyono Forest, Javan gibbon (*Hylobates moloch*), and elevate local people's livelihood?

PRIMARY SOURCES (not limited to)

link:
https://www.oneearth.org/from-loggers-to-forest-protectors-agroforestry-changed-this-community-in-indonesia/
https://swaraowa.org/

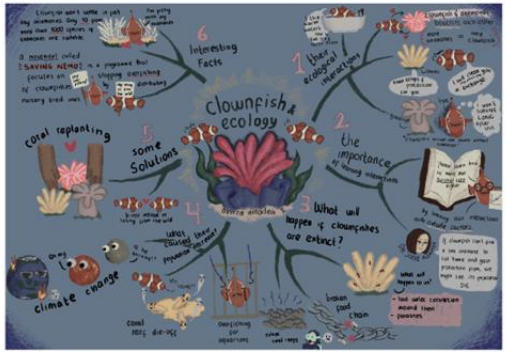
PRE-IMPLEMENTATION

Mind Map Exercise

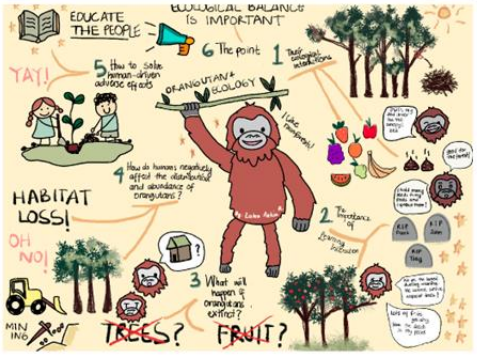


Nayla

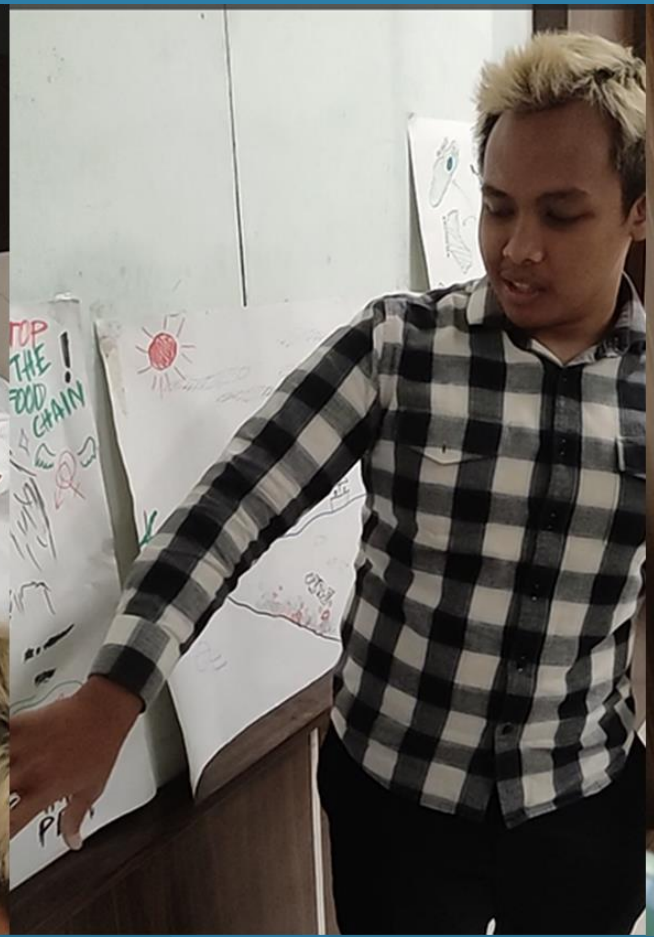
Avirra



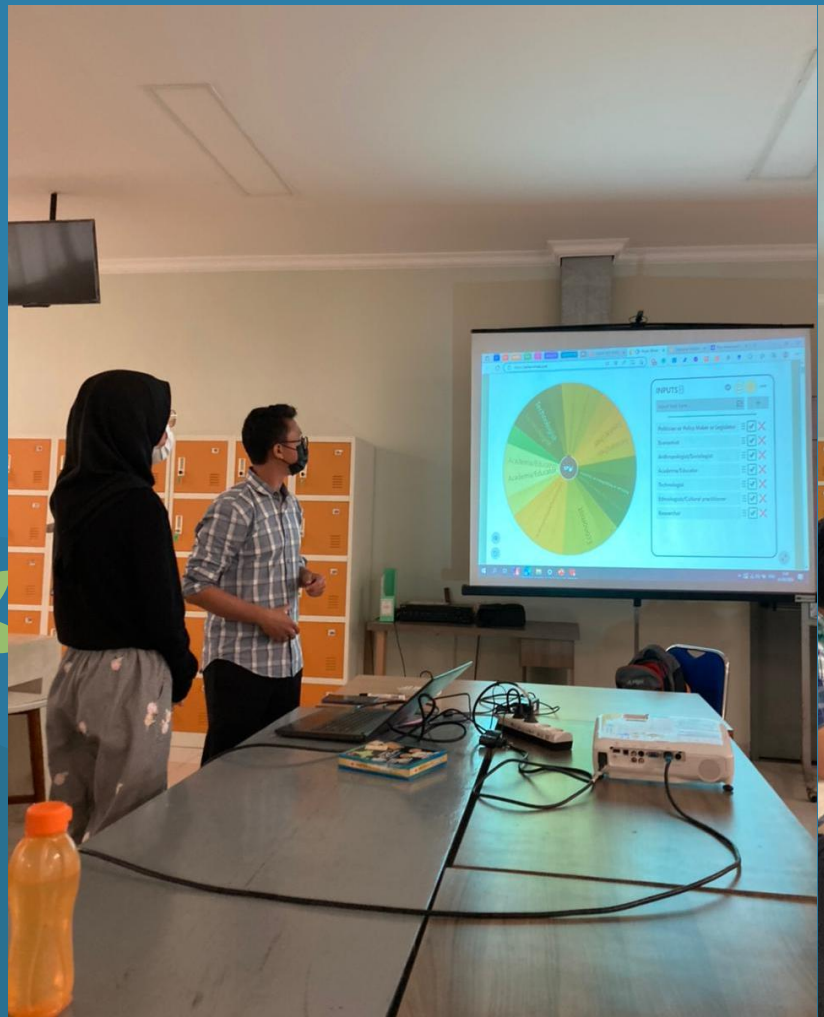
Rara



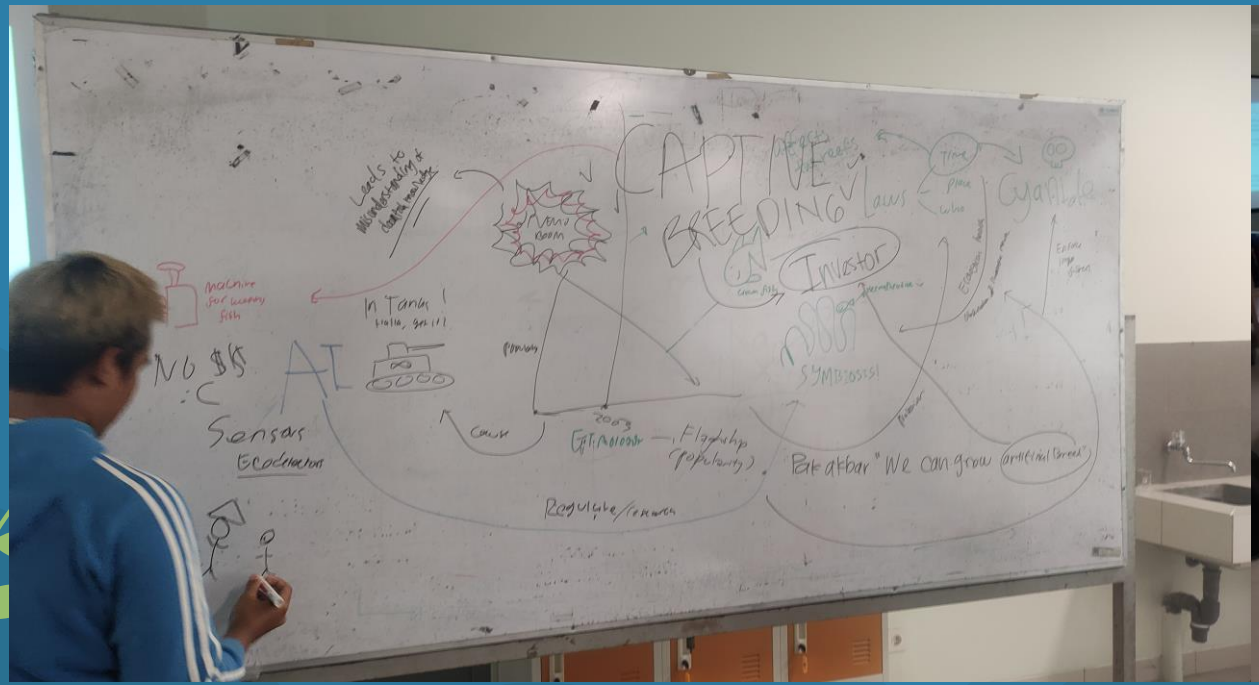
PRE-IMPLEMENTATION Presentation



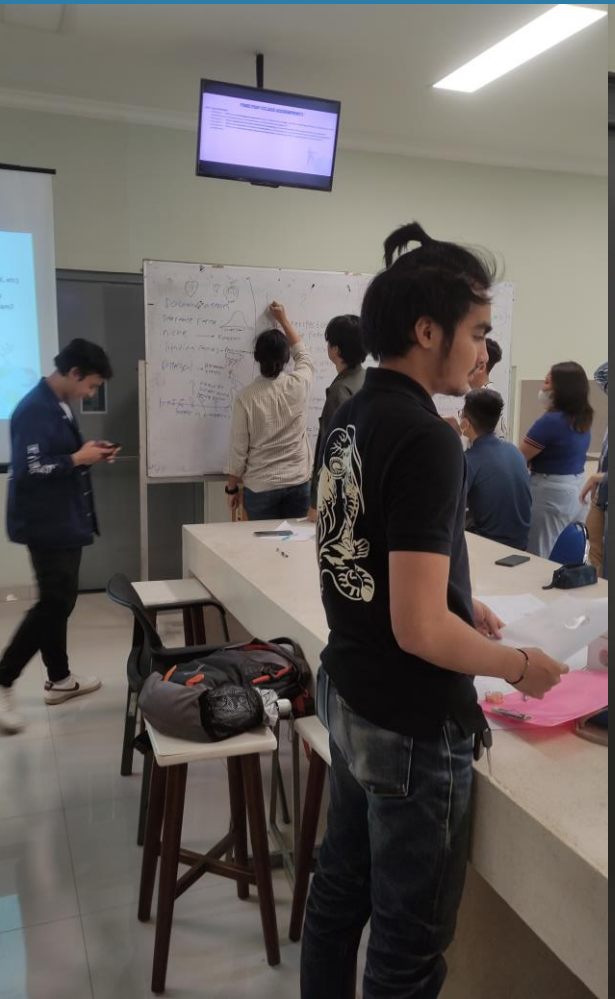
PRE-IMPLEMENTATION Role Play and Roundtable

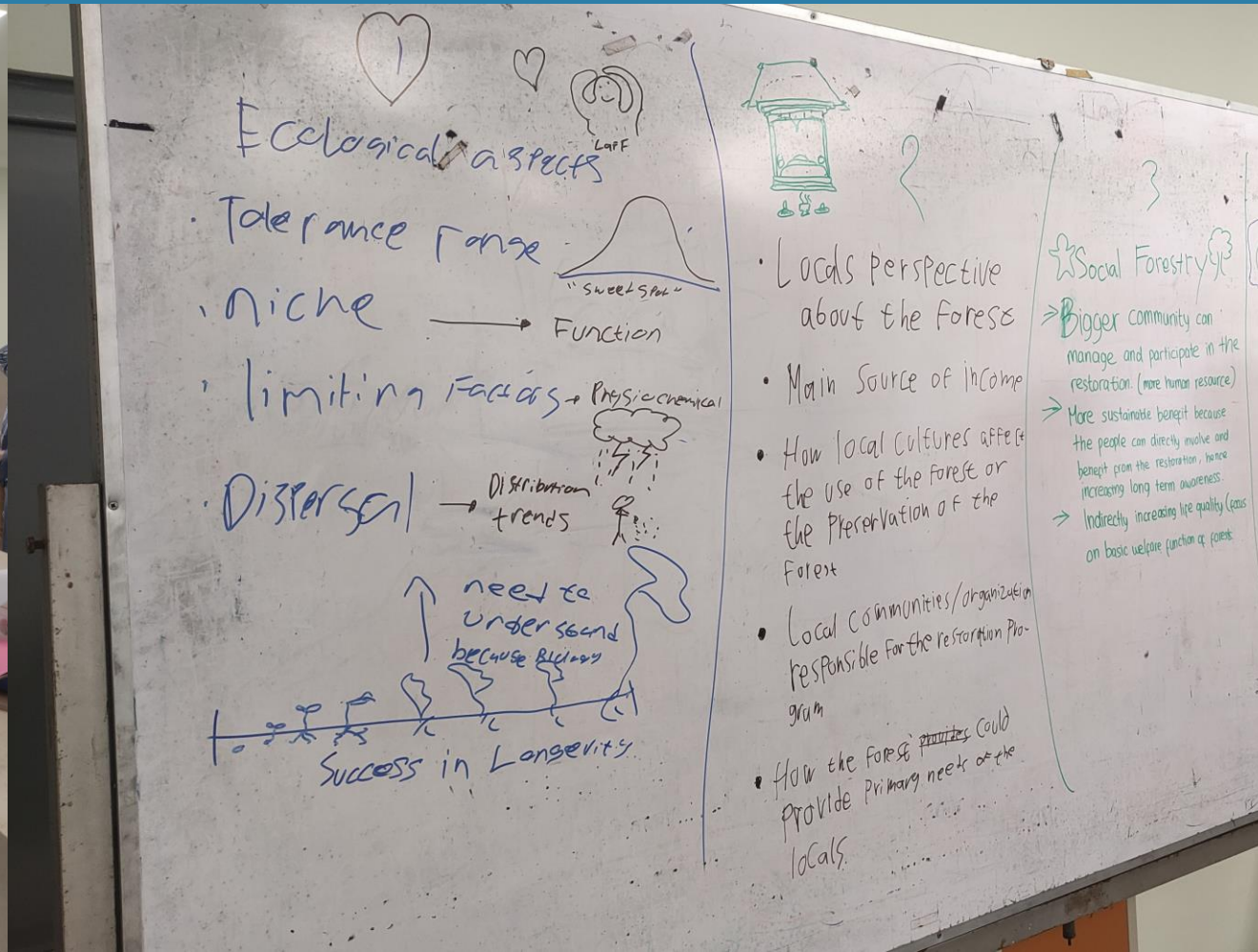


PRE-IMPLEMENTATION Role Play and Roundtable



IMPLEMENTATION Group Discussion





IMPLEMENTATION Group Discussion

1

Ecological aspects

- Tolerance range
- niche → Function
- limiting Factors → Physicochemical
- Dispersal → Distribution trends

"sweet spot"

need to understand because biology

Success in Longevity

2

- Locals perspective about the Forest
- Main Source of Income
- How local cultures affect the use of the Forest or the Preservation of the Forest
- Local communities/organization responsible for the restoration Program
- How the Forest ~~provides~~ could provide Primary needs of the locals

3

Social Forestry

→ Bigger community can manage and participate in the restoration. (more human resource)

→ More sustainable benefit because the people can directly involve and benefit from the restoration, hence increasing long term awareness.

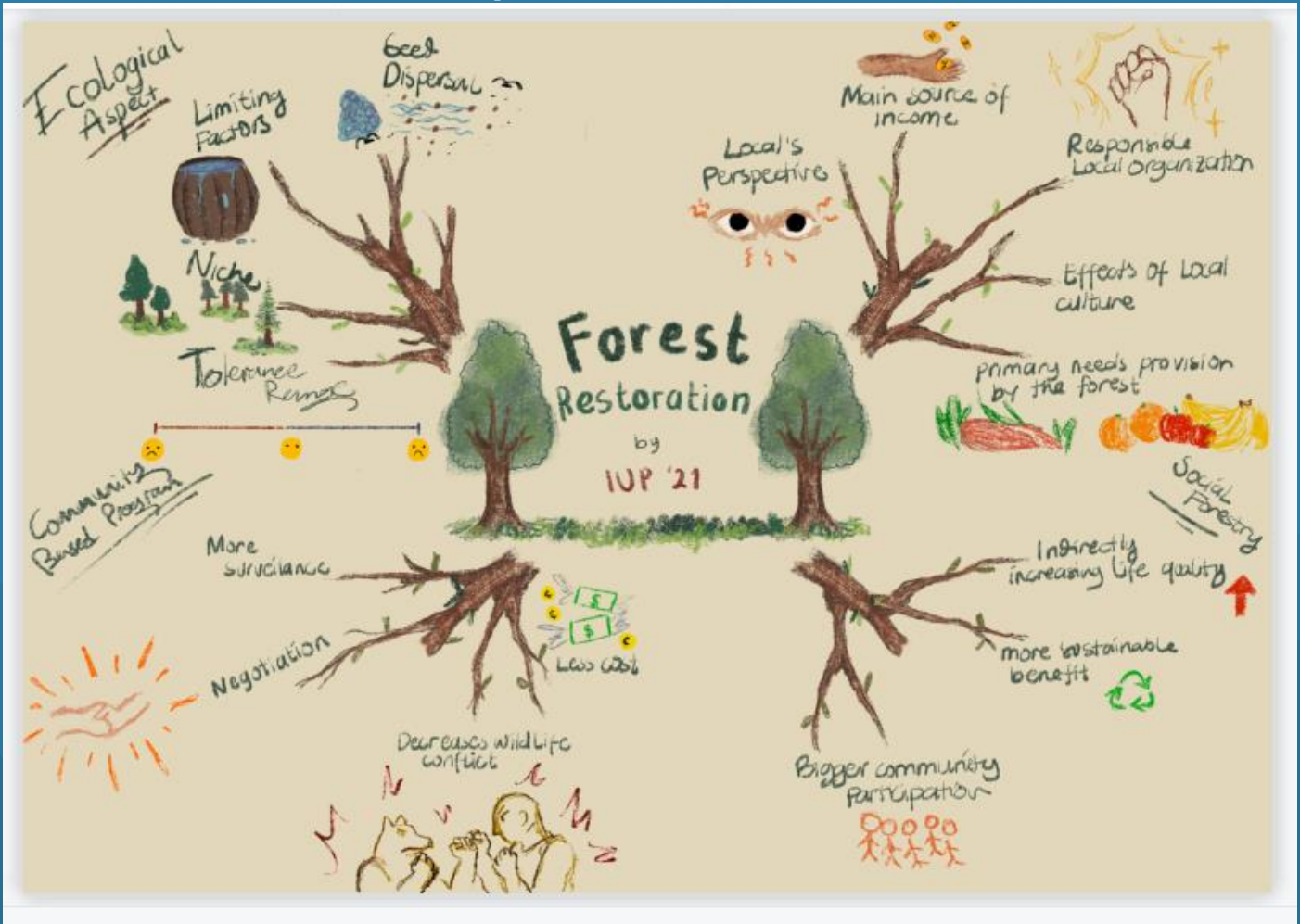
→ Indirectly increasing life quality (focus on basic welfare function of forest.

4

Community Based Programs

- Negotiating
- Cooperation with the locals
- Less Cost
- Locals knows more about the Environment condition
- Open minded (listen to locals)
- We can gotong royong
- More surveilance
- Decrease the level of conflict with the wildlife

IMPLEMENTATION Mind Map



IMPLEMENTATION

Photo Session ☺

The implementation of this OCELOTS module was done as part of a workshop supported by the U.S. National Science Foundation, award RCN-UBE 2120141. After the course was completed and grades had been posted, all of the students in the images consented to inclusion of their photos and drawings in this powerpoint included in this publication.