

Hazard Literacy Center

Hazard Literacy Education Program

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Plantation Farming and the Loss of Biodiversity



1. Program Overview

This program is an integrated social-and-environmental education unit exploring the effects of plantation agriculture on biodiversity through a range of activities (critical reading, map-based activity, dinner-table analysis). Learners identify the links between the production regions of plantation crops such as palm oil, bananas, and cacao and our own dinner tables, and analyze how large-scale monoculture leads to increased pesticide use and habitat destruction. The program is designed so that learners from diverse backgrounds, including students with immigrant/multicultural backgrounds, can connect the material to their own lived experience and cultural background.

Grade Level	Middle and high school students (with consideration for multicultural-background students)	Instructional Methods	Lecture, critical reading, map-based activity
Learning Environment	Regular classroom (using a world map or projector)	Duration	Total 100 minutes (50 min × 2 sessions)
Required Materials	Plantation-related articles/advertising materiall, world map, food cards (20 types), worksheet		

2. Learning Objectives (Hazards Literacy Framework)

① Explain the definition and historical background of plantation agriculture, and the effects on biodiversity decline of the chemicals (pesticides/herbicides) used in it.

② Identify how crops produced through plantation agriculture connect to dinner tables around the world, and recognize one's own role as a consumer.

③ Propose measures to mitigate the problem of biodiversity decline caused by plantation agriculture.

Learning Objectives	Knowledge & Understanding		Reasoning & Skills					Values & Attitudes			Psychology & Emotion			Behavioral & Practical Enagement		
	A1	A2	B1	B2	B3	B4	B5	C1	C2	C3	D1	D2	D3	E1	E2	E3
Objective ①	O	O	O													
Objective ②			O	O				O	O							
Objective ③													O		O	O

3. Key Concpets

· The concept of plantation agriculture and its major crops

· The problems of monoculture and the effects of pesticides/herbicides: biodiversity decline, soil and water pollution, etc.

• Fair trade and sustainable agriculture, and the social impact of consumer behavior

4. Program Sequence

Learning Activities	
Introduction	·Introduction: Photos related to palm oil, bananas, and chocolate → connect to the term "plantation" ·Prompt: "Which of the foods I ate this morning might have come from a tropical region?"
Inquiry1	·Explain the types and effects of pesticides/herbicides used in plantation agriculture ·Share cases of biodiversity decline and labor exploitation caused by chemical intensive plantation farming ·World map: mark major plantation regions and draw a production → processing → consumption route diagram
Inquiry2	·"Analyzing My Dinner Table" activity: each group member draws one food card, then chooses which foods drawn are most likely to contain plantation-grown ingredients ·Discussion 1: ways to consume food without causing ecological damage from plantations ·Discussion 2: the roles of individuals/businesses/governments in preventing ecological damage from plantations
Wrap-up	·Present the activity content and complete the worksheet

5. Theoretical Background and Activity Design for Disaster Education

Plantation agriculture originated in the enslaved labor of European colonialism in the 15th–16th centuries and continues today as large-scale monoculture centered on multinational corporations. A well-known example is how oil-palm plantations in Indonesia and Malaysia destroy orangutan habitat and sharply reduce biodiversity. Moreover, most of the profits from the plantation business go to multinational corporations in developed countries, with only about 3% returning to workers. Pesticides and herbicides also expose workers to various disease risks. From the perspective of social studies education, this issue is a strong topic for critical-thinking education that connects environmental disaster to global consumption structures and historical colonialism. Because it examines the natural and human-made causes of disaster from an international-society perspective, it is also readily applicable and extendable to the context of students with multicultural backgrounds.

6. Instructional Considerations

- Take care not to portray countries that produce plantation crops negatively; address both the historical origins of plantation agriculture and the structural problems of plantations involving multinational corporations together.
- Rather than having students simply brand companies as "bad," guide the discussion so students critically understand the consumption–production–ecology connection and seek solutions.
- When introducing the historical background of plantation agriculture, take care that no prejudice or hostility arises toward countries that experienced colonial rule.
- Present cases showing that processed foods resulting from plantation agriculture are exported and sold worldwide, and connect this to the backgrounds of multicultural background students.

7. References

- https://www.hani.co.kr/arti/culture/book/1107651.html
- https://www.khan.co.kr/article/200703270811151
- https://www.segye.com/newsView/20231201511938

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Topic	
What will we learn?	

1 Opening Reflection

Write down anything you ate yesterday that you think may have contained plantation-grown ingredients.

2 Inquiry: Major Exporting/Importing Countries and Trade Routes of Plantation Agriculture

Palm Oil	Exporting country	
	Importing country	
Banana	Exporting country	
	Importing country	
Cacao	Exporting country	
	Importing country	
Coffee	Exporting country	
	Importing country	



3 Inquiry: Which Foods Contain Plantation-Grown Ingredients?

Choose the dishes below that are most likely to contain plantation-grown ingredients, and explain why.



Dish(es) chosen and why (estimated plantation-grown ingredients involved)

4 Discussion: Ways to Reduce Ecological Damage from Plantation Agriculture

What are ways to reduce ecological damage caused by plantation agriculture?

Discussion 1: Ways to consume food without causing ecological damage from plantations

Discussion 2: The roles of individuals/businesses/governments in preventing ecological damage from plantations

5 Wrap-Up

Let's summarize what we newly learned and felt through this lesson.