

Sustainable Palm Oil Debate

In this activity, students act as stakeholders involved in the development of Asian rainforests and discuss the issues surrounding the global sustainable palm oil industry.

Middle School Life Sciences:

NGSS Performance Expectations:

MS-ESS3-3 **DCI:** ESS3.A Natural Resources & ESS3.C Human Impacts on Earth Systems

MS-ESS3-4 **DCI:** ESS3.A Natural Resources & ESS3.C Human Impacts on Earth Systems

MS-LS2-1 **DCI:** LS2.A Interdependent Relationships in Ecosystems

MS-LS2-5 **DCI:** LS2.C Ecosystem Dynamics, Functioning and Resilience & LS4.D Biodiversity and Humans

MS-ETS1-1 **DCI:** ETS1.A Defining and Delimiting Engineering Problems

Common Core: WHST.6-8.1, WHST.6-8.7, WHST.6-8.8, WHST.6-8.9, RST.6-8.1, RST.6-8.8, RI.8.8, SL.8.1 & SL.8.4

High School Life Sciences:

NGSS Performance Expectations:

HS-ESS3-4 **DCI:** ESS3.A Natural Resources, ESS3.C Human Impacts on Earth Systems & ETS1.B Developing Possible Solutions

HS-LS2-6 **DCI:** LS2.C Ecosystem Dynamics, Functioning and Resilience & LS4.D Biodiversity and Humans

HS-LS2-7 **DCI:** LS2.C Ecosystems Dynamics, Functioning and Resilience, LS4.D Biodiversity and Humans & ETS1.B Developing Possible Solutions

HS-ETS1-1 **DCI:** ETS1.A Defining and Delimiting Engineering Problems

HS-ETS1-3 **DCI:** ETS1.B Developing Possible Solutions

Common Core Standard: RST.11-12.1, RST.11-12.7 & MP.2

Background

If you are interested in saving orangutans, tigers, elephants and rhinos in the wild, it is important to learn about the palm oil industry. Palm oil is a type of vegetable oil found in many foods and bath products. It is mostly grown in the biodiverse rainforests of Asia on the islands of Borneo and Sumatra. These islands are the only habitat of many endangered species.

Palm oil is not part of the rainforest; it is an introduced crop that can be grown in different ways. There is a conservation group called the Roundtable on Sustainable Palm Oil (RSPO). They ensure that palm oil is grown in a sustainable way which reduces the impact on the rainforests, the people, and animals that live there. The companies that join the RSPO use sustainable palm oil in their products. Today 21% of the palm oil that is produced globally is sustainable palm oil. When palm oil is grown in a non-sustainable way, rainforests that are home to many endangered species of animal are cut down.

Objectives:

Students will be able to effectively engage in a collaborative discussion on conservation issues to construct an explanation based on research and explain the reasoning behind their decision.

Students will be able to construct an argument to demonstrate the way in which human interests, attitudes, and actions influence an individual's decision on the environment.

Students will be able to define the challenges involved in balancing the needs of people and wildlife and provide evidence to support their solution to the problem.

Materials:

Sustainable palm oil research materials (students gather on their own)

Mock RSPO newspaper article

Role cards (Optional: placards identifying each group)

Procedure:

1. In this lesson, students will discuss their ideas and role-play a debate on the conservation issue of sustainable palm oil.
2. Students will read the mock newspaper article about the RSPO's invitation to all stakeholders involved in the sustainable palm oil industry to discuss the issue.
3. Students will be assigned to different interest groups and research their viewpoints.
4. They will produce a list of the pros and cons of supporting the RSPO and the production of sustainable palm oil. Students will need to provide evidence to support their conclusions.
5. A discussion will follow, led by the RSPO representative, to rally support for their cause.
6. After the different groups have decided whether they will support the RSPO, the whole class will discuss the complex issue of wildlife conservation and alternatives to sustainable palm oil.

Websites with Background Information:

Cheyenne Mountain Zoo- www.cmzoo.org/conservation/palmOilCrisis/

Roundtable on Sustainable Palm Oil- www.rspo.org

Report on Profitability & Sustainability in Palm Oil Production-

[http://awsassets.panda.org/downloadprofitability_and_sustainability_in_palm_oil_production_update .pdf](http://awsassets.panda.org/downloadprofitability_and_sustainability_in_palm_oil_production_update.pdf)



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Mock News Article/Palm Oil Debate Lesson

Roundtable on Sustainable Palm Oil Hosts Global Conference

The Roundtable on Sustainable Palm Oil (RSPO) will meet at the Fresno Chaffee Zoo this week to discuss the global conservation issue of sustainable palm oil production. The RSPO is an international organization founded in 2004, in response to the urgent and pressing global call for sustainable produced palm oil. The organization is a multi-stakeholder group with many members from palm oil growers and producers to businesses, social organizations, conservation NGOs and government institutions. The objective of the RSPO is to promote the growth and use of sustainable palm oil products through credible global standards and

engagement of stakeholders. In November 2007, the RSPO launched a certification system establishing a definition and criteria for certified sustainable palm oil.

The goal of this conference is to gather members of industry related special interest groups to discuss the complex issue. In an attempt to rally for support, the RSPO has invited a variety of representatives including Sumatran plantation manufacturers, ecotourism companies, retailers, and farmers. Attendees will be encouraged to express their opinions, questions and concerns regarding the issue.

A Glimpse Into the Rainforest

Tropical Rainforests are home to roughly half of all the animal and plant species on Earth. The rainforest receives anywhere from 100 inches or more per year. Animals found in the rainforest have adaptations for survival in this environment, such as: prehensile tails for arboreal life, bright colors and patterns for camouflage, loud vocalizations for communication, and diets that

What is Palm Oil?

Palm oil is a type of vegetable oil that you probably eat and use every day, and is found in many food and bath products. It is widely grown in the rainforests of Asia on the islands of Borneo and Sumatra, home to many endangered animals including orangutans, tigers, elephants and rhinos. Palm oil is not native to this rainforest; it is an introduced crop that can be grown as a plantation crop.

may be largely based on fruits. Soil in the rainforest is nutrient poor, causing plants to rely heavily on the ability to recycle those nutrients from other living plants and decomposing leaf litter.

Who is the RSPO?

The RSPO develops a criteria for sustainable management to minimize the impact on the rainforest, people, and animals that live there. The companies that join the RSPO, pledge to help protect habitats and species that live in these rainforests.



“The Orangutan Project”

Your job is to lead guests on white water rafting excursions and hikes up a volcano! You are native Indonesian tour guides headed by Leif Cocks, founder and president of the conservation organization “The Orangutan Project.” Leading expeditions into the rainforests of Sumatra is what you do. Treks begin and end in Jakarta and include a tour of the magnificent Gunung Leuser National park where orangutans, siamangs, gibbons, leaf and macaque monkeys can be observed in their natural habitat. Wildlife trips include a visit to a reforestation project site and an orangutan rehabilitation center. As a tour guide, you will introduce participants to the native people of Indonesia and their way of life. Although, the overall goal of the organization is to save orangutans from extinction, this job also allows you to feed your family and send your children to school.



Indo Agricultural Services Workers



You know first-hand that your employer, Indo Agricultural Services, provides poor working conditions to their employees. They are in the palm oil production business, a labor intensive industry that has helped to lift millions of native Indonesians out of poverty. However, Indo Agricultural Services has set up a monopoly on palm oil production in your region. Within your community, land has been seized from local farmers to increase the size of your company’s plantation. Growers do not issue protective equipment to workers, they do not provide adequate accommodations, they do not pay minimum wage or offer healthcare and other benefits. Currently, Indo Agricultural Services is not a member of the Roundtable on Sustainable Palm Oil (RSPO).

American Consumer

Have you ever had *Honey Bunches of Oats* cereal for breakfast, snacked on a *Twinkie* after lunch or ordered *Domino’s Pizza* for dinner? If the answer is yes, you are one of millions of customers who are unknowingly supporting rainforest deforestation in Indonesia. Orangutans, tigers, elephants and rhinos live in this habitat. So how can you help save these endangered species? The products mentioned above use non-sustainable palm oil, an edible oil farmed in Indonesia. Non sustainable palm oil is grown in a way that negatively impacts the rainforest. If you are looking to purchase food and bath products that use sustainable palm oil, oil that is produced so that the impact on the rainforest, the people and the animals that live there is reduced, there is a simple way. Download the Cheyenne Mountain Zoo’s Sustainable Palm oil App by going to their website. It contains a shopping guide of the products that use sustainable palm oil and those who do not. Once you have become educated, it is an easy choice to make!



Indo Agricultural Services



There is turmoil within your community. The farmers that work on your large plantation are protesting poor working conditions. They demand better treatment. A possible solution would be to become certified by the Roundtable on Sustainable Palm Oil (RSPO), but this requires time and money. Maintaining this certification is an added cost. In order to become certified by the RSPO, your company must protect High Conservation Value (HVC) areas where biodiversity is found and habitats for endangered species exist. This means that you cannot farm on highly forested land to make extra timber profits. You must farm on already degraded land. Ongoing audits or financial checks must be done to make sure these improvements are being made. Staff must also be trained in these new practices. This takes time. However, with all of these regulations the quality and uniformity of the palm oil being produced would increase. Pesticide costs would be reduced. Accident rates on the plantation would go down, social conflicts within the community and associated costs would be reduced. Improved relations with other organizations in the production of palm oil would also occur.

Hostess Food Company



For nearly a century, Hostess continues to delight snack fans everywhere with a variety of new and classic treats like *Twinkies*, *Ding Dongs*, *Ho Hos*, *Donettes* and *Fruit Pies*. As a retailer, you are honored to sell the original creme-filled cakes that so many consider an irreplaceable part of American life. Palm oil is a delicious ingredient in your products that makes them so tasty. Because of its affordability, this edible oil keeps prices down. Currently, you are not a member of the Roundtable on Sustainable Palm Oil (RSPO). Switching over to the use of sustainable palm oil for your desserts would be a costly and time consuming endeavor. However, over the past couple of years, you have received thousands of letters from consumers asking you to make the ecologically responsible choice. Many of these consumers have mentioned that the Cheyenne Mountain Zoo has an App available for consumers to download onto their smartphone. This App contains a list of the food companies which use sustainable palm oil. They comment that they are buying our competitors products because, unlike us, they are on the sustainable palm oil shopping list.