

REFLECTION SECTION

ANSWER GUIDE

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Note: The reflection questions are meant to encourage students to think critically about what they have read. There are no right or wrong answers.

THINKING ABOUT SCIENCE

What are some of the benefits forests provide to your community? *Students should be able to identify at least 3 of the following benefits: wood products, homes for wildlife, clean water, clean air, places to live and play, food, and energy. Students may also know that forests hold*

carbon on Earth, reducing the impact of climate change; and they may know that forests help to slow or stop soil erosion.

Do you think it is helpful to get information about forests in different regions of the world? Why or why not? *Students will answer individually to this question and should back up their answer with logic. They should realize, however, that it is helpful to get information about regions so that regions can be compared.*

INQUIRY 1

THE SITUATION:

Compare and contrast the forests shown in Figure 11. What are their similarities? What are their differences? *Students should identify at least 2 similarities and 2 differences and explain what these similarities and differences are. For more challenge, have students imagine why the forests they compared are different.*

What do you think about the changes in your country's forests over the past 5 years? Is this a change for the better or worse? Why or why not? *Each student will have individual answers to these questions. You can use this question to start a class discussion about your country's forest resources, their value, and forest management.*

WHAT FAO DISCOVERED:

Look at figures 19-21. What can you say about the change in your country's forests in the past 5 years? *Each student, depending on their location, will have a different answer. Students in the same classroom should come to similar conclusions about changes in their country's forests over the past five years.*

Why is it important to understand whether the amount of forest area worldwide is shrinking, growing, or staying about the same? *Individual students will have different answers to this question. This question can be used to begin a discussion about the value of forests to people and the planet.*

INQUIRY 2

THE SITUATION:

Why do you think biodiversity is important to the world's forests? *Students will have individual answers to this question. They should be able to back up their answers with logical reasons.*

Some possible answers include:

- 1. Biodiversity creates a variety of places for animals to live.*
- 2. Biodiversity protects species from becoming endangered.*

3. *Biodiversity ensures a variety of forest products.*
4. *Biodiversity allows species to adapt over time.*
5. *Biodiversity provides insurance against one species using too many resources.*

How could knowing the number of hectares in each of the 3 categories help FAO to understand how healthy those forests were in 2010? *Primary forests are forest with native tree species and with little evidence of human activities. In primary forests, the ecological processes are not much disturbed. Because of this, primary forests indicate healthy forests.*

WHAT FAO DISCOVERED:

Based on FAO's findings, would you say that the health of the world's forests is increasing or decreasing? Why? *Students will have individual answers to this question, but they should look at the evidence given and be ready to discuss their thinking. Based on the findings about primary forests, it appears that the health of the world's*

forests is decreasing.

Based on the findings about the number of hectares of forests set aside for either biodiversity or other ecological functions, it appears that the health of the world's forests is increasing.

Due in part to climate change, damage from insects, disease, fire, and other disturbances may increase in the future. This would negatively affect the health of forests worldwide. FAO, therefore, found both positive and negative indicators of forest health.

Is it important to protect the biodiversity of forests? Why or why not? *Students will have individual answers to this question. Students should be able to back up their answer with logic.*

One of the most important reasons to protect biodiversity is that biodiversity is considered to be the most important indicator of forest health. It is important to keep forests healthy so that they can continue to offer benefits to people and wildlife into the future.

INQUIRY 3

THE SITUATION:

If the size of the world's forest decreases, what will happen to the amount of benefit forests provide to people? What does this suggest about how we should manage our forests?

Students should realize that if the size of a forest decreases, the amount of benefit it can provide will decrease as well.

Students should realize that if we want to continue to enjoy the benefits forests provide, we will have to manage forests so that they can be sustained into the future.

Do you think that anywhere forests are located on Earth they provide benefits in all four of FAO's

categories? Why or why not? *Students will have individual answers to this question.*

They should realize, however, that forests everywhere provide benefits in all four of FAO's categories. In your classroom, you can have a discussion about the benefits of nearby forests and contrast this with possible benefits of a forest far away.

WHAT FAO DISCOVERED:

Why are the protection of soil and water important to the world's citizens? *Students will have individual answers, but they should realize that healthy soil is necessary for agriculture and that clean water is necessary for all life.*

What are some of the social benefits you enjoy from visiting forests? *Students will have individual answers to this question. Remind them of what social benefits are: outdoor recreation, tourism, education, research, and the*

existence of cultural or spiritual areas. Some of the benefits could include health and wellbeing, fitness, time with family and friends, learning, and inspiration.

INQUIRY 4

THE SITUATION:

Do you think that humans contain carbon? Why or why not? *Students should realize that since humans are animals, they contain carbon. (About 18 percent of a human body's weight is carbon, and carbon is the second most prevalent element in a human behind oxygen.)*

Why should we care whether the world's forests are holding the same amount, more, or less carbon over time? *Each student will have an individual answer to this question. Students should be able to back up their answer with logic. Students should conclude that we can better manage the world's forests for reducing the effects of climate change if we know over time how much carbon is being held by those forests.*

WHAT FAO DISCOVERED:

How do forests help to reduce the impact of climate change? *They absorb and hold carbon on Earth.*

Countries are beginning to manage their forests primarily for the protection of soil and water (Inquiry 3). In the same way, do you think countries may begin to manage their forests primarily for the protection of carbon resources? Why or why not? *Students will have individual answers to this question. This question asks students to imagine how forest management priorities might change in the future as the climate continues to change. Use this question as a discussion about current and future benefits of forests, and the role of forests in mitigating climate change.*

Look at the list of actions that make up REDD+. Compare the first two with the last three. How are the last three different than the first two? *The first two describe an effort to reduce carbon emissions. The last three go much farther and involve a greater effort to actively manage forests so that carbon is not just lost, but so the service provided by forests when they hold carbon can be enhanced into the future.*

INQUIRY 5

THE SITUATION:

Look at the indicators in Table 7. What is similar about every one of the indicators? *Students may need a hint with this answer. Every indicator can be measured.*

Look at the last indicator of Social and Economic benefits. FAO calculated the value of wood

removals in United States dollars. What did it have to do with the information from each country before it could report this figure? *The value of wood removals in each country's currency had to be recalculated to its value in United States dollars. This was done so that the same unit of measurement was used. In "Thinking About Science," students learned the importance of*

using the same unit of measurement.

WHAT FAO DISCOVERED:

Look at Table 8. Find the column labeled, “HOW MUCH INFORMATION WAS AVAILABLE?” Why is this important? *Compare and contrast the meaning of findings for which little information was available with the meaning of findings for which much information was available. The more information available, the more confidence FAO can have in its findings. For those indicators where little information is available, FAO cannot be as confident that the findings reflect the true situation. Where a lot of information is available, FAO can be much more confident that the findings reflect the true situation.*

Change in “Forest Health and Vitality”, “Protective Benefits” and “Social and Economic Benefits” has been positive. If these positive trends continue, what might you predict for the future of “Forest Health and Vitality?” *Although no one can know the future, if “Protective Benefits” continues to change in a positive direction, “Forest Health and Vitality” may become more positive in the future. On the other hand, if the amount of forest land continues to decline, we may find fewer forests on Earth, even if they offer a greater amount of protective benefits.*