INQUIRY 3: HEALTHY FORESTS NOW AND INTO THE FUTURE

Photo courtesy of Xiping Wang

PLANNING FOR HEALTHY FORESTS

Did you know that people manage or work with forest resources to achieve goals and gain benefits? For example, people might have a goal of maintaining clean water for drinking and cooking. Clean water is a benefit of healthy forests. To gain and maintain this benefit, for example, people purposely leave forest areas undisturbed when they are close to streams and rivers. People may also plant vegetation next to streams and rivers to protect water resources (Figure 76).

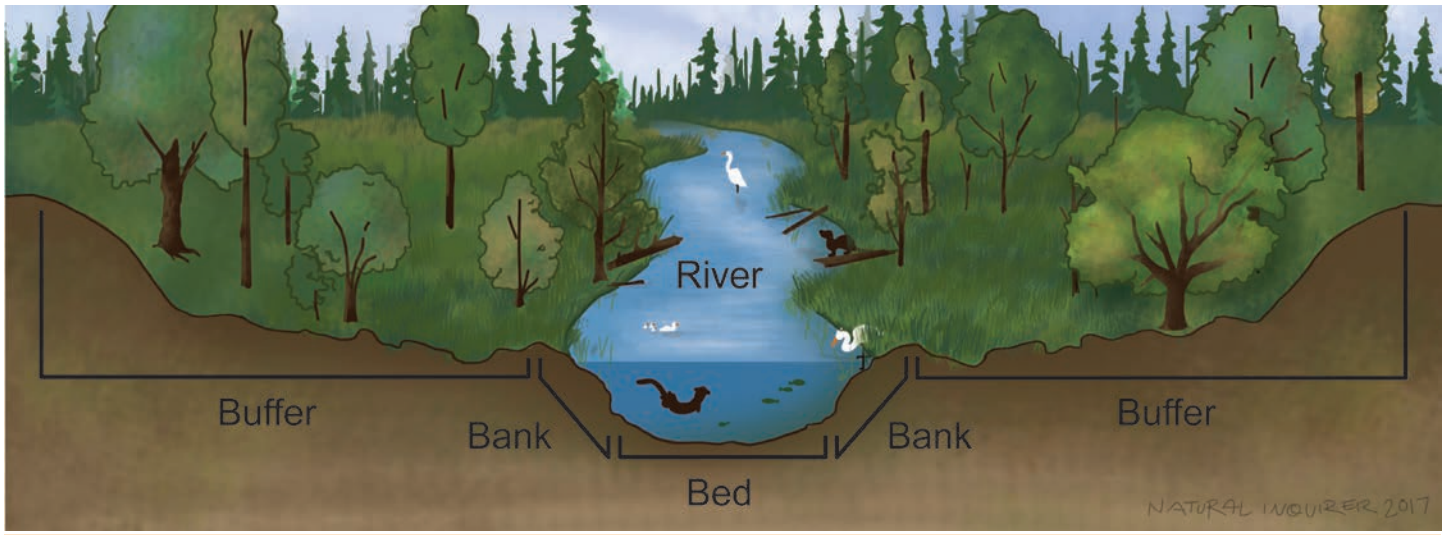


FIGURE 76.
Areas next to streams and rivers may be purposely left undisturbed or planted with trees and shrubs. Trees and other vegetation protect the stream or river from soil erosion, sediment, and pollutants. These managed areas are called stream buffers.
Illustration by Stephanie Pfeiffer.

FIGURE 77.
An example of managing forests sustainably is cleaning brush and leaves away from an area so that trees and food crops can be grown close together in that area, as this woman is doing in the United Republic of Tanzania. Photo courtesy of Food and Agriculture Organization of the United Nations/Simon Maina.

FIGURE 78.
Sustainable forest management enables people in Kyrgyzstan to provide for their children, and in the future, for their children to provide for their own children. Photo courtesy of Food and Agriculture Organization of the United Nations/Vyacheslav Oseledko.

Forests are managed to achieve many different benefits. (You learned about these benefits in Inquiry 2.) Sustainable forest management is a method people use to gain and maintain desired benefits from their forests (Figure 77).

Let's examine the word "sustainable." The Merriam-Webster dictionary defines sustainable in this way:

1. Capable of being sustained.
2. Of, relating to, or being a method of harvesting or using a resource so that the resource is not depleted or permanently damaged.

The second definition is the one that best describes sustainable forest management. Sustainable forest management includes the actions that forest managers take to produce benefits from healthy forests. No matter what benefits people want to gain from their forests, sustainable forest management is important. When forests are managed sustainably, people gain the benefits they want now and into the future.

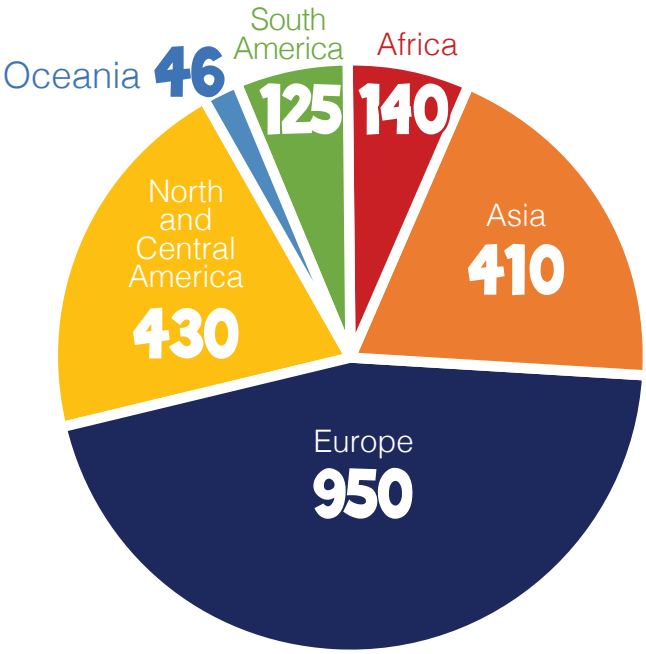
Sustainable forest management helps people balance the social, environmental, and **economic** benefits that forests provide. Sustainable forest management also recognizes the importance of providing benefits to present and future generations (Figure 78).

FAO has defined an important way to understand sustainable forest management. This understanding has to do with the amount of land worldwide that is being managed as forests. FAO asked: How much of the world's forest area is managed so that it remains healthy into the future?

FAO was interested in finding out how much of the world's forests people manage to provide benefits. They found that in 2010, 2.1 billion hectares of forest area have a management plan to provide either forest products or

environmental protection. The amount of land permanently managed as forests was slightly larger, making 2.2 billion hectares, and 1 billion of these hectares were in the tropical ecozones. The most successful forest management is done with the aid of a forest management plan. A forest management plan is a written document that identifies what actions will be taken and when they will be taken. These actions are meant to gain particular benefits from the forest.

Forest management plans are important because when forests are managed for specific benefits identified in a plan, the chance of people gaining those benefits is increased (Figure 79, Figure 80, and Figure 81). A forest management plan includes a specific statement of the benefits an individual or an organization would like to gain from the forest land. The plan also includes specific actions to be taken to gain those benefits and when those actions will be taken.



Source: Food and Agriculture Organization of the United Nations

FIGURE 80.
Amount of forest area under a management plan (in millions of hectares) in 2010 by continent.
Illustration by Stephanie Pfeiffer.

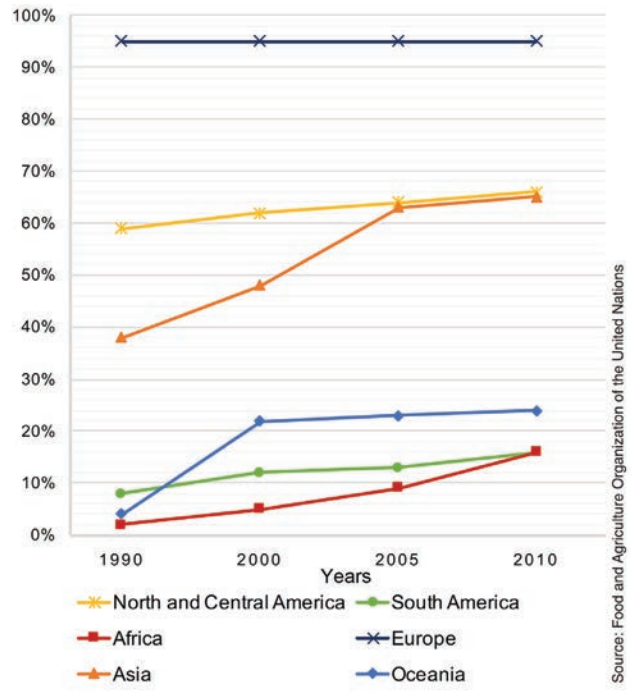


FIGURE 79.
Percentage of forest land managed under a forest management plan between 1990 and 2010 by continent.
Illustration by Stephanie Pfeiffer.

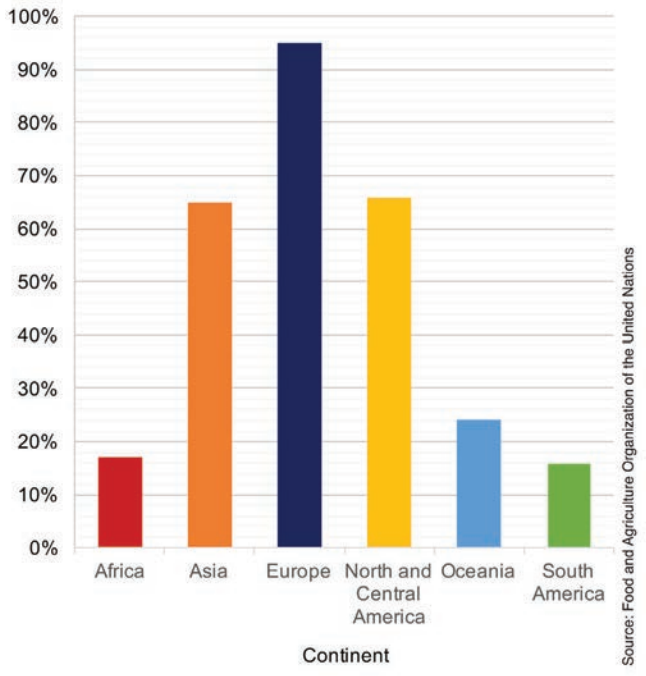


FIGURE 81.
Amount of forest area under a management plan as a percentage of total forest area (of countries that reported on this variable) in 2010 by continent.
Illustration by Stephanie Pfeiffer.

REFLECTION SECTION

Describe in your own words what "sustainable" means.

Do you think having a forest management plan is a good idea? Why or why not?

PUTTING FOREST MANAGEMENT TO THE TEST!

FAO was also interested in learning more about forest management **certification**. Forest management certification occurs when an independent organization reviews and **confirms** that a forest is being managed according to a written plan.

When a forest is certified as being managed according to a written management plan, people can feel more comfortable that the best management practices are being used. People can also feel more confident that the forest benefits identified in the plan will be received.

People use forest certification programs to **monitor** areas under a forest management plan to make sure they meet certain conditions. People also use certification programs to evaluate whether the written sustainable forest management plan is being followed.

When a plan describes a condition to be met, the condition is meant to protect the forest and the people for whom the forests are being managed. For example, certified sustainable forest management plans should protect the rights of **indigenous** people who live near or in the forest. These plans must also protect the rights of people who work in the forest or in forest-related jobs. The forest managers must restore forested ecosystems, if needed, and protect the forested ecosystems that they are managing. Biodiversity must be maintained in a certified forest. Forest certification provides a way to ensure that human rights and environmental health are being protected.

FAO collected information on two of the most widely used forest management certification programs. These programs are operated by the Forest Stewardship Council (FSC) and the Program for the **Endorsement** of Forest Certification (PEFC) (Figures 82 and 83; Table 2).

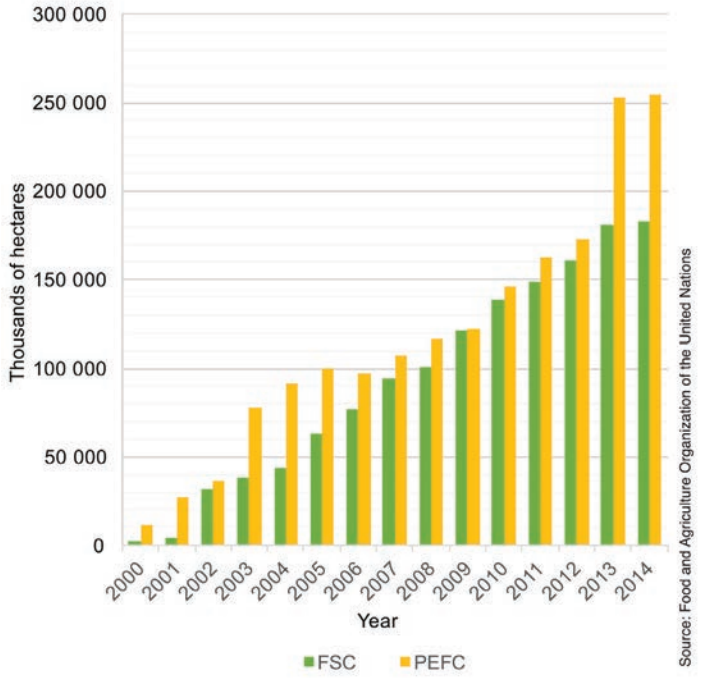


FIGURE 82.
Amount of the world's forest area (in thousands of hectares) certified under a certification program by type of certification program and total amount between 2000 and 2014. FSC = Forest Stewardship Council; PEFC = Program for the Endorsement of Forest Certification. Illustration by Stephanie Pfeiffer.

TABLE 2. Forest area under an international certification program (in millions of hectares) by continent in 2014.

CONTINENT	AFRICA	ASIA	EUROPE	NORTH AND CENTRAL AMERICA	OCEANIA	SOUTH AMERICA
Forest area certified under an international scheme (million ha)	6.4	14	167	222	13	15

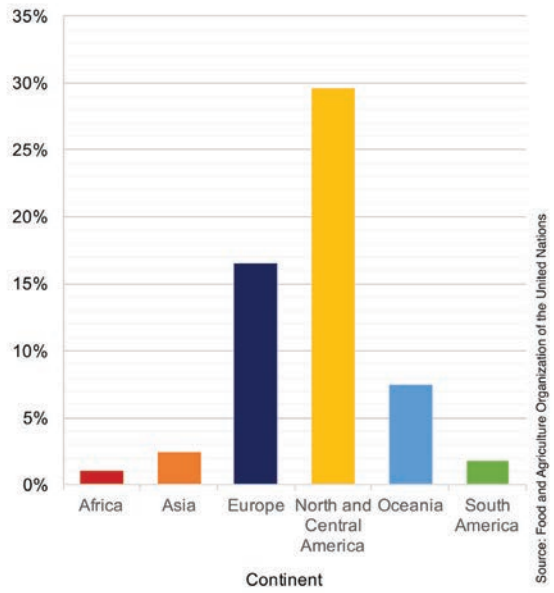


FIGURE 83.
Forest area under an international certification program as a percentage of total forest area by continent in 2014.
Illustration by Stephanie Pfeiffer.

The number of forested hectares worldwide under forest certification programs increased from 14 million hectares in 2000 to 438 million hectares in 2014. The temperate and boreal ecozones had the greatest number of hectares under forest certification programs (see Figure 12 on page 17).

If you didn't take tests or submit schoolwork for your teacher's review, would you know whether you have improved in school? You might have a feeling one way or another, but you wouldn't know for sure. Forest managers are in the same situation! Without doing an **assessment**, or monitoring, of their practices, forest managers and others may not know how well they are doing.

Worldwide, the condition of 83 percent of the world's forests is monitored by forest managers and scientists in 116 countries. These countries periodically produce national reports about their forests. Eighty-six countries, covering 77 percent of the world's forest area, include information describing how well their country is progressing toward sustainable forest management.

HOW CAN FOREST MONITORING BE MADE EASIER?

More forest land area is being periodically monitored worldwide for forest management practices and benefits. The USDA Forest Service's Forest Inventory and Analysis (FIA) Program has created a way to assist countries with forest monitoring. The FIA Program has developed a 15-step process to help tropical countries better understand and monitor their forest management. The FIA Program has worked with Honduras, Peru, Guyana, and the Democratic Republic of the Congo (Figure 84).

FIGURE 84.
The countries using the FIA 15-step program to monitor their country's forest management include Honduras, Peru, Guyana, and the Democratic Republic of the Congo.
Map by Carey Burda and Stephanie Pfeiffer.

REFLECTION SECTION

Everyone benefits when forest managers use a forest management plan to guide them. Name a time when having a plan provided a benefit to you. What was your plan, and how did you benefit from having a plan?

Observe Figure 82. Do you think the number of forested hectares under forest certification will increase or decrease in the future? Why?

Observe Figure 84. What is similar about the 4 countries that used FIA's 15-step program for forest monitoring?

FACTIVITY

PLANNING YOUR OWN FOREST

TIME NEEDED

One class period

MATERIALS

(for each student or group of students)

- Blank paper
- Writing utensil
- Crayons, colored pencils, or colored markers
- Planning Your Own Forest Graphic Organizer

In this FACTivity, you will create a forest management plan for a 1-hectare (or 1-acre) forest. You will make this plan by using the Planning Your Own Forest Graphic Organizer on page 58. Since this forest is a creation of your imagination, it can contain any kind of trees, other plants, and animals that you want.

METHODS

1. Take a blank piece of paper. You will draw a picture of your forest on this paper.
2. Draw two native tree species that grow in your forest. Remember, you can make up any kind of tree, or you can draw trees that you are familiar with from your area or from your research.
3. Draw two native mammal species that live in your forest. You can make up these mammals or you can draw mammals that you are familiar with from your area or from your research.
4. Draw two native bird species that live in your forest. You can make up these birds or you can draw birds with which you are familiar.
5. Make a list of other features that are found in your forest. For example, you might find a stream or river in your forest. You might find waterfalls. You might find a lake in your forest. What other features are found in your forest? Once you have a list, draw these features in your picture.
6. On a separate piece of paper, make a list of the benefits your forest provides. If you need a reminder, review Inquiry 2: Benefits of Healthy Forests.
7. Once you have completed your forest picture, give your forest a name and write it on the paper.

Unfortunately, a cyclone, typhoon, hurricane, or tornado has recently passed across your forest, destroying the trees. Fortunately, the wildlife escaped unharmed. They have left your forest, however, because their habitat was destroyed. It is your job to make a plan to restore your forest. You will use the Planning Your Own Forest Graphic Organizer that follows to make a plan to restore your forest to a healthy condition.

8. Using the Planning Your Own Forest Graphic Organizer, list your goals for restoring your forest. What benefits do you want the forest to provide? How are these benefits similar or different to the benefits your original forest provided? How long will it take to restore the forest?
9. Using a blank piece of paper, draw the shape of your forest. Draw features like streams, ponds, lakes, and trails you want within the forest.
10. Use the Planning Your Own Forest Graphic Organizer to detail how you will meet your goals for the forest. When will you complete each part of the plan? For example, will planting trees come before or after making trails? How many trees will you plant? Which species of trees? Where exactly will those trees be planted?
11. If you want to use your forest for recreation, show on your map where you will put a trail. Identify when you will put the trail in place and how long you think it will take to complete the trail. Be sure to name the trail.
12. If you need to create a special habitat to attract your wildlife or bird species back to your forest, describe what you will do, where you will do it, and when it will be done.

PLANNING YOUR OWN FOREST GRAPHIC ORGANIZER

Forest Management Plan for _____Forest.

What are your goals for your forest? Your goals should include whether you want to have the forest managed for recreation, timber production, wildlife habitat, or other benefits.

My goals for _____ Forest are:

_____

_____

_____

_____

_____

How long will it take to achieve these goals?

I would like to achieve these goals in _____.

What will you do to achieve your goals?

_____

_____

_____

_____

_____

_____

_____

_____

When you have finished your plan, look again at your original picture of your forest. How did your restoration activities improve your forest?

_____

_____

_____

_____

_____

_____

_____