

# Empathy Element 4: Protecting the Rice Plant and the Planet

<b>Standardize It:</b> <b>Environmental Agriculture</b>	<b>Empathy Element 4: Protecting the Plant and the Planet</b>
<b>Grade Level:</b> Middle and High School  <b>Time</b> 1 ½ hours  <b>Resources:</b> Videos on rice growing listed in curriculum	<b>Teachers or Self-Guided Learners</b> <ul style="list-style-type: none"><li>• Read the background information about the relationship of climate change and growing rice.</li><li>• Watch the videos. Choose the methodology that would work in your region.</li><li>• Recommend it to farmers in a letter, with diagrams.</li></ul>



## **Protecting the Plant and the Planet**

Most producers of rice grow more than enough to feed their own people. Empathy for those beyond our borders makes us want to help others. We must ensure that we can grow enough rice by protecting the plant and the planet at the same time.

## **Use of Water**

Rice consumes higher amounts of land and water per calorie than any other crop, so rice growers use two or three times as much water as growers of other grains. The plants begin in soil, but by partially submerging them in water, the farmers ensure that weeds will not overtake them. We must think of ways to conserve water as we grow rice.

## **Increasing the Effects of Climate Change**

Rice paddies produce their own greenhouse gases. In fact, they emit as much methane as all the world's wetlands combined. As the gases rise and hit the ceiling (the ozone layer above Earth), these greenhouse gases contribute to rising global temperatures.

## **Feeling the Effects of Climate Change**

As the world's temperature rise from 1.5 to 2.0 C, studies show the impact of climate change will have an ever-greater impact on rice production and, likewise, growing rice has an impact on rising temperatures.

However, the rice offers nutritional benefits to distract from those disadvantages. To continue to help all those who rely on rice, we must learn to grow rice using less land, less water and less labor.

## **Promote Informed Planting**

Three rice growing methods are listed under "Definitions and Videos."

1. Watch the videos.
2. Choose one method. Draw pictures or diagrams of it.
3. Send your recommendations of the method to farmers in your region, explaining why you think the method would benefit the plant, the people and the planet. If you cannot find a local agricultural organization, send your input to an organization such as the

Association for International Agricultural and Rural Development at  
<http://www.aiard.org/>)

## **Growing Method Definitions and Videos**

**Modified System of Rice Intensification:** a low water, labor-intensive, method that uses younger seedlings singly spaced and hand weeded. Frederick Banda demonstrated an example on the following video, filmed in Malawi:

<https://www.bing.com/videos/search?q=modified+system+of+rice+intensification&docid=608015855324169928&mid=357B0F4DA4D372982D0E357B0F4DA4D372982D0E&view=detail&FORM=VIRE>

**Direct Seeding:** sowing rice seeds into the soil instead of growing small plants and transplanting them. Farmers in India discuss this method on the following video. (Note that this video shows a tiller. No-till farming could keep more carbon in the ground.)

<https://www.bing.com/videos/search?q=direct+seeding+rice+video&docid=607997859416903132&mid=A60DC076F0BD9BE30BC2A60DC076F0BD9BE30BC2&view=detail&FORM=VIRE>

**Alternate Wetting and Drying:** a method of controlling and intermittently withholding the level of irrigation in the field, to conserve water.

<https://www.bing.com/videos/search?q=alternate+wetting+and+drying&docid=607995046198118738&mid=6D0803E8CA7802FB52666D0803E8CA7802FB5266&view=detail&FORM=VIRE>

## **Extension Lesson**

With a classmate, practice finding empathy for one another's growing preferences on the conflict bridge.