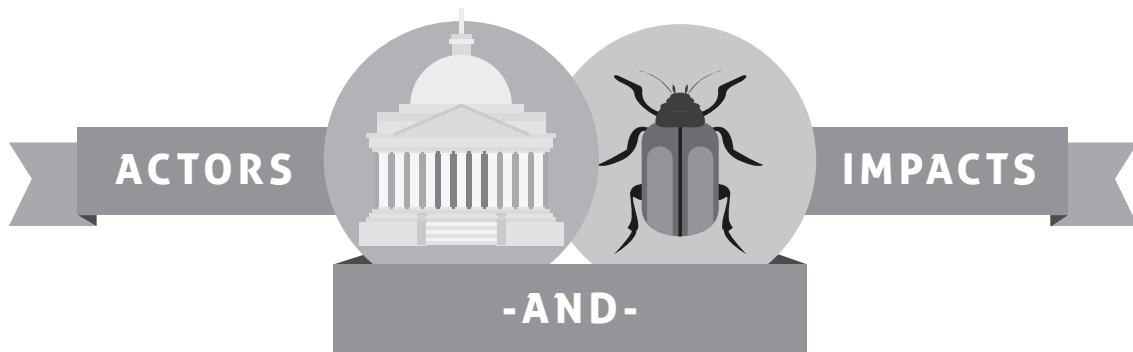


ANSWER KEY



This table lists ways that producers, agro-industry, and government agencies can adapt to climate change. Each *adaptation* is an adjustment to mediate climate impacts of changing temperature, water availability, pests, and/or pollinators.

DIRECTIONS

1. In the actor column, write which actor or actors are responsible for each adaptation: producers, agro-industry, and/or government. More than one actor may be responsible; if so, write the names of two actors or “all” if all three actors are responsible.
2. Using the colors in the key below, highlight each adaptation to indicate the impact that it is mediating. Adaptations may help to address more than one impact; if so, highlight the adaptation with more than one color.

ACTORS

Producer: the person, or group of people that operate a farm

Agro-Industry: business connected with agriculture; involves researching technologies and disseminating information to producers

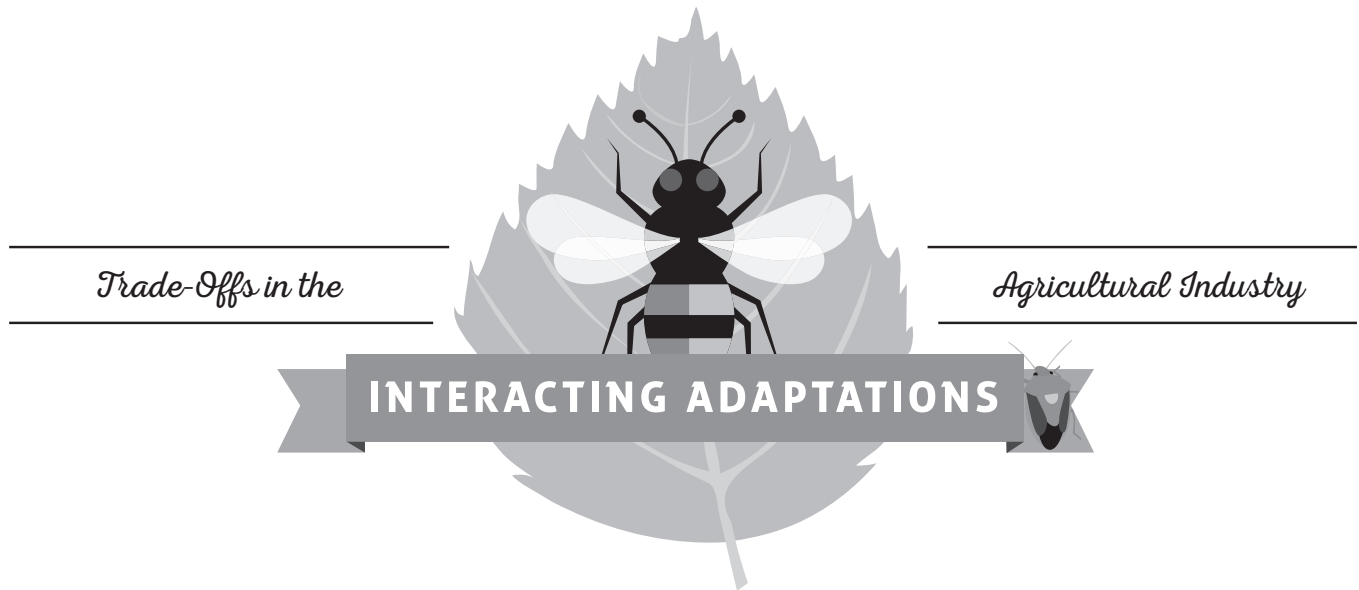
Government: agencies responsible for the creation and implementation of programs and policies to support producers and the agro-industry

YELLOW TEMPERATURE	GREEN PESTS	BLUE WATER	PINK POLLINATORS
ACTOR Write Producer, Agro-Industry, or Government		IMPACT Highlight each <i>adaptation</i> to indicate the impact that it is mediating	
EXAMPLE			
1. <i>Agro-Industry</i>		Develop pest suppression technologies (<i>Green</i>)	
2. <i>Producer</i>		Switch to an established heat-tolerant or low-chill tolerant plant variety (<i>Yellow</i>)	
3. <i>Government</i>		Develop pest insurance programs for producers (<i>Green</i>)	
4. <i>Producer</i>		Alter planting and harvesting schedules (<i>Yellow/Blue</i>)	
5. <i>Agro-Industry</i>		Study the use of solar panels as shade structures over crops (<i>Yellow</i>)	

CONTINUE ➞

YELLOW TEMPERATURE	GREEN PESTS	BLUE WATER	PINK POLLINATORS
ACTOR Write Producer, Agro-Industry, or Government		IMPACT Highlight each <i>adaptation</i> to indicate the impact that it is mediating	
6. <i>Agro-Industry</i>		Develop technologies for efficient irrigation systems and excess water management systems (<i>Blue</i>)	
7. <i>Government</i>		City and county agencies restore habitat for native pollinators (e.g. adjusting roadside maintenance to include locally-appropriate options for vegetated roadsides) (<i>Pink</i>)	
8. <i>Government</i>		Provide technical assistance for risk management (<i>All</i>)	
9. <i>Producer</i>		Provide cooling, such as shade structures or intercropping, to sensitive crops (<i>Yellow</i>)	
10. <i>Producer</i>		Choose appropriate flood tolerant or drought-resistant crops (<i>Blue</i>)	
11. <i>Producer</i>		Implement an integrated pest management plan (<i>Green</i>)	
12. <i>Agro-Industry</i>		Study intercropping to reduce heat stress (<i>Yellow</i>)	
13. <i>Agro-Industry</i>		Develop pest resistant crop varieties (<i>Green</i>)	
14. <i>Producer</i>		Provide nesting sites for native pollinators (<i>Pink</i>)	
15. <i>Agro-Industry</i>		Develop technologies of drought resistant and flood tolerant crop varieties (<i>Blue</i>)	
16. <i>Agro-Industry</i>		Identify and register new and safe products or biocontrol methods to deal with Varroa mites, which attack honeybees (<i>Pink/Green</i>)	
17. <i>All</i>		Stay updated on emerging pests of concern (<i>Green</i>)	
18. <i>Government</i>		Modify land management policies and programs to improve resilience to climate change (<i>All</i>)	
19. <i>Producer</i>		Attract native pollinators and other beneficials with hedgerows, flower strips, and polyculture (<i>Pink</i>)	
20. <i>Agro-Industry</i>		Study nutritional needs of honeybees, methods of supplying nutrition, and pesticide impact on honeybee health (e.g. hedgerows, flower strips) (<i>Pink/Green</i>)	

ANSWER KEY



1. Examine the distribution of the sticky notes on the posters around the classroom and fill in the blank for the following sentence (**CIRCLE ONE**).

When an adaptation to the effects of climate change is put in place, it **DOES** / **DOES NOT** affect other parts of agriculture.

- a. How does the distribution of sticky notes show this?

Most posters have multiple sticky notes (or posters have different colored sticky notes on them).

- b. What does this tell us about the way actors in agriculture should work together to adapt to the effects of climate change?

Finding and implementing effective adaptations are the responsibilities of all actors. Adaptations are interconnected, and agricultural actors should work together to find solutions to the issues related to all of the major climate impacts. When an adaptation for an impact is implemented, it can have an effect on other impacts, and the trade offs should be considered by all actors.

2. Think back to the farmers in Tulare County, CA. If you were one of the farmers, knowing what you know now, would you still tap into groundwater as an adaptation to climate change? (**CIRCLE ONE**)

student answers will vary

NO

- a. Why or why not?

Reasons for answering "yes" could include: there is not enough surface water; I need to water my crops in the short term; my neighbors are doing it, and I do not want to lose out on my share; etc.

Reasons for answering "no" could include: we will run out of groundwater; we should stop the subsidence (or sinking) of land; I may be taking more than my fair share of water; drilling for water is expensive

- b. What could have been done differently to increase sustainability of water resources?

Alter planting and harvesting schedules, develop efficient irrigation systems and excess water systems, develop/plant drought-resistant crop varieties, implement other water conservation methods (watering schedules, incentives), monitor soil moisture and water only when needed