

Topic # 8 Water Quality Protection

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Q1:

What are the top 3-5 grape related (Water Quality Protection) accomplishments of ARS during the past 3 years? **NONE**

What priorities of industry have been met?

- ❖ **ARS watershed based research in other cropping systems (corn, soybean, cotton) needs to expand to GRAPES.**
- ❖ **CEAP - (conservation effects assessment program) needs to include GRAPES.**

Q2:

What major gaps still exist between ARS' research focus and the needs of industry?

- ❖ **Disconnect of grape production with other Federal WQ programs**
- ❖ **Impact of grapes on hydrologic cycle in a watershed**
- ❖ **Increase in grape production effects on regional hydrology**
- ❖ **Waste water use or reuse in grape**
- ❖ **Salinity in arid environ is a potential problem**
- ❖ **Drainage in tile drained grape fields**
- ❖ **Spray drift to surface water**

Q2: (Cont.)

What major gaps still exist between ARS' research focus and the needs of industry?

- ❖ **High intense storms and Climate Change on WQ**
- ❖ **Region and state specific problem**
- ❖ **Runoff and leaching concerns for the eastern states for chemicals and sediments (WA, CA)**
- ❖ **Precip > ET in eastern states will have transport of agchemicals offsite**

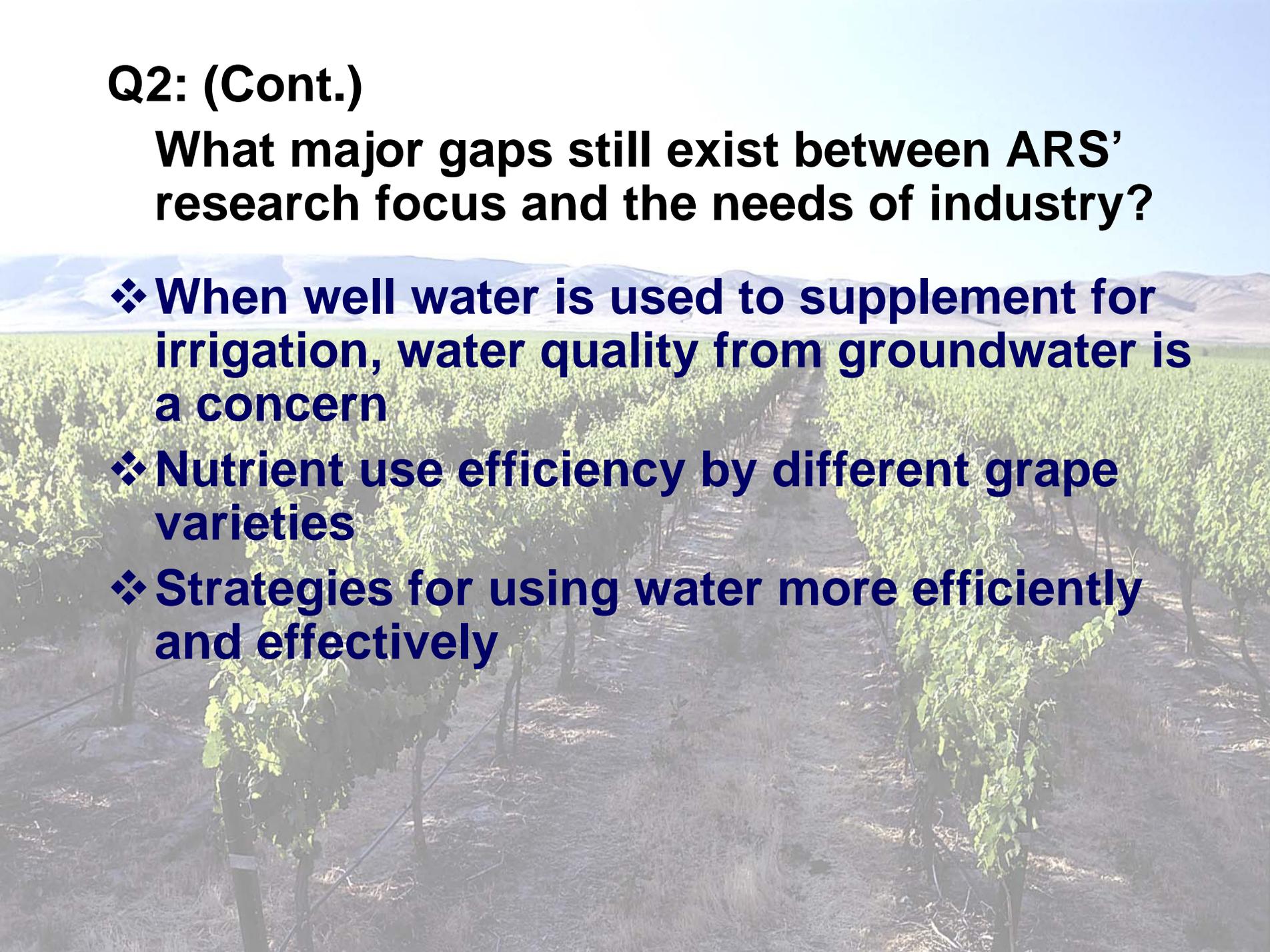
Q2: (Cont.)

What major gaps still exist between ARS' research focus and the needs of industry?

- ❖ Water management effects on grape quality and antioxidant components**
- ❖ Extend the ARS research on watershed and water quality issues to grape production systems**
- ❖ Quality water protection vs water quality protection**
- ❖ Quality of water effects on grape quality and soil quality, potential impact on food safety**

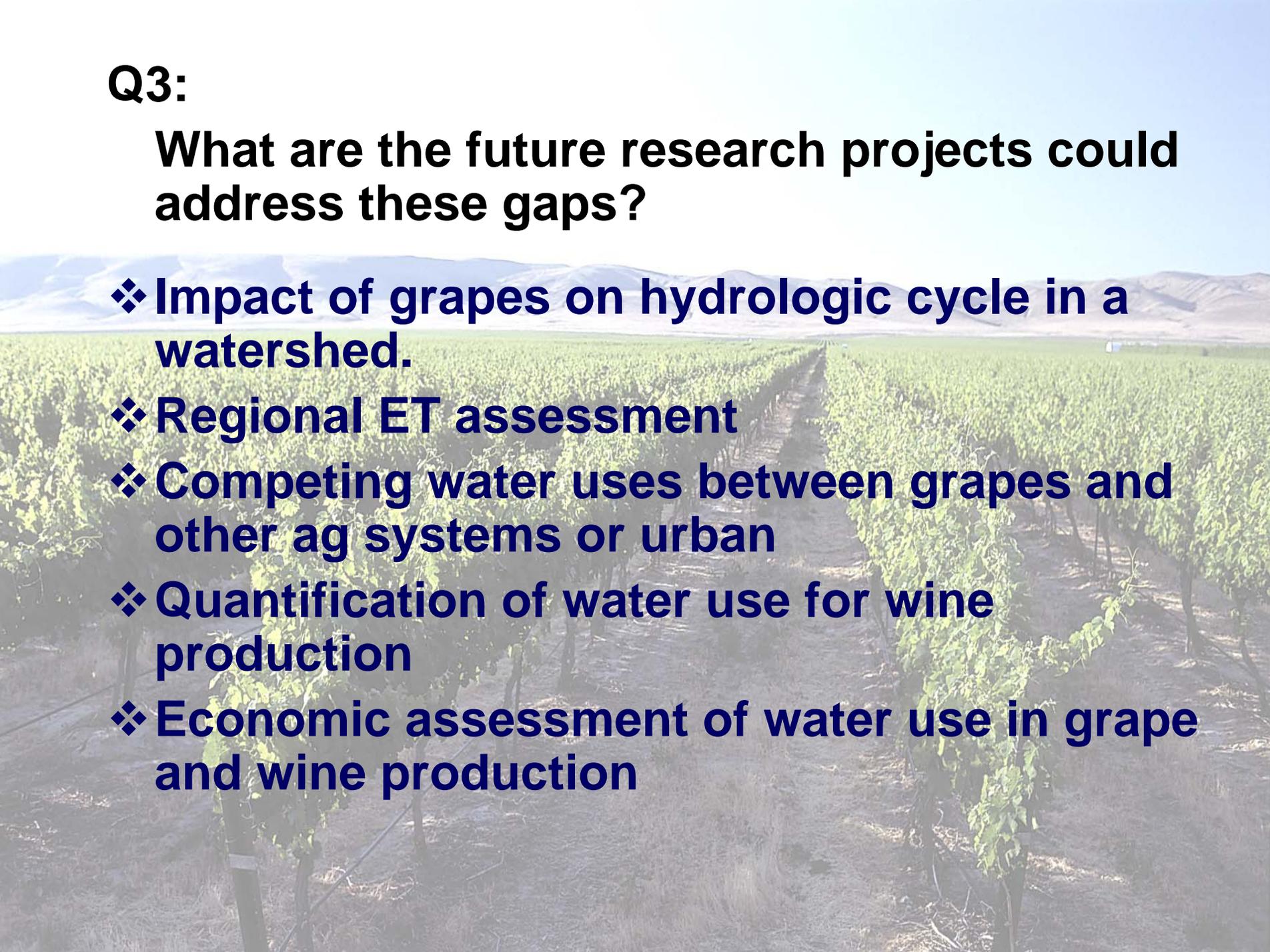
Q2: (Cont.)

What major gaps still exist between ARS' research focus and the needs of industry?

- ❖ When well water is used to supplement for irrigation, water quality from groundwater is a concern**
 - ❖ Nutrient use efficiency by different grape varieties**
 - ❖ Strategies for using water more efficiently and effectively**
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- A photograph of a vineyard with rows of grapevines stretching into the distance under a clear blue sky. The vines are green and appear to be in a well-maintained state. The ground between the rows is dry and brown, suggesting a semi-arid environment. In the background, there are rolling hills or mountains under a clear blue sky.

Q3:

What are the future research projects could address these gaps?

- ❖ **Impact of grapes on hydrologic cycle in a watershed.**
 - ❖ **Regional ET assessment**
 - ❖ **Competing water uses between grapes and other ag systems or urban**
 - ❖ **Quantification of water use for wine production**
 - ❖ **Economic assessment of water use in grape and wine production**
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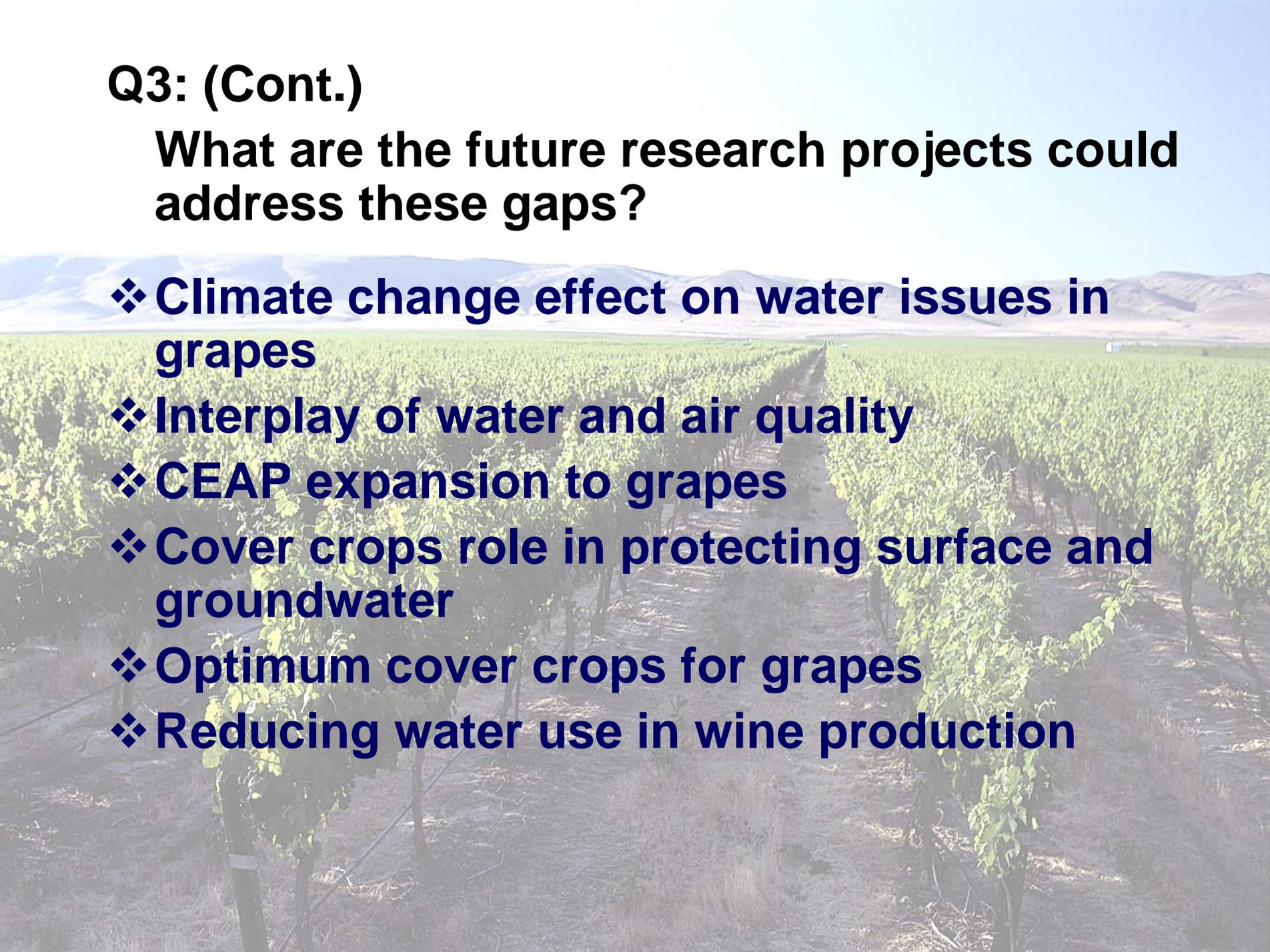
Q3: (Cont.)

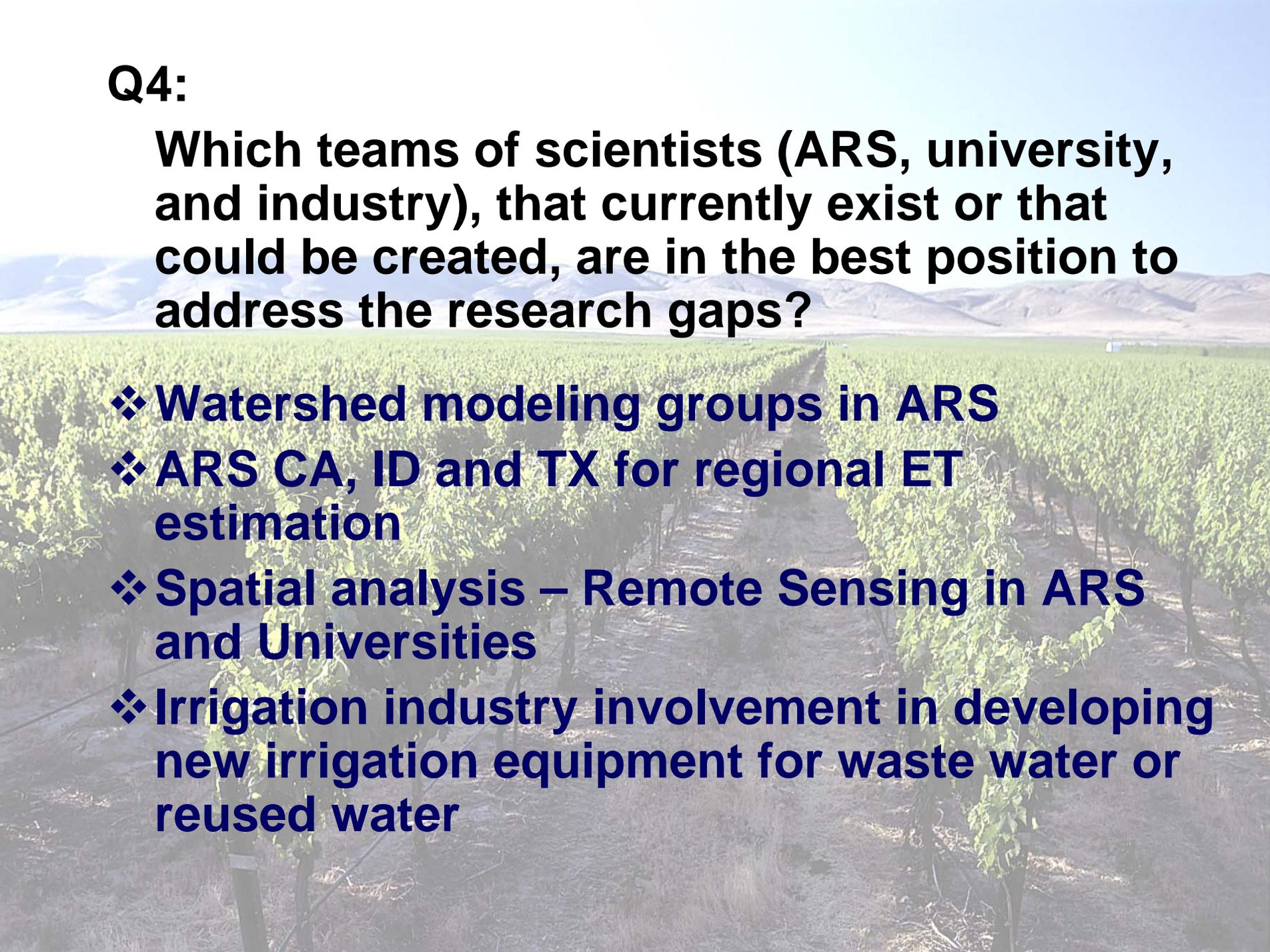
What are the future research projects could address these gaps?

- ❖ Water management to optimize health benefits of grapes**
- ❖ Spatial analysis of water issues (CA, WA, NY, etc.)**
- ❖ Quantification of grape and wine industry on watershed (perception and reg issues)**
- ❖ Develop supplement water management strategies that minimize nutrient and pesticide movement off site for different grape varieties**

Q3: (Cont.)

What are the future research projects could address these gaps?

- ❖ Climate change effect on water issues in grapes**
 - ❖ Interplay of water and air quality**
 - ❖ CEAP expansion to grapes**
 - ❖ Cover crops role in protecting surface and groundwater**
 - ❖ Optimum cover crops for grapes**
 - ❖ Reducing water use in wine production**
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- A photograph of a vast grapevine field stretching towards distant mountains under a clear blue sky. The vines are arranged in neat, parallel rows, creating a strong sense of perspective. The ground between the rows appears to be covered with dry, light-colored soil or mulch. In the far distance, a range of low, rolling mountains is visible against the horizon. The sky is a uniform, clear blue.



Q4:

Which teams of scientists (ARS, university, and industry), that currently exist or that could be created, are in the best position to address the research gaps?

- ❖ **Watershed modeling groups in ARS**
- ❖ **ARS CA, ID and TX for regional ET estimation**
- ❖ **Spatial analysis – Remote Sensing in ARS and Universities**
- ❖ **Irrigation industry involvement in developing new irrigation equipment for waste water or reused water**

Q4: (Cont.)

Which teams of scientists (ARS, university, and industry), that currently exist or that could be created, are in the best position to address the research gaps?

- ❖ **USDA PM10/PM2.5 - air quality program**
- ❖ **Land grant universities- UC-Davis, U of AZ, etc.**
- ❖ **USGS**
- ❖ **Economists participation – ERS**

Q5:

How can the progress and impact of ARS research on grapes be increased with existing resources?

- ❖ **Resource relocation from corn and other crops to support grape research on WQ at watershed scale**
- ❖ **Incorporate grapes in existing programs**
- ❖ **Use other existing technology for grapes**
- ❖ **ARS new postdoc programs on grapes WQ research**
- ❖ **ARS special project on grape water quality research**
- ❖ **Reprioritize to grapes research**

Q6:

How will research results be extended to end users through an outreach plan? What is that outreach plan?

- ❖ **Industry meetings**
- ❖ **Trade journals**
- ❖ **Convenient technology**
- ❖ **Large processors and coops**
- ❖ **Extension**
- ❖ **Field days**
- ❖ **Tailgate meetings**
- ❖ **Inter-regional guest speakers**
- ❖ **U-tube**

Growing grape in central CA, water use is measured by the DROP!

