

The River Runs Dead

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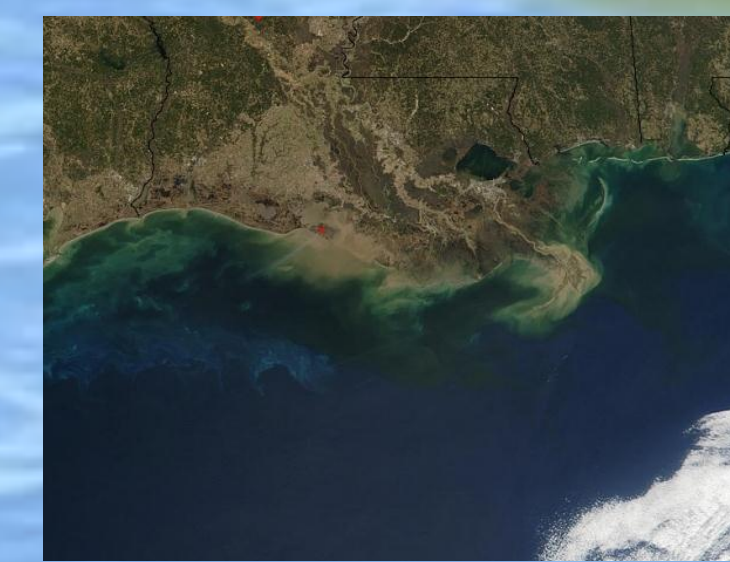
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Background

- Drinking nitrogen-polluted water increases the risk for the following:
 - Blue-baby Syndrome
 - Alzheimer's Disease
 - Diabetes
- Blue-baby Syndrome-nitrogen asphyxiation in infants.
- 2,000 reported cases of Blue-baby syndrome.
- 784 water systems along Mississippi River polluted with excess nitrogen.
- 907,482 people depend on this water.
- 82,000 people living with Alzheimer's in the Mississippi River Basin.



Excess fertilizer use



Elevated nitrogen levels in water sources

Problem Statement

Excess nitrogen in water sources, caused by too much nitrogen used as fertilizer on large monoculture farms in the Midwest, increases the risk for a number of health problems for people who drink the polluted water.



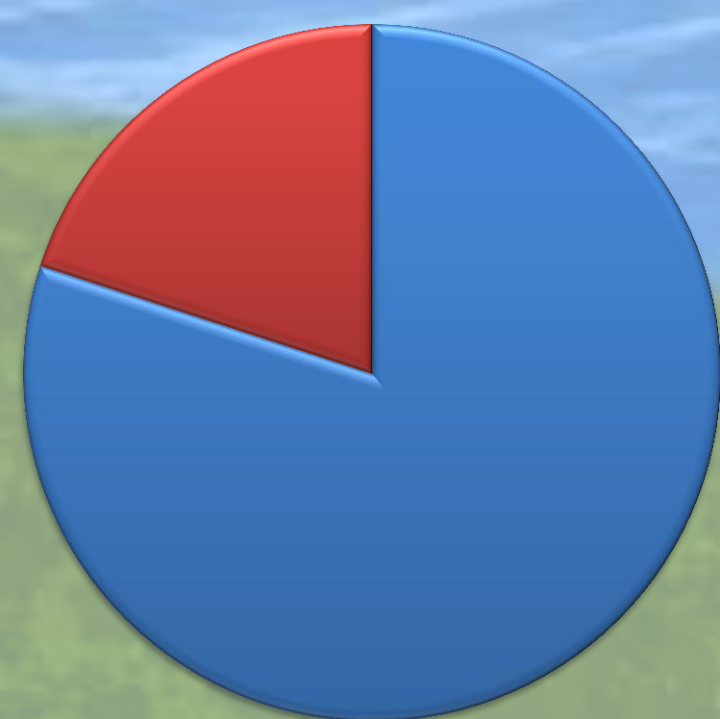
Increase health risks



Nitrogen in drinking water

Where Does Nitrogen Pollution Come From?

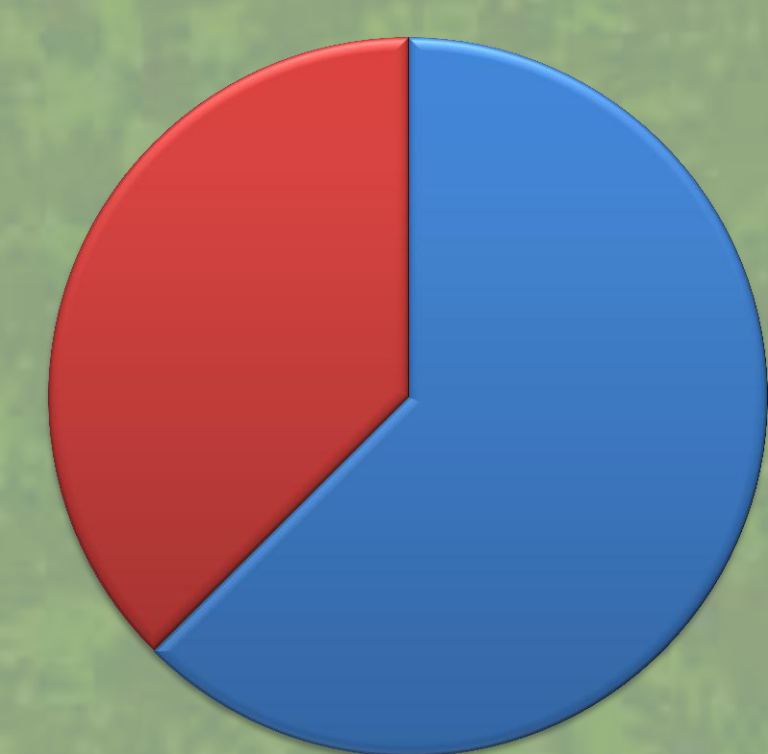
Agriculture vs. Industry



■ Agriculture
■ Industry

Agriculture accounts for 80% of Nitrogen Pollution, while Industry accounts for 20%.

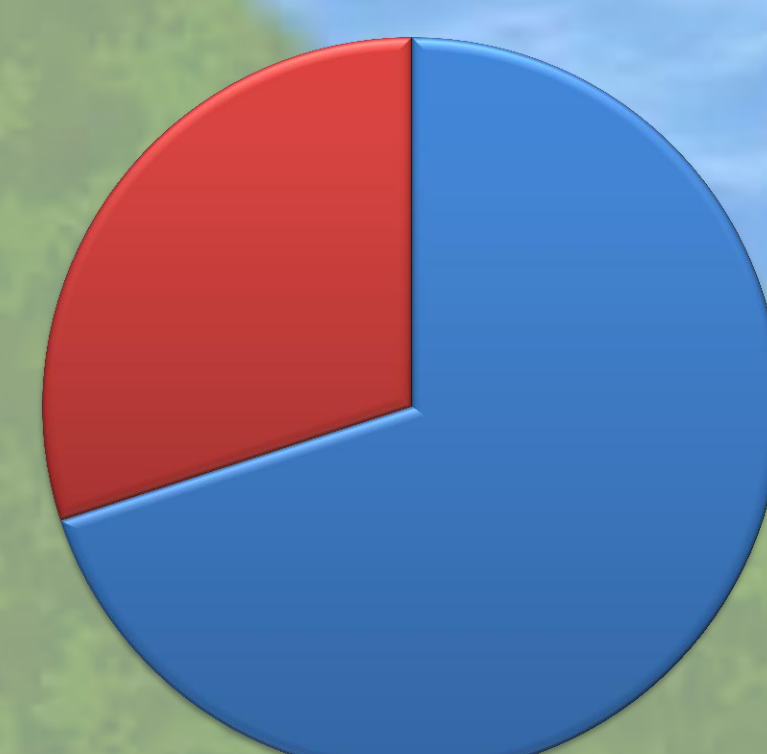
Agriculture Breakdown



■ Crops
■ Animals

Crops account for 62.5% of agricultural nitrogen pollution, while animal waste accounts for 37.5%.

Industry Breakdown

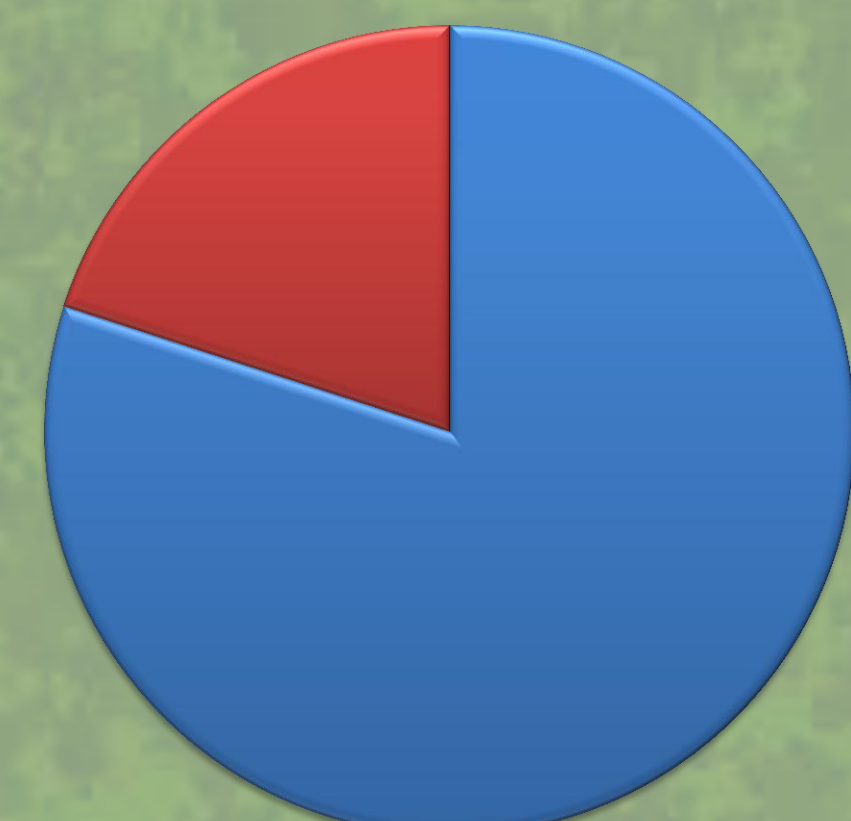


■ Air Pollution
■ Point-Source

Air pollution accounts for 70% of industrial nitrogen pollution, while point-source pollution accounts for 30%.

Breakdown Of Nitrogen Placed on Crops

Of the Nitrogen placed on crops, 80% was used by plants, while 20% leached into water sources.



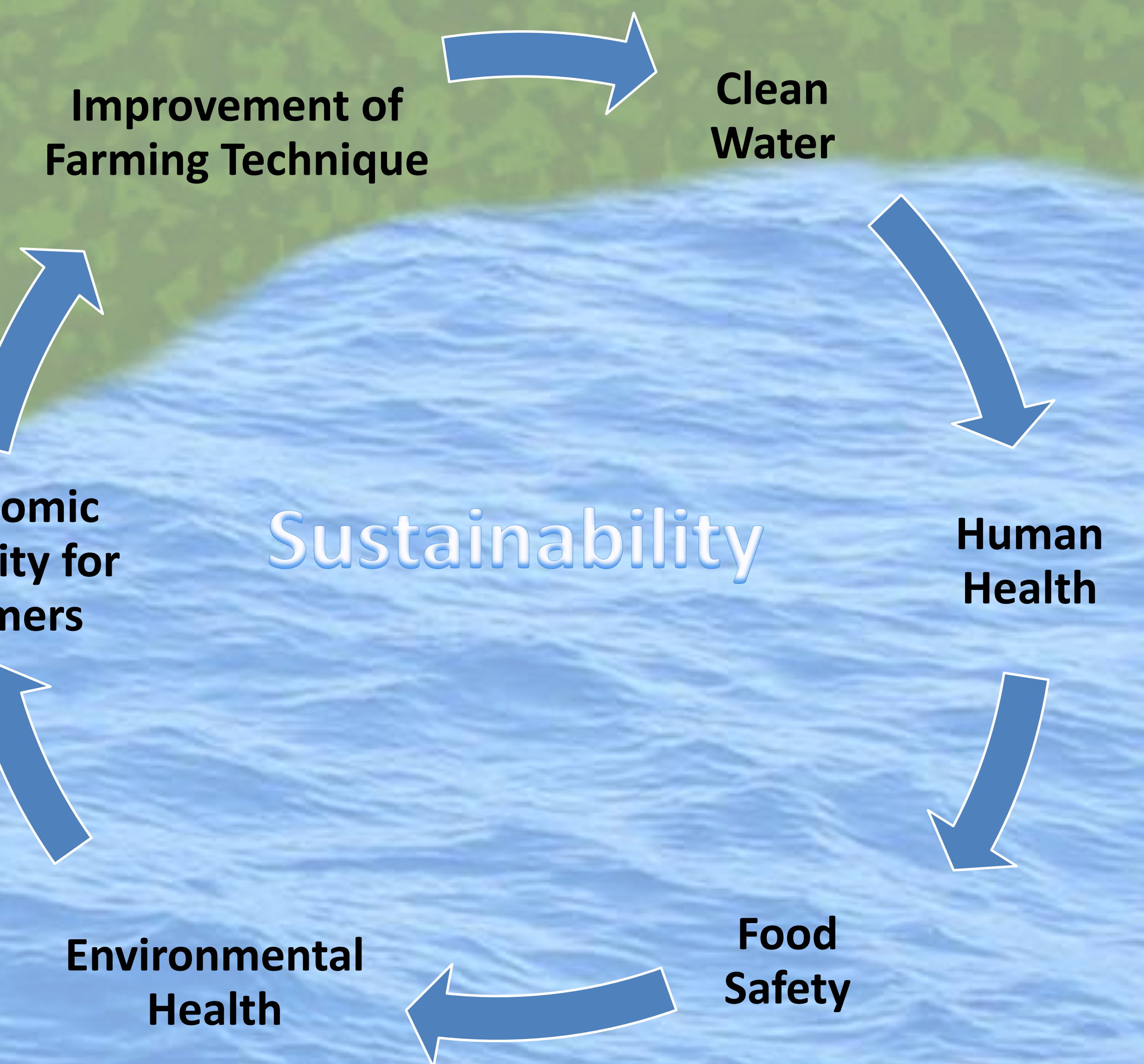
■ Used By Plants
■ Not Used By Plants

Solution

- Create awareness of the health risks caused by drinking nitrogen polluted water.
- Educate farmers on how to efficiently apply fertilizer while maximizing crop yield.
- Educate farmers on what incentives they can receive by utilizing efficient practices.

References

- Cohen, Brian. "Pouring It On | Environmental Working Group." *EWG Home | Environmental Working Group*. Feb. 1996. Web. 27 Nov. 2011. <<http://www.ewg.org/reports/nitrate>>.
- Galloway, J.N. (2008). "Transformation of the nitrogen cycle: recent trends, questions, and potential solutions". *Science (New York, N.Y.)*(0036-8075), 320(5878), p.889.
- Good, A. G., & Beatty, P. H. (2011). Fertilizing nature: A tragedy of excess in the commons. *PLoS Biology*, 9(8), e1001124.
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Here, the effect of improvement of technique is a long line of benefits and is a recurring cycle that will continually develop.

Mechanism

- Education and Awareness.
- Education: website and workshops.
- Awareness: advertisements and commercials geared towards change.

Assessment

- Collect numbers of new cases of Alzheimer's, diabetes, and Blue Baby Syndrome each year and compare to previous years.
- Weekly water tests downstream from farms.
- Global Positioning System Soil Analysis on farms.