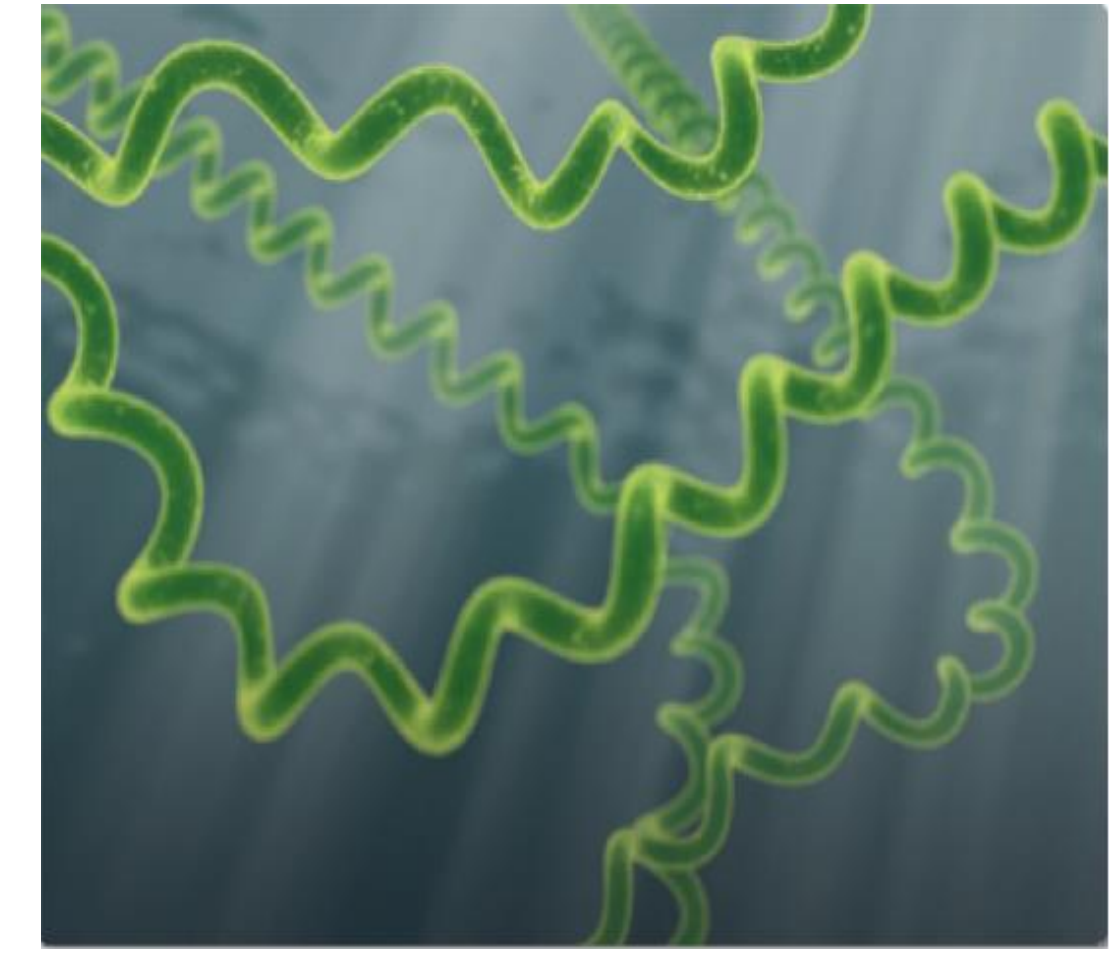


Spirulina: The Little Green Machine

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Problems In the Lake Chad Basin

10 million people are undernourished

Since 1963...

- Lake Chad receded by 90%
 - Irrigation intensive agriculture
 - Global warming → droughts
- Population doubled: still increasing at similar rate

Solution: Spirulina

Implement a large scale production system on Lake Chad for animal consumption in Bosso, Nigeria.

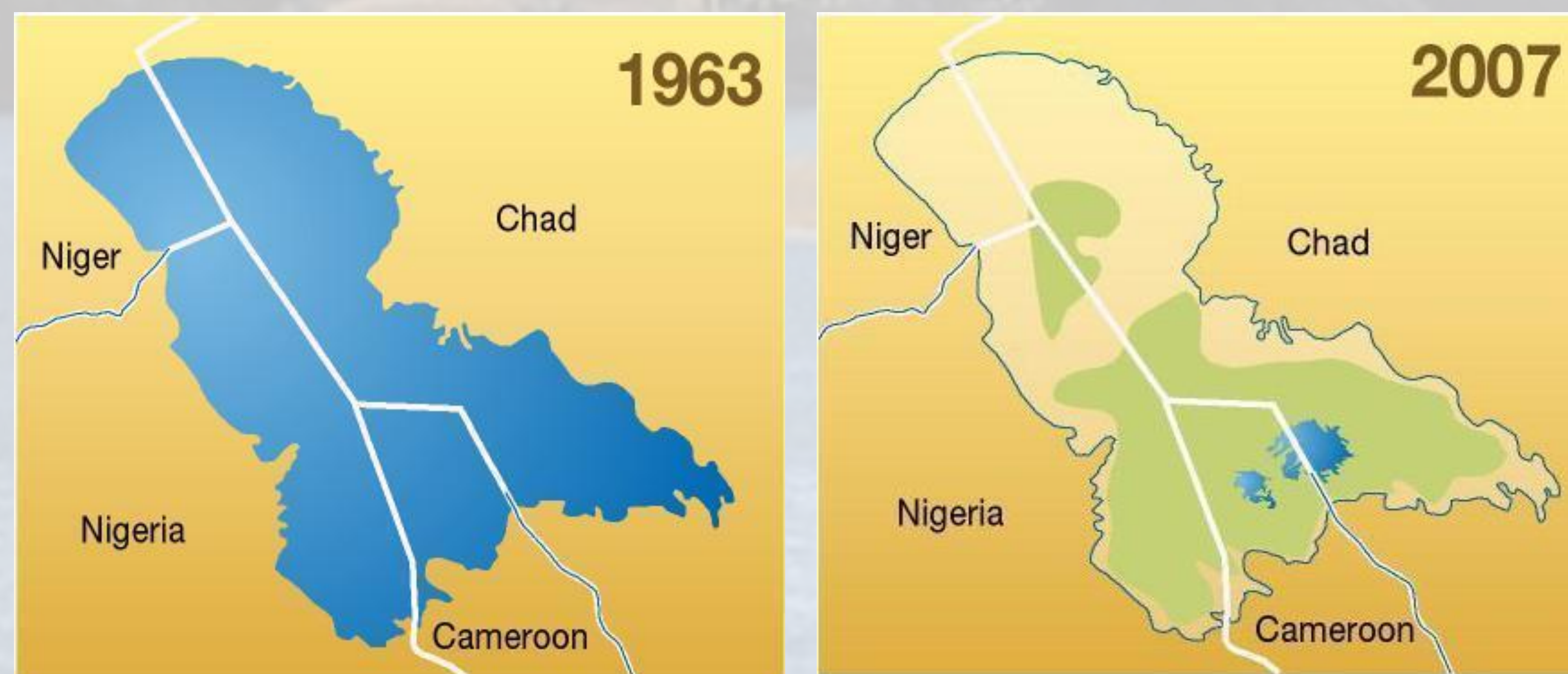
Benefits

- Efficiency of time, energy, and water usage
- 40x more protein than corn
- Variety of uses: biofuel, animal feed, fertilizer
- Benefits fishing industry
- Female empowerment through entrepreneurship



Funding: FAO, EU, Lake Chad Commission

Lake Chad's Disappearance



Size of Lake Chad in 1963
 Philippe R. (1963-2007). Surface of Lake Chad. Retrieved from <http://www.water-for-africa.org/en/lake-chad/articles/disappearing-lake-chad.html>

Implementation Process



Marzio, M. (2010). Chad: Development of Dike for Vulnerable Populations [Digital image]. Retrieved from <http://www.fao.org/agriculture/crops/themes/spi/photo-gallery/ar/>

Recommendations

- Expansion to other tropical areas
- Future research: safer production
- Growth behind dams and other water collection systems



Thinkstock. (10/02/2013). Recruiting E. coli to combat hard-to-treat bacterial infections. Retrieved from <http://www.acs.org/content/acs/en/pressroom/presspac/2013/acs-presspac-october-2-2013/recruiting-e-coli-to-combat-hard-to-treat-bacterial-infections.html>

Outcomes

- Higher calories/person/day
- Spirulina used as animal feed
- More jobs for female entrepreneurs
- Increased algae sales over time



Golly. (2005). It Really Does do you Good: Nutritional Values. Retrieved from <http://www.poverty.ch/documents/spirulina.pdf>

Evidence of Success

- FAO and European Union: \$1.4 million donation for family algae farming in Chad
- Currently produce 388.8 tons per year
- 90% of work done by female entrepreneurs



Women collecting spirulina



Drying of spirulina in seasonal pools

Marzio, M. (2010). Chad: Development of Dike for Vulnerable Populations [Digital image]. Retrieved from <http://www.fao.org/agriculture/crops/themes/spi/photo-gallery/ar/>

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