Effective Uses of NOx and Drainage are Clever Way to Protect Global Warming and to Increase Fish Production

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Abstract

The earth is warmed up by the burning of fossil releasing CO₂. If we can compensate the generation of CO₂ by CO₂ assimilation, global warming can be protected. To promote CO₂ assimilation, supply of nutrient N and P is essential. NOx is produced when fossil is burned. NOx is critically important for plant growth. Japan government asks us to eliminate NOx in burned gas and asks us to eliminate N, P in drainage. Fish production decreased 70% in past 30 years. When we look at fish industry of many countries, the country which use NOx in burned gas and N, P in the drainage are producing much fish and fixing much CO₂ and contributing for the protection of global warming. Effective uses of NOx and drainage are clever way to protect global warming and to get many fish.

**\[
\text{assimilation} \\
\text{CO}_2 + \text{H}_2\text{O} + 114\text{kcal} \rightarrow \frac{1}{6}\text{C}_6\text{H}_{12}\text{O}_6 + \text{O}_2 \\
\text{burning} \\
\text{NOx} \text{is a main nutrient nitrogen sources. Plants are growing by eating CO}_2, \text{water and nutrient N.P. Plant cannot grow without nutrient N.P.} \\
\text{Nature look likes to set up system to make NOx to promote CO}_2\text{assimilation to promote plant growth. Nature also look like to make thunder (39-41) to make NOx, by following reaction.} \\
\text{N}_2 + \text{O}_2 \rightarrow 2 \text{NO} - 43.2\text{kcal} \\
\text{Keywords: NOx; Carbon dioxide; Carbon dioxide assimilation; Global warming; NOx elimination; Fish}**

Introduction

The earth is warmed up by the heat and CO₂ evolved by the burning of fossil. Most (probably 95%) CO₂ evolved is fixed by plant by CO₂ assimilation. But burning of fossil is so much. CO2 assimilation cannot follow.

If we can compensate the generation of CO₂ and heart of burning with the absorption of CO₂ and heart by CO₂ assimilation, global warming will be protected (1-11). NOx is produced when fossil is burned. NOx is essential compound for plant growth. Many governments hating NOx as pollution gas and set laws to elimination NOx. I wish to insist that NOx elimination should be stopped to increase CO₂ assimilation and protect global warming.

To promote CO₂ assimilation, the supply of nutrient nitrogen and phosphorous is essential. Many CO₂ assimilation studies (12-38) indicated that CO₂ assimilation is playing very important role for the regulation of climate and supply of nutrient N.P is important for the promotion of CO₂ assimilation.

NOx is a main nutrient nitrogen sources. Plants are growing by eating CO₂, water and nutrient N.P. Plant cannot grow without nutrient N.P. NOx is main promoter of CO₂ assimilation and promoter of protection of global warming.

Nature look likes to set up system to make NOx to promote CO₂ assimilation to promote plant growth. Nature also looks like to make thunder (39-41) to make NOx,
Stop NOx Elimination to Promote CO$_2$ Assimilation and to Increase Fish Production

NOx is hated as pollution gas. Many governments set up very strict laws to eliminate NOx in burned gas and forced to eliminate all NOx using ammonia. To kill one fertilizer with other fertilizer gives tremendous loss for the growth of plant. Nutrient nitrogen and phosphorous in drainage is also hated as pollution elements and many governments set up very strict laws to eliminate all nutrient nitrogen and phosphorus and forced to eliminate these elements using much electricity.

Table 1:

| Fish Production Million Tone | Population Billion | CO$_2$ Fixed By Plankton Million Tone |
|------------------------------|-------------------|--------------------------------------|
| 2016                         | 1997              |                                      |
| Top                          | China             | 79.38                                |
| 2nd                          | Indonesia         | 22.21                                |
| 3rd                          | India             | 10.11                                |
| 4th                          | Vietnam           | 6.21                                 |
| 5th                          | USA               | 6.05                                 |
| 6th                          | Japan             | 4.92                                 |
| 7th                          | Russia            | 4.61                                 |
| 9th                          | Philippine        | 4.5                                  |
| 10th                         | Norway            | 3.52                                 |
| 11th                         | Bangladesh        | 3.66                                 |
| 12th                         | Korea             | 3.33                                 |
| 13th                         | Chile             | 3.19                                 |
| 14th                         | Myanmar           | 2.95                                 |
| 15th                         | Tai               | 2.59                                 |
| 16th                         | Malaysia          | 2                                    |

But since NOx, nutrient N, P elimination policy and elimination law were established at around 1980. Concentration of N, P of sea water decreased. Concentration of nitrogen in rain dropped to zero. No weed, no plankton grow at Seto inland sea. Hundred thousand fisherman lost job. Most fish shops were closed. We cannot buy fish produced at Seto inland sea. At Seto inland sea, 500 thousand tone fish was produced in 1980. But it decreased to 50 thousand tone now. This indicates that CO$_2$ assimilation by plankton was lost by the NOx and nutrient N, P elimination policy. Fish production of Japan 16 million tone in 1980 was top in the world, but it decreased to 4.64 million tone 7th place in 2015 (Table 1).

Japan is eliminating 3 million tone N and P. Therefore 16 million tone fish was not produced in recent years. China, Indonesia, India, Vietnam do not eliminate NOx and do not do drainage treatment. They use NOx and excreta as it is for production of plankton and fish. Therefore, fish production increased remarkably in the district where no N, P supply by counter current of nutrient rich deep sea water with nutrient poor shallow sea water.

Fish production is proportional to population, amount of excreta. Shrimp production by excreta is popular in Vietnam, India and Indonesia and 31000, 30000 and 25000 tone shrimps are exported to Japan respectively in 2015. Peru, Norway and Chile produce much fish by N, P caused by counter current of nutrient rich deep sea water with nutrient poor shallow sea water.

Fish production is proportional to CO$_2$ fixed by CO$_2$ assimilation at sea. The country having high fish production is the country which have done high CO$_2$ fixing. 10 times of CO$_2$ of fish production are fixed by plankton CO$_2$ assimilation. China produced 79.38 million tone fish in 2016. This means that China fixed 8 billion tone CO$_2$ by plankton CO$_2$ assimilation. This is huge amount. This is 1/12 of 100 billion tone CO$_2$ produced at China. China is biggest CO$_2$ producing country.

This data indicates that plankton CO$_2$ assimilation is playing significant role for the fixing of CO$_2$ and protection of global warming. Decrease of 12 million tone fish at Japan means decrease of 120 million tone CO2 fixing. If Japan stop elimination of 3 million tone N and P, Japan can fix 46 million tone CO$_2$ and can produce 12 million tone fish. Decrease of half million tone fish at Seto inland sea means decrease of 5 million tone CO$_2$ fixing.

Japan is most CO$_2$ increasing country, because country is narrow and cannot fix produced CO$_2$ at land [11]. Therefore Japan must fix CO$_2$ by promotion of CO$_2$ assimilation at sea. Japan is producing 10% CO$_2$ of total CO$_2$ production for the elimination of NOx and drainage treatment. Japan must diminish CO$_2$ emission by stopping NOx elimination, and promote CO$_2$ assimilation and fish production.

If governments think CO$_2$ diminish is most important subject, they should consider sea as firm of fish, firm to fix CO$_2$. They should increase N, P concentration of sea by releasing NOx and drainage N, P as it is.
Conclusion

Effective uses of NOx and drainage are clever way for the increase of fish production and for the protection of global warming.

References

1. Ozaki S (1993) Recycle of nitrogen and phosphorous for the increase of food production. New Food Industry 35(10): 33-39.
2. Ozaki S (2016) Methods to protect global warming. Adv. Tech. Biol Med 4(3): 181.
3. Ozaki S (2016) Methods to protect global warming, Food production increase way. New Food Industry 58(8): 47-52.
4. Ozaki S (2016) Global warming can be protected by promotion of CO2 assimilation using NOx. Journal of Climatology & Weather Forecasting 4(2): 1000171.
5. Ozaki S (2016) Global warming can be protected by promotion of plankton CO2 assimilation. Journal of Marine Science: Research & Development 6: 213.
6. Ozaki S (2017) Method to protect global warming by promotion of CO2 assimilation and method to reactivate fish industry. New Food Industry 59(3): 61-70.
7. Ozaki S (2017) NOx is Best Compound to Reduce CO2. Eur J Exp Biol 7: 12.
8. Ozaki S (2017) Protection of global warming and burn out of fossil fuel by promotion of CO2 assimilation. J. of Marine Biology & Oceanography 6: 2.
9. Ozaki S (2017) Promotion of CO2 assimilation supposed by NOx is best way to protect global warming and food production. Art of Pet-Environ Biotechnol 02:110.
10. Ozaki S (2017) Promotion of CO2 assimilation supported by NOx is best way to protect global warming. J Marine Biol Aquacult 3(2): 1-5.
11. Ozaki S (2017) Stopping of NOx elimination is easy way to reduce CO2 and protect global warming. J Environ Sci Public Health 1(1): 24-34.
12. Falkowski, Paul G (1994) The role of phytoplankton photosynthesis in global biogeochemical cycles*. Photosynthesis Research 39(3): 235-258.
13. Falkowski PG, Zielmann D, Kolber Z, Bienfang PK (1991) Nutrient pumping and phytoplankton response in a subtropical mesoscale eddy. Nature 352: 52-58.
14. Falkowski PG, Wilson C (1992) Phytoplankton productivity in the North Pacific ocean since 1900 and implications for absorption of atmospheric CO2. Nature 358: 741-743.
15. Falkowski PG, Woodhead AD (1992) Primary Productivity and Biogeochemical Cycles in the Sea. Plenum Press, New York, USA, p. 550.
16. Chisholm SW, Falkowski PG, Cullen JJ (2001) Dis-crediting ocean fertilization. Science 294(5541): 309-310.
17. Aumont O, Bopp L (2006) Globalizing results from ocean in situ iron fertilization studies*. Global Biogeochemical Cycles 2(2).
18. (2015) How much do oceans add to worlds oxygen? Earth & Sky.
19. Roach J (2004) Source of Half Earth’s Oxygen Gets Little Credit. National Geographic News.
20. Tappan H (1968) Primary production, isotopes, extinctions and the atmosphere. Palaeogeography, Palaeoclimatology, Palaeoecology 4(3): 187-210.
21. Wang G, Wang X, Liu X, Li Q (2012) Diversity and biogeochemical function of planktonic fungi in the ocean. In: Raghukumar C (Edt.), Biology of marine fungi. Springer Berlin Heidelberg 53: 71-88.
22. Omori M, Ikeda T (1992) Methods in Marine Zooplankton Ecology. Krieger Publishing Company, Malabar, USA, p. 332.
23. NASA Satellite Detects Red Glow to Map Global Ocean Plant Health. 24. (2014) NASA Satellite Sees Ocean Plants Increase, Coasts Greening.
25. Richtel M (2007) Recruiting Plankton to Fight Global Warming. New York Times.
26. Charlson RJ, Lovelock JE, Andreae MO, Warren SG (1987) Oceanic phytoplankton, atmospheric sulphur, cloud albedo and climate. Nature 326 (6114): 655-661.
27. Quinn PK, Bates TS (2011) The case against climate regulation via oceanic phytoplankton sulphur emissions. Nature 480(7375): 51-56.
28. Calbert A (2008) The trophic roles of microzooplankton in marine systems. ICES Journal of Marine Science 65(3): 325-331.
29. Arrigo KR (2005) Marine microorganisms and global nutrient cycles. Nature 437(7057): 349-355.
30. Fanning KA (1989) Influence of atmospheric pollution on nutrient limitation in the ocean. Nature 339(6224): 460-463.
31. Sterner RW, Elser JJ (2002) Ecological Stoichiometry: The Biology of Elements from Molecules to the Biosphere. Princeton University Press, USA.
32. Klausmeier CA, Litchman E, Levin SA (2004) Phytoplankton growth and stoichiometry under multiple nutrient limitation. Limnology and Oceanography. 49(4 Part 2): 1463-1470.
33. Klausmeier CA, Litchman E, Daufresne T, Levin SA (2004) Optimal nitrogen-to-phosphorus stoichiometry of phytoplankton. Nature 429(6988): 171-174.
34. Boyce DG, Lewis MR, Worm B (2010) Global phytoplankton decline over the past century. Nature 466(7306): 591-596.
35. Schiermeier Q (2010) Ocean greenery under warming stress. Nature.
36. Mackas DL (2011) Does blending of chlorophyll data bias temporal trend? Nature 472(7342): E4-E5.
37. Rykaczewski RR, Dunne JP (2011) A measured look at ocean chlorophyll trends. Nature. 472(7342): E5-E6.
38. McQuatters-GAG, Reid PC, Edwards M, Burkill PH, Castellani C, et al. (2011) Is there a decline in marine phytoplankton? Nature 472(7342): E6-E7.
39. Boersma KE, Eskes HJ, Meijer EW, Kelder HM (2005) Estimates of lightning NOx production from GOME satellite observations. Atmos Chem Phys 5: 2311-2331.
40. Leskey EO, Kenneth E, Pickering GL, Stenchikov DJ, Allen AJ, et al. (2010) Production of lightning NOx and its vertical distribution calculated from three-dimensional cloud-scale chemical transport model simulations. Journal of Geophysical Research. 115(D4): 301.
41. Schumann U, Huntrieser H (2007) The global lightning-induced nitrogen oxides source. Atmos Chem Phys 7: 3823-3907.
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