

## Promotion of Plankton CO<sub>2</sub> Assimilation by Effective Use of NO<sub>x</sub> and NP is Best Method to Produce Much Fish and Protect Global Warming

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### Abstract

The earth is warmed up by the burning of 1.4 billion tone fossil releasing 360 billion tone CO<sub>2</sub> in 2016. If we can compensate the generation of CO<sub>2</sub> by CO<sub>2</sub> assimilation, global warming can be protected. About 14.4 billion tone NO<sub>x</sub> is produced when fossil is burned. NO<sub>x</sub> is a promotor of plant growth and CO<sub>2</sub> assimilation. Therefore NO<sub>x</sub> elimination gives great damage on growth of plant plankton. Production of fish, grain. To eliminate NO<sub>x</sub>, ammonia is used. By this reaction, precious fertilizer is destroyed by other fertilizer. This is tremendous loss. The countries who do this reaction like USA, Japan, Germany and Italy are consuming much fossil generating much CO<sub>2</sub> for elimination of NO<sub>x</sub>. Therefore electricity price is higher than no NO<sub>x</sub> elimination country. The country whose electricity price is low can produce good with low price. Then producing industry progress and GDP growth rate become higher. Therefore NO<sub>x</sub> elimination and drainage NP elimination should be stopped to produce much fish and protect global warming.

**Keywords:** CO<sub>2</sub> assimilation, NO<sub>x</sub> elimination, Waste water purification, Fish production, Global warming, Plankton.

### Introduction

I wish to describe about how to increase the fish production and protection of global warming. Much carbon dioxide is released and global warming is happening. Reduce of carbon dioxide is most important for the protection of global warming. To reduce carbon dioxide, promotion of carbon dioxide assimilation is best method to reduce carbon dioxide. To promote carbon dioxide assimilation, supply of nitrogen fertilizer and phosphorous fertilizer is essential. Nitrogen oxide NO<sub>x</sub> is most abundant nitrogen fertilizer. Waste water contain much nitrogen and phosphorous fertilizer.

When I was a professor at Ehime University, in 1990 newspaper Ehime shinbone reported that waste water purification process is reducing Nori (sea weed) and fish production at Seto inland sea. Nori contains 30 % protein. Fish protein contains much nitrogen. Nitrogen must be supplied from NO<sub>x</sub>, and drainage.

NO<sub>x</sub> is hated as pollution gas of car. This hating is extended to exhaust gas of electricity generation plant, iron making plant and petro chemistry plant. The amount of NO<sub>x</sub> is so much .1/25 of produced CO<sub>2</sub>, 20 billion tones. Many developed country like USA, Japan, Germany, United Kingdom France set up rule to inhibit the release of NO<sub>x</sub> in the air. Then CO<sub>2</sub> assimilation is reduced remarkably. CO<sub>2</sub> fix is reduced remarkably. Plant and plankton growth are reduced remarkably. Fish production of such country is reduced remarkably. I have strong opinion that NO<sub>x</sub> elimination should be stopped.

The reason why official of developed country set up such rule to inhibit the release of NO<sub>x</sub> lay on internet. Internet tells us thousand papers about toxicity of NO<sub>x</sub> and no paper indicate NO<sub>x</sub> is fertilizer.

When we look at plankton. Thousand papers including 100 nature papers teach us plankton playing significant role for the control of climate, CO<sub>2</sub> assimilation, fish production [1]. Plankton reduced 95% CO<sub>2</sub> concentration to 250ppm in 30 billion years.

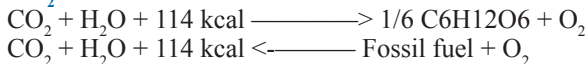
I am insisting NO<sub>x</sub> elimination should be eliminated and NO<sub>x</sub> elimination law should be eliminated. This is against the law. Therefore I wish to ask you to decide my opinion is correct or not. You can read my paper just search at internet by put two items [2-15]. NO<sub>x</sub>, Protection of global warming, or CO<sub>2</sub> assimilation, Protection of global warming, or NO<sub>x</sub>, Shoichiro Ozaki.

My opinion is simple, easy to do. NO<sub>x</sub> elimination should be stopped. NO<sub>x</sub> should be released to air as it is. Waste water cleaning should be stopped. Ocean dumping, field dumping, forest dumping are recommended.

The plant is growing by eating CO<sub>2</sub> and water making carbohydrate and oxygen absorbing sun energy. The earth is warmed up by the heat evolved by the burning of fossil fuel which produced from plant and plankton. Burning reaction is reverse reaction of CO<sub>2</sub> assimilation. If we can compensate the emission of CO<sub>2</sub> and heat of burning with the absorption of CO<sub>2</sub> and heat by CO<sub>2</sub> assimilation, global warming will be protected. I proposed many methods to protect global warming [2-15]. I picked up best part of these methods at this paper.

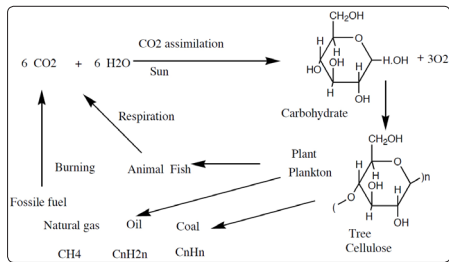
## Relation of CO<sub>2</sub> assimilation and burning

### CO<sub>2</sub> assimilation



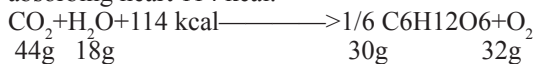
### Burning

CO<sub>2</sub> react with water by CO<sub>2</sub> assimilation to produce carbohydrate, glucose and oxygen. Glucose turns to cellulose, tree, plant and plankton. Tree turn to coal, plankton turn into oil in many billion years. Our human being are using this fossil fuel and enjoying civilized life. Animal including fish can live by eating plant and plankton. Animal release CO<sub>2</sub> by respiration. Released CO<sub>2</sub> react with water to give carbohydrate. CO<sub>2</sub> is cycling in such way.

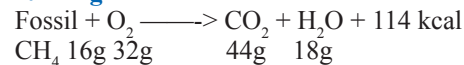


### CO<sub>2</sub> assimilation

CO<sub>2</sub> assimilation produces carbohydrate (glucose) and oxygen absorbing heat 114 kcal.



### Burning



Oil CH<sub>2</sub> 14g  
Coal CH 13g

At laboratory CO<sub>2</sub> 44g react with water 18g and produce 30g glucose and 32g oxygen. At rice fields: To make 1 tone of plants CO<sub>2</sub> 1 tone x44//30=1.47 tone is necessary. At earth: Fossil 140 billion tone was burned at whole world and about 360 billion tone CO<sub>2</sub> was released. At forest 7-17 billion tone CO<sub>2</sub> was fixed. At Ocean: Annual CO<sub>2</sub> fix by plankton is 200 billion t.

### CO<sub>2</sub> Assimilation, fix CO<sub>2</sub> and absorbed heat

At	CO <sub>2</sub>	H <sub>2</sub> O	Absorbed heat kcal	Products
(A) Laboratory	44g	18 g	114 kcal	Carbohydrate 30 g O <sub>2</sub> 32g
(B) Rice field	1.47 t		38x10 <sup>5</sup>	Rice 1t
(C) Setoinland sea	69x10 <sup>6</sup> t		5.3x 10 <sup>12</sup>	Weed, Plankton
(D) Earth	3.6x10 <sup>10</sup> t		7.4x 10 <sup>15</sup>	1.4x 10 <sup>10</sup> t
(E) forest	7-17 x 10 <sup>8</sup> t		1.6x 10 <sup>13</sup>	Tree
(F) Land	(10-20)x10 <sup>8</sup> t		5.7x 10 <sup>13</sup>	Plant
(G) Ocean	(20-30)x10 <sup>8</sup> t		1.1x 10 <sup>8</sup>	plant, plankton
(H) Ocean	(2-3)x 10 <sup>10</sup> t		5.6x 10 <sup>14</sup>	plankton

### Amount of CO<sub>2</sub> emission and fixable CO<sub>2</sub> and CO<sub>2</sub> increase of 10 countries

Most emitted CO<sub>2</sub> is fixed by CO<sub>2</sub> assimilation. CO<sub>2</sub> increase is calculated based by CO<sub>2</sub> emission minus fixable CO<sub>2</sub>. CO<sub>2</sub> increase of 10 countries is shown at next Table.

10 k tone co<sub>2</sub> can be fixed at 1km<sup>2</sup> wood and 10 k tone CO<sub>2</sub> is fixed at 1 km<sup>2</sup> cultivated land. Then we can calculate fixable CO<sub>2</sub> by area km<sup>2</sup> multiply 10 k tone.

Country	CO <sub>2</sub> emission billion t	area km <sup>2</sup>	Fixable CO <sub>2</sub>	CO <sub>2</sub> Increase
<b>World</b>	360			
<b>China</b>	100	1.0x 10 <sup>7</sup>	100	0
<b>USA</b>	51	9.5x 10 <sup>6</sup>	95	0
<b>India</b>	24	3.2x 10 <sup>6</sup>	32	0
<b>Russia</b>	17	3.2x 10 <sup>6</sup>	32	0
<b>Japan</b>	12	3.8 x 10 <sup>5</sup>	3.3	9
<b>Germany</b>	7.8	3.5x 10 <sup>5</sup>	3.5	4.3
<b>Canada</b>	5.5	1.0x 10 <sup>8</sup>	100	0
<b>United Kingdom</b>	4.0	2.4 x 10 <sup>4</sup>	2.4	1.6
<b>Italy</b>	3.6	2.0x 10 <sup>5</sup>	3.0	0.6
<b>France</b>	3.3	6.4x 10 <sup>5</sup>	8.4	0

Six countries listed at the table look like able to fix emitted co<sub>2</sub> by co<sub>2</sub> assimilation because area is wide enough.

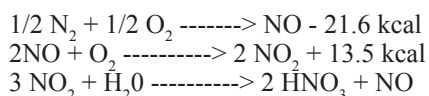
Japan, Germany, United Kingdom and Italy cannot fix all CO<sub>2</sub> produced at his country. Because areas are narrow. Japan emitted 12 billion tones CO<sub>2</sub> in 2015. Japan has area 3.8×10<sup>5</sup> km<sup>2</sup>. Fixable CO<sub>2</sub> is 3.3 billion tones. Japan increasing 9 billion tones CO<sub>2</sub>. Japan, United Kingdom and Italy are increasing CO<sub>2</sub>. These 3 countries are surrounded by sea. These countries must decrease CO<sub>2</sub> by plankton CO<sub>2</sub> assimilation at sea. Total CO<sub>2</sub> emission of the world is 360 billion tones. We must decrease CO<sub>2</sub> emission by the promotion of plankton CO<sub>2</sub> assimilation by increasing concentration of NP at sea by stop elimination of NOx and by stop of waste water purification.

### **NOx elimination or not is key point of protection of global warming**

140 billion tonne fossil is burned and about 360 billion CO<sub>2</sub> is produced and when fossil is burned, much CO<sub>2</sub> is produced. About 1/25 NOx of CO<sub>2</sub>, 14.4 billion tones is produced as by product. One NOx can fix 25 CO<sub>2</sub>.

### **NOx is a gift from nature to promote growth of plant**

Nature has systems to change N<sub>2</sub> to nutrient nitrogen. By thunder the high temperature at fire place for cooking, warming up of room by burning of wood, by forest fire, by forest burning, by bonfire, and also burning of fossil fuel, following reactions proceed [16,17,18].



NOx is a mixture of 90% NO and 10% NO<sub>2</sub>. NOx is dissolved in rain and give nutrient nitric acid and promote the growth of plant and plankton.

The earth was boon and plant appeared. and plant eat CO<sub>2</sub>, H<sub>2</sub>O and nutrient N, P, and plant is burned then NOx is produced to recover lost plant. When no burning material present, like sea district, thunder storms make NOx.

NOx is a gift from nature. We should not against nature. We should use NOx as it is. In 2015 fossil 140 billion tonne was burned and CO<sub>2</sub> 360 billion tonne and NOx 14.4 billion tonne are produced. If we use all NOx for the fixing of CO<sub>2</sub>, we can fix 14.4x25x 108 = 360 billion tone CO<sub>2</sub>. As C/N ratio of plant is around 5/1-50/1 (average 25/1).

But NOx is hated as pollution gas causing illness. Many governments of developed countries like USA, Japan, Germany, UK, France and Italy set up very strict law to eliminate NOx in burned gas and forced to eliminate NOx using ammonia. Amount of NOx is huge amount 24 billion tonne. To eliminate NOx, huge amount of ammonia is necessary and huge amount of fossil is burned. These governments put emphasis on toxicity of NOx than the utility of NOx.



Many other governments like China, India, and Indonesia do not do NOx elimination. They used NOx as fertilizer and got many plant, plankton, grain and fish. And they could do much CO<sub>2</sub> fixing. To do NOx elimination or do not do NOx elimination give tremendous difference in industries, economics, GDP, global warming [14]. NOx is hated as pollution gas causing sun light smog and is eliminating using much fossil. But no report as to the sickness and dead person

caused by NOx is reported.

Low doses of inhalation of nitric oxide have been reported to be clinically effective, and most current dosing recommendation does not exceed 40 ppm. At this dose, the little measurable short term toxicity. Indeed, it is noteworthy that in the large randomized trials of inhalation of nitric oxide, major clinical toxicity (e.g., methemoglobinemia) was observed only at dose>80 ppm [19,20]. Therefore NOx has small demerit but not significant as big merit that NOx is essential for the growth of plant for the production of food for the promotion of health and long life.. The ratio of merit / demerit is 10000/1.

Therefore NOx should be released without elimination procedure.

### **NOx is good fertilizer**

When I was a professor of Ehime University, Department of Resources Chemistry, I noticed the news of Ehime Newspaper. Urification of sea water block the production of Nori (sea weed to mate norimaki) and hundred fisherman lost job [2-4]. Old Japanese proverb say "In clean water, no fish can live" (Mizukiyokereba uosumazu)". If we make very clean water, no fish, no plankton grows. Water must contain N and P and must be turbid with plankton for the production of fish. NOx in air is fertilizer to give nutrient nitrogen to soil and sea.

I was born at Kurashiki, Japan in 1930. The bottom of sea of Seto inland sea was filled with eel grass and sea was filled with plankton and many fish: breams (Tai), eel (unagi) seaeel (anago), octopus (tako), sardine (iwashi), shrimp (ebi), ikanago. The sea was filled with fishing boat. Fish was very low price than meat. Seto inland sea was producing 500thousand tonne fish and 1 million Nori sheets. Main protein source of Japanese was fish before 1945. The ratio of fish/meat was 99/1. But since NOx elimination and waste water purification law were established at around 1978, concentration of N, P of sea decreased remarkably. Concentration of nitrogen in rain dropped to zero. No weed, no plankton grows at Seto inland sea. Hundred thousand fisherman lost job. Most fish shop were closed. Fish price increased 5 times. Grassy eel production decreased to 1/100. At Seto inland sea, 500 thousand tone fish was produced in 1980. But it decreased to 50 thousand tonne now. Peal and shellfish production decreased remarkably. This indicates that CO<sub>2</sub> assimilation by plankton was lost by the NOx and nutrient NP elimination. Fish production of Japan 16 million tonne in 1980 was top in the world, but it decreased too 4.64 million tonne 7th place [6-15].

NOx promote plant growth. NOx promote wood and food roduction. Thunder produce NOx and NOx produce yellowtail (buri) and rice [16,17]. About 4 million thunder in one day and about 30 million t NOx is produced by thunder in one year. It is estimated that 7 kg of NOx is produced by 1 lightning flash. Old proverb say that many thunderstorm year gives good rice harvest. One thunder lightning give one inch growth of rice. Thunder lightning is written as Inazuma, Ine (rice) tsuma (wife). Because thunder is so precious and essential like rice and wife. Heavey snow falling (3 meter) district Minami Unouma, Niigata, Japan is famous for the production of most delicious rice Minamiuonuma koshihikari. Gulf Toyama and surrounding sea are rich in nutrient N from thunder produced NOx and filled with plankton and produce many fish like Yellowtail (buri) and crab. Therefore thunder is called as Buriokoshi (yellowtail producer) in Japan.

These facts indicate that NO<sub>x</sub> is playing very important role for CO<sub>2</sub> fixing, the growth of plant, production of foods and protection of global warming.

### Phosphorous is essential for fixing CO<sub>2</sub>

Phosphorous P is important atom constituent of plants and animals [4]. Phytic acid (inositol hexaphosphate) calcium salt is contained in every surface of grain such as rice, wheat and corn about 30%. Plant makes glucose by photosynthesis from CO<sub>2</sub> and water. Some of glucose is converted to inositol. Inositol is converted to phosphoinositides (PIP2) and phytic acid. PIP2 is converted to IP3 and diacylglycerol. These two compounds are essential for signal transduction of plant. Plant makes phytic acid as storage of phosphorous. Phosphorous is an essential atoms as fertilizer, because it is an essential atom to make DNA. The seed store phosphorous atom as a store so that even when seed germinates at no phosphorous land. To make this phytic acid, plant absorbs corresponding phosphorous at harvest time. Lack of phosphorous give poor harvest. How phosphorous is supplied. There are two routes to supply phosphorous to plant.

### Phosphorous in drainage

About 60 thousand tone phosphorous was contained in drainage in Japan. By using this phosphate, 60 thousand x 25 = 1500 thousand tones CO<sub>2</sub> can be fixed. And 1500 thousand tone plankton can be produced and fish 160 thousand tone will be produced. Animal eat food containing P and exclude excreta containing P. When toilet disposal and drainage are sent to excreta disposal treatment plant. P in water was made to water insoluble mass, mixed with cement and made to concrete and buried in soil. Plant cannot use P any more. This process use huge electricity and consume much fossil fuel. Around two hundred thousand tone fossil and producing five hundred thousand CO<sub>2</sub>. For the elimination of one phosphorous, about 25 carbon fossils are used and about 25 CO<sub>2</sub> is produced. One phosphorous can fix 25 CO<sub>2</sub> the phosphorous elimination process should be avoided. Because excreta is best food for plant. Ocean dumping, field dumping and forest dumping of excreta are recommended to increase the concentration of nutrient phosphorous.

### Phosphorous

Ideal concentration for cell growth experiment P 88 µg is in 1 little sea water. Concentration of N (nitrogen and P (phosphorous) of surface sea water at 100km south of Muroto (South corner of Shikoku) is 1 µg/l, 0.3 µg/l. respectively. These values are 1/20000, 1/2000000 of ideal concentration for cell growth experiment. N 33 µg/l, P 2.9 µg/l at 1000m deep sea, water is 30 times and 10 times rich in nutrition than that of surface sea water at the same spot. Global warming produce high temperature of sea water, evaporation of water and consequent many typhoon, hurricane. These typhoon and hurricane agitate surface sea water (poor nutrient) with deep sea water (rich nutrient). Plankton growth infinitely if enough nutrient N and P are present. Many hurricane attacking east south part of United State producing nutrient rich surface sea water and this sea current goes up to north producing much plankton and much CO<sub>2</sub> and heat absorption and producing much fish. . Coral bleaching is reported at Sekisei Reef Lake at Okinawa, Japan in Sept 2016. And Great Barrier reef in June 6 2016. Because no typhoon approach at this district, agitation was not enough to replace nutrient deep sea water (contain much nutrient nitrogen, phosphorous) with poor nutrient shallow sea water causing the no growth of zooxanthella.

Annual CO<sub>2</sub> fix by ocean plankton in the world is 2 x 19<sup>10</sup> tones. This amount is more than half of CO<sub>2</sub> generated in the world. Therefore fixing of CO<sub>2</sub> by plankton at sea is most important.

### Fish production and CO<sub>2</sub> fix by plankton

When we look at fish production of world [11-13]. China produced 79.38 million tonne fish and Indonesia produced 22.21 million tonne fish. India 18.11 Vietnam 6.21 million t fish. They do not eliminate NO<sub>x</sub> and do not do wast water purification they use NO<sub>x</sub> and excreta as it is for production of plankton and fish. Therefore fish production increased remarkably at 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.

Fish production is proportional to CO<sub>2</sub> fixed by CO<sub>2</sub> assimilation at sea; The country having high fish production is the country which have done high CO<sub>2</sub> fixing. 20 times of CO<sub>2</sub> of fish production are fixed by plankton CO<sub>2</sub> assimilation.

China produced 79.38 million tone fish in 2016. This means that China fixed 16 billion tone CO<sub>2</sub> by plankton CO<sub>2</sub> assimilation. This is huge amount. This is 1/6 of 100 billion tone CO<sub>2</sub> produced at China.

This data indicates that plankton CO<sub>2</sub> assimilation is playing significant role for the fixing of CO<sub>2</sub> and protection of global warming.

Decrease of 12 million tone fish at Japan means decrease of 240 million tone CO<sub>2</sub> fixing. If Japan stop elimination of 3 million tone N and P, Japan can fix 2.4 billion tone CO<sub>2</sub> and can produce 12 million tone fish Decrease of half million tone fish at Seto inland sea means decrease of 10 million tone CO<sub>2</sub> fixing.

1	China	79.38	16.29	13.5	1588
2	Indonesia	22.21	5.55	2.39	444
3	India	10.11	3.60	12.24	202
4	Vietnam	6.21		0.86	124
5	USA	6.05	5.41	3.10	120
6	Peru	4.92	7.87	0.28	98
7	Japan	4.64	5.88	1.27	92
8	Russia	4.61	4.66	1.43	92
9	Philippine	4.50		0.92	90
10	Norway	3.52	2.87	0.48	70
11	Bangladesh	3.68		1.48	74
12	Korea	3.33		0.4	66
13	Chile	3.19	5.87	0.17	64
14	Myanmar	2.95		0.48	60
15	Tai	2.59		0.63	52
16	Malaysia	2.00		0.28	40



### Increase of fish production can protect global warming

Japan is producing 12 billion tone CO<sub>2</sub> and 0.5 billion tone NOx. Responsible carbon dioxide is 4.95 billion tone. Japan is producing 1 billion tone CO<sub>2</sub> for the elimination of NOx, and 1 billion tone CO<sub>2</sub> for waste water purification. If Japan stop 0.5 billion tone NOx elimination and stop waste water purification, Japan can produce 2.4 billion tone plankton and 12 million tone fish. 2.4 billion tone plankton can fix  $2.4 \times 44/30 = 3.52$  billion tone CO<sub>2</sub>.  $1 + 1 + 3.52 = 5.52$  billion tone CO<sub>2</sub>. This is 0.57 billion tone over 4.95 (responsible CO<sub>2</sub>).

CO<sub>2</sub> emission; 360 Billion tone CO<sub>2</sub> was produced in the world in 2016 by the burning of 140 billion tone fossil. To protect global warming, we must fix CO<sub>2</sub> same amount of CO<sub>2</sub> as emission. We are emitting 360 billion tone CO<sub>2</sub>. We are fixing 283 billion tone. Therefore 142 billion tone CO<sub>2</sub> is increasing. We must fix 142 billion tone CO<sub>2</sub> by proportion of emission of each country. Responsible amount of each country is calculated CO<sub>2</sub> res( responsible amount of CO<sub>2</sub>) can be calculated as Emission amount x 142/360(0.397) Each country must clear targeted their CO<sub>2</sub> res by either decrease of CO<sub>2</sub> emission or increase of CO<sub>2</sub> fixing.

NOx: Amount of NOx is estimated from the fact that NOx is produced about 1/25 of produced CO<sub>2</sub>. When 1 tone CO<sub>2</sub> is produced, 1/25 tone NOx is produced in the burning process, the ratio C/N = 25/1 is same as plant composition ratio C/N = 25/1. Plant eat CO<sub>2</sub> and nutrient N by the ratio C/N = 25/1 [21,22]. 14.4 billion tone NOx is estimated to be produced when 360 billion tone CO<sub>2</sub> is produced.

Many governments such as United State, Japan, Germany, United Kingdom, France consider NOx as pollution gas and eliminating NOx by the reaction with ammonia. Amount of NOx is so much, CO<sub>2</sub> assimilation is retarded very much. CO<sub>2</sub> fixing is retarded very much. And global warming is accelerated very much. For the production of ammonia, much fossil is used and much CO<sub>2</sub> is produced and global warming is accelerated so fast.

CO<sub>2</sub>p: Same weight of CO<sub>2</sub> is fixed in the growth of plankton. Therefore 20 times of fish weight CO<sub>2</sub> is estimated to be fixed. Paris agreement asks us no increase of CO<sub>2</sub>. We must fix CO<sub>2</sub> same amount CO<sub>2</sub> as emission. World is emitting 360 billion tone CO<sub>2</sub>. World is fixing 283 billion tone CO<sub>2</sub>. Therefore 142 billion tone CO<sub>2</sub> is increasing. We must fix 142 billion tone CO<sub>2</sub>.

World is emitting 14.4 billion NOx. About half of emitted NOx is estimated to be eliminated by ammonia. And around half of NOx 7.2 billion tone NOx is estimated to be released as it is. 1 tone NOx can fix 25 times of CO<sub>2</sub>. Therefore if 7.2 billion tone NOx is not eliminated,  $7.2 \times 25 = 180$  billion tone CO<sub>2</sub> can be fixed [14,16]. United States: Responsible CO<sub>2</sub> is 20 billion tones. USA emitted 51.0 billion CO<sub>2</sub>. And emitted 2 billion tone NOx. To eliminate 2 billion tones NOx, 1.13 billion tone ammonia is necessary. To make 1.13 billion tone ammonia, 0.2 billion tone hydrogen gas is required. To make 0.2 billion tone hydrogen, butane 0.64 billion tones is required. As the result, 1.76 billion tone CO<sub>2</sub> is released. If NOx elimination is not done, 1.76 billion tones CO<sub>2</sub> can be saved. And  $2 \times 25 = 50$  billion tone CO<sub>2</sub> will be fixed. And every plant grows well and produces grain, fish and tree grass well. Responsible 20 billion tone COx fix will be done.

NOx concentration limit rule of exhaust gas of car determine the fuel efficiency. By loosening concentration limit, 20 % fuel efficiency will increase and 2 billion tone CO<sub>2</sub> emissions will be saved. By effective use of NOx and NP in the drainage, 50 billion tone CO<sub>2</sub> assimilation is accelerated and grain and fish and meat production will increase.

### Influence of NOx elimination on GDP growth rate

CO<sub>2</sub> assimilation is most important reaction for all biology on earth. NOx is a promotor of plant growth, CO<sub>2</sub> assimilation. Therefore NOx elimination gives great damage on growth of plant plankton. Production of fish, grain, grass and tree and GDP the elimination reaction of NOx is a reaction of NOx with ammonia [15]. By this reaction, precious fertilizer is destroyed by other precious fertilizer. This is tremendous loss.

1. The country who do not do NOx elimination like China (NOx c= 1.6g/kWh, GDP=6.92%), India NOxcon=1.6 g/kWh, GDP=7.10%), S Korea (NOx c=1.6g/kWh, GDP= 2.8%) can boost high GDP growth rate.
2. The countries who do this reaction NOx elimination like USA (NOxc=0.5g/ kWh, GDP= 1.38%), Japan (NOxc=0.1g/kWh. GDP=1.01%)Germany, (NOxc=1.0g/kWh,GDP=1.85%), UK(NOxc=1.3g/kWh,GDP=1.8%), Italy (NOxc=0.5g/kWh, GDP=0.88%) are consuming much fossil fuel for elimination of NOx. Therefore electricity price is higher than no NOx elimination country. and CO<sub>2</sub> assimilation is retarded. Agriculture and fish industry are retarded. Japan did no NOx elimination before 1970, GDP was 8.0 in 1970. Japan started NOx elimination in 1980, then plankton production was destroyed and 13 million tone fish was not produced. About 1 million fisherman lost job. As fish price is 3000 dollar /t. Then  $3000 \times 13$  million dollar= 390 billion dollar were lost. Fish price increased 5 times. Average life in Japan: male is 80.50 (third), female is 86.83 (top in the world). The author believe that long life of Japanese come from the habit to eat fish containing glucosamine , hyaluronic acid and chondroitin as a main protein source. Japanese cannot eat fish as before. Fish/Meat ratio of Japanese changed from 99/1 in 1945 to 30/70 in 2017. Therefore Japanese may lose long life record soon.
3. The country whose electricity price is low can produce good with low price Then producing industry progress. And DGP growth rate become higher.

### The country does not do NOx elimination

1. Need not fossil to eliminate NOx; 2. Can have enough NOx and can promote CO<sub>2</sub> assimilation; 3. Electricity price is low; 4. Can produce much fish and grain; 5. Can get high GDP growth rate. China 6.92%, India 7.10%.

The country do NOx elimination show low GDP growth rate. USA 1.48%, Germany 1.85%, UK 1.8%, Japan 1.03 %, Italy 0.88%. CO<sub>2</sub> em (CO<sub>2</sub> emission), NOxcon (NOx concentration in exhaust gas), electricity, price, fish, CO<sub>2</sub>fplankton, GDP growth rate of 11 countries are shown at Table 1

Country	CO <sub>2</sub> em bill t	NOx con g/kWh	NOxe mill t	Electricity billkWh	Price c/kWh	Fish mill t	CO <sub>2</sub> fplankton bill t	GDP growth rate
China	106.4	1.6	984	154220	1.6-4.5	79.38	19.8	6.92
India	24.5	1.6	86	1390		10.11	2,0	7.10
S Korea	5.8	1.6	34.2	5380	8.1	3.33	0.083	2.8
USA	51.7	0.5	192	43670	12	6.05	0.50	1.48
Japan	12.5	0.1(2016) 1.6(1970)	0.4 64.2	10080	24	4.64(2016) 13.00(1970)	0.11(2016) 3.25(1970)	1.03 8.0
Canada	5.5	1.3	52.4	6520	8.1	1.05	0.25	1.40
Germany	7.7	1.0	24.4	6270	32	0.29	0.07	1.85
France	3.2	1.9	3.8	5570	19	0.91	0.18	1.20
UK	4.0	1.3	18.4	3560	15.4	0.91	0.002	1.8
Italy	3.5	0.5	5.6	2880	28	0.34	0.008	0.88
Russia	17.6				17	4.61	1.15	-0.22

### Electricity generation by solar cell system [8]

Construction of solar mega system by the sacrifice of wood is not clever way. 1 hector wood can absorb heat  $3.8 \times 10^6$  kcal and can fix 13.7 tone CO<sub>2</sub>. Heat absorption efficiency of solar system cell is 1/3 of green leaf of tree. Solar system cell cannot fix CO<sub>2</sub>. For the preparation of solar cell material, much fossil fuel is necessary generating almost same amount of CO<sub>2</sub> in compared with the generation of CO<sub>2</sub> and electricity by burning of fossil fuel. Therefore, construction of solar mega system should be done at no green land We must consider burn out of fossil fuel [7]. We have very limited amount of fossil.

### Billion Tone

Fossil	buried amount	yearly use	year
Natural gas	2760	46	60
Oil	1730	41	42
Coal	9090	75	121

Remaining fossil is; Natural gas is 2760 billion tone, oil is 1730 tone coal is 9090 tone We are using 46 billion tone natural gas, 41 billion tone oil and 76 billion tone coal per years. After these fuels are burned out How can we fly by air plane. How can we drive car, fishing boat. How can we generate electricity? How can we make electricity generation cell. We must consider how to save the consumption of fossil fuel we should not wast these precious fossil for elimination of NOx and wast water purification [20-22].

### Summary

We should reconsider the magnitude of plankton CO<sub>2</sub> assimilation. The increase of N.P concentration of sea water is most important

- NOx elimination law should be abandoned.
- Wast water purification law should be abandoned.
- Agitate deep sea with shallow sea.
- Stop the unproductive spent of fossil fuel, like war military exercise. Auto race, leisure cruising and leisure trip.
- Stop the unnecessary economy stimulus measure such as renewal of building, road.
- Ocean dumping, field dumping of excreta are recommended.
- Restriction rule of NOx emission of car should be loosened.

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