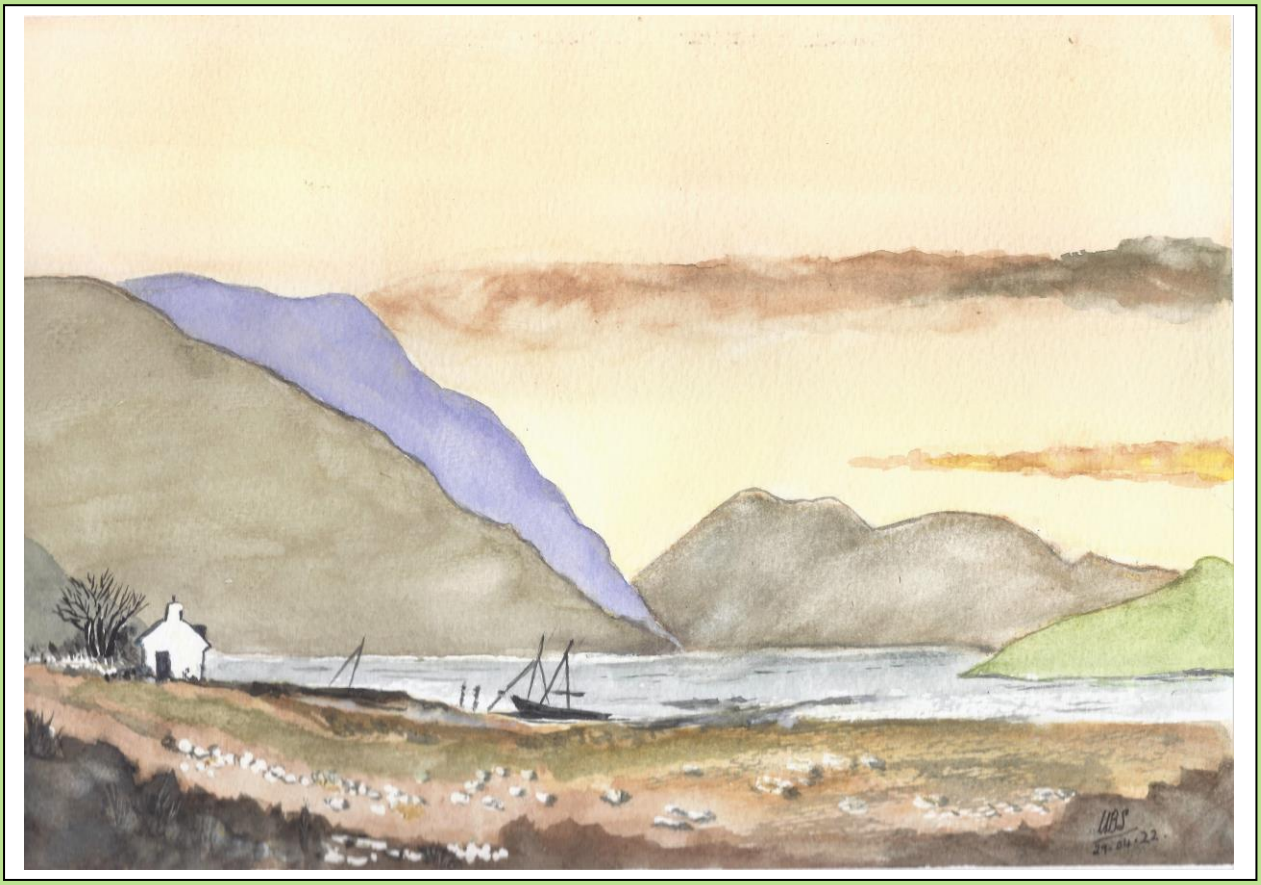
DISCUSSION NOTE

Global Environmental Issues

Shekhar Sinah



RaaG
Research, Assessment and Analysis Group

1992

This paper was written in 1992 to feed into the growing debate on international environmental issues and responsibilities. There was, at that time, the beginnings of acceptance of the inevitability of “global warming” or “climate change", as it is more appropriately known now.

The illustration on the cover is by Uma Bordoloi.

This decade has seen the beginnings of new efforts at setting up global cooperation, at a governmental level, on environmental issues. At present it seems that international conventions, agreements or protocols might be in the offing on the control of ozone depleting substances, global warming, biodiversity, and forests.

Ozone Depletion

Between 15 and 50 kms. above the surface of the Earth there is a protective layer of Ozone (O_3 -a poisonous substance), which shields the Earth from the harmful ultraviolet rays of the sun. It especially shields the Earth from almost all of ultraviolet-C, which is lethal, and much of ultraviolet-B, which is less lethal but nevertheless dangerous. It allows through ultraviolet-A, which is relatively harmless.

Ultraviolet-B damages the genetic material DNA and is the main cause for skin cancer, causing an estimated 300,000 cases each year in the USA. Incidentally, it is far more harmful to fair skins than to dark ones!

Ultraviolet - B also has many other harmful effects, including damage to fish and other sea life. Damage to the ozone layer, which filters the harmful ultraviolet rays could, therefore, be fatal to all life on Earth.

The major threat to the ozone layer is from CFCs, or Chlorofluorocarbons, which are a family of human made compounds. CFCs are extremely stable, non-flammable, non-toxic and, therefore, easy to store, use and handle. There are also other substances which affect the ozone layer, but much less so.

Unfortunately, CFCs have the ability to destroy the ozone layer, once they reach the stratosphere. In actual fact it is the chlorine atoms of the CFCs which do the damage. The UV radiation in the stratosphere is strong enough to split the chlorine atoms off the CFC molecule. The free chlorine atom then attacks an ozone molecule,

resulting in the splitting off of an oxygen atom. This results in the ozone (O_3) molecule being reduced to plain oxygen (O_2), and the chlorine atom joining with the split off oxygen atom to form chlorine monoxide.

Unfortunately, the chlorine atom is not consequently neutralised, as a free oxygen atom can steal its oxygen. It is estimated that, in this way, a single chlorine atom can destroy upto 100,000 ozone molecules.

CFCs have and are being used extensively, especially by countries of the North, for refrigeration, aerosols, foams, and solvents.

To protect the ozone layer, the Vienna convention between various countries was signed in 1985. To limit and phase out the use and manufacture of CFCs, the Montreal Protocol was also signed 1987.[1]

Global Warming

It is because of the presence of Carbon dioxide, methane, and other green house gases in the atmosphere that the Earth is not a lifeless, cold and barren place. These gases form a "green house" around the Earth, retaining some of the heat that is radiated off the surface of the Earth.

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1. For more information please see:

Saving The Ozone Layer: A Global Task, 1990, The Swedish Society for Conservation of Nature; Action on Ozone, 1989, UNEP;

However, over the past century, due to the burning of fossil fuels and deforestation, the quantity of green house gases has grown by about 50%.[2] The release of CFCs into the atmosphere has also aggravated the green house effect. If the increase of green house gases continue , it is anticipated that global temperatures will rise. This, in turn, might melt the polar ice-caps, consequently submerging many of the low lying coastal areas around the world. It might also significantly affect climates, especially rainfall patterns, and the fauna & flora of the world.

The international community now propcses to finalise a protocol on climate changes, which would include measures to counteract global warming.[3]

Biodiversity

Life on Earth is constituted of millions of species of plants, animals and micro-organisms. These, together, form the web of life, where each strand is supported by many others, which in their own turn are supported by yet another set.

Over the years, scientific research has not only begun to establish the diversity of nature, but also the uniqueness of each species, and the interdependence that exists in nature. Though, even now, only a part of the existing species have been identified, and even fewer studied for their characteristics and linkages, it is amply clear that the conservation of biodiversity is crucial for the survival of humankind, and indeed of all life.

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2. "Facing the challenge of Greenhouse Effect", Gerald Foley, Panoscope, 21, November, 1990.

3. For more details, see A matter of Degrees:The Potential for Controlling the Green house Effect, 1987, Irving M. Mintzer, World Resources Institute, USA.

Unfortunately, in the last few hundred years, hundreds of species have become extinct because of human activities. The number of species that are becoming extinct today is much greater than ever before, and daily increasing.

Considering genetic resources are Global resources, there is now a proposal to finalise an international convention on biodiversity, in order to ensure that adequate protection is accorded to all species, and to representative areas of biological diversity.

Forestry

The depletion of the world's forest cover is a matter of serious concern. It was estimated in 1988-89, that the world was losing 6.1 million hectares of forests every year.[4]

Apart from the socio economic implications of this, especially in countries of the South where much of the population is dependent on these forests for their fuel, fodder, raw-materials, and food supplements, this has serious ecological implications.

Rampant deforestation in many regions has resulted in severe floods and droughts, has destroyed bio-diversity, aggravated soil erosion and disrupted water availability, especially through streams and wells. Recent research shows that deforestation has also contributed to global warming, as these forests act as "sinks" to greenhouse gases.

Considering many trans-national implications of deforestation, it is proposed to set up an international convention on forestry.

Some Major Concerns

However, there is a real danger that, if current trends continue, these protocols and conventions might reflect the interests of some of the industrialised nations at the cost of other countries. Though there are various governmental efforts to ensure that this does

4. World Resources 1988-89, 1990, World Resources Institute, USA, p 71.

not happen, the current international alignments do not promise much success for such efforts. The danger is therefore a real one that in the name of international cooperation what might finally emerge is a world which is once again divided, and this time on environmental issues.

The Question of Justice

The problems leading to ozone depletion and the build up of green house gases, have a historical genesis. In effect, it is the industrialised nations who have contributed the most. Even at present, India and China, with over a third of the world's population, produce only 2% of the chemicals responsible for ozone depletion[5]. Similarly, according to current calculations[6], though india had 16.2% of the world's population in 1990, it produced only 6% of the carbon dioxide and 14.4% of the methane that is absorbed by the earth's ecological system. This is also true for many of the other countries of the South.

Also, these problems are a result of the historical accumulation of ozone depleting and green house gases in the atmosphere. The historical contribution of these gases by the industrialised nations is even greater.

Despite this, efforts are on to make countries of the South pay a disproportionate price for protecting the global environment. This must be resisted.

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5. Global Warming in an Unequal World, 1991, Anil Agarwal & Sunita Narain, Centre for Science & Environment, New Delhi, p 1.

6. Ibid, p 10. Also see Tables I-XVIII. The differing sets of data reflect the varied approaches to the problem.

The Question of Sovereignty

Using the slogan that the earth is under threat, there is an effort to interfere in the sovereignty of nation states. Economically and militarily powerful countries of the North, who in any case were, and continue to be, the main culprits, hold out explicit and implicit threats of trade sanctions, credit squeeze, and even worse, if countries of the South do not conform to their dictates. They pick and choose the issues that require "global co-operation", determine the method in which such "co-operation" must be evoked, and then crack the whip. Such tendencies must also be resisted.

As a step towards consolidating the positions of the "developing" countries, China called a Ministerial level meeting at Beijing, in the middle of June, 1991. The declaration made at this meeting is appended. However, even with total unanimity among the 41 "developing" countries invited to Beijing, it is questionable whether their position would be easily accepted globally, especially by the industrialised nations.

On the other hand, there is a genuine danger that efforts by the "developing" countries to form a common platform would encourage a process by which the industrialised nations, who at present do not all agree with each other, also form a common platform which, in the current international scenario, would command an overwhelming proportion of political and economic power.

It seems, therefore, important that non-governmental organisations and individuals across the world join hands and support the stand of the "developing" countries. Such international cooperation would not only strengthen the position of the "developing" countries but also send a clear message to the governments of all the nations that whatever be the differences between these governments, the people of the world are united in their perception and approach to global environmental issues and the related issues of social justice.

The possibility of forming such a global linkage of NGOs is seen from the fact that, in the past, many environmental groups in the West have had a much greater level of sympathy than their governments to the problems and aspirations of "developing" countries. It is, therefore, likely that the common platform that evolves as a result of global consultations among peoples' organisations would be far more just and sympathetic to the cause of the "developing" countries, than appear to be the current stands of various western governments.

Some effort towards organising an NGO consensus has been initiated in India and a few other countries. However, this effort needs to be supplemented and made more broad based. Therefore, a new initiative seems to be urgently called for.

Though the details of the various proposed protocols need to be discussed separately, it appears that broadly there are three sorts of positions that can be taken:

i) A position that is in the best interests of a specific country

ii) A position that is moral and just in a global perspective

iii) A position that is acceptable to the global community

For example, given the fact that India is the second most populous country in the world, it would clearly be in India's interest that ozone depleting and green house gases be regulated according to national quotas based on per capita calculations. However, this might not be in the interest of sparsely populated "developing" countries, especially those in the Middle East, Latin America and Africa. This might also not be in the best interest of the industrialised nations whose emission of these gases is far in excess of any per capita quota that could be fixed.

In terms of what is morally right and just, it might be essential to add to the per capita formula and include in it historical patterns of emissions, levels of economic and social underdevelopment,

actual and potential forest cover which would act as a global sink, and a cut-off date for calculating the population.

Even though this would be perhaps the most just position, it might still remain unacceptable to the western industrialised nations, primarily because of the economic implications that its acceptance would have on them. Therefore, it might become necessary to widen the scope of discussion and agree to concessions in terms of ozone depleting and green house gases against gains in other areas pertaining to economic justice and the environment.

In any case, an initiative has to be taken to first build up a consensus among countries of the South, and then to involve NGOs and individuals in countries across the world, so that this consensus can grow. There is not only the urgency of achieving this before the proposed protocols are finalised, but there is also the forthcoming UN conference on environment and development, in January 1992, where many of these issues will be discussed. A consensus among people's organisations across the world will go a long way in sending the right messages to governments and international bureaucracies.

TABLES

Note : Tables I - VI have been taken from World Resources 1988-89, 1990, World Resources Institute.
Tables VII - XVIII have been taken from Global Warming in an Unequal World, 1991, Anil Agarwal and Sunita Narain, Centre for Science & Environment, New Delhi.

	Extent of Forest and Woodland, 1980s (thousand hectares)		Deforestation, 1980s		Reforestation 1980s (thousand hectares per year)	Managed Closed Forest 1980s (thousand hectares)	Protected Closed Forest 1980s (thousand hectares)
	Open	Closed	Average Annual Extent (thousand hectares per year)	Percent per Year			
ASIA	**65,120**	**431,072**	X	X	**5,649**	**49,415**	**25,865**
Afghanistan	400	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Bahrain	X	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Bangladesh	X	982	[illegible]	0.9	9	[illegible]	25
Bhutan	40	2 [illegible]	[illegible]	0.1	[illegible]	[illegible]	X
Burma	X	31 941	[illegible]	0.5	2	3 419	299
China	17 200	97 647	[illegible]	X	4 552	[illegible]	X
Cyprus	24	153	X	X	X	153	25
India	5 393	51 641	145	0.3	120	20 [illegible]	6 779
Indonesia	3 000	113 895	420	0.5	187	46	13 625
Iran	1 000	2 [illegible]	40	0.5	X	403	X
Iraq	1 160	70	[illegible]	X	X	[illegible]	X
Israel	35	40	[illegible]	X	2	[illegible]	7
Japan	1 390	70 [illegible]	[illegible]	X	240	[illegible]	X
Jordan	50	[illegible]	[illegible]	X	3	[illegible]	X
Kampuchea, Dem	5 100	7 548	30	0.2	X	[illegible]	X
Korea, Dem People's Rep	X	8 970	X	X	200	[illegible]	X
Korea, Rep	240	6 275	X	X	152	[illegible]	X
Kuwait	X	X	X	X	X	X	X
Lao People's Dem Rep	5 215	8 410	130	1.0	1	X	X
Lebanon	20	X	0	X	X	X	X
Malaysia	X	20 996	255	1.2	4	2 499	959
Mongolia	5 300	10 000	X	X	X	X	X
Nepal	780	1 941	64	4.0	2	X	330
Oman	X	X	X	X	X	X	X
Pakistan	295	2 185	9	0.4	7	410	15
Philippines	X	9 510	92	1.0	42	X	690
Qatar	X	X	X	X	X	X	X
Saudi Arabia	170	30	0	X	X	X	X
Singapore	X	X	X	X	X	X	X
Sri Lanka	X	1 659	58	3.5	10	X	193
Syrian Arab Rep	90	60	0	X	X	60	X
Thailand	6 440	9 235	379	2.4	13	X	2 220
Turkey	11 343	8 856	X	X	82	8 656	139
United Arab Emirates	X	X	X	X	X	X	X
Viet Nam	1 340	8 770	65	0.6	20	70	560
Yemen	10	X	0	X	X	X	X
Yemen, Dem	X	X	X	X	X	X	X

Wildlife and Habitat

	Mammals		Birds		Reptiles		Amphibians		Swallowtail Butterflies	
	Number of Species Known	Number Threatened	Number of Species Known	Number Threatened	Number of Species Known	Number Threatened	Number of Species Known	Number Threatened	Number of Species Known	Number Threatened
ASIA										
Afghanistan	X	10	X	2	X	2	X	X	[illegible]	[illegible]
Bangladesh	X	5	X	4	X	6	X	X	[illegible]	X
Bhutan	X	12	X	3	X	1	X	X	[illegible]	[illegible]
Brunei	X	6	X	X	X	3	X	X	[illegible]	[illegible]
Burma	X	15	X	14	X	12	X	X	66	[illegible]
China	X	30	X	7	X	X	X	X	[illegible]	[illegible]
India	X	29	X	5	X	12	X	X	91	[illegible]
Indonesia	X	22	X	14	X	11	X	X	121	[illegible]
Iran	X	9	X	3	X	6	X	X	7-9	0
Iraq	X	8	X	3	X	1	X	X	6-7	0
Japan	186	9	632	19	85	2	58	1	22	0
Korea, Dem Rep	X	8	X	10	X	X	X	X	14	0
Korea, Rep	X	8	X	9	X	X	X	X	14-15	0
Malaysia	X	8	X	7	X	7	X	X	54-56	3
Mongolia	X	6	X	4	X	X	X	X	11	[illegible]
Nepal	X	17	X	2	X	4	X	X	37-38	1
Pakistan	X	13	X	6	X	9	X	X	14	0
Philippines	X	X	X	X	X	X	X	X	49	0
Sri Lanka	X	7	X	2	X	34	X	4	[illegible]	[illegible]
Turkey	31	X	217	X	X	X	X	X	[illegible]	[illegible]

XVI contd.

Sl. No.	Country	Net Emissions of Carbon dioxide ('000 t of Carbon equivalent)	Net Emissions of Methane ('000 t of Carbon equivalent)	Net Emissions of CFCs ('000 t of Carbon equivalent)	Net Emissions of all Green-house gases ('000 t of Carbon equivalent)	Cumulative share of world total (%)
51	Mexico	0.00	0.00	9100.00	9100.00	97.92
52	Iran, Islamic Rep	0.00	0.00	9000.00	9000.00	98.08
53	Yugoslavia	0.00	0.00	8200.00	8200.00	98.23
54	Ireland	1511.74	1853.91	4500.00	7865.65	98.37
55	Sweden	1500.93	0.00	6300.00	7800.93	98.51
56	Singapore	3283.35	0.00	3700.00	6983.35	98.63
57	Israel	370.19	0.00	5400.00	5770.19	98.74
58	Korea, Rep	0.00	0.00	5400.00	5400.00	98.83
59	Egypt	0.00	0.00	5100.00	5100.00	98.92
60	Hungary	3045.53	0.00	1900.00	4945.53	99.01
61	Uruguay	0.00	3813.62	540.00	4353.62	99.09
62	Bahrain	3559.59	491.89	160.00	4211.59	99.17
63	Kampuchea	0.00	3865.65	0.00	3865.65	99.24
64	Liberia	3312.41	0.00	410.00	3722.41	99.30
65	Trinidad and Tobago	2685.21	0.00	640.00	3325.21	99.36
66	Madagascar	3067.67	0.00	0.00	3067.67	99.42
67	Iraq	0.00	0.00	3000.00	3000.00	99.47
68	Panama	2118.53	0.00	400.00	2518.53	99.52
69	Ghana	0.00	0.00	2400.00	2400.00	99.56
70	Luxembourg	1569.76	228.82	450.00	2248.58	99.60
71	Chile	0.00	0.00	2200.00	2200.00	99.64
72	Honduras	1742.88	0.00	350.00	2092.88	99.68
73	Malawi	2021.87	0.00	0.00	2021.87	99.71
74	Cuba	0.00	0.00	1800.00	1800.00	99.74
75	Zimbabwe	0.00	0.00	1500.00	1500.00	99.77
76	Korea, Dem People's Rep	1414.01	0.00	0.00	1414.01	99.80
77	Guinea-Bissau	1352.39	0.00	0.00	1352.39	99.82
78	Tunisia	0.00	0.00	1300.00	1300.00	99.84
79	Senegal	0.00	0.00	1200.00	1200.00	99.87
80	Dominican Rep	0.00	0.00	1200.00	1200.00	99.89
81	Gabon	1162.27	0.00	0.00	1162.27	99.91
82	Mongolia	0.00	1127.09	0.00	1127.09	99.93
83	El Salvador	0.00	0.00	860.00	860.00	99.94
84	India	0.00	0.00	700.00	700.00	99.96
85	Paraguay	623.37	0.00	0.00	623.37	99.97
86	Jamaica	0.00	0.00	420.00	420.00	99.98
87	Congo	313.78	0.00	0.00	313.78	99.99
88	Libya	0.00	251.86	0.00	251.86	99.99
89	Iceland	0.00	0.00	170.00	170.00	99.99
90	Suriname	22.76	41.53	68.00	132.28	100.00
91	Barbados	0.00	0.00	130.00	130.00	100.00
92	Fiji	0.00	0.00	130.00	130.00	100.00
	WORLD	3438660.44	785719.24	1358128.00	5582507.68	

XVII

Per capita Annual Net Emissions all Greenhouse gases to the atmosphere (as calculated by CSE)

Sl No	Country	Per capita Net Emissions of all Greenhouse gases to the atmosphere (tonnes of Carbon equivalent)
1	Qatar	7.01
2	Lao People's Dem Rep	9.06
3	Canada	9.51
4	Oman	8.79
5	United Arab Emirates	8.53
6	Bahrain	8.42
7	New Zealand	7.13
8	Kuwait	7.11
9	Saudi Arabia	6.88
10	Brazil	6.76
11	Australia	6.70
12	Cote d'Ivoire	6.52
13	United States	6.15
14	Luxembourg	5.62
15	German Dem Rep	4.94
16	Netherlands	3.89
17	Costa Rica	3.73
18	Nicaragua	2.98
19	Denmark	2.87
20	Norway	2.85
21	Colombia	2.70
22	Czechoslovakia	2.67
23	Singapore	2.59
24	Trinidad and Tobago	2.56
25	Germany, Fed Rep	2.56
26	U.S.S.R.	2.54
27	Ecuador	2.47
28	Finland	2.47
29	United Kingdom	2.32
30	Bulgaria	2.24
31	Ireland	2.13
32	Poland	2.01
33	Myanmar	1.95
34	Belgium	2.24
35	Switzerland	1.54
36	Austria	1.51
37	Cameroon	1.50
38	Liberia	1.43
39	Uruguay	1.40
40	Algeria	1.36
41	Guinea-Bissau	1.35
42	Italy	1.34
43	Malaysia	1.31
44	Portugal	1.26
45	Israel	1.25
46	France	1.23
47	Spain	1.22
48	Greece	1.20
49	Japan	1.13
50	Panama	1.05
51	Gabon	0.97
52	Sweden	0.94
53	Romania	0.82
54	Venezuela	0.71
55	South Africa	0.70
56	Argentina	0.66
57	Peru	0.63
58	Iceland	0.57
59	Mongolia	0.51
60	Kampuchea	0.47
61	Hungary	0.47
62	Barbados	0.43
63	Honduras	0.41
64	Thailand	0.38
65	Yugoslavia	0.34
66	Suriname	0.33
67	Madagascar	0.26
68	Malawi	0.24
69	Fiji	0.19
70	Cuba	0.17
71	Jamaica	0.17
72	Chile	0.17
73	Dominican Rep	0.17
74	Turkey	0.17
75	El Salvador	0.16
76	Senegal	0.16
77	Ghana	0.16
78	Nigeria	0.16
79	Iran, Islamic Rep	0.16
80	Iraq	0.16
81	Tunisia	0.16
82	Zimbabwe	0.15
83	Congo	0.16
84	Paraguay	0.14
85	Korea, Rep	0.12
86	Mexico	0.10
87	Egypt	0.09
88	Korea, Dem People's Rep	0.06
89	Libya	0.06
90	Indonesia	0.05
91	China	0.03
92	India	0.0008

XVIII

Reasons why certain developing countries figure in top 20 list of net emitters

Country	Main Greenhouse Gas Involved	Reason
Brazil	Carbon Dioxide	Land Use Change (Deforestation)
Saudi Arabia	Methane	Pipeline Leakage (Consumption by West)
Colombia	Carbon Dioxide	Land Use Change (Deforestation)
Cote d'Ivoire	Carbon Dioxide	Land Use Change (Deforestation)
Myanmar	Carbon Dioxide	Land Use Change (Deforestation)
Lao People's Dem Rep	Carbon Dioxide	Land Use Change (Deforestation)
Algeria	Methane	Pipeline Leakage (Consumption by West)
China	CFCs	
Ecuador	Carbon Dioxide	Land Use Change (Deforestation)

XVI

Annual Net Emissions of all Greenhouse Gases to the atmosphere (as calculated by CSE)

Sl. No.	Country	Net Emissions of Carbon dioxide ('000 t of Carbon equivalent)	Net Emissions of Methane ('000 t of Carbon equivalent)	Net Emissions of CFCs ('000 t of Carbon equivalent)	Net Emissions of all Greenhouse gases ('000 t of Carbon equivalent)	Cumulative share of world total (%)
1	United States	808791.78	372915.21	350000.00	1531706.99	27.40
2	Brazil	1000776.13	0.00	16000.00	1016776.13	45.65
3	U.S.S.R.	550084.08	0.00	180000.00	730084.08	58.72
4	Canada	65563.81	150520.11	36000.00	252083.92	63.24
5	Germany, Fed Rep	79723.04	0.00	75000.00	154723.04	66.01
6	Japan	39968.56	0.00	100000.00	139968.56	68.52
7	United Kingdom	61273.24	0.00	71000.00	132273.24	70.89
8	Australia	36643.80	54263.14	21000.00	111906.94	72.89
9	Saudi Arabia	22603.39	67845.17	6600.00	97048.56	74.64
10	Colombia	80506.58	0.00	5200.00	85706.58	76.17
11	Cote d'Ivoire	80213.30	0.00	2000.00	82213.30	77.64
12	German Dem Rep	62001.86	0.00	20000.00	82001.86	79.11
13	Myanmar	81407.53	0.00	0.00	81407.53	80.57
14	Lao People's Dem Rep	78165.50	0.00	0.00	78165.50	81.97
15	Poland	64164.54	0.00	13000.00	77164.54	83.35
16	Italy	5601.00	0.00	71000.00	76601.00	84.72
17	France	0.00	0.00	69000.00	69000.00	85.96
18	Netherlands	11191.96	28387.38	18000.00	57579.34	86.99
19	Spain	0.00	0.00	48000.00	48000.00	87.85
20	Czechoslovakia	39214.41	0.00	2700.00	41914.41	88.60
21	Algeria	0.00	30515.05	4100.00	34615.05	89.22
22	China	0.00	0.00	32000.00	32000.00	89.79
23	Ecuador	24975.40	0.00	1700.00	26675.40	90.27
24	South Africa	18842.50	0.00	5800.00	24642.50	90.71
25	New Zealand	132.92	20611.53	3500.00	24244.45	91.15
26	Malaysia	20235.01	0.00	2500.00	22735.01	91.55
27	Belgium	10151.95	0.00	12000.00	22151.95	91.94
28	Thailand	15889.98	2009.96	3500.00	21399.94	92.32
29	Argentina	0.00	15738.35	5500.00	21238.35	92.68
30	Bulgaria	18544.50	0.00	1600.00	20144.50	93.02
31	Romania	19201.77	0.00	0.00	19201.77	93.34
32	Nigeria	0.00	0.00	18000.00	18000.00	93.74
33	Cameroon	16778.16	0.00	0.00	16778.16	94.04
34	Kuwait	5570.72	7566.68	1800.00	14937.39	94.31
35	Denmark	8314.88	0.00	6300.00	14614.88	94.57
36	Venezuela	10851.97	0.00	3200.00	14051.97	94.82
37	Peru	13986.38	0.00	0.00	13986.38	95.07
38	United Arab Emirates	11351.02	0.00	2300.00	13651.02	95.32
39	Oman	3399.08	9788.56	0.00	13187.64	95.55
40	Portugal	0.00	0.00	13000.00	13000.00	95.79
41	Finland	6236.95	0.00	6100.00	12336.95	96.01
42	Greece	0.00	0.00	12000.00	12000.00	96.22
43	Norway	5251.43	5529.32	1200.00	11980.76	96.44
44	Nicaragua	11019.62	0.00	610.00	11629.62	96.65
45	Austria	2215.42	0.00	9100.00	11315.42	96.85
46	Costa Rica	10689.17	0.00	490.00	11179.17	97.05
47	Qatar	2448.76	8354.41	0.00	10803.16	97.24
48	Switzerland	0.00	0.00	10000.00	10000.00	97.42
49	Indonesia	0.00	0.00	9500.00	9500.00	97.59
50	Turkey	0.00	0.00	9200.00	9200.00	97.76

Contd.

XIV

Per capita Annual Net Emissions to the atmosphere of Carbon Dioxide (as calculated by CSE)

Sl.No Net	Country	Per capita Annual Emissions of Carbon Dioxide to the atmosphere (tonnes of carbon equivalent)
1	Lao People's Dem Rep	9.06
2	Bahrain	7.12
3	United Arab Emirates	7.09
4	Brazil	6.65
5	Cote d'Ivoire	6.37
6	Qatar	6.12
7	Luxembourg	3.92
8	German Dem Rep	3.74
9	Costa Rica	3.56
10	United States	3.25
11	Nicaragua	2.83
12	Kuwait	2.65
13	Colombia	2.53
14	Czechoslovakia	2.50
15	Canada	2.47
16	Ecuador	2.31
17	Oman	2.27
18	Australia	2.19
19	Trinidad and Tobago	2.07
20	Bulgaria	2.06
21	Myanmar	1.95
22	U.S.S.R.	1.91
23	Poland	1.67
24	Denmark	1.63
25	Saudi Arabia	1.60
26	Cameroon	1.50
27	Guinea-Bissau	1.35
28	Germany, Fed Rep	1.32
29	Liberia	1.27
30	Norway	1.25
31	Finland	1.25
32	Singapore	1.22
33	Malaysia	1.17
34	United Kingdom	1.08
35	Belgium	1.03
36	Gabon	0.97
37	Panama	0.88
38	Romania	0.82
39	Netherlands	0.76
40	Peru	0.63
41	Venezuela	0.55
42	South Africa	0.54
43	Ireland	0.41
44	Honduras	0.34
45	Japan	0.32
46	Austria	0.30
47	Hungary	0.29
48	Thailand	0.29
49	Madagascar	0.26
50	Malawi	0.24
51	Sweden	0.18
52	Congo	0.16
53	Paraguay	0.14
54	Italy	0.10
55	Israel	0.08
56	Korea, Dem People's Rep	0.06
57	Suriname	0.06
58	New Zealand	0.04

XV

Per capita Annual Net Emission to the atmosphere of Methane (as calculated by CSE)

Sl. No	Country	Per capita Net Emissions of Methane to the atmosphere (tonnes of carbon equivalent)
1	Qatar	9.06
2	Oman	7.12
3	New Zealand	7.09
4	Canada	6.65
5	Saudi Arabia	6.37
6	Kuwait	6.12
7	Australia	3.92
8	Netherlands	3.74
9	United States	3.56
10	Norway	3.25
11	Uruguay	2.83
12	Algeria	2.65
13	Bahrain	2.53
14	Luxembourg	2.50
15	Mongolia	2.47
16	Ireland	2.31
17	Argentina	2.27
18	Kampuchea	2.19
19	Suriname	2.07
20	Libya	2.06
21	Thailand	1.95

XIII

Annual Net Emissions to the atmosphere of Methane (as calculated by CSE)

Sl No	Country	Excess Emisssions of Methane over permissible limits ('000 t of carbon equivalent)	Permissible Emissions of Methane obtained through tradeable quotas from other countries ('000 t of carbon equivalent)	Net Emissions of Methane to the atmosphere ('000 t of carbon equivalent)	Percentage of total net Emissions of Methane in the world (%)
1	United States	601265.98	228350.77	372915.21	47.46
2	Canada	174803.00	24282.89	150520.11	19.16
3	Saudi Arabia	80765.50	12920.33	67845.17	8.63
4	Australia	69563.09	15299.95	54263.14	6.91
5	Algeria	53789.97	23274.92	30515.05	3.88
6	Netherlands	41946.61	13559.24	28387.38	3.61
7	New Zealand	23726.49	3114.96	20611.53	2.62
8	Argentina	45335.98	29597.63	15738.35	2.00
9	Oman	11163.06	1374.50	9788.56	1.25
10	Qatar	8720.94	366.53	8354.41	1.06
11	Kuwait	9490.98	1924.30	7566.68	0.96
12	Norway	9377.21	3847.89	5529.32	0.70
13	Kampuchea	11379.60	7513.95	3865.65	0.49
14	Uruguay	6654.26	2840.64	3813.62	0.49
15	Thailand	53049.84	51039.88	2009.96	0.26
16	Ireland	5244.29	3390.39	1853.91	0.24
17	Mongolia	3143.02	2015.94	1127.09	0.14
18	Bahrain	950.06	458.17	491.89	0.06
19	Libya	4375.37	4123.51	251.86	0.03
20	Luxembourg	1595.29	366.47	228.82	0.03
21	Suriname	408.06	366.53	41.53	0.01
22	Botswana	1110.89	1110.89	0.00	0.00
23	U.S.S.R.	139528.66	139528.66	0.00	0.00
24	Bangladesh	28959.26	28959.26	0.00	0.00
25	France	35801.43	35801.43	0.00	0.00
26	Venezuela	12935.56	12935.56	0.00	0.00
27	Hungary	2407.12	2407.12	0.00	0.00
28	Somalia	5356.65	5356.65	0.00	0.00
29	Mexico	49701.02	49701.02	0.00	0.00
30	Denmark	1186.75	1186.75	0.00	0.00
31	Nepal	7755.13	7755.13	0.00	0.00
32	Czechoslovakia	822.91	822.91	0.00	0.00
33	Guinea-Bissau	421.03	421.03	0.00	0.00
34	Austria	115.25	115.25	0.00	0.00
35	Madagascar	6493.95	6493.95	0.00	0.00
36	Guinea	46.12	46.12	0.00	0.00
37	Iceland	72.01	72.01	0.00	0.00
38	Bolivia	61.00	61.00	0.00	0.00
39	Lao People's Dem Rep	2806.50	2806.50	0.00	0.00
40	Sudan	563.23	563.23	0.00	0.00
41	Romania	993.37	993.37	0.00	0.00
42	Paraguay	557.86	557.86	0.00	0.00
43	Colombia	237.78	237.78	0.00	0.00
44	Poland	15058.99	15058.99	0.00	0.00
45	Viet Nam	8716.44	8716.44	0.00	0.00
46	Germany, Fed Rep	2040.57	2040.57	0.00	0.00
47	United Kingdom	39033.74	39033.74	0.00	0.00
48	South Africa	19920.16	19920.16	0.00	0.00
49	Mauritania	1029.28	1029.28	0.00	0.00
50	Brazil	51747.84	51747.84	0.00	0.00
51	Myanmar	21524.10	21524.17	0.07	0.00
	World	1672753.21	887034.04	785719.17	99.99

XII contd.

Sl. No.	Country	Excess emissions of carbon dioxide over permissible limits ('000 t of carbon equivalent)	Permissible emissions of carbon dioxide obtained through tradeable quotas ('000 t of carbon equivalent)	Net emissions of carbon dioxide to the atmosphere ('000 t of carbon equivalent)	Percentage of total net emissions of carbon dioxide inthe world (%)
49	Ireland	4362.24	2850.50	1511.74	0.04
50	Sweden	7894.29	6394.36	1500.93	0.04
51	Korea, Dem People's Rep	19056.28	17642.26	1414.01	0.04
52	Guinea-Bissau	2122.79	770.40	1362.39	0.04
53	Gabon	2086.75	924.49	1162.27	0.03
54	Paraguay	3936.11	3312.74	623.37	0.02
55	Israel	3914.05	3543.86	370.19	0.01
56	Congo	1854.59	1540.81	313.78	0.01
57	New Zealand	2752.30	2619.38	132.92	0.00
58	Suriname	330.92	308.16	22.76	0.00
59	Libya	3195.07	3195.07	0.00	0.00
60	Mexico	32955.73	32955.73	0.00	0.00
61	Indonesia	90607.77	90607.77	0.00	0.00
62	Guinea	2679.58	2679.58	0.00	0.00
63	Sudan	4959.80	4959.80	0.00	0.00
64	Bolivia	1274.49	1274.49	0.00	0.00
65	Guatemala	2576.10	2576.10	0.00	0.00
66	Zaire	3196.57	3196.57	0.00	0.00
67	Mongolia	494.55	494.55	0.00	0.00
68	Argentina	760.34	760.34	0.00	0.00
69	Central African Rep	931.40	931.40	0.00	0.00
70	Iceland	222.94	222.94	0.00	0.00
71	Cyprus	462.86	462.86	0.00	0.00
72	Malta	15.92	15.92	0.00	0.00
73	Switzerland	4953.66	4953.66	0.00	0.00
74	Greece	7067.94	7067.94	0.00	0.00
75	France	43046.41	43046.41	0.00	0.00
76	Korea, Rep	8015.01	8015.01	0.00	0.00
77	Yugoslavia	12737.09	12737.09	0.00	0.00
78	Viet Nam	1944.14	1944.14	0.00	0.00
79	Spain	11066.89	11066.89	0.00	0.00
80	Philippines	21083.13	21083.13	0.00	0.00
	WORLD	4898845.23	1460178.16	3438667.07	100.00

Annual Net Emissions to the atmosphere of Carbon Dioxide (as calculated by CSE)

Sl. No.	Country	Excess emisssions of carbon dioxide over permissible limits ('000 t of carbon equivalent)	Permissible emissions of carbon dioxide obtained through tradeable quotas ('000 t of carbon equivalent)	Net emissions of carbon dioxide to the atmosphere ('000 t of carbon equivalent)	Percentage of total net emissions of carbon dioxide inthe world (%)
1	Brazil	1116644.98	115868.85	1000776.13	29.10
2	United States	1000776.60	191984.82	1192761.42	34.69
3	U.S.S.R.	771960.60	221876.52	550084.08	16.00
4	Myanmar	113533.40	32125.87	81407.53	2.37
5	Colombia	105005.44	24498.87	80506.58	2.34
6	Cote d'Ivoire	89920.40	9707.10	80213.30	2.33
7	Germany, Fed Rep	126332.52	46609.48	79723.04	2.32
8	Lao People's Dem Rep	81324.15	3158.66	78165.50	2.27
9	Canada	85979.53	20415.72	65563.81	1.91
10	Poland	93748.08	29583.54	64164.54	1.87
11	German Dem Rep	74790.58	12788.72	62001.86	1.80
12	United Kingdom	105109.26	43836.02	61273.24	1.78
13	Japan	135113.53	95144.97	39968.56	1.16
14	Czechoslovakia	51309.76	12095.35	39214.41	1.14
15	Australia	49509.56	12865.76	36643.80	1.07
16	Ecuador	33295.77	8320.37	24975.40	0.73
17	Saudi Arabia	33466.09	10862.70	22603.39	0.66
18	Malaysia	33586.13	13351.11	20235.01	0.59
19	Romania	37152.19	17950.43	19201.77	0.56
20	South Africa	45960.74	27118.24	18842.50	0.55
21	Bulgaria	25478.14	6933.64	18544.50	0.54
22	Cameroon	25406.69	8628.53	16778.16	0.49
23	Thailand	58801.51	42911.54	15889.98	0.46
24	Peru	31166.40	17180.02	13986.38	0.41
25	United Arab Emirates	12583.67	1232.65	11351.02	0.33
26	Netherlands	22593.95	11401.99	11191.96	0.33
27	Nicaragua	14024.20	3004.58	11019.62	0.32
28	Venezuela	26026.94	15176.97	10851.97	0.32
29	Costa Rica	13000.38	2311.21	10689.17	0.31
30	Denmark	12243.95	3929.06	8314.88	0.24
31	Finland	10088.97	3852.02	6236.95	0.18
32	Italy	49745.18	44144.18	5601.00	0.16
33	Kuwait	7188.57	1617.85	5570.72	0.16
34	Norway	8487.73	3235.70	5251.43	0.15
35	Belgium	17778.96	7627.01	10151.95	0.15
36	Bahrain	3944.90	385.20	3559.69	0.10
37	Oman	4554.69	1155.61	3399.08	0.10
38	Liberia	5315.46	2003.05	3312.41	0.1
39	Singapore	5363.44	2080.09	3283.35	0.10
40	Madagascar	12312.52	9244.85	3067.67	0.09
41	Hungary	11211.81	8166.29	3045.53	0.09
42	Trinidad and Tobago	3686.73	1001.53	2685.21	0.08
43	Qatar	2756.92	308.16	2448.76	0.07
44	Austria	7993.45	5778.03	2215.42	0.06
45	Panama	3967.50	1848.97	2118.53	0.06
46	Malawi	8493.27	6464.77	2028.50	0.06
47	Honduras	5671.95	3929.06	1742.88	0.05
48	Luxembourg	1877.92	308.16	1569.76	0.05

contd.

XI contd.

Country/ Continent	Percentage of World's Population	Permissible Emissions of Carbon Dioxide ('000 t of Carbon equivalent)	Actual Emission of Carbon Dioxide Emissions of ('000 t of Carbon equivalent)	Less (+) or Excess (-) Methane Carbon Dioxide over Permissible Emissions ('000 t of Carbon equivalent)	Permissible Emissions of Emissions of ('000 t of Carbon equivalent)	Actual Emission of Methane ('000 t of Carbon equivalent)	Less (+) or Excess (-) Methane over Permissible Emissions ('000 t of Carbon equivalent)
Peru	0.42	20297.60	51464.00	31166.40	16914.67	5092.58	11822.09
Suriname	0.01	364.08	695.00	-330.92	303.40	711.46	-408.06
Uruguay	0.06	2821.64	946.00	1875.64	2351.37	9005.62	-6654.26
Venezuela	0.37	17931.06	43960.00	-26028.94	14942.55	27878.11	-12935.56
Afghanistan	0.31	15109.42	1096.00	14013.42	12591.19	7732.48	4858.71
Bahrain	0.01	455.10	4400.00	-3944.90	379.25	1329.31	-950.06
Bangladesh	2.19	105219.84	5276.00	99943.84	87683.20	116642.47	-28959.26
Bhutan	0.03	1365.31	229.00	1136.31	1137.76	636.57	501.19
China	21.53	1039539.20	596110.00	437429.20	861282.67	544830.79	316451.88
Cyprus	0.01	637.14	1100.00	-462.86	530.95	149.76	381.17
India	15.18	776770.02	294900.00	481870.02	647308.35	576846.62	70461.73
Indonesia	3.42	164292.20	254900.00	-90607.77	136910.19	114564.25	22345.94
Iran, Islamic Rep	1.07	51517.67	39700.00	11817.67	42931.40	37333.06	5598.32
Iraq	0.36	17282.90	13301.00	3981.90	14335.75	3576.04	10759.71
Israel	0.09	4186.95	8101.00	-3914.05	3489.12	2658.62	830.50
Japan	2.34	112410.47	247524.00	-135113.53	93675.39	73767.47	19907.93
Jordan	0.08	3913.89	2710.00	1203.89	3261.57	299.64	2962.01
Kampuchea	0.16	7463.60	4920.00	2543.69	6219.74	17599.34	-11379.60
Korea, Dem People's Rep	0.43	20843.72	39900.00	-19056.28	17369.77	13461.63	3908.14
Korea, Rep	0.83	39684.99	47700.00	-8015.01	33070.83	17393.40	15677.43
Kuwait	0.04	1911.43	9100.00	-7188.57	1592.86	11083.84	-9490.98
Lao People's Dem Rep	0.08	3731.65	85056.00	-81324.15	3109.67	5916.38	-2806.50
Lebanon	0.06	2730.62	2320.00	410.62	2275.52	168.50	2107.01
Malaysia	0.33	15773.87	49360.00	-33586.13	13144.90	8294.16	4850.74
Mongolia	0.04	2002.45	2497.00	-494.55	1668.71	4811.74	-3143.02
Myanmar	0.79	37955.60	151489.00	-113533.40	31629.67	53153.77	-21524.10
Nepal	0.36	17304.94	6926.00	10458.94	14497.45	22242.58	-7755.13
Oman	0.03	1365.31	5920.00	-4554.69	1137.76	12300.82	-11163.06
Pakistan	2.33	111682.31	15320.00	96362.31	93068.59	50551.31	42517.28
Philippines	1.16	56796.87	77880.00	-21083.13	47331.73	40553.38	6777.34
Qatar	0.01	364.08	3121.00	-2756.92	303.40	9024.34	-8720.94
Saudi Arabia	0.27	12833.91	46300.00	-33466.09	10694.92	91460.43	-80765.50
Singapore	0.05	2457.56	7821.00	-5363.44	2047.96	149.78	1898.18
Sri Lanka	0.33	15505.55	2781.00	12874.55	13046.29	9117.96	3928.33
Syrian Arab Rep	0.24	11377.58	7560.00	3817.58	9481.32	2302.89	7178.42
Thailand	1.06	50698.49	109500.00	-58801.51	42248.74	95298.58	-53049.84
Turkey	1.05	50607.47	37150.00	13457.47	42172.89	21231.55	20941.34
United Arab Emirates	0.03	1456.33	14040.00	-12583.67	1213.61	205.95	1007.66
Viet Nam	1.27	61165.86	63110.00	-1944.14	50971.55	59687.99	-8716.44
Yemen Arab Rep	0.15	7281.65	910.00	6371.65	6068.04	1348.03	4720.01
Yemen, People's Dem Rep	0.05	2275.52	1500.00	775.52	1896.26	505.51	1390.75
Albania	0.06	2912.66	2620.00	292.66	2427.22	1797.38	629.84
Austria	0.14	6826.55	14820.00	-7993.45	5688.79	5804.04	-115.25
Belgium	0.19	9011.04	26790.00	-17778.96	7509.20	7077.18	432.02
Bulgaria	0.17	8191.86	33670.00	-25478.14	6826.55	3931.77	2894.78
Czechoslovakia	0.30	14290.24	65600.00	-51309.76	11908.53	12731.44	-822.91
Denmark	0.10	4642.05	16886.00	-12243.95	3868.38	5055.13	-1186.75
Finland	0.09	4551.03	14640.00	-10088.97	3792.53	3613.48	179.04
France	1.07	51153.59	94200.00	-43046.41	42627.99	78429.42	-35801.43
German Dem Rep	0.31	15109.42	89900.00	-74790.58	12591.19	12356.99	234.20
Germany, Fed Rep	1.15	55067.48	181400.00	-126332.52	45889.57	47930.13	-2040.57
Greece	0.19	9102.06	16170.00	-7067.94	7585.05	6552.95	1032.10
Hungary	0.20	9648.19	20860.00	-11211.81	8040.16	10447.27	-2407.12
Iceland	0.01	273.06	496.00	-222.94	227.55	299.56	-72.01
Ireland	0.07	3367.76	7730.00	-4362.24	2806.47	8050.76	-5244.29
Italy	1.09	52154.82	101900.00	-49745.18	43462.35	33888.10	9574.25
Luxembourg	0.01	364.08	2242.00	-1877.92	303.40	898.69	-595.29
Malta	0.01	364.08	380.00	-15.92	303.40	168.50	134.90
Netherlands	0.28	13471.05	36065.00	-22593.95	11225.88	53172.49	-41946.61
Norway	0.08	3822.87	12310.00	-8487.13	3185.72	12562.94	-9377.21
Poland	0.73	34951.92	128700.00	-93748.08	29126.60	44185.59	-15058.99
Portugal	0.20	9375.12	8490.00	885.12	7812.60	5953.82	1858.78
Romania	0.44	21207.81	58360.00	-37152.19	17673.17	18666.54	-993.37
Spain	0.75	35771.11	46838.00	-11066.89	29809.25	25125.87	4683.38
Sweden	0.16	7554.71	15450.00	-7895.29	6295.59	5242.36	1053.24
Switzerland	0.12	5916.34	10870.00	-4953.66	4930.28	4680.68	249.61
United Kingdom	1.08	51790.74	156900.00	-105109.26	43158.95	82192.69	-39033.74
Yugoslavia	0.45	21662.91	34400.00	-12737.09	18052.42	16607.04	1445.38
U.S.S.R.	5.46	262139.40	1034100.00	-771960.60	218449.50	357978.11	-139528.66
Australia	0.32	15200.44	64710.00	-49509.56	12667.04	82230.13	-69563.09
Fiji	0.01	637.14	155.00	482.14	530.95	280.84	250.11
New Zealand	0.06	3094.70	5847.00	-2752.30	2578.92	26305.40	-23726.49
Papua New Guinea	0.08	3640.83	3341.00	299.83	3034.02	280.84	2753.18
Solomon Islands	0.01	273.06	37.00	236.06	227.55	56.17	171.38
WORLD	100.00	4800000.00	8238659.00	-3438659.00	4000000.00	4785711.24	-785711.24

Permissible Emissions of Carbon Dioxide and Methane (on a population basis) (as calculated by CSE)

Country/ Continent	Percentage of World's Population	Permissible Emissions of Carbon Dioxide ('000 t of Carbon equivalent)	Actual Emission of Carbon Dioxide Emissions of ('000 t of Carbon equivalent)	Less (+) or Excess (-) Methane Carbon Dioxide over Permissible Emissions ('000 t of Carbon equivalent)	Permissible Emissions of Emissions of ('000 t of Carbon equivalent)	Actual Emission of Methane ('000 t of Carbon equivalent)	Less (+) or Excess (-) Methane over Permissible Emissions ('000 t of Carbon equivalent)
Algeria	0.48	23119.24	19300.00	3819.24	19266.03	73056.00	-53789.97
Angola	0.19	9102.06	6739.00	2363.06	7585.05	2733.52	4851.54
Benin	0.09	4277.97	2640.00	1637.97	3564.97	973.58	2591.39
Botswana	0.02	1183.27	1120.00	63.27	986.06	2096.94	-1110.89
Burkina Faso	0.17	8191.86	4320.00	3871.86	6826.55	2752.24	4074.31
Burundi	0.10	5006.13	45.00	4961.13	4171.78	711.46	3460.32
Cameroon	0.21	10194.31	35601.00	-25406.69	8495.26	3370.09	5125.17
Cape Verde	0.01	364.08	9.00	355.08	303.40	37.45	265.96
Central African Rep	0.05	2639.60	3571.00	-931.40	2199.67	1273.14	926.52
Chad	0.11	5188.18	4256.00	932.18	4323.48	3538.59	784.89
Comoros	0.01	455.10	13.00	442.10	379.25	168.50	210.75
Congo	0.04	1820.41	3675.00	-1854.59	1517.01	149.78	1367.23
Cote d'Ivoire	0.24	11468.60	101389.00	-89920.40	9557.17	3257.75	6299.41
Djibouti	0.01	364.08	72.00	292.08	303.40	187.23	116.18
Egypt	1.03	49242.16	20500.00	28742.16	41035.13	18722.71	22312.42
Equatorial Guinea	0.01	364.08	269.00	95.08	303.40	18.72	284.68
Ethiopia	0.89	42506.63	8534.00	33972.63	35422.19	24039.96	11382.24
Gabon	0.02	1092.25	3179.00	-2086.75	910.21	74.89	835.32
Gambia, The	0.02	819.19	249.00	570.19	682.65	318.29	364.37
Ghana	0.28	13653.09	8319.00	5334.09	11377.58	1816.10	9561.48
Guinea	0.13	6280.42	8960.00	-2679.58	5233.69	5279.80	-46.12
Guinea-Bissau	0.02	910.21	3033.00	-2122.79	758.51	1179.53	-421.03
Kenya	0.48	22846.18	2947.00	19899.18	19038.48	10934.06	8104.42
Lesotho	0.03	1638.37	0.00	1638.37	1365.31	0.00	1365.31
Liberia	0.05	2366.54	7682.00	-5315.46	1972.11	1048.47	923.64
Libya	0.09	4095.93	7291.00	-3195.07	3413.27	7788.65	-4375.37
Madagascar	0.23	10922.48	23235.00	-12312.52	9102.06	15596.02	-6493.95
Malawi	0.16	7645.73	16139.00	-8493.27	6371.44	2078.22	4293.22
Mali	0.18	8555.94	2203.00	6352.94	7129.95	6665.28	464.67
Mauritania	0.04	1820.41	864.00	956.41	1517.01	2546.29	-1029.28
Mauritius	0.02	1001.23	322.00	679.23	834.36	74.89	759.46
Morocco	0.48	22846.18	5565.00	17281.18	19038.48	5204.91	13833.57
Mozambique	0.30	14290.24	7317.00	6973.24	11908.53	2246.72	9661.81
Niger	0.13	6462.46	1803.00	4659.46	5385.39	4306.22	1079.16
Nigeria	2.14	102853.31	73559.00	29294.31	85711.09	18366.98	67344.11
Rwanda	0.14	6553.49	389.00	6164.49	5461.24	842.52	4618.72
Senegal	0.14	6735.53	3531.	3204.53	5612.94	2396.51	3216.43
Sierra Leone	0.08	3822.87	1140.00	2682.87	3185.72	1722.49	1463.23
Somalia	0.14	6917.57	1250.00	5667.57	5764.64	11121.29	-5356.65
South Africa	0.67	32039.26	78000.00	-45960.74	26699.38	46619.54	-19920.16
Sudan	0.48	22937.20	27897.00	-4959.80	19114.33	19677.57	-563.23
Swaziland	0.02	728.17	120.00	608.17	606.80	468.07	138.74
Tanzania	0.52	24848.63	5364.00	19484.63	20707.19	13667.58	7039.62
Togo	0.07	3185.72	815.00	2370.72	2654.77	524.24	2130.53
Tunisia	0.16	7463.69	3254.00	4209.69	6219.74	1516.54	4703.20
Uganda	0.35	16747.80	2393.00	14354.80	13956.50	4605.79	9350.71
Zaire	0.68	32767.43	35964.00	-3196.57	27306.19	4718.12	2288.07
Zambia	0.16	7736.75	4941.00	2795.75	6447.29	2003.33	4443.96
Zimbabwe	0.18	8829.00	8290.00	539.00	7357.50	4474.73	2882.77
Barbados	0.01	273.06	249.00	24.06	227.55	37.45	190.11
Canada	0.50	24120.47	110100.00	-85979.53	20100.39	194903.38	-174803.00
Costa Rica	0.06	2730.62	15731.00	-13000.38	2275.52	1947.16	328.35
Cuba	0.20	9375.12	9261.00	114.12	7812.60	6496.78	1315.82
Dominican Rep	0.14	6553.49	1849.00	4704.49	5461.24	2602.46	2858.78
El Salvador	0.10	4824.09	733.00	4091.09	4020.08	936.14	3083.94
Guatemala	0.17	8373.90	10950.00	-2576.10	6978.25	2209.28	4768.97
Haiti	0.12	5916.34	213.00	5703.34	4930.28	1460.37	3469.91
Honduras	0.10	4642.05	10314.00	-5671.95	3868.38	1890.99	1977.38
Jamaica	0.05	2275.52	1692.00	583.52	1896.26	355.73	1540.53
Mexico	1.68	80644.27	113600.00	-32955.73	67203.56	116904.59	-49701.02
Nicaragua	0.07	3549.80	17574.00	-14024.20	2958.17	1759.93	1198.24
Panama	0.05	2184.50	6152.00	-3967.50	1820.41	1366.76	453.65
Trinidad and Tobago	0.02	1183.27	4870.00	-3686.73	986.06	112.34	873.72
United States	4.73	226823.40	1227600.00	-1000776.60	189019.50	790285.48	-601265.98
Argentina	0.61	29399.66	30160.00	-760.34	24499.72	69835.70	-45335.98
Bolivia	0.14	6644.51	7919.00	-1274.49	5537.09	5598.09	-61.00
Brazil	2.85	136895.02	1253540.00	-1116644.98	114079.18	165827.02	-51747.84
Chile	0.25	12014.72	7148.00	4866.72	10012.27	6609.12	3403.15
Colombia	0.60	28944.56	133950.00	-105005.44	24120.47	24358.24	-237.78
Ecuador	0.20	9830.23	43126.00	-33295.77	8191.86	3426.26	4765.60
Guyana	0.02	910.21	620.00	290.21	758.51	524.24	234.27
Paraguay	0.08	3913.89	7850.00	-3936.11	3261.57	3819.43	-557.86

Contd.

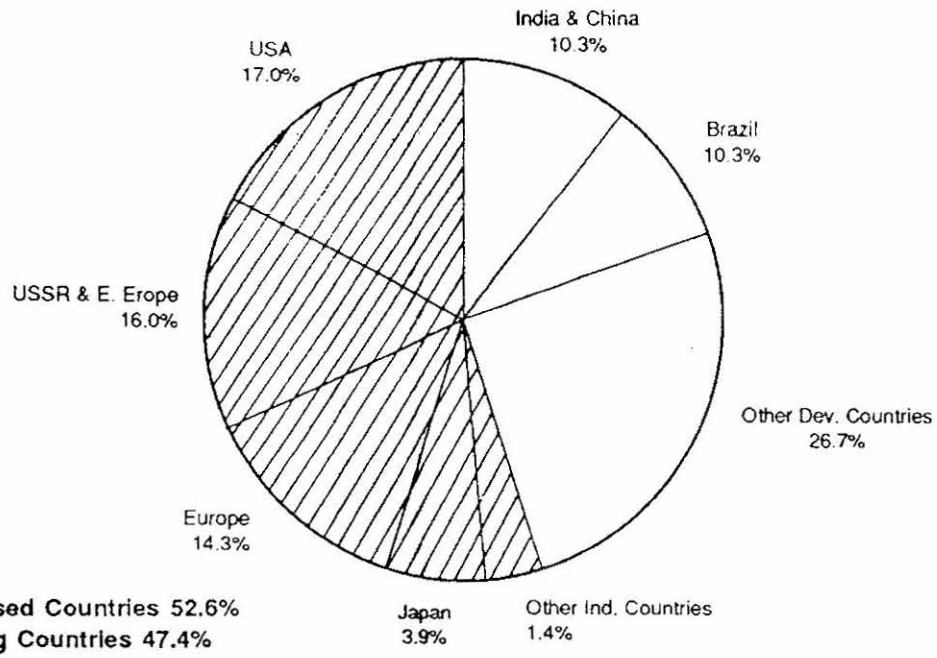
X

Amounts receivable by top 20 countries which trade quotas of Permissible Emissions of Carbon Dioxide and Methane (as calculated by CSE)

Sl. No.	Country	Trade amounts receivable for trading quotas of Permissible Emissions of Carbon Dioxide (at $ 15 per '000 tonnes of carbon equivalent) (m $)	Trade amounts receivable for trading quotas of Permissible Emissions of Methane (at $ 15 per '000 tonnes of carbon equivalent) (m $)	Total Trade Amounts receivable (m $)
1.	China	6561	4747	11308
2	India	7228	1057	8285
3	Pakistan	1445	638	2083
4	Nigeria	439	1010	1449
5.	Bangladesh	1499	434	1065
6.	Egypt	431	338	769
7.	Ethiopia	510	171	681
8.	Turkey	202	314	516
9.	Morocco	259	208	467
10.	Kenya	298	122	420
11.	Tanzania	292	106	398
12.	Uganda	215	140	356
13.	Zaire	48	339	291
14.	Afghanistan	210	73	283
15.	Iran, Islamic Rep.	177	84	261
16.	Sri Lanka	193	59	252
17.	Mozambique	105	145	250
18.	Ghana	80	143	223
19.	Iraq	60	161	221
20.	Yemen Arab Rep	96	71	167
	Total	20252	9492	29744

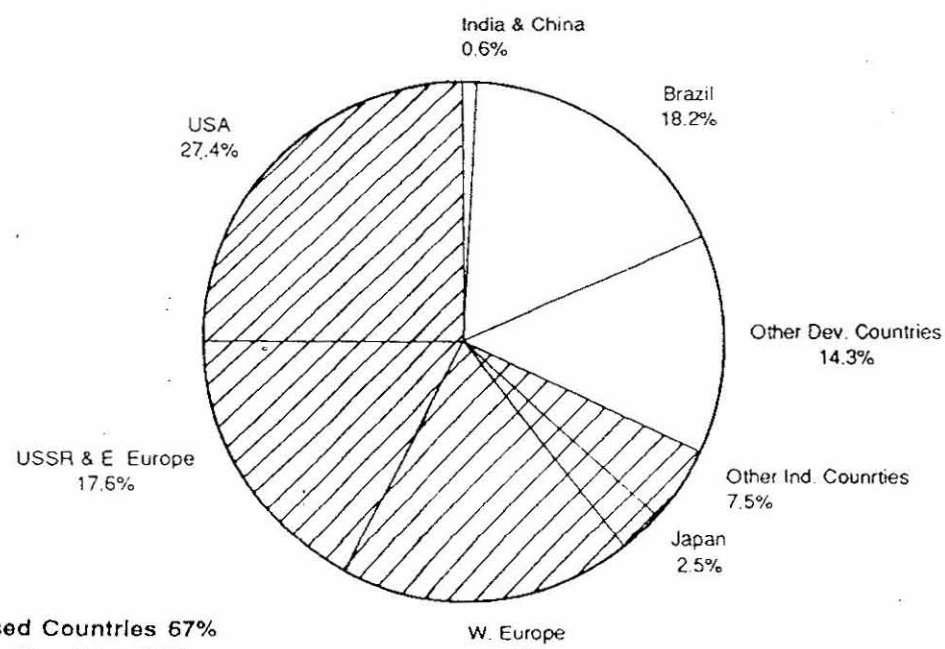
Percentage Distribution of Net Emissions of Greenhouse Gases by Industrialised and Developing Countries

a) As calculated by WRI



Industrialised Countries 52.6%
Developing Countries 47.4%

b) As calculated by CSE

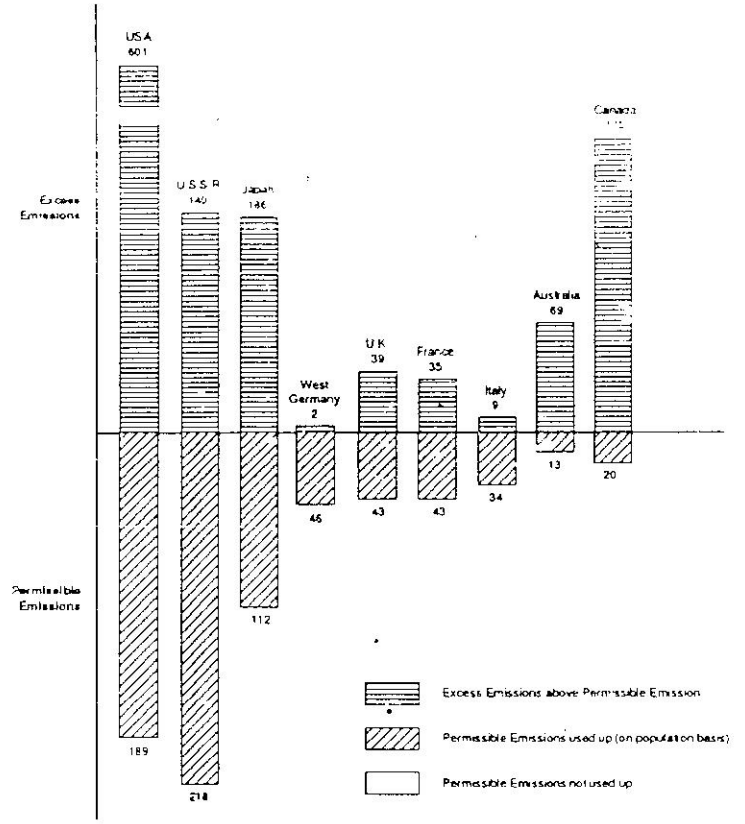


Industrialised Countries 67%
Developing Countries 33%

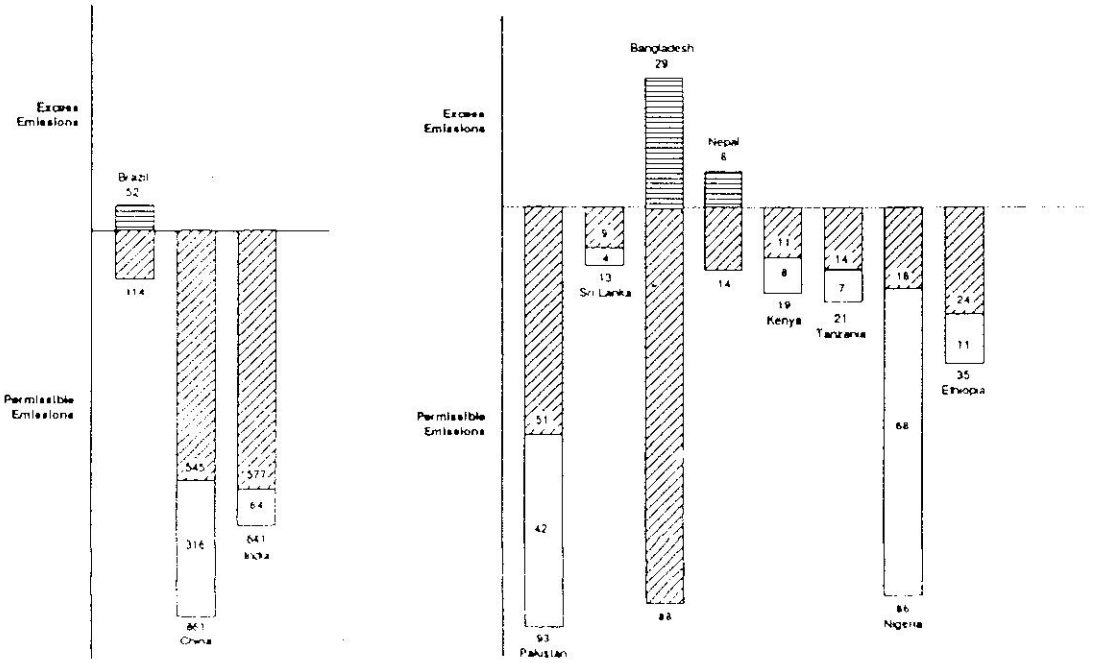
Permissible Emissions vs Total Emissions of Methane of select countries on the basis of population (in million tonnes of carbon equivalent)

as calculated by CSE

a) Industrialised Countries



b) Developing Countries

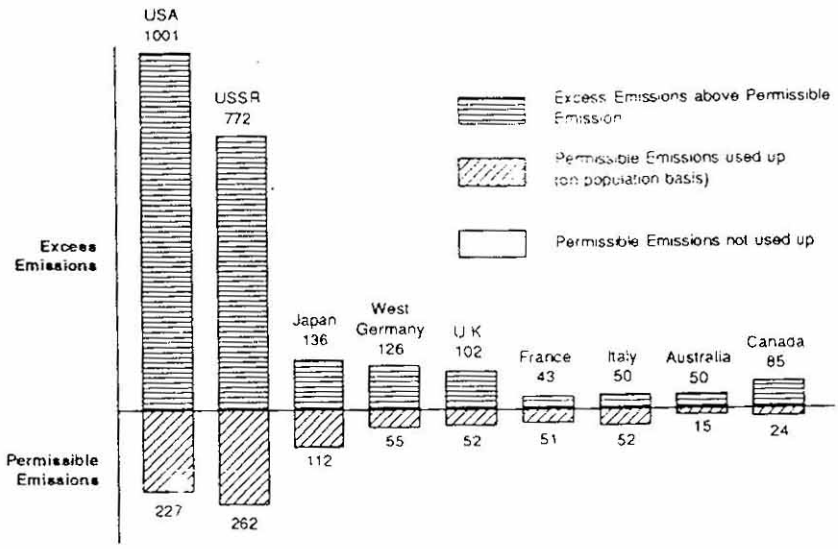


VII

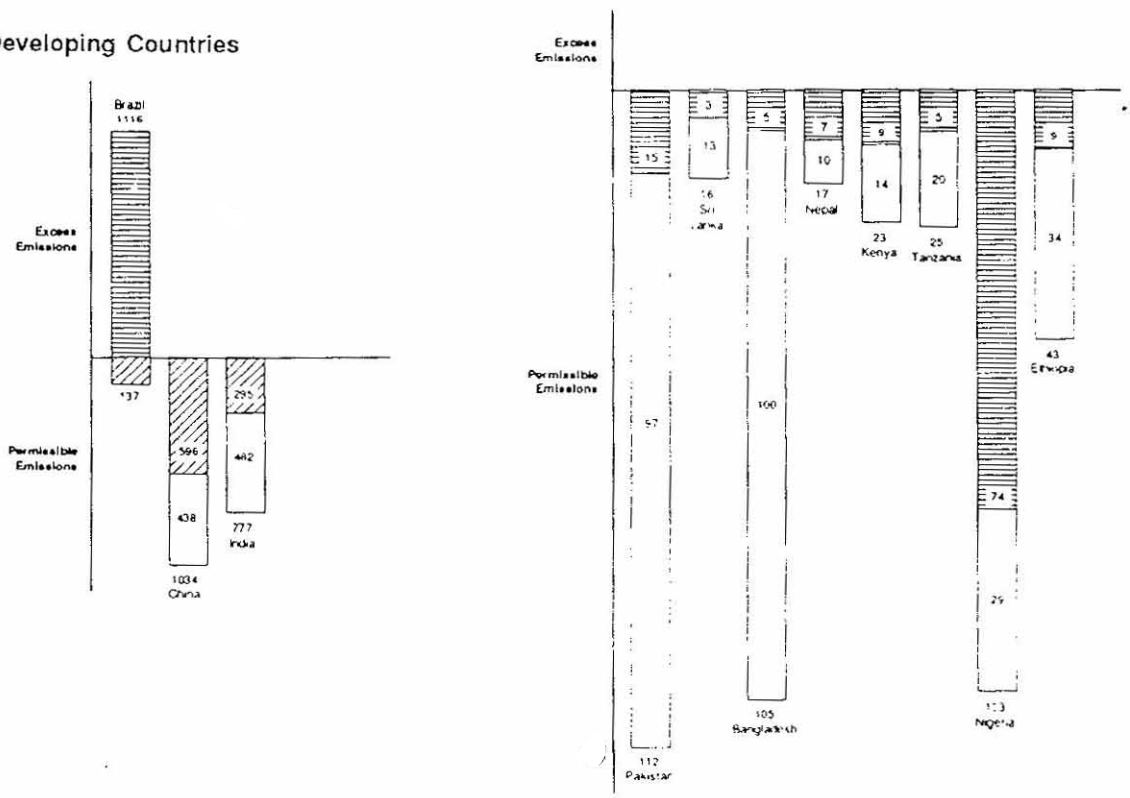
Permissible Emissions vs Total Emissions of Carbon Dioxide of select countries on the basis of population (in million tonnes of carbon equivalent)

as calculated by CSE

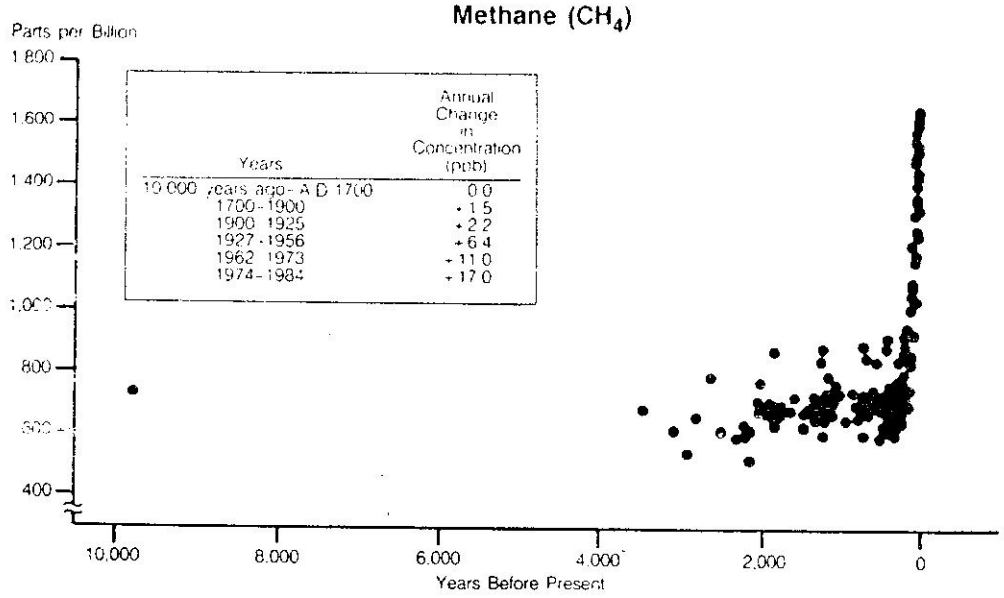
a) Industrialised Countries



b) Developing Countries



and Ozone-Depleting Gases



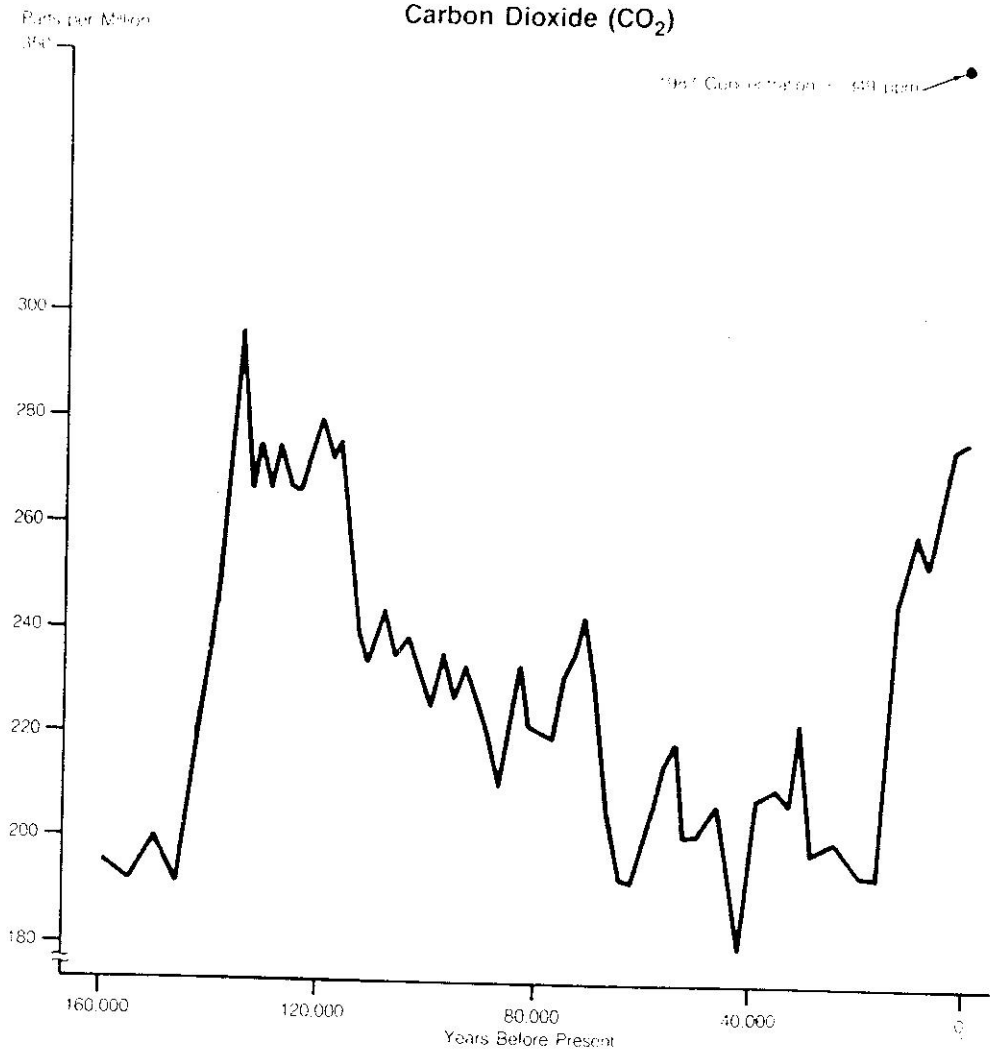
Source: M.A.K. Khalil and R.A. Rasmussen, "Atmospheric Methane: Trends Over the Last 10,000 Years," *Atmospheric Environment*, Vol. 21, No. 11.
Note: Present-day concentration = 1653 ppb.
For additional information, see Sources and Technical Notes.

Atmospheric Concentrations of Greenhouse and Ozone-Depleting Gases, 1959–87

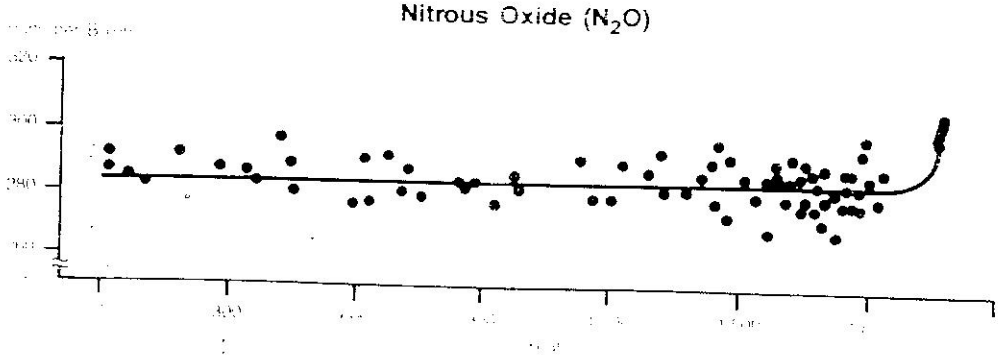
	(parts per million)	(parts per trillion)							(parts per billion)		
	CO_2	CCl_4	CH_3CCl_3	CCl_3F (CFC-11)	CCl_2F_2 (CFC-12)	$CHClF_2$ (CFC-22)	$C_2Cl_3F_3$ (CFC-113)	Total Gaseous Chlorine	N_2O	CH_4	CO
1959	316.1	X	X	X	X	X	X	X	X	X	X
1960	317.0	X	X	X	X	X	X	X	X	X	X
1961	317.7	X	X	X	X	X	X	X	X	X	X
1962	318.6	X	X	X	X	X	X	X	X	X	X
1963	319.1	X	X	X	X	X	X	X	X	X	X
1964	X	X	X	X	X	X	X	X	X	X	X
1965	320.4	X	X	X	X	X	X	X	X	X	X
1966	321.1	X	X	X	X	X	X	X	X	X	X
1967	321.9	X	X	X	X	X	X	X	X	X	X
1968	322.7	X	X	X	X	X	X	X	X	X	X
1969	324.2	X	X	X	X	X	X	X	X	X	X
1970	325.5	X	X	X	X	X	X	X	X	X	X
1971	326.5	X	X	X	X	X	X	X	X	X	X
1972	327.6	X	X	X	X	X	X	X	X	X	X
1973	329.8	X	X	X	X	X	X	X	X	X	X
1974	330.4	X	X	X	X	X	X	X	X	X	X
1975	331.0	104	70	120	200	X	X	1,202	291.4	X	X
1976	332.1	106	78	133	217	X	X	1,290	293.3	X	X
1977	333.6	115	86	148	239	X	X	1,416	294.6	X	X
1978	335.2	122	94	159	256	X	X	1,544	296.1	X	X
1979	336.5	130	113	167	273	28	X	1,601	296.8	1,500	X
1980	338.4	137	120	179	302	X	X	1,755	297.6	1,500	X
1981	339.6	139	127	185	315	X	X	1,797	298.5	1,508	X
1982	340.8	140	134	193	326	42	X	1,863	301.0	1,583	X
1983	342.8	138	143	205	347	44	24	1,985	302.1	1,613	X
1984	344.3	136	150	213	364	X	X	2,072	303.4	1,627	X
1985	345.7	137	158	223	386	X	33	2,184	304.5	1,641	X
1986	346.8	X	X	X	X	X	X	X	X	1,647	X
1987	348.6	X	X	X	X	X	X	X	X	1,656	X

Sources: Scripps Institution of Oceanography, University of California at San Diego, La Jolla, California; National Oceanic and Atmospheric Administration, Geophysical Monitoring for Climatic Change, Boulder, Colorado; and Atmospheric Lifetime Experiment/Global Atmospheric Gases Experiment/Atmospheric Effects of Stratospheric Aircraft Measurement Program, Massachusetts Institute of Technology, Cambridge, Massachusetts.

Long-Term Trends in Concentrations of Greenhouse



Source: J.M. Barnola *et al.*, "Vostok Ice Core Provides 160,000 year Record of Atmospheric CO_2," *Nature*, Vol. 329, p. 410.
Note: Carbon dioxide (CO_2) concentrations fluctuated between 190 and 280 parts per million between 160,000 years ago and 1700 A.D. From 1958 to 1987, CO_2 concentrations increased at an average annual rate of 1.2 per cent per year.



Source:
Note:

Sulfur Dioxide Concentrations in Urban Areas, 1973–85

		Site Type*	Average Number of Monitoring Days per Year				Mean of Daily Values (micrograms per cubic meter)				Peak Levels (98th Percentile of Daily Values) (micrograms per cubic meter)			
			1973–75	1976–78	1979–81	1982–85	1973–75	1976–78	1979–81	1982–85	1973–75	1976–78	1979–81	1982–85
ASIA														
China	**Beijing**	SI	X	X	104*	147	X	X	38*	100	X	X	146*	298
	Beijing	CCC	X	X	113*	153	X	X	56*	167	X	X	290*	459
	Beijing	SR	X	X	93*	143	X	X	6*	29	X	X	44*	101
	Beijing	CCR	X	X	110*	149	X	X	98*	228	X	X	397*	625
	Guangzhou	SR	X	X	93*	163	X	X	140*	71	X	X	372*	170
	Guangzhou	CCR	X	X	97*	171	X	X	66*	90	X	X	270*	212
	Guangzhou	CCC	X	X	76*	171	X	X	117*	81	X	X	340*	206
	Guangzhou	CCI	X	X	55*	163	X	X	12*	64	X	X	38*	157
	Shanghai	CCI	X	X	88*	142	X	X	23*	77	X	X	153*	200
	Shanghai	CCR	X	X	87*	177	X	X	52*	77	X	X	176*	207
	Shanghai	CCC	X	X	85*	178	X	X	55*	54	X	X	272*	217
	Shangha	SR	X	X	X	178	X	X	X	13	X	X	X	55
	Shenyang	CCR	X	X	73*	144	X	X	29*	133	X	X	390*	682
	Shenyang	CCI	X	X	72*	144	X	X	136*	279	X	X	358*	1119
	Shenyang	CCC	X	X	72*	120	X	X	72*	160	X	X	320*	576
	Shenyang	SR	X	X	72*	120	X	X	27*	55	X	X	299*	272
	Xian	SR	X	X	98*	174	X	X	22*	30	X	X	98*	156
	Xian	CCR	X	X	119*	180	X	X	108*	109	X	X	349*	372
	Xian	CCC	X	X	120*	180	X	X	160*	113	X	X	670*	398
	Xian	SI	X	X	117*	179	X	X	46*	59	X	X	256*	259
Hong Kong	**Hong Kong**	CCC	357*	359	365	308	14*	12	37	32	72*	87	117	121
	Hong Kong	SI	364*	365	365	307	100*	43	76	39	680*	312	415	143
	Hong Kong	SR	362*	364	365	322*	19*	17	27	23*	72*	101	86	84*
India	Bombay	CCC	X	40*	30	17	X	26*	23	8	X	123*	97	38
	Bombay	SR	X	75*	47	31*	X	31*	24	25*	X	121*	81	85*
	Bombay	SC	X	75*	48	28*	X	96*	66	35*	X	253*	188	85*
	Bombay	CCC	X	X	34*	28	X	X	57*	11	X	X	195*	63
	Calcutta	CCC	67	46	32	31	46	43	65	68	237	217	288	188
	Calcutta	SI	63	48	29	23	51	50	61	70	221	241	244	149
	Calcutta	SR	67	48	24	30	34	21	34	39	171	102	123	155
	Delhi	CCC	X	44*	37	29	X	34*	43	68	X	136*	111	197
	Delhi	CCR	X	33*	37	29	X	6*	14	28	X	67*	77	97
	Delhi	CCI	X	34*	38	29	X	57*	37	58	X	474*	137	172
Indonesia	Jakarta	CCR	X	X	29*	31	X	X	0*	1	X	X	0*	6
	Jakarta	SI	X	X	26*	20*	X	X	0*	0*	X	X	0*	0*
Iran	**Tehran**	CCC	X	67	81	59	X	65	129	122	X	183	362	467
	Tehran	SI	X	46	71	57	X	68	106	125	X	138	330	365
	Tehran	SR	X	46	74	56	X	73	108	79	X	208	376	318

Annual Emissions of Greenhouse and Ozone-Depleting Gases, 1925–86

Year	Chlorofluorocarbons (thousand metric tons) CCl_3F (CFC-11)	Chlorofluorocarbons (thousand metric tons) CCl_2F_2 (CFC-12)	Carbon Dioxide (million metric tons of carbon) Biotic Sources	Carbon Dioxide (million metric tons of carbon) Fossil Fuel Combustion and Industrial Processes
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1926	[illegible]	0.0	[illegible]	[illegible]
1927	[illegible]	0.0	[illegible]	[illegible]
1928	0.0	0.0	[illegible]	[illegible]
1929	0.0	0.0	[illegible]	X
1930	0.0	0.0	[illegible]	X
1931	0.0	0.1	[illegible]	X
1932	0.0	0.1	[illegible]	X
1933	0.0	0.1	[illegible]	X
1934	0.0	0.2	[illegible]	X
1935	0.0	0.3	[illegible]	X
1936	0.0	0.5	[illegible]	X
1937	0.0	0.5	[illegible]	X
1938	0.1	[illegible]	[illegible]	X
1939	0.1	[illegible]	[illegible]	X
1940	0.1	2.3	782	X
1941	0.1	2.0	[illegible]	X
1942	0.1	3.7	[illegible]	X
1943	0.2	4.5	767	X
1944	0.2	6.1	764	X
1945	0.3	8.0	763	X
1946	0.6	13.9	765	X
1947	1.3	21.3	769	X
1948	2.3	24.8	776	X
1949	3.8	26.6	785	X
1950	5.5	29.5	796	1,639
1951	7.6	32.4	818	1,776
1952	11.0	33.7	857	1,803
1953	15.0	37.9	904	1,846
1954	18.6	42.9	955	1,872
1955	23.0	48.2	1,018	2,050
1956	28.7	[illegible]	[illegible]	2,185
1957	32.2	[illegible]	[illegible]	2,278
1958	30.2	[illegible]	[illegible]	2,328
1959	30.9	[illegible]	[illegible]	2,470
1960	40.5	[illegible]	[illegible]	2,586
1961	52.1	[illegible]	1,408	2,602
1962	65.4	[illegible]	1,456	2,709
1963	80.0	[illegible]	1,503	2,855
1964	95.0	[illegible]	1,545	3,016
1965	108.3	[illegible]	1,578	3,154
1966	121.3	[illegible]	1,604	3,313
1967	137.6	[illegible]	1,625	3,420
1968	156.8	[illegible]	1,643	3,595
1969	181.9	[illegible]	1,675	3,808
1970	206.6	[illegible]	1,700	4,116
1971	226.9	321.6	1,714	4,267
1972	255.8	349.9	1,718	4,435
1973	292.4	387.3	1,714	4,678
1974	321.4	418.6	1,707	4,684
1975	310.9	404.1	1,695	4,660
1976	316.7	390.4	1,688	4,924
1977	303.9	371.2	1,687	5,065
1978	283.6	341.3	1,690	5,108
1979	263.7	337.5	1,691	5,345
1980	250.8	332.5	1,691	5,255
1981	248.2	340.7	X	5,115
1982	239.5	337.4	X	5,079
1983	252.8	343.3	X	5,068
1984	271.1	359.4	X	5,236
1985	280.8	368.4	X	5,336
1986	295.1	376.5	X	5,543[a]

Sources: Chemical Manufacturers Association; Woods Hole Research Center; and University of New Orleans.
Note: a preliminary.
0 = zero or less than half the unit of measure, X = not available
For additional information, see Sources and Technical Notes

Carbon Dioxide Emissions by Country and Region, 1950–85

	1950 Biotic Total (million metric tons)	1950 Biotic Percentage of World Total	1950 Industrial Total (million metric tons)	1950 Industrial Percentage of World Total	1965 Biotic Total (million metric tons)	1965 Biotic Percentage of World Total	1965 Industrial Total (million metric tons)	1965 Industrial Percentage of World Total	Biotic 1980 Total (million metric tons)	Biotic 1980 Percentage of World Total	Industrial 1985 Total (million metric tons)	Industrial 1985 Percentage of World Total
WORLD	**796**	**100**	**1,553**	**100**	**1,576**	**100**	**2,929**	**100**	**1,691**	**100**	**5,102**	**100**
North America	111	14	723	47	36	2	1,003	34	19	1	1,293	25
United States	X	X	679	44	X	X	935	32	X	X	1,186	23
Canada	X	X	44	3	X	X	68	2	X	X	107	2
Western Europe	35	4	377	24	14	1	643	22	12	1	773	15
United Kingdom	X	X	136	9	X	X	169	6	X	X	148	3
France	X	X	55	4	X	X	94	3	X	X	107	2
Germany, Fed Rep	X	X	93	6	X	X	172	6	X	X	182	4
Italy	X	X	11	1	X	X	49	2	X	X	93	2
Other	X	X	81	5	X	X	157	5	X	X	251	5
Eastern Europe	X	X	291	19	X	X	748	26	X	X	1,346	26
USSR	48	6	185	12	200	13	509	17	78	5	958	19
Poland	X	X	30	2	X	X	66	2	X	X	120	2
German Dem Rep	X	X	43	3	X	X	82	3	X	X	85	2
Other	X	X	33	2	X	X	92	3	X	X	178	3
Pacific	35	4	55	3	81	5	138	5	43	3	314	6
Japan	X	X	27	2	X	X	101	3	X	X	244	5
Other	X	X	18	1	X	X	37	1	X	X	70	1
Centrally Planned Asia	X	X	22	1	X	X	146	5	X	X	562	11
China	60	7	21	1	91	6	131	5	63	5	506	10
Other	X	X	X	X	X	X	16	1	X	X	44	1
Developing World	X	X	95	6	X	X	251	9	X	X	816	16
Latin America	191	24	36	2	548	35	87	3	775	46	286	6
Africa	81	10	26	2	220	14	55	2	272	16	144	3
Middle East	27	3	4	0	11	1	29	1	7	0	223	4
South & Southeast Asia	210	26	27	2	375	24	79	3	421	25	166	3

Sources: University of New Orleans and Woods Hole Research Center
Note: Percentages may not add to 100 due to rounding.
0 = zero or less than half of 1 percent, X = not available
For additional information, see Sources and Technical Notes

	Number of Plant Species	Endemic Flora as Percentage of Total	Number of Rare and Threatened Plant Species	Completeness of Data on Rare and Threatened Plants[a]	Red Data Book or List
ASIA					
Afghanistan	3,000	25-30	1	3	No
Bangladesh	5,000[f]	X	4	3	No
Bhutan	5,000	10-15	5	3	No
Borneo	10,000-11,000	34	22	3	No
Brunei	X[e]	X[e]	4	3	No
Burma	7,000[f]	5	10	3	Yes[g]
China	30,000	X	288	2	IP
Cyprus	2,000	116[c]	46	2	No
India	15,000	33	1,103	1	Yes
Andaman and Nicobar Islands	2,270[f]	10	10	3	No
Indonesia					
Irian Jaya	X[e]	X[e]	23	3	X
Java	5,000	X	87	2	No
Kalimantan	X[e]	X	11	3	X
Lesser Sunda Islands	X	12	9	3	No
Moluccas	X	X	11	3	No
Sulawesi	5,000	X	14	3	No
Sumatra	X	12	48	2	No
Iran	7,000	20	1	3	No
Iraq	2,937	7	3	3	No
Israel	2,317	7	[d]	2	IP
Japan	4,022	34	395	2	IP
Bonin Islands	369	41	81	1	Yes
Jordan	2,200	X	14	3	No
Kampuchea, Dem	X	X	4	3	No
Korea, Rep	2,838[i]	14[i]	33	2	Yes
Kuwait	350	X	1	3	No
Lao People's Dem Rep	X	X	3	3	No
Lebanon[h]	3,000	11	5	3	Yes
Malaysia					
Peninsular Malaysia	8,500	X	254	2	No
Sabah	X[e]	X	34	2	No
Sarawak	X[e]	X	28	2	No
Nepal	6,500[f]	5	15	3	IP
Oman	1,100	5	2	3	No
Pakistan	5,500-6,000	6	6	3	IP
Philippines	9,000	39	73	2	Yes[j]
Saudi Arabia	3,500	23[i]	1	3	IP
Singapore	2,030	X	15	2	No
Sri Lanka	2,900[f]	9	53	2	Yes[g]
Syrian Arab Rep[h]	3,000	11	12	3	No
Taiwan	3,577	25	84	2	IP
Thailand	12,000	X	40	3	No
Turkey	8,000	31	10	3	IP
Viet Nam	8,000	10	24	3	Yes[g]
Yemen	1,000	3	2	2	No
Yemen, Dem	1,700	5-10	1	3	No
Socotra	660	32	132	2	No

	National Protection Systems					International Protection Systems				
	All Protected Areas		Marine and Coastal Protected Areas		Percentage of National Land Area Protected	Biosphere Reserves		Natural World Heritage Sites	Wetlands of International Importance	
	Number	Area (hectares)	Number	Area (hectares)		Number	Area (hectares)	Number	Number	Area (hectares)
ASIA	**882**	**52,365,026**	**156**	**11,686,173**	**2.0**	**33**	**5,938,242**	**5**	**33**	**1,468,356**
Afghanistan	3	131,000	NA	NA	0.2	0	0	0		
Bahrain	3	0	0	0	0.0	0	0		—	
Bangladesh	9	94,961	3	32,386	0.7	0	0	0		
Bhutan	5	876,058	NA	NA	18.6	0	0			
Burma	1	3,056	0	0	0.0	0	0			
China	21	2,278,606	5	11,367	0.2	6	1,602,305	1		
Cyprus	0	0	0	0	0.0	0	0	0	—	
India	267	12,910,021	14	473,802	4.3	0	0	4	2	119,273
Indonesia	135	13,590,792	66	8,595,298	7.5	6	1,482,400	—		
Iran	23	3,055,536	3	74,889	1.9	9	2,609,731	0	18	1,297,560
Iraq	0	0	0	0	0.0	0	0	0	—	
Israel	5	33,996	0	0	1.7	0	0	—	—	
Japan	48	2,245,942	19	569,575	6.1	4	116,300	—	2	5,571
Jordan	2	34,300	0	0	0.4	0	0	0	1	7,372
Kampuchea, Dem	0	0	0	0	0.0	0	0	—	—	—
Korea, Dem People's Rep	0	0	0	0	0.0	0	0	—	—	
Korea, Rep	17	557,766	3	284,671	5.7	1	37,430	—	—	
Kuwait	0	0	0	0	0.0	0	0	—	—	
Lao People's Dem Rep	0	0	NA	NA	0.0	0	0	0	—	
Lebanon	0	0	0	0	0.0	0	0	0	—	
Malaysia	38	1,597,144	9	55,640	4.9	0	0	—	—	
Mongolia	13	317,840	NA	NA	0.2	0	0	—	—	
Nepal	11	964,887	NA	NA	7.1	0	0	2	1	17,500
Oman	3	54,000	0	0	0.3	0	0	0	—	
Pakistan	52	7,290,580	1	15,540	9.4	1	31,355	0	3	20,394
Philippines	29	498,947	5	30,722	1.7	1	23,545	0	—	
Qatar	0	0	0	0	0.0	0	0	0	—	
Saudi Arabia	1	415,000	1	415,000	0.2	0	0	0	—	
Singapore	1	2,434	0	0	4.3	0	0	—	—	
Sri Lanka	37	687,028	6	332,197	10.6	2	9,376	0	—	
Syrian Arab Rep	0	0	0	0	0.0	0	0	0	—	
Thailand	65	4,015,912	10	621,904	7.8	3	26,100	0	—	
Turkey	13	235,150	3	113,785	0.3	0	0	1	—	
United Arab Emirates	0	0	0	0	0.0	0	0	—	—	
Viet Nam	13	193,068	0	0	0.6	0	0	0	—	
Yemen	0	0	0	0	0.8	0	0	0	—	
Yemen, Dem	0	0	0	0	1.3	0	0	0	—	