

AIR POLLUTION AND HEALTH

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Abstract: Among the factors that influence health, the environment areas, the temperature changes and the strong use of the Earth’s fuels (oil, coal etc.) will lead to an unprecedented increase of CO₂ in the breathing air. Due to the greenhouse effect, the forest, which will be supplied with CO₂ released from the air, will “abandon” this through the global deforestation, which will lead to an uncontrolled environment.

Keywords: health accidents, human environment aggression, people education.

Rezumat: Printre factorii care influențează sănătatea, zonele de mediu – modificarea temperaturii, utilizarea forte a combustibililor Terrei (petrol, cărbune etc.) va duce la o creștere fără precedent a CO₂ în aerul pe care îl respirăm noi. Apariția efectului de seră, pădurea care va avea o eliminare a CO₂ din atmosferă, va “abandona” acest lucru prin despăduririle globale, care va duce la o nestăpânire a mediului ambiant.

Cuvinte cheie: accidente ale sănătății, agresiunea umană a mediului, educația oamenilor

3. Greenhouse effect (gradual heating of the climate, slow and predictable geologic process).

Moreover, the following will be taken into consideration:

1. trans-national co-interest of environment health
2. environment – survival priority
3. “development” pathology
4. “controlling” ideology – demonic gesticulation
5. identity of environment health with human health
6. the necessity of changing the cultural-educational standards
7. environment health – global investment, which is the survival resource
8. limits of environment human aggression
9. reconsideration concepts, regarding environment reform
10. global re-adaptation (demo – economical, educational, cultural)
11. necessity of a healthy existence
12. balance development policies (ecologic development)
13. child education reform – family future trainer
14. reformulation of occupational existence perimeter, “clean industries”
15. the requirement for accomplishing new parameters (norms) of environment health
16. chronic malady – continuation of environment aggression
17. a new Charter for education

The new Charter of the environment is the new Charter of human survival.

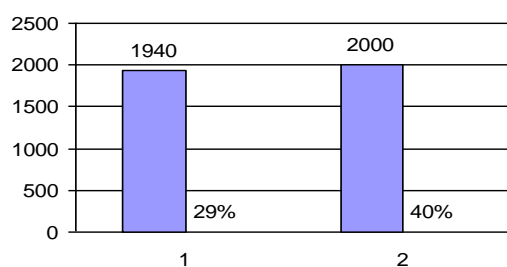
The urban population of the developed countries increased from 71% in 1985 to 74% in 2000, in Africa, it raised from 30% to 39%, in Asia (without Japan) from 28% to 35%, in Latin America from 69% to 77%.

Until 2000, the number of urban “agglomerations” (5 million people) reached 48 (out of these, 37 are placed within the developing countries).

In Ciudad de Mexico, there are 11.000 tones of toxic dust (carbon oxide, sulphur dioxide, iron, cadmium, lead...); developing or stopping the toxic substances is difficult to accomplish.

The population stabilization campaign breaches:

Picture no. 1. CO₂ increase in the air



The quantity of oxygen necessary for a man to live one year is the same with that spent by a vehicle for covering 1.000 km.

1. Exhaust emissions of the vehicles (which gather 15 toxic compounds) produce” 50 million cubic metres of CO!

2. On average, at international level, highways represent “a stream of noxious substances”, and in Paris, the traffic agent shifts every three hours, in Los Angeles and Tokio, the traffic agent wears the gas mask on his face.

PUBLIC HEALTH AND SANITARY MANAGEMENT

-the right of reproduction of the future generation

-the right of survival of the future generation

Natural balance was deeply affected by the exaggerated use of fossil fuel and of carbon emissions.

Greenhouse effect occurs, as a result of the increase of CO₂ levels in the air.

The global average temperature increased, altering the climate.

The level of seas is increasing.

Strom frequency is increasing.

Influenza epidemics in the USA cost 5 billion dollars a year.

In the developing countries = 25 million of people die due to the water contaminated with polluted substances (Diarrhoea = 3 mil. of victims among the children under the age of five). In 1990 = 1 billion of people need clean water and 1,7 billion released untreated residues in the water of the urban areas.

The more careful and limited use of antibiotics is required.

Especially, when biodiversity of a ecosystem is lost, it tends to become as fragile as possible.

Bio-invasions are correlated with the ECONOMIC processes.

Today, Health is confronting with "AN EPIDEMIC OF EPIDEMICS" (1982 Richard Krause – from the National Health Institute – "infectious diseases – represent a presence as sure as that of death and taxes")

There are 38.000 barrages in the world (!) Barrages – „the curse of future" said Lester R. Brown !

The exotic species often DESTROY the autochthon ecology.

In the last century, the level of sea increased with 20-40 cm, until the year 2100, it will reach 10-120 cm (!)

Solid fuels burning:

-eliminates today 6 billion tones of coal

-yearly adds 3 billion to those 170 billion that have gathered since the beginning of the Industrial Revolution (!)

-Forests and ocean absorb almost 20% of the present level of emissions!

Carbon emissions / 1 hectare:

-USA = 5,26 tones

-Japan= 2,39 tones

-India = 0,24 tones

Forest:

1. Clearing the juniper tress with a view to > the grazing area → accelerated deterioration of the existing ones, too.

2. Regarding plains, the lack of forest curtains → soil particles stimulation by air currents (their speed increase), in the dry periods of time > the transported ground soil quantity.

3. Tropical area clearing → rapid soil degradation (in the absence of the forest) because there is no route formed in these areas, because the mineralization is very intense).

4. The productivity of a hectare of forest regarding oxygen =

11 to/hectare/year (tropical forest)

8 to/hectare/year (temperate areas forest) in comparison with 0,55 to/hectare/year (planetary ocean)

1-1,3 to/hectare/year (herbaceous vegetations)

5. Forest clearing → the change of the parameters that characterize the precipitations regime → significant decreases → topoclimate becomes dry → reducing the desert areas (the surface of deserts increases yearly with 60.000 km² → the change of the hydrographical network (rivers, streams).

6. Setting on fire the forests in the equatorial areas in order to be cleared (due to high density of the forest) → increased the release of CO₂ → its accumulation in the air → reflection on the active surface of the infrared radiations (caloric) → greenhouse effect. The empty soil, as a result of having been burnt, large methane quantities are still releasing, which contribute to the global heating of the air.

7. Forest clearing → the removal of an important CO₂ consumer → the negative effect is amplified.

Massive deforestations:

1 inhabitant of the USA releases 16-36 tones of carbon every year.

1 inhabitant of Europe releases = 7-16 tones / of carbon dioxide

Greenhouse effect is produced by:

- Carbon dioxide
- Hydrofluorocarbons
- Perfluorocarbons
- Suphur Hexafluoride
- The forest absorbs carbon dioxide and stabilizes the greenhouse gases in the air.
- People have been destroying the forests for centuries!

The forest gathers the carbon from the air and soil and releases oxygen. The trees consume and store 1,8 tones of oxygen: (one hectare of forest may absorb a carbon quantity released by 200 people by breathing. In order to provide the necessary oxygen per 1 inhabitant, we need three mature trees).

„To protect nature, means first of all to accomplish a task of planetary hygiene" - Jean Rostand, Member of the French Academy.

Until the year 1970, Sahara surface has advanced with 1,5-10 km/year.

- Air reckless use has destroyed two billion of lands until now (15% of the total of the continental areas).

- Massive deforestation of the Southeast Asia, Africa, AMAZON (its length is of 6500 km, which contains 1/5 of the world fresh water), is in large a planetary deforestation.

- In Ethiopia, the country was 50% covered by forests, nowadays, only 3% represent areas covered by forests.

The forest today:

„Forests precede human and deserts follow him”
(Chateaubriand)

1. the increasing requirements of humanity
 2. limits of the natural systems of the Earth is putting out, tensions occur and it is bankrupt.
- Firewood demand increased three times, timber demand doubled and the paper demand increased 6 times.
 - Solid fuels burning increased 4 times.
 - Although it represents 16% of the total area, the irrigated area produces 40% of the total of the world food (more than 10% of the irrigated area seems to be for salts accumulation)!
 - 12% of the entire animal species are living on 1% of the planet's area.
 - including 41% of the fish species.
 - In Amazon, the flooded forests represent 150.000 of km square, out of those 500000 of km. square of the Amazonian forests (there are 3000 fish species in Amazon). In the third flooded area of the Amazon, 15-20% of the total area is covered by forests (because of the deforestation)
 - Because of the air heating, energy exchange produces, which increases the vertical movement process regarding the formation of tropical cyclones, tornadoes and storms.
 - An increase of the temperature with 3-4 gr. Celsius will lead to an increase of the destructive potential with 50%, bringing about winds with the speed of 350 km. / hour!
 - Water chronic deficit affects 80 countries (where 40% of the world population are living in)
 - According to Steven Hamburg (specialist in forests ecology –Brown University), 1/3 of the world's forests will be forced to “immigrate”, as a result of doubling the CO₂ concentration (process foreseen in 2100) (many trees will be infected with insects and diseases, which will make them fire vulnerable)
 - Pin forests from the North of Finland “advance” towards the tundra area with a speed of 40 m/year.
 - In 1995, an annual increase of the sea level with 3 mm was established!
 - The problem of the “lost carbon” – oceans and forests of the North Europe absorb almost 1,5 billion of tones, yearly.
 - The loss of the forests of the Northern and temperate area for the coming decades could release (?) tens of billions of extra carbon tones, which will speed up the planet's heating!
 - At the same time with the increase of the temperatures, the incidence of floods, drought, fires and canicular days will increase in certain regions.
 - Salinization contributed to the decline of the large civilizations of Mesopotamia (including bilharziasis– serious disease)
 - Aswan Dam (Egypt) deprives the areas from the substances favourable for the fish communities.

The forest – through the trees leaves and bushwoods make up the humus through decomposition (which plays a part in soil transformation). The forest is an important producer of living substance, indispensable for photosynthesis). The forest = defends the soil against the erosions produced by wind or water.

- According to FURON (Erosion du Sol –Ed. Payot, 1947) „a metre square of moss that covers the forest soil retains one kilo of water after a strong rain. A forest of 10 thousand of hectares retains 500.000 cubic metres of water”.

The forest plays a crucial part as a fundamental regulator of the hydrological regime.

- In Africa, the forests cover 1/3 of the land.

- The American Professor ODUN established that 1 hectare of costal marsh = 22 tones of dry substance (and a field cultivated with wheat produces 3,4 tones).

- The earthworm “produces” 420 kilos of organic substances in one year per one square meter, which fertilize the soil (!)

Earthworms breeding farms (!)

- Since the beginning of the world:

- The disappearance of 120 mammal species

- 150 varieties of birds have disappeared

„Nature should revive in our lives and replace our universe of concrete and pollution with a universe full of fresh air and greenery”. (Edward Bonnefaus)

BIBLIOGRAPHY

1. Ramond Batra, Vijay Batra – Idei și sfaturi pentru manageri, Ed. Niculescu. (Ideas and Pieces of Advice for Managers).
2. Zygmunt Bauman – Globalizarea și efectele ei sociale – Ed. Antet, București, 2000. (Globalization and Its Social Effects).
3. Raumont Boudon - Tratatul de sociologie, Ed. Humanitas, București, 1997. (Treatise on Sociology).
4. Gustave Le Boo - Psihologia mulțimilor, Ed. Antet XX Pres, 2003. (Crowds Psychology).
5. Harting Center – Scopurile și prioritățile medicinei contemporane. (Purposes and Priorities of the Contemporary Medicine).
6. Andrew Gamble – Politică și destin, Ed. Antet, București, 2001. (Politics and Destiny).
7. James Mayall – Politica Mondială, Ed. Antet, București, 2000. (World Politics).
8. Bertrand Schneider – Revoluția desculturilor – Raportul către Clubul de la Roma, Ed. Politică, București, 1988. (Revolution of the Bearfood).
9. Noel M. Tichy – Arta de a conduce, Ed. Teora, București, 2000. (The Art of Management)
10. Alvin Toffler – Spasmul economic – Ed. Antet, București, 2001. (Economic Spasm).
11. Stelian Țurlea, Elena Mureșan - SOS! – Natura în pericol, Ed. Politică, București, 1989. (The Nature in Danger).