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Congress of the United States
House of Representatives
Washington, DC 20515

December 21, 1994

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Thank you for contacting my office to request copies of the Treaty on Biological Diversity and Agenda 21. I have enclosed a copy of the Treaty on Biological Diversity (also known as Senate Treaty Document 103-20) and three short articles regarding this document.

Unfortunately, I am unable to provide the full text of Agenda 21 but have enclosed a summary of each chapter of this worldwide international environmental action plan as well as instructions on how you may acquire this document. The full text of this agreement is also available through many university libraries and on-line computer services.

I appreciate your contacting me as you have, and if you have further questions, please do not hesitate to contact my office. With kind regards, I remain

Sincerely yours,



Charles W. Stenholm
Member of Congress



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AGENDA 21

We regret that we do not have giveaway copies of *Agenda 21*, the worldwide environmental action plan for sustainable development into the 21st century, negotiated and adopted by the representatives of 178 nations attending the United Nations Conference on Environment and Development (UNCED) or "Earth Summit."

The complete final text of *Agenda 21*, together with the *Rio Declaration* and *Forest Principles*, may be purchased from United Nations Publications by telephone, (800) 253-9646 or (212) 963-8302, or by fax, (212) 963-3489, using VISA, MasterCard, or American Express, or by mail. Written prepaid orders should be addressed to

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ISBN: 92-1-100509-4
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We hope this information will be helpful.

Congressional Reference
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Agenda 21: A new Magna Carta

BY GERARD PIEL

As the 47th General Assembly of the United Nations gets on with its work, the world will better understand what the United Nations Conference on Environment and Development accomplished at Rio.

The General Assembly will be taking the first steps to implement Agenda 21. The principal product of the UNCED deliberations, Agenda 21 is not a binding convention, such as the two (on climate change and biodiversity) signed at the Rio Earth Summit. It does, however, "reflect a global consensus and political commitment at the highest level" on what needs to be done about "a worsening of poverty, hunger, ill health and illiteracy, and the continuing deterioration of the ecosystems on which we depend for our well-being."

Agenda 21 responds to the understanding — a new force in national and international affairs — that the Earth cannot much longer sustain a human species divided into rich and poor. Abundant evidence shows that the cycles of nature are perturbed by the desperation to which poverty drives the three-quarters of mankind who inhabit the developing countries and, even more so, by heedless operation and enjoyment of industrial technology in the developed countries. Agenda 21 describes and prices out the actions necessary to bring human numbers and appetites into adjustment, by the middle of the 21st century, with the finite resources of the Earth.

The preamble to Agenda 21 summons the nations of the world, rich and poor, the United Nations system and other international, regional and subregional organizations, and the people themselves in their non-governmental organizations, including corporate industrial and financial enterprises, to join "in a global partnership for sustainable development." In the partnership, the rich nations undertake a special obligation: "The developmental and environmental objectives of Agenda 21 will require a substantial flow of new and additional financial resources to countries in need, particularly to developing countries, in order to cover the incremental costs for the actions they have to undertake to deal with global environmental problems and to accelerate sustainable development."

The framing of Agenda 21 began nearly a decade ago. By resolution 38/161 in December 1983, the General Assembly convened the World Commission on Environment and Development, to be chaired by Gro Harlem Brundtland, Prime Minister of Norway. The Commission's report in 1987, incorporating testimony from hearings held around the world, showed the human presence crowding the life cycles of the planet. Population had doubled since 1950; the world output of material goods had multiplied four times. Extension of a human existence to the three-quarters of mankind living in poverty and still increasing rapidly in number, would require multiplication of that output in the next half century by four or five times again. Yet, by reliable reckoning, the human species was already diverting to its use and misuse nearly half of the energy of life captured from sunlight by the planet's green cover. Without development, the environment could not be saved from increase in the number of people living in misery; the necessary development could not be sustained without a cherished environment.

Agenda 21 reflects not only the testimony and counsel of the numerous technical and scientific advisers mobilized by the UNCED Secretariat under the leadership of Maurice F. Strong but negotiation by the delegates of sovereign nations, ultimately 172 in number. The Preparatory Committee, a committee of the whole, held four month-long meetings beginning in August, 1990. From PrepCom4, the fourth meeting in New York City in April, the draft agenda went to Rio with numerous passages bracketed, in expression of still outstanding disagreements among the delegates. Principally, these related to the obligation of the industrialized nations to the funding and technology transfer necessary to accelerate industrialization in the developing nations. They spoke also for the differing claims of nations on the Earth's resources. Negotiation at Rio did not settle all disputes to the satisfaction of each participant — nor in the best interests of all, seen from the broadest perspective. The preamble concludes, however, "Agenda 21 is a dynamic program. It will be carried out over time by the various actors according to the different situations, capacities and priorities of countries and regions... The process marks the beginning of a new global partnership..."

For deliberation at the Conference, the 40 chapters of

Agenda 21 were submitted in four sections to the corresponding four major committees of the delegates. They are presented in the same groupings here. The preamble and the following 7 chapters consider the challenges that the adaptation of human behavior to sustainable development must lay to prevailing social and economic arrangements. The "environment" itself is the subject of chapters 9 through 22, on the conservation and management of resources for development. How people are to be mobilized and capacitated for their various roles in sustainable development is addressed in chapters 23 through 32. Here and under the other headings, Agenda 21 gives emphasis to the role of women. This, in a document expressing the consensus of 172 nations, bespeaks the liberation of women from the destiny of gender, as the rate of population growth declines almost everywhere.

Chapters 33 through 40 deal with the ways and means of implementing Agenda 21. The negotiation of these chapters not only arrayed the North and South on either side but also pitted short-range against long-range interest, the living generation against posterity, in the Conference debates. Debate on the scale and terms of the economic assistance to be rendered by the developed to the developing countries settled on a promise of best efforts by the former (see chapter 33, below). The chapter-by-chapter itemization of the average annual cost of implementation is encapsulated in a mantra that attributes the estimate to the Secretariat and goes on to recite "These are indicative and order of magnitude estimates only and have not been reviewed by governments. Actual costs and financial terms, including any that are non-concessional will depend upon, inter alia, the specific strategies and programs governments decide upon for implementation." Thus, though no commitment is made, the size of the problem is acknowledged in the partnership consensus.

To boost the developing countries onto the course of sustainable development, Agenda 21 calls, all told, for "new and additional" annual investment and expenditure of \$600 billion. By far the largest part of this outlay must be made by the developing countries themselves. That would be nearly 10 percent of their combined \$6,000 billion 1992 GDP. It is to be supplied by their "savings", that is, their under-employed labor forces and under-utilized resources. The crucial, catalytic balance of \$125 billion, principally in the form of the technology needed to put that labor and those resources to work, is to come from the developed countries as economic assistance "on grant and concessional terms." That would be about .7 percent of their combined \$16,000 billion 1992 GDP.

Section I. Social and Economic Dimensions

CHAPTER 2 — ACCELERATING SUSTAINABLE DEVELOPMENT

Agenda 21 here calls upon the global partnership to provide a dynamic and growing world economy in support of sustainable development in the poor countries. The record of the 1980s — a stagnant world economy, falling commodity prices, decline in financial assistance and investment flows and accumulation of debt that brought reverse flow of capital from the developing to the developed countries — is cited as the negative example. An "open, equitable, secure, non-discriminatory and predictable multilateral trading system", in which the commodity exports of the developing countries can find markets at fair prices free of tariff and non-tariff barriers, is the first requisite of sustainable development. Environmental protection measures must not be allowed to restrain trade, and vice versa, with such vexed questions to be settled each on its own terms.

Discussion in this chapter of the economic assistance to be rendered beyond the maintenance of a supportive environment and correction of the terms of trade was bracketed in the draft of the fourth meeting of the preparatory committee in New York City. It was subsumed in chapter 33 at Rio.

Cost of implementation: \$8.8 billion in economic assistance to developing countries — in compensation for disadvantageous terms of trade and to be adjusted as those terms are adjusted.

CHAPTER 3 — COMBATTING POVERTY

"The long-term objective of enabling all people to achieve sustainable livelihoods should provide an integrating factor that allows policies to address issues of development, sustainable resource management, and poverty eradication simultaneously." This objective is to be sought by improving the access of the poor to education and health care, to safe water and sanitation, and to resources, especially land; by

restoration of degraded resources; by empowerment of the disadvantaged, especially women, youth and indigenous peoples; by ensuring that "women and men have the same right and the means to decide freely and responsibly on the number and spacing of their children." Given that the economic activity of poor people in the "informal sector" of many developing countries approximates and even exceeds that of the formal, the regulations and hindrances that isolate and discriminate against the informal sector should be lifted.

Cost of implementation: \$30 billion, including \$15 billion in economic assistance.

CHAPTER 4 — CHANGING CONSUMPTION PATTERNS

"One of the most serious problems now facing the planet is that associated with historical patterns of unsustainable consumption and production, particularly in the industrialized countries." This must be attributed, in part, to inequitable distribution of income and wealth, which results in unsustainably conspicuous consumption. Social research and policy should bring forward new concepts of status and lifestyle which are "less dependent on the Earth's finite resources and more in harmony with [its] carrying capacity." Greater efficiency in the use of energy and resources — for example, reducing wasteful packaging of products — must be sought by new technology and new social values.

Cost of implementation: The recommended measures are unlikely to require significant new financial resources.

CHAPTER 5 — DEMOGRAPHIC DYNAMICS AND SUSTAINABILITY

Continued rapid population growth in the developing countries and implosion of people into cities unprepared to receive them places increasingly severe stress on the life-supporting capacities of the planet. With due regard for the sensibilities of Muslim and Roman Catholic constituencies represented at the conference, Agenda 21 here urges governments to develop and implement population policies integral with their economic development programs. Health services should "include women-centered, women-managed, safe and effective reproductive health care and affordable, accessible services, as appropriate, for the responsible planning of family size..." In motivation of fertility restraint, health services are to emphasize reduction of infant death rates. The objective is the culmination of the demographic transition in the convergence of low birth rates with low death rates early in the next century and a world population stabilized at a sustainable number at the end of the century.

Cost of implementation: \$7 billion, including \$3.5 billion in economic assistance.

CHAPTER 6 — PROTECTING AND PROMOTING HUMAN HEALTH

"Within the overall strategy to achieve health for all by the year 2000, the objectives are to meet the basic health needs of rural, peri-urban and urban populations; to provide the necessary specialized environmental health services; and to coordinate the involvement of citizens, the health sector, the health-related sectors and relevant non-health sectors (business, social, educational and religious institutions) in solutions to health problems. As a matter of priority, health service coverage should be achieved for population groups in greatest need, particularly those living in rural areas." The preventative measures urged include reckoning with urban health hazards and risks from environmental pollution.

Cost of implementation: \$273 billion (the third significant figure reflects the small as well as large programs in the estimate), including \$28.4 billion in economic assistance.

CHAPTER 7 — SUSTAINABLE HUMAN SETTLEMENTS

"In industrialized countries, the consumption patterns of cities are severely stressing the global ecosystem, while settlements in the developing countries need more raw material, energy and economic development simply to overcome basic economic and social problems." The resourceful self-reliance of the new urban populations occupying the shantytowns around the cities of the South is reflected in the experience of the United Nations Development Program, which finds every \$1 it spends in those communities generating \$122 of follow-on investment. This makes possible an "enabling approach": with investment to supply the missing urban infrastructure, people will build their own homes. Rational land-use planning must reduce the irreversible environmental devastation of urban sprawl.

Cost of implementation: \$218 billion, including \$29 billion in economic assistance.

CHAPTER 8 — INTEGRATING ENVIRONMENT & DEVELOPMENT

Although more than 140 countries have established environmental protection agencies and the great transnational corporations advertise their environmental consciousness, environmental defenses continue to be installed after the fact and at the end of the pipe. Thus national bookkeeping reckons into GNP as product the consumption of non-renewable resources and carries no entry for degradation of soil and water resources. In this chapter, Agenda 21 calls on nations and corporate enterprises to integrate environmental protection, degradation and restoration costs in decision-making at the outset — to mount without delay the research necessary to reckon such costs, to develop protocols bringing these considerations into procedures at all levels of decision-making.

Cost of implementation: \$63 million in economic assistance.

Section II. Resources for development**CHAPTER 9 — PROTECTING THE ATMOSPHERE**

The oil-producing countries and the United States enmeshed the writing of this chapter in casuistry. The final text makes no mention of fossil fuels, subsumes carbon dioxide in "greenhouse gases", emphasizes uncertainties of knowledge and need for further research, and hedges any national obligations implied in this chapter behind the terms of international conventions, including the 1992 Framework Convention on Climate Change which exhibits the resistance and objections of the same parties. (Ozone-layer problems, in contrast, are attributed quite explicitly to "man-made CFCs and halons.") Nonetheless, Chapter 9 urges constraint and efficiency in energy production and consumption, development of renewable energy sources, and promotion of mass transit technology and access thereto for developing countries. Conservation and expansion of "all sinks for greenhouse gases" is extolled and transboundary pollution recognized as subject to international controls.

Cost of implementation: \$20 billion in economic assistance to moderate the environmental impact of expansion of energy production and consumption in developing countries (estimated, in the draft from PrepCom4, to build up to \$120 billion annual investment from their own resources and other assistance) plus \$800 million to \$1.23 billion in economic assistance for other aspects of air pollution control in developing countries.

CHAPTER 10 — PLANNING AND MANAGEMENT OF LAND-USE

An increasingly crowded world has been learning to bring the competing uses of finite land resources under zoning and planning by public agencies. These must now learn to integrate environmental considerations into decisions that may irreversibly upset ecosystems.

Cost of implementation: \$50 million in economic assistance to fund technical cooperation, research and education.

CHAPTER 11 — COMBATTING DEFORESTATION

The negotiation of this chapter was embroiled in the parallel negotiation and controversy surrounding renegotiation of the International Tropical Timber Agreement of 1983, due in 1992-1993. Anxiety in developed countries about the integrity of tropical moist forests as greenhouse-gas sinks brought them to assert a "global commons" claim on those forests. Such claim was firmly rejected by the nations, Indonesia and Brazil especially, in possession of them; their rejection was warned by the refusal of the United States to recognize their sovereignty over such resources in the convention on biodiversity, also under negotiation. This chapter calls, nonetheless, for concerted international research and conservation efforts to control harvesting of forests and "uncontrolled degradation and conversion to other types of land use," to develop the values of standing forests under sustained cultivation by indigenous technologies and agroforestry, and to expand the shrunken world-forest cover.

Cost of implementation: \$31.25 billion, including \$5.67 billion in economic and technical assistance.

CHAPTER 12 — COMBATTING DESERTIFICATION

Desertification threatens about 70 percent of the 3.6 billion hectares of Earth's arid lands, one quarter of its land surface and habitation of one-sixth of the world population. The Sahel and Somali famines (exacerbated by human behavior) are the acute symptom and consequence of this untoward trend. Agenda 21 here calls for intensive study of the process in its relation to world climate change to improve forecasting, study of natural vegetation succession to support large-scale revegetation and afforestation, checking and reversal of erosion, and like small- and grand-scale measures. For inhabitants whose perilously adapted livelihoods are threatened or erased, resettlement and adaptation to new life ways must be assisted. The General Assembly in its current session is urged to initiate negotiation of an international

convention to combat desertification for signature in 1994.

Cost of implementation: \$8.6 billion, including \$4.8 billion in economic and technical assistance; cost for succor of inhabitants is covered by estimates in Chapters 3 and 14.

CHAPTER 13 — MOUNTAIN DEVELOPMENT

The virtue of the ecosystem approach to assessing the human condition and prospect is demonstrated by the recognition of the Earth's mountain regions as a topic for concern. While about 10 percent of the world population live in the mountains or directly on their resources, a very much larger portion of mankind depends upon the mountains in their role in the modulation of climate, retarding runoff and governing water supply. This chapter calls for study, protection, and restoration of these fragile ecosystems and assistance to populations in regions suffering degradation.

Cost of implementation: \$13 billion, including \$1.3 billion in technical and economic assistance.

CHAPTER 14 — AGRICULTURE AND RURAL DEVELOPMENT

At the present size and rate of growth of the world population, the food supply becomes a question to be addressed in its global dimension, not left to the ingenuity of the subsistence farmer. Traditional agriculture can no longer sustain the populations in the crowded villages of the preindustrial world. The new technologies — that have doubled the world food supply for the first time by increase in the yield of the land under cultivation — must be made more securely sustainable; they must be introduced into and adapted to lands, especially in Africa, still under the old regime. Secure water supply makes year-around cropping possible in many lands. Degradation of soil by the new as well as the old technology must be repaired. The new agriculture brings industrial revolution in its train: most of its work goes on in places — laboratories, chemical plants, factories, power stations — off the land. Rural development must provide, as well, for storage, processing, and distribution.

Cost of implementation: \$30.8 billion, including \$4.95 billion in technical and economic assistance.

CHAPTER 15 — CONSERVATION OF BIODIVERSITY

"Our planet's essential goods and services depend upon the variety and variability of genes, species, populations and ecosystems." Habitat destruction (as in Amazonia), over-harvesting (as in the oceans), and inappropriate introduction of plants and animals in distant habitats has brought on an epoch of extinction comparable to the geological cataclysms that mark the evolution of life. Specification of counter-measures, apart from acquisition of a more complete picture of the on-going catastrophe, is here delegated by Agenda 21 to the negotiation of the Convention on Biodiversity then proceeding at Rio. As does that Convention, Agenda 21 recognizes the sovereignty of nations over the genetic resources of their ecosystems and the right of indigenous people to participate in exploitation by biotechnology of the genetic resources they have husbanded.

Cost of implementation: \$3 billion, including \$1.5 billion in economic and technical assistance.

CHAPTER 16 — SUSTAINABLE BIOTECHNOLOGY

The comprehension and control of life processes acquired in the present half century gives the human species hitherto unprecedented means to increase the availability of food, feed and renewable raw materials, to improve human health and to enhance the protection of the environment. With the science and technology so largely in the possession of the developed countries, Agenda 21 here calls for the transfer of biotechnology to the developing countries and the creation of the infrastructure of human capacity and institutions to put it to work there.

Cost of implementation: \$20 billion, including \$200 million in technical assistance.

CHAPTER 17 — PROTECTION OF THE OCEANS

The human species has not migrated far from the womb that nurtured evolution through 3 billion years of its 3.5 billion-year history: more than half the world population lives within 60 kilometers of the ocean. Exploitation and abuse of the oceans now place this continuing essential resource of human existence in peril. Onshore waters, the richest site of ocean life, receive the outfall of industrial civilization; over-harvesting makes deserts of pelagic waters; the emission of carbon dioxide exceeds the absorptive capacity of the carbon-silicate sink. The Law of the Sea, that was to have reserved the oceans to the global commons, put millions of square kilometers of continental shelf and the oceans above them under national sovereignty. This Chapter sets out goals and programs under which nations may conserve "their" oceanic

resources for their own and the benefit of the nations that share oceans with them and international programs that may protect the residual commons in the interests even of land-locked nations. The prevailing economic interests, however, reduced the ambition and financing of such programs between PrepCom4 agreements and the settlement at Rio.

Cost of implementation: \$13 billion, including \$330 million in technical and economic assistance.

CHAPTER 18 — WATER, ITS PROTECTION AND MANAGEMENT

Fresh water, once a free good like the air, is rapidly becoming a commodity, comparable to petroleum. The human population, especially in its urban conglomerations and on the marginal lands now brought increasingly under cultivation, confronts water as the limiting element in its existence. Water is the earliest necessity required by human metabolism from hour to hour, and it is the contamination of water that sickens most of the sick. Agenda 21 here sets out measures, from development of long-range weather and climate forecasting to cleanup of the most obvious sources of pollution, to secure the supply of fresh water for the next doubling of the human population.

Cost of implementation: \$54.7 billion, including \$17 billion in technical and economic assistance.

CHAPTER 19 — MANAGEMENT OF TOXIC CHEMICALS

The industrial revolution has brought no less than 100,000 man-made chemicals into world commerce. While no more than 1,500 of these account for 95 percent of the commerce, most of them have come into use within the last four decades. Their benefits are such as to erase concern, on first use, for their environmental costs (witness: DDT). About the long-term — or even the immediate- and short-term — effects of exposure of the human organism and the environment to the presence of half of these chemicals not enough is known. Agenda 21, here seeking such objectives as the full evaluation of 500 chemicals before the year 2000, has the willing cooperation of all concerned.

Cost of implementation: \$600 million, including \$150 to the industrial countries for evaluation and distribution-control.

CHAPTER 20 — HAZARDOUS WASTES

To the 2 kilograms of solid waste per capita per day generated in the industrial countries, certain of the 100,000 man-made chemicals make a hazardous contribution. Crowding of the land-fills in those countries has started up a dubious new branch of international trade. Its operators have succeeded in delaying ratification of the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal. The destination of much of the trade originating in Europe is suggested by the writing of the defensive Bamako Convention on the Ban on the Import into Africa and the Control of Transboundary Movement of Hazardous Wastes within Africa. Developing countries on other continents have come under the same pressure to accept these unpleasant imports. Agenda 21 here seeks international support in restraint of the trade and for containing the hazardous cargoes in safe sinks.

Cost of implementation: \$18.5 billion worldwide, \$3.5 billion attributable to the needs of the developing countries, including \$1.25 billion in technical and economic assistance.

CHAPTER 21 — SOLID WASTES AND SEWAGE

Apart from its hazardous content, the sheer volume of solid waste generated by industrial civilization calls for modes of control and disposal that reduce the burden it lays upon the environment. The minimizing of waste and the recycling of waste are here urged as strategies to make it possible to arrive, finally, at environmentally sound waste treatment and disposal. "Life cycle" management of the flow of material into and out of manufacturing and use is encouraged.

Cost of implementation: To new technology for minimizing and recycling, developed countries are urged to devote 1 percent of their waste disposal costs, or \$14.5 billion per year. Needed improvement and extension of waste disposal facilities in developing countries is estimated at \$22.5 billion including \$6 billion in technical and economic assistance.

CHAPTER 22 — RADIOACTIVE WASTES

Nuclear power production presently generates 200,000 tons of low- and intermediate-level radioactive waste and 10,000 tons of high-level waste. Mainly a problem for the developed countries, its management calls for stricter observance and enforcement of Code of Practice on the Transboundary Movements of Radioactive Waste, propounded by the International Atomic Energy Agency, and giving teeth to the London Dumping Convention that now calls for voluntary restraint of ocean dumping.

Cost of implementation: \$8 million to promote research and international cooperation on containment of this hazard.

AGENDA 21:**Analysis**

Section III. Strengthening major groups

CHAPTER 23 — PREAMBLE

"Critical to the effective implementation of the objectives, policies, and mechanisms agreed to by Governments in all program areas of Agenda 21 will be the commitment and involvement of all social groups..."

CHAPTER 24 — WOMEN

In the poor countries women bear the cruelest burdens of poverty, including the hardest and most lowly tasks, the pain of childbirth, and the anguish of infant mortality. They suffer further the humiliation of status that accords with the meanness of their existence. Governments, principally male, are urged to face the status question, to give girls equal access to education, to reduce the workloads of girls and women, to make health-care systems responsive to female needs, to open employment and careers to women, to bring women into full participation in social, cultural and public life. Absent such participation, development is unsustainable.

Cost of implementation: Covered in other programs; \$40 million in technical assistance to establish data bases and monitoring procedures.

CHAPTER 25 — CHILDREN AND YOUTH

Among other measures to enlist youth in sustainable development, governments are urged, by the year 2000, to ensure that 50 percent of their youth, gender balanced, have access to secondary education. On the other side of the coin, they are urged to combat abuse of the rights of youth, especially female, endemic in certain cultures.

Cost of implementation: Covered in other programs.

CHAPTER 26 — INDIGENOUS PEOPLE

Population growth is crowding the geographic margins of industrial and traditional agricultural civilization and encroaching on wilderness habitations, from the Arctic shores to the tropical moist forests, of the few remaining hunters and gatherers. These indigenous peoples have much to teach the industrial world about sustainable development. Agenda 21 urges their enrollment in full global partnership, beginning with measures to protect their rights and conserve their patrimony.

Cost of implementation: \$3 million to strengthen UN agencies concerned.

CHAPTER 27 — NON-GOVERNMENTAL ORGANIZATIONS

The installation of environmental protection agencies in the standard governmental table of organization must be credited in history to participatory democracy asserted by the non-governmental organizations of the now worldwide environmental movement. As those organizations in the developed countries are reinforced by counterparts in the developing countries, development is finding its place on their agendas alongside environment. The human compassion of the largely young militants is fortified by their increasing sophistication in the economics and politics of under-development. Agenda 21 urges governments to accept the inevitable and to work constructively with this new opposition, even against the impression, conveyed at times by its militancy, of uncertain loyalty.

Cost of implementation: "...significant, but cannot be reliably estimated."

CHAPTER 28 — LOCAL AUTHORITIES

"Because so many of the problems and solutions being addressed by Agenda 21 have their roots in local activities..." most local authorities should, by 1996, have undertaken to promote a consensus in their local populations on "a local Agenda 21"; by 1993, the international community should have initiated increasing cooperation among local authorities; by 1994, such cooperation should be gathering full momentum; at all times, local authorities should be inviting women and youth into full participation in the decision-making, planning and implementation process.

Cost of implementation: \$1 million for UN agencies involved in cooperative network; other expenses borne locally.

CHAPTER 29 — WORKERS AND TRADE UNIONS

Measures of sustainable development must necessarily impinge upon the workplace and on the nature of occupations. In their own protection and in promotion of socially responsible economic development, workers through their elected representatives must have their voice. Poverty alleviation and full and sustainable employment bring, by definition, safe, clean, and healthy en-

vironments. Relevant conventions proposed by the International Labor Organization await ratification.

Cost of implementation: \$300 million in technical assistance.

CHAPTER 30 — BUSINESS AND INDUSTRY

Through the transnational corporations, business and industry make the closest connection between the developed and developing countries. The 350 largest transnationals, conducting 40 percent of world production, are the agencies of the principal impact of industrial technology on the environment. Through the Business Council on Sustainable Development, a number of these enterprises have taken the lead in demonstrating life-cycle accounting and in reflecting environmental costs of their input and production and of the use, recycling and disposal of their products. While they look to market compulsions and incentives to close most of the distance to sustainable development, they accept the necessity for regulatory measures by governments to speed the way. The promotion of responsible entrepreneurship in small

and medium-sized business and industrial enterprise — where exposure to risk is more absolute — presents a challenge to educators, to government regulators and to leaders of bigger enterprises.

Cost of implementation: Experience has shown that most measures to achieve environmentally responsible operation pay dividends.

CHAPTER 31 — SCIENCE AND TECHNOLOGY

The Montreal ozone-layer convention and the climate-change convention signed at Rio both argue for closer communication and understanding between the scientific and technological community and the decision-makers who determine public policy. In their new responsibility to sustainable development, members of the community have acquired a new accountability to the public that compels them to live up to the high ideals of their profession. A code of ethical practice agreed upon by scientists and recognized by society as a whole would facilitate the monitoring of their accountability.

Cost of implementation: \$20 million for strengthening of international institutions.

CHAPTER 32 — FARMERS

Farmers are stewards of sustainable development, directly responsible for one third of the land surface of the Earth. They require economic and technical assistance that will encourage them in self-sufficient, low-input, low-energy agricultural practices. The market should adopt pricing mechanisms that internalize environmental costs. Women, who do so much of the world's farming, should have access to tenure and use of land, to credits, and to technology.

Cost of implementation: Costs implied here are covered in Chapter 14 and in Chapters 3, 12, and 13 as well.

Section IV. Means of Implementation

CHAPTER 33 — FINANCIAL RESOURCES AND MECHANISMS

While the delegates from the developed countries were careful to attribute all estimates of cost to the UNCED secretariat and to make no explicit promise to fund any of them, they committed their countries to the consensus of the global partnership. The consensus holds that the eradication of poverty "is essential to meeting national and global sustainability objectives;" that "the cost of inaction could outweigh the financial costs of implementing Agenda 21;" that "the huge sustainable development programs of Agenda 21 will require the provision to developing countries of substantial new and additional financial resources;" and that "the initial phase will be accelerated by substantial early commitments of concessional funding." Further, the developed countries "reaffirmed their commitments to reach the accepted United Nations target of 0.7 percent of GNP for concessional funding...as soon as possible."

Cost of implementation: \$600 billion per year, all told, including \$125 billion in technical and economic assistance.

CHAPTER 34 — TRANSFER OF TECHNOLOGY

The \$125 billion in economic assistance would move from the developed to the developing countries principally in the form of technology. Developing countries would be assisted in gaining access to technology and know-how in the public domain and to that protected by intellectual property rights, as well, "taking into account developments in the process of negotiating an interna-

tional code of conduct on the transfer of technology" proceeding under the United Nations Agreement on Tariffs and Trade (UNCTAD). To enhance access of developing countries to environmentally sound technology a collaborative network of laboratories is to be established.

Cost of implementation: \$450 million to \$600 million in technical and economic assistance.

CHAPTER 35 — SCIENCE FOR SUSTAINABLE DEVELOPMENT

Sustainable development requires expansion of the ongoing international collaborative enterprises in the study of the geochemical cycles of the biosphere and the establishment of strong national scientific enterprises in the developing countries. The sciences link fundamental understanding of the Earth system to development of strategies that build upon its continued healthy functioning. "In the face of threats of irreversible environmental damage, lack of full scientific understanding should not be an excuse for postponing actions which are justified in their own right."

Cost of implementation: \$3 billion, including \$2 billion in technical and economic assistance.

CHAPTER 36 — EDUCATION AND PUBLIC AWARENESS

Because sustainable development must ultimately enlist everyone, access to education must be hastened for all children; adult illiteracy must be reduced to half its 1990 level, and the curriculum must incorporate environmental and developmental learning.

Cost of implementation: \$14 billion to \$15 billion, including \$5.5 billion to \$6.5 billion in technical and economic assistance.

CHAPTER 37 — CAPACITY BUILDING

"Building endogenous capacity to implement Agenda 21 will require efforts of the countries themselves in partnership with relevant United Nations organizations and developed countries."

Cost of implementation: \$15 billion in bilateral assistance funds are now spent in developing countries for purposes that comport with this objective. \$300 million to \$1 billion in additional technical assistance is indicated.

CHAPTER 38 — INTERNATIONAL INSTITUTIONS

To the existing UN system — the General Assembly as the supreme deliberative and policy-making body, the Economic and Social Council as the appropriate overseer of system-wide coordination reporting to the General Assembly, the Secretary General as chief executive, and the technical agencies seeing to their special functions — Agenda 21 proposes to add a Commission on Sustainable Development to monitor implementation of Agenda 21, reporting to the General Assembly through ECOSOC (see page 10 [in this issue of EST]).

CHAPTER 39 — LEGAL INSTRUMENTS AND MECHANISMS

Implementation of Agenda 21 will require further development and strengthening of international law. Existing international agreements, having been negotiated without adequate participation and contribution of developing countries, need to be reviewed. Sustainable development will require the extension of international law into new realms of human activity; for example, environmental protection may engender conflict with free trade principles. Such development of international law must be conducted on an open, universal basis.

CHAPTER 40 — BRIDGING THE DATA GAP

Current national accounting reckons environmental costs as "externalities." Internalization of such costs, the amortization of non-renewable resources, and the development of indicators of sustainability all require not only new data but new thinking. The Global Environmental Monitoring System and Global Resource Information Database of the UN Environment Program represent first steps to this end.

Cost of implementation: \$1.9 billion in technical assistance.

Clearly, implementation of Agenda 21 will make this a very different world. It must do so; for the world cannot go on as it is.

Gerard Piel, founder and chairman-emeritus of *Scientific American*, is vice chairman of the Earth Summit Pledge, and editor of *Earth Summit Times*. He is the author, most recently, of *Only One World: Our Own to Make and Keep* (New York: W. H. Freeman and Company, 1992.)

AGENDA 21:

Analysis

BIOLOGICAL PACT 8/2 PASSES INTO LAW

Treaty's Goal Is to Prevent Loss of Species and Share Biotechnology Benefit

By DAVID E. PITT

UNITED NATIONS, Dec. 30 — An agreement conceived in the spirit of Noah's mission to rescue every beast, every fowl and "whatsoever creepeth upon the earth" became international law this week.

The agreement, the Convention on Biological Diversity, is both a global conservation pact and a guide to help rich and poor nations share in the profits of biotechnology, a fledgling industry that uses organisms with unique genetic characteristics to create new products like cancer-fighting drugs and hardier strains of crops and livestock.

The United States is among the 167 nations that have signed the treaty, although ratification by a two-thirds vote of the Senate is needed.

The treaty commits countries to draw up national strategies to conserve not only the plants, animals and microorganisms within their borders, but the habitats that sustain them. It also requires that countries pass laws to protect endangered species, expand protected areas and restore damaged ones, and promote public awareness of the need for conservation and sustainable use of biological resources.

— Natural Habitats Destroyed

The treaty, first presented for signature at the so-called Earth Summit in Brazil in June 1992, began to take shape a decade ago in response to warnings by scientists that the pace of extinctions had risen to 25,000 times the natural rate. By the year 2050, some experts believe, half of all remaining species may have vanished, largely because of the various effects of the exploding human population.

Although chemical pollution, poaching, overharvesting and trafficking in wildlife are all factors in the accelerating wave of extinctions, experts say the biggest threat comes from the destruction of natural habitats, ranging from tropical rain forests to grasslands and coral reefs. The possibility of global warming from increased use of fossil fuels could also have profoundly destructive effects on ecosystems.

Elizabeth Dowdeswell of Canada, executive director of the United Nations Environment Program, called the agreement's entry into force on Dec. 29 "one of the most significant recent developments in international law and in international relations relating to environment and development."

"I see the convention as an affirmation in favor of life in all its myriad forms," said Ms. Dowdeswell, whose Nairobi-based agency is overseeing the administration of the treaty.

Three broad political principles are at the heart of the treaty: the idea that countries have "the sovereign right to exploit their own resources pursuant to their own environmental policies"; that well-to-do countries have an obligation to help their poorer neighbors abide by the pact by offering "new and additional" financial aid and technology, and that species-rich but cash-poor nations should share in the profits from products made from their biological resources.

Treaty Rejected by Bush

President Bush rejected the treaty nearly 18 months ago on the ground that its biotechnology provisions would weaken patent rights for American companies. But President Clinton reversed the decision in April, saying that while he shared Mr. Bush's reservations, he was confident that the problem areas could be negotiated later.

But many potential snags are likely to face treaty signers when they meet in late 1994 to decide how the agreement will actually function. There is considerable scientific uncertainty about how — or even if — many species can be saved. And, apart from issues of how to balance access to genetic material with biotechnology profits, questions remain about how the treaty will be financed, the technology shared and a permanent secretariat established.

The treaty became legally binding three months after the requisite 30th signer — Mongolia — ratified it. Although the current total of 36 ratifying countries include industrialized nations like Canada, Japan, Norway and Australia, most are developing countries like Uganda, Nepal, the Philippines and Ecuador.

"I think it is worth remarking that the first 30 ratifications came overwhelmingly from the lower-income countries," said Angela Cropper of Trinidad and Tobago, executive secretary of the treaty's interim secretariat. "Biological diversity — our food and medicines as well as the treasure house of animals and plants — come mainly from the tropical and developing nations. If we want to continue to profit from this wealth, we must make it worthwhile for poor countries to protect this heritage."

About 1.4 million species of plants, animals and microorganisms have been identified by modern science. But the actual number is thought to be far larger. According to Dr. Edward O. Wilson, a biologist at Harvard University, it could be anywhere from 10 million to 100 million.

New York Times
11/2/94, p. 9

Trade and treaties dominate global environmental agenda

Treaties: While the Senate gave its stamp of approval to several environmental treaties during the 103rd Congress, Senate Democratic leaders were unable to get agreement from Republicans to bring to the floor a 1992 U.N.-sponsored convention to conserve the world's biological diversity.

The Convention on Biological Diversity (Treaty Doc. 103-20, Exec. Rpt. 103-30), negotiated under the auspices of the United Nations Environment Program, was completed in June 1992 at the U.N.-sponsored "Earth Summit" in Rio de Janeiro, Brazil. It took effect Dec. 29.

The treaty's main objectives are the conservation of biological diversity, sustainable use of its various components, and the "fair and equitable sharing of benefits" derived from the use of the Earth's plant and animal resources.

Under the agreement, parties are obligated to take steps to conserve plant and animal life within their borders and use these resources in a sound manner. The accord also aims to provide technologies to developing countries to assist them in promoting long-term sustainable use of biological resources.

Global biodiversity treaty

Treaty Doc. 103-20: Convention on Biological Diversity.

Floor action: Possible.

Prospects for Senate ratification of this treaty appear to be dimming, with Congress nearing adjournment and a significant bloc of senators still opposing the accord, staffers said.

The Senate had been expected to take up the treaty under a unanimous consent agreement in August, but consideration was blocked then by farm state lawmakers worried about the accord's impact on agricultural interests.

Although some of those concerns apparently had been allayed, it was unclear at press time whether the support of enough senators had been lined up to force a vote on the controversial pact before the Senate adjourns, probably late this week.

Even if Senate leaders can muscle a vote, aides say the treaty's remaining opponents could make this an unattractive option by insisting on a lengthy debate, thus consuming what

precious time remains on the Senate's calendar this session.

The Senate Foreign Relations Committee voted 16-3 on June 29 to ratify this international agreement, which aims to protect and conserve the Earth's biological resources.

The convention was completed June 5, 1992, at the U.N.-sponsored "Earth Summit" in Rio de Janeiro, Brazil, and was signed by the United States a year later. The United States drew sharp criticism from environmentalists and other nations for initially refusing to sign the agreement at the Rio conference.

The Clinton administration decided to sign after an inter-agency review of the treaty and consultations with Congress, environmental groups and private industry. The Senate must give its consent to ratification, or formal approval, before the United States can participate in the agreement. A two-thirds majority vote is required for the treaty to be ratified. However, legislation to implement the accord is not necessary.

Treaty: The biodiversity treaty, negotiated under the auspices of the United Nations Environment Program, took effect Dec. 29. Its main objectives are the conservation of biological diversity, sustainable use of its various components, and the "fair and equitable sharing of benefits" derived from the use of the Earth's plant and animal resources.

Under the agreement, parties are obligated to take steps to conserve plant and animal life within their borders and use these resources in a sound manner. The accord also aims to provide technologies to developing countries to assist them in promoting long-term sustainable use of biological resources.

Many believe that maintaining a rich diversity of living things, and the ecosystems they inhabit, may provide numerous human benefits, such as new sources of food, improved agricultural techniques and products, and new medicines to combat disease.

At present, roughly 25 percent of all prescription drugs used in the United States come from plant extracts. Water purification, oxygen production, waste recycling and control of erosion are other benefits derived from Earth's varied biological resources.

Around the world each year, numerous plant and animal species are lost to extinction before their potential economic, medicinal, or ecological values become known.

The primary threats to biodiversity include rapid human population growth and the growing consumption of natural resources for human use. Associated pressures on biodiversity include desertification, habitat fragmentation, pollution and toxic chemicals, and the threat of global warming. Exec. Rpt. 103-30. — *Dan Riedinger*