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MATTERS OF CONSCIENCE[©]

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IN THIS ISSUE

WE EXAMINE GLOBAL WARMING/CLIMATE CHANGE AND THE MULTIPLE CRISES IT IS LIKELY TO BRING UPON OUR COUNTRY AND OUR CO-INHABITANTS OF PLANET EARTH. WE EXPLORE OUR INGRAINED NATIONAL ATTITUDES, SPECIFIC PHYSICAL THREATS AND THE POSSIBILITIES, SLIM THOUGH THEY MAY BE, OF TAKING EFFECTIVE REMEDIAL ACTION.

IN OUR NEXT ISSUE

OUR FEATURE ARTICLE, ENTITLED EMINENT DISDAIN, WILL DESCRIBE ONE OF THE MOST DANGEROUS EXAMPLES OF GOVERNMENTAL ACTION AND PROCESS THAT WE HAVE EVER COME ACROSS. IT RELATES IN CONCEPT TO RIGHT OF EMINENT DOMAIN LOCAL CONFLICTS, BUT HAS EXPANDED THAT ISSUE TO A NATIONAL AND INTERNATIONAL SCALE. THE POLICY AND IMPLICATIONS OF THIS MATTER ARE SO TRULY ALARMING THAT WE THINK AMERICANS OF ALL POLITICAL PARTIES AND PERSUASIONS SHOULD BE AWARE OF THE CHANGES IN OUR WAYS OF LIFE AND GOVERNMENT THAT WILL OCCUR IF PRESENT PLANS ARE ALLOWED TO PROCEED

SEMANTIC DISTINCTIONS

IN THIS REPORT WE HAVE REFERRED TO THE END OF NATURE BY BILL MCKIBBEN¹. HE EXPLAINS THAT BY “END” HE DOES NOT REFER TO THE END OF OUR WORLD BUT RATHER TO THE END OF A “A CERTAIN SET OF HUMAN IDEAS ABOUT THE WORLD AND OUR PLACE IN IT”.

SIMILARLY WE REFER TO OUR SOCIETY’S MOVING TOWARDS AN ENVIRONMENTAL “PRECIPICE”. AGAIN WE DO NOT MEAN A CATAclysmic EVENT THAT WOULD DESTROY OUR PLANET. THE PRECIPICE WE HAVE IN MIND IS A POINT AT WHICH NATURAL CHEMICAL AND PHYSICAL PROCESSES INFLUENCED BY HUMAN ACTIVITY WILL BECOME SELF-SUSTAINING. AT THAT TIME THEY WILL BE FUELED BY THEIR OWN MOMENTUM AND WILL NO LONGER BE SUBJECT TO OUR CONTROL.

AND WE DEAL WITH THREE DIFFERENT TIME SCALES. THE FIRST RELATES TO THE MOST SEVERE EFFECTS OF CLIMATE CHANGE WHICH MAY APPEAR IN A FEW GENERATIONS. PRIOR TO THESE EFFECTS A CAUSAL TIPPING POINT, WHICH WE WILL ONLY BE ABLE TO IDENTIFY IN RETROSPECT, WILL HAVE OCCURRED AT SOME TIME UNKNOWN TO US. THE THIRD SCALE IS PREVENTION WHICH CAN AND SHOULD BE UNDERTAKEN IMMEDIATELY. WE TEND TO SHIFT BACK AND FORTH FROM ONE TO ANOTHER IN OUR TEXT, BUT WE SHOULD BE AWARE THAT WHETHER WE ARE DEALING WITH PREVENTION, CAUSE OR EFFECT EACH ONE WILL IMPOSE ITS OWN TIMETABLE ON OUR EFFORTS.

POLES APART

WHAT IS AMERICA'S ROLE IN THE POLITICAL AND ENVIRONMENTAL CRISIS FACING OUR TIME AND PLANET?

TODAY OUR COUNTRY IS MORE POLARIZED POLITICALLY AND OTHERWISE THAN ANYTIME SINCE OUR CIVIL WAR. THIS POLARIZATION IS ALSO UNFORTUNATELY REFLECTED IN OUR RESPONSE TO THE DOMINANT SCIENTIFIC ISSUE OF OUR NEW CENTURY — GLOBAL WARMING/CLIMATE CHANGE. THESE TWO TERMS ARE SO CLOSELY BOUND TOGETHER THAT WE WILL USE THEM INTERCHANGEABLY WITH EACH ONE INCLUDING THE OTHER.

THERE IS NOW A FATEFUL, AND PERHAPS FATAL, DISTINCTION BETWEEN THE POLARIZATIONS OF OUR NATURAL AND POLITICAL WORLDS. IN OUR POLITICS THE CENTER HAS CEASED TO BE THE RESIDENCE OF REASON, AS THE MODERATES WHO FORMERLY OCCUPIED IT HAVE FLED TO THE FRINGES WHERE THE BATTLE FOR MONEY AND POWER IS EXPRESSED IDEOLOGICALLY AND WITH THE MOST FERVOR.

IN NATURE WE FIND JUST THE OPPOSITE. ALMOST ALL OF HUMAN LIFE EXISTS IN THE SPACE BETWEEN THE TWO ARCTIC CONTINENTS.

THE HEYDAY OF THE POLITICAL CARTOON IN AMERICA OCCURRED IN THE LATE NINETEENTH CENTURY PRIOR TO TV, RADIO, COLOR PHOTOGRAPHY AND RAPID TRAVEL. THE CARTOON WAS A READILY RECOGNIZABLE MEANS OF CONVEYING AN ISSUE IN SIMPLE AND SOMETIMES EXTREME IMAGES.

IN ECONOMIC ISSUES THE RICH WERE OFTEN PORTRAYED WITH STRIPED TROUSERS, MORNING COAT, PORCINE FEATURES, OVERWEIGHT, CIGARS, DIAMOND STICK PINS AND SHIRT STUDS. THE LESS ADVANTAGED WERE SEEN AS VICTIMS, USUALLY THIN, UNKEMPT AND WITH THREADBARE CLOTHING.

ECONOMIC CARTOONS ARE NO LONGER AS EXTREME AS THEY WERE THEN, BUT THE SAME CANNOT BE SAID FOR MANY OF OUR ENVIRONMENTAL ISSUE CARTOONS WHERE THE DEFENDER OF THE ENVIRONMENT IS OFTEN SHOWN AS AN AGAIN UNKEMPT, OLD LADY TREE-HUGGER, IN A SWEATER, TWEED SKIRT AND BROWN SNEAKERS. THE USUALLY PRO-DEVELOPMENT NON-ENVIRONMENTALIST APPEARS AS TRIM AND NEAT EXUDING REASON AND RIGHTNESS AND ABLE TO PROVIDE THE COMMUNITY WITH BENEFITS SUCH AS JOBS, DEVELOPMENT, TOURISM, REVENUES, LOWER TAXES AND UTILITY RATES, ETC.

IN TIME, OF COURSE, ATTITUDES CAN BE CHANGED AND DIFFERENCES RESOLVED, BUT IN AMERICA THE COMBINATION OF THE PROFIT MOTIVE AND OUR REPRESENTATIVE POLITICAL SYSTEM MAKES SUCH A PROCESS A SLOW ONE. PERHAPS THE MOST IMPORTANT QUESTION OF OUR CLIMATE CHANGE

CRISIS, NO MATTER HOW OR WHEN IT IS ASKED, IS "IS THERE TIME?"

IF WE LOOK AT SOME OF OUR MAJOR RECENT LEGISLATIVE EFFORTS SUCH AS EDUCATION, TAXATION, CIVIL RIGHTS, IMMIGRATION, CAMPAIGN FINANCE, ETC., WE FIND THAT THESE ALL HAVE BEEN MATTERS OF CONTINUING DEBATE FOR FORTY YEARS.

NOW WE FACE A DIFFERENT PROBLEM, A NATURAL PROBLEM—CLIMATE CHANGE/GLOBAL WARMING. BUT NATURE DOES NOT DEBATE! IT IS THE SUM TOTAL OF THE ACTIONS OF UNTOLD NUMBERS OF SPECIES AND THE PHYSICAL FORCES THAT HAVE SHAPED OUR PLANET.

NO SINGLE GOVERNMENT CAN COMMAND IT, BUT IT IS POSSIBLE THAT ALL GOVERNMENTS ACTING TOGETHER CAN BRING US BACK FROM THE PRECIPICE INTO NATURAL BALANCE. THE THOUGHT OF MANY GOVERNMENTS ATTEMPTING TO ACT IN UNISON INVARIABLY BRINGS TO MIND ENDLESS DISCUSSION AT THE UN OR OTHER COOPERATIVE ORGANIZATIONS.

ITS FORCES DETERMINE THE DESTINY OF SPECIES — WHICH ONES DIE AND WHICH ONES LIVE, AND FOR HOW LONG.

BUT NATURE DOES NOT DISCUSS! IT OBSERVES OUR ACTIONS, DECLARES THEIR CONSEQUENCES AND CONTINUES ON ITS WAY, AS IT HAS FOR BILLIONS OF YEARS. ITS FORCES DETERMINE THE DESTINY OF SPECIES — WHICH ONES DIE AND WHICH ONES LIVE, AND FOR HOW LONG.

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TODAY WE ARE FACED WITH SCIENTIFIC OPINION FROM AROUND THE WORLD THAT CLIMATE CHANGE WITH POTENTIALLY DESTRUCTIVE CONSEQUENCES IS IN PROCESS AND THAT ITS RECENT ACCELERATION IS DUE TO HUMAN ACTIVITIES THAT HAVE ALTERED THE SYMBIOTIC BALANCES BETWEEN OUR PLANET AND ITS LIFE FORMS.

THIS HAS BEEN AN OPEN AND ONGOING GLOBAL PROCESS, AND YET WE HAVE NOT BEEN ABLE TO ARRIVE AT ANY REAL DEFINITION, CONSENSUS OR REMEDIAL ACTION FOR IT.

PERHAPS WHAT IS NECESSARY IS THE URGENCY AND DEDICATION OF OUR WW II MANHATTAN PROJECT RAMPED UP TO INTERNATIONAL SCALE. THIS WOULD CONSTITUTE A GLOBAL, COOPERATIVE RESPONSE UNLIKE ANYTHING UNDERTAKEN BEFORE. AS IT IS, COMPETING INTERESTS NOW PREVENT US FROM COMMON AGREEMENT ON EVEN THE SCIENCE INVOLVED, LET ALONE HOW TO BRING ABOUT GLOBAL CHANGE IN A VARIETY OF SOCIETIES WITH DIFFERENT POPULATIONS, ECONOMIES, RESOURCES, CULTURES, RELIGIONS AND GOVERNMENTS.

THERE ARE MANY ARGUMENTS AND DIFFICULTIES

TO OVERCOME, BUT WE HAVE NOT YET BEEN ABLE TO TAKE THE FIRST STEP OF ARTICULATING THE COMMON GOAL. SOME ARGUE THAT THE PRECIPICE DOES NOT EXIST. IT DOES, ALTHOUGH WE CAN'T SAY WHERE OR WHEN WE'LL REACH IT. BUT IT IS REAL. IT IS THERE. IT AWAITS US.

IT IS A TIPPING POINT AT WHICH THE CUMULATIVE MOMENTUM OF OUR ACTIONS REACHES A LEVEL THAT TRIGGERS OTHER EVENTS AND ACTIONS WHICH WE CANNOT CONTROL AND WHICH CONTAMINATE, DIMINISH OR DESTROY THE NATURAL RESOURCES WE HAVE COME TO NEED IN ORDER TO LIVE.

WE DO NOT KNOW WHERE THE PRECIPICE LIES; OR WHAT LIES BEYOND IT. THERE ARE ONLY TWO THINGS WE KNOW ABOUT IT. IT IS REAL, AND WE ARE MOVING TOWARDS IT, NOT AWAY FROM IT.

IN VIEWING THE CLIMATE CHANGE PROBLEM TODAY AND ATTEMPTING TO RESOLVE IT, WE MUST ADDRESS THREE VERY DIFFERENT AREAS OF CONCERN:

- 1) OUR ATTITUDE TOWARDS NATURE AND OUR PLANET.
- 2) THE INTERRELATION OF FORCES AND PROBLEMS THAT HAVE BECOME APPARENT AND THAT WILL MOST LIKELY INTENSIFY.
- 3) POSSIBLE REMEDIES AND HOW THEY MIGHT BE GLOBALLY IMPLEMENTED.

NOT AN EASY TASK BY ANY MEANS. POSSIBLE? PERHAPS. BUT IS THERE TIME, REMEMBERING ALWAYS THAT WE ARE NOT THE TIMEKEEPER?

MAN AND NATURE IN TWENTY-FIRST CENTURY AMERICA

IN THE EARLY DAYS OF OUR COLONIAL, AND THEN OUR NATIONAL, STATUS OUR "NEW WORLD" WAS SEEN BY MANY AS A BIBLICAL METAPHOR DRAWN FROM BOTH THE OLD AND NEW TESTAMENTS. THE FORMER RELATED TO THE PARADISAL GARDEN OF EDEN IN THE BOOK OF GENESIS, WHEREAS THE LATTER SUGGESTED THAT GOD'S NEW SPIRITUAL COVENANT WITH MAN, AS EXPRESSED BY JESUS IN THE NEW TESTAMENT, WOULD HAVE AN HISTORICAL COUNTERPART IN THE NEW AMERICA LEADING THE OLD WORLD OF EUROPE TOWARDS A FAIRER AND BETTER POLITICAL CONSCIENCE AND FORM OF GOVERNMENT.

THE COLONISTS ALL CAME FROM COUNTRIES WITH MONARCHIES AND LANDED ARISTOCRACIES WHERE LAND WAS PRIVATELY OWNED AND THE PRIME SOURCE OF WEALTH.

THE NATIVE AMERICANS THEY CONFRONTED WERE JUST THE OPPOSITE. THEY WERE OFTEN NOMADIC WITHIN THEIR TRIBAL AREAS WHOSE BOUNDARIES WERE SUBJECT TO SOMEWHAT LOOSE AND DIFFERING INTERPRETATIONS WHERE OTHER TRIBES ABUTTED.

THE LAND PROVIDED FOOD, MOSTLY IN THE FORM OF

GAME, WHICH REQUIRED MOBILITY TO TRACK, BUT WAS NOT SUBJECT TO INDIVIDUAL OWNERSHIP OR TRANSFER. TRIBAL CONFLICTS WERE FREQUENT, AND SOMETIMES PROLONGED, BUT THEY SEEM TO HAVE BEEN FRAMED IN TERMS OF HUNTING/FISHING RIGHTS OR SPIRITUAL DIFFERENCES RATHER THAN CONQUEST AND ANNEXATION OF TERRITORY. THE LAND WAS THERE FOR ALL AND ALL TRIBES ACCORDED IT (AND NATURE) GREAT REVERENCE.

THIS REVERENCE IS SO DEEPLY IMBEDDED IN NATIVE AMERICAN CULTURE THAT IT STILL EXISTS TODAY IN OUR AGE OF HIGH TECHNOLOGY AND COMMERCE. SEDONA, AZ, FOR INSTANCE, IS A SMALL TOWN IN NORTHERN AZ'S RED ROCK COUNTRY. IT HAS ATTRACTED HEAVY TOURISM AND BUILT A "NEW AGE" COTTAGE INDUSTRY THAT DRAWS UPON MANY OF THE MYTHS AND LEGENDS OF THE LOCAL TRIBES.

TO COUNTER THIS COMMERCIAL DEVELOPMENT THE TRIBES HAVE BEEN ABLE TO HAVE THEIR MOST SACRED SITES DECLARED HISTORICAL AREAS OF SPIRITUAL VALUE WHERE ACCESS IS LIMITED AND BEHAVIOR REGULATED. CANYONS, MOUNTAINS AND FORESTS SO DESIGNATED MAY ADJOIN GLITZY TOURIST RESORTS, BUT SEPARATION IS EVIDENT. THE REVERENCE OF THE TRIBES WHEN REFERRING TO THESE AREAS IS IMPRESSIVE AND, WHETHER BY SUGGESTION OR ACTUALITY, THEIR MYSTICISM AND SPIRITUALITY CAN BE PALPABLE.

OVER TIME, SPACE AND DISTANCE THESE TWO VERY DIFFERENT VIEWS OF LAND USE BY THE COLONISTS AND THE NATIVES CONTINUALLY CLASHED. THE OUTCOME WAS NEVER REALLY IN DOUBT AND TODAY ALL LAND IS OWNED AND/OR MANAGED BY INDIVIDUALS, COMMERCIAL INTERESTS, GOVERNMENT OR OTHER ENTITIES. THE KEY WORD IS OWNERSHIP.

WE LIVE ON THE LAND AND WE TAKE FROM ITS SURFACE OR INTERIOR MANY OF THE THINGS THAT, THROUGH AGRICULTURE, MINING, CHEMISTRY OR MANUFACTURING, ENABLE US TO SUBSIST AND PROSPER. FOR MANY, IF THEY THINK ABOUT IT AT ALL, THAT IS THE END OF THE EQUATION.

BUT IT (NATURE) IS FAR MORE POWERFUL THAN
ANYTHING WE MAKE FROM WHAT WE TAKE.
SUCH IS THE REAL EQUATION OF LIFE ON EARTH.

NOT SO; THAT IS A TRAGIC DECEPTION, AS ITS FAILS TO INCLUDE NATURE WHICH IS THE COMBINATION OF THE MANY TERRESTRIAL, OCEANIC, ATMOSPHERIC AND COSMIC PHYSICAL AND CHEMICAL FORCES THAT CONTINUALLY ACT UPON OUR WORLD AND OURSELVES. WHATEVER WE TAKE FROM IT WE ONLY BORROW WITH ITS PERMISSION. AND YET WE HAVE ASSIGNED TO OURSELVES THE ROLE OF MANIPULATING AND CONTROLLING IT. BUT IT IS FAR MORE POWERFUL THAN ANYTHING WE MAKE FROM WHAT WE TAKE. SUCH IS THE REAL

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WITH A BENIGN FORBEARANCE SUGGESTED BY DR. JAMES LOVELOCK'S GAIA THEORY², OUR PLANET HAS ACCEPTED OUR ACTIONS WITH WHAT MAY COME TO SEEM AS RELATIVELY MILD AND OCCASIONAL RESPONSES.

NOW, WE FACE SCIENTIFIC EVIDENCE THAT SUGGESTS THAT PENALTIES FOR OUR ACTIONS ARE BECOMING MORE FREQUENT, VIOLENT AND FAR-REACHING. WE APPEAR TO HAVE ACCELERATED NATURE'S RESPONSE AND CREATED A MOMENTUM THAT, AT SOME POINT, CAN BE FUELED BY ITS OWN GATHERING AND SPONTANEOUS FORCES.

AT THIS UNKNOWN POINT, ALL EFFORTS TO DEFLECT THIS MOMENTUM BY LEGISLATION, DISCUSSION, REGULATION, DIPLOMACY, ETC WILL BE USELESS, AND WE WILL BE UNABLE, WHETHER WE KNOW IT OR NOT, TO PREVENT THE WIDENING DEGRADATION OF THE ESSENTIAL NATURAL SYSTEMS OF OUR PLANET – WATER, WEATHER, FOOD, TEMPERATURE, ETC.

WHAT WE WILL BE LEFT TO PONDER AMIDST MASSIVE DAMAGE TO OUR ECONOMIES, CULTURES AND POPULATIONS IS OUR CHOICE OF BUSINESS AS USUAL IN THE FACE OF IMPENDING DANGER.

IT IS LIKELY THAT IN ORDER TO DEAL WITH A GLOBAL ENVIRONMENTAL CRISIS WE MAY HAVE TO REEXAMINE MANY OF OUR LONG-HELD POLITICAL AND ECONOMIC TRUTHS. EVEN IF WE DO, HOWEVER, WE WILL STILL FACE THE QUESTION, "IS THERE TIME?"

AND WE MAY HAVE TO REDEFINE OUR SENSE OF TIME. WE HAVE TENDED TO VIEW NATURAL CHANGE AS A GRADUAL PROCESS THAT PLAYS OUT SLOWLY OVER MILLIONS OF YEARS AT EVOLUTION'S STATELY PACE.

. . . TIME MAY BE MOVING FASTER THAN IT EVER HAS BEFORE.

EVOLUTION IN THE PAST HAS DETERMINED MUCH OF OUR PLANET'S DESTINY AND WILL PRESUMABLY CONTINUE TO DO SO, BUT THE IMPACTS OF THE INDUSTRIAL REVOLUTION AND CONTINUING GEOMETRIC POPULATION GROWTH HAVE QUICKENED ITS PACE. ENVIRONMENTALLY, TIME MAY BE MOVING FASTER THAN IT EVER HAS BEFORE.

WE ARE CONDITIONED TO THINK ABOUT MATTERS OF NATURE IN THE THOUSANDS AND MILLIONS OF YEARS BY WHICH GEOLOGIC TIME IS MEASURED. EVOLUTION IS ONE EXAMPLE. ANOTHER IS THE SHIFTING OF TECTONIC PLATES WHICH UPLIFT JAGGED MOUNTAIN RANGES WHICH ARE, IN TURN, ERODED BY WEATHER INTO ROUNDED, MATURE TOPOGRAPHIES, EACH PROCESS TAKING MILLIONS OF YEARS.

NOW WE ARE WARNED THAT GLOBAL WARMING COULD RELEASE FROM OUR ARCTIC ZONES ENOUGH ICE THAT, WHEN MELTED, WILL RAISE GLOBAL SEA LEVELS BY TWENTY FEET

OVER THE NEXT CENTURY. WE ARE PRESENTED WITH BOTH A NEW CALENDAR AND THE NEED FOR A NEW WAY OF THINKING. WE MUST DO AWAY WITH THE DIFFERENCE BETWEEN LONG-TERM GOALS AND SHORT-TERM SOLUTIONS WHERE THE SCIENCE IS URGENT. AND WE WILL HAVE TO INVENT THE POLITICAL EQUIVALENT OF BIFOCAL LENSES WITH WHICH TO VIEW OUR PLANETARY ENVIRONMENTAL PROBLEMS.

IN JUST THE LAST GENERATION CARBON DIOXIDE (CO₂) IN OUR ATMOSPHERE HAS RISEN MORE THAN 10% FROM 315 TO 350 PPM (PARTS PER MILLION)³, AND, EVEN MORE RECENTLY, WE HAVE SEEN THE APPEARANCE OF AN ENORMOUS "HOLE" IN THE OZONE LAYER OVER THE ANTARCTIC AND THE CALVING FROM THIS POLAR ICE SHEET OF A PIECE THE SIZE OF RI.

THE INCREASING AMOUNT OF CO₂ ACCUMULATES IN THE ATMOSPHERE AND PREVENTS INFRARED RADIATION FROM BEING REFLECTED BACK INTO SPACE, THEREBY HEATING THE EARTH. MCKIBBEN PROVIDES A DEFINING QUOTATION FROM THE WORK OF TWO CA SCIENTISTS,

"HUMAN BEINGS ARE NOW CARRYING OUT A LARGE-SCALE GEOPHYSICAL EXPERIMENT OF A KIND THAT COULD NOT HAVE HAPPENED IN THE PAST, NOR BE REPEATED IN THE FUTURE."⁴

IF WE THINK ABOUT THIS, IT PUTS QUITE A BURDEN ON THE PRESENT. THAT MEANS US! AND AGAIN THE QUESTION THAT WILL NOT GO AWAY; "IS THERE TIME?"

IT IS NOT JUST OUR INDUSTRIAL HERITAGE, HOWEVER, THAT NOW HAUNTS US. IN THE PURSUIT OF ECONOMIC AND SOCIAL DEVELOPMENT WE BURN LARGE AREAS OF TROPICAL RAIN FOREST THEREBY RELEASING ADDITIONAL CARBON INTO THE AIR AND EXTINGUISHING MANY RESIDENT PLANT AND ANIMAL SPECIES.

AND THROUGHOUT THE WORLD THE BILLIONS OF CATTLE, SHEEP, GOATS, PIGS, HORSES, CAMELS, WATER BUFFALOES, ETC. THAT ARE ESSENTIAL TO OUR FOOD CHAIN OR WAY OF LIFE ANNUALLY EMIT AS WASTE APPROXIMATELY 75 MILLION METRIC TONS OF METHANE INTO THE AIR. METHANE CAN BE BURNED, BLENDED OR CONVERTED, BUT, IF IT IS DISCHARGED INTO THE AIR IN ITS NATURAL STATE FROM ANIMAL WASTE, "IT IS TWENTY TIMES MORE EFFICIENT THAN CARBON DIOXIDE AT TRAPPING SOLAR RADIATION AND WARMING THE PLANET."⁵

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THERE ARE MANY OTHER WAYS BY WHICH WE ADD TO ATMOSPHERIC POLLUTION AND ITS RESULTING GLOBAL WARMING. IF WE LOOK AROUND AT THE VAST NUMBER OF PROCESSES, ENTERPRISES AND SERVICES WE HAVE CREATED TO FEED, CLOTHE, COMFORT AND AMUSE OURSELVES, WE SHOULD BE ALARMED. WE SHOULD REMEMBER THAT THE ACCELERATION OF OUR WASTE MECHANISM IS BEING

DIRECTED TO AN AREA OF LIMITED CAPACITY. THE LAW OF LIMITS MUST, AT SOME POINT, EXERT ITSELF. BUT DO WE LOOK AROUND? IS THERE TIME?

IT IS EVIDENT THAT OUR PLANET'S ENVIRONMENTAL DEGRADATION PROBLEM IS LINKED TO GROWING POPULATION, AS BOTH ARE INCREASING GEOMETRICALLY.

IN RECENT YEARS ONLY TWO OF THE WORLD'S LEADING SOCIETIES HAVE INSTITUTED NATIONAL POLICIES TO CURB THEIR POPULATION GROWTH. BOTH, CHINA AND INDIA, ARE ASIAN AND HAVE THE WORLD'S TWO LARGEST POPULATIONS. OF THE TWO PROGRAMS, CHINA'S HAS SO FAR BEEN MORE DETERMINED, RIGOROUS IN ITS APPLICATION AND SUCCESSFUL. AS A RESULT, INDIA'S POPULATION BY MID-CENTURY WILL BE THE LARGEST IN THE WORLD.

BECAUSE OF THE NATURE OF THESE TWO ASIAN CULTURES, ECONOMIES AND GOVERNMENTS, IT HAS BEEN RELATIVELY EASIER TO UNDERTAKE POPULATION CONTROL MEASURES THERE THAN IT WOULD BE HERE. "IT CAN'T HAPPEN HERE." IS THE USUAL RESPONSE FROM BOTH POLITICAL PARTIES.

BUT, AGAIN, JUST LOOK AROUND. OUR PRESENT POPULATION IS 300 MILLION AND HAS BEEN PROJECTED BY VARIOUS SOURCES TO REACH 400 TO 500 MILLION BY THE HALF-CENTURY AND AS MUCH AS ONE BILLION BY ITS END.⁶ CONSIDER THE ECONOMIC AND SOCIAL EFFECTS OF HAVING OVER THREE TIMES OUR PRESENT POPULATION!

WHILE WE MAY RECOGNIZE THE THREAT OF GEOMETRIC POPULATION GROWTH IN AN ABSTRACT WAY, IT DOES NOT APPEAR TO US AS A MATTER OF PRESENT IMPORTANCE AND, THEREFORE, LIKE NATURE, IS NOT TO BE ENGAGED.

UNFORTUNATELY, OUR NATIONAL POLITICAL FOCUS IS HEAVILY INFLUENCED BY TWO ELEMENTS. FIRST IS THE DISPROPORTIONATELY LARGE GROUP OF VOTERS WHO ARE SUSPICIOUS OF ANY ISSUE INVOLVING A NEW WAY OF THINKING. THEY CAN BE FOUND IN BOTH PARTIES, TEND TO BE UNDEREDUCATED AND NARROWLY OPINIONATED AND ASCRIBE MANY OF OUR PROBLEMS TO UNNAMED MEMBERS OR DEPARTMENTS OF GOVERNMENT WHICH ARE ALWAYS REFERRED TO AS "THEY". CONSPIRACY THEORIES USUALLY FIND FERTILE GROUND WITH THEM.

THE SECOND ELEMENT EXISTS PRIMARILY WITHIN THE LEGISLATIVE AND EXECUTIVE BRANCHES OF GOVERNMENT AND THROUGH THEM IS EXTENDED TO THE MANY DEPARTMENTS OF OUR BUREAUCRACY. ITS MESSAGE IS THE AVOIDANCE OF POLITICAL RISK AT ANY COST. THIS MANDATE PRECLUDES MOST LONG-TERM THINKING, BLANDIZES GOVERNMENT'S EFFORTS, LIMITS ITS ACCOMPLISHMENTS AND EFFECTIVELY THWARTS THE DEVELOPMENT OF TRUE LEADERS AND THE ART OF LEADERSHIP.

CONSEQUENTLY, NO MATTER WHAT OUR INDIVIDUAL LEVEL OF AWARENESS OR INTEREST MAY BE, AS A NATION WE WILL NOT BE ABLE TO RESPOND EFFECTIVELY UNLESS WE CAN IDENTIFY POLITICAL LEADERS WILLING TO ACCEPT SUCH RISK.

NATURAL CHANGES AND OUR WAY OF LIFE

SO FAR, MOST OF THE PUBLIC MENTION OF COMING EFFECTS OF CLIMATE CHANGE HAS CENTERED AROUND THE INCREASE IN OCEAN TEMPERATURES AND RISING SEA LEVELS. WHILE THESE WOULD EXTEND TO ALL PARTS OF THE GLOBE AND HAVE SEVERE CONSEQUENCES, THEY ARE ONLY ONE PART OF A PROCESS THAT COULD DISRUPT AND DAMAGE MANY ROUTINE ASPECTS OF OUR DAILY LIVES.

THIS PROCESS COULD DESTABILIZE GLOBAL ECONOMIC AND DIPLOMATIC RELATIONSHIPS. IT COULD BRING TO A HALT WIDE AREAS OF INDUSTRIAL AND AGRICULTURAL PRODUCTION. IT COULD INFLICT PHYSICAL PAIN, DEATH AND DISEASE. AND IT MIGHT JUST REDUCE ALL THE WORLD'S POLITICAL SYSTEMS AND IDEOLOGIES TO MERE MEMORIES.

THESE ARE THE PENALTIES WE MAY PAY IF WE IGNORE THE LAW OF LIMITS AND ITS WARNINGS. GIVEN THIS POTENTIAL, THE FOLLY OF NOT ATTEMPTING TO INTERVENE OR TAKE COUNTERACTION SEEMS CLEAR.

IN ENVIRONMENTAL MATTERS THE LAW OF LIMITS IS VERY CLEARLY IN PLAY. WE HAVE MENTIONED EARLIER THE STRAIN THAT OUR HEAVY POPULATION AND ECONOMIC GROWTH HAS PUT UPON THE ENVIRONMENT. LESTER BROWN OF THE EARTH POLICY INSTITUTE POINTS OUT THAT THE WORLD'S ECONOMY INCREASED SEVENFOLD AND ITS POPULATION 140% IN THE LAST HALF-CENTURY, BUT THAT OUR ABILITY TO PROVIDE LIFE SUPPORT REMAINED BASICALLY THE SAME.⁷

WATER USE TRIPLED WHILE OUR PLANETARY CAPACITY TO PRODUCE FRESH WATER FROM ATMOSPHERIC PRECIPITATION SHOWED LITTLE VARIATION. UNFORTUNATELY, WE CONTINUED TO DRAW DOWN SUBSURFACE WATER FROM SOURCES THAT CANNOT BE REPLENISHED. OUR DEMAND FOR SEAFOOD ROSE FIVEFOLD, BUT OUR GLOBAL FISH CATCH FAILED TO INCREASE. AND, WHILE CO₂ EMISSIONS INCREASED TO FOUR TIMES THEIR 1950S DEMAND, THERE WAS NO CORRESPONDING PLANETARY ABILITY TO ABSORB THESE HIGHER EMISSION LEVELS.

... WE MUST FACE A NEW TYPE OF PROBLEM FOR GOVERNMENT — OURS OR ANY OTHER.

MANY SIMILAR EXAMPLES EXIST, AND WE MUST RECOGNIZE THAT, EITHER ALONE OR IN COMBINATION, THEY CAN THREATEN THE EARTH'S LIFE SUPPORT SYSTEMS TO WHICH WE OWE OUR EXISTENCE. THIS IS THE AWFUL TRUTH THAT BURNS OUR BRAIN AND PLAGUES OUR CONSCIENCE. IT IS SO AWESOME A CONCEPT THAT ITS DEGREE OF PROBABILITY IS NOT IMPORTANT. NINETY PERCENT IS NO MORE MEANINGFUL THAN TEN PER CENT. THEIR MATHEMATICAL DIFFERENCE IS TRANSFORMED INTO PARITY. THE CONSEQUENCES OF INACTION ARE POTENTIALLY SO DISASTROUS THAT WE MUST TRY. IN DOING SO, WE MUST FACE A NEW TYPE OF PROBLEM FOR GOVERNMENT — OURS OR ANY OTHER.

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OVER THE PAST TWO CENTURIES THE NATURAL SCIENCES HAVE PROVIDED US WITH A VAST ARRAY OF STATISTICS AND MEANS WITH WHICH TO EVALUATE OUR ENVIRONMENT. MOISTURE, TEMPERATURE, SALINITY, ACIDITY, ALTITUDE, DISTANCES, MOVEMENTS, SPECIES ON LAND OR IN OUR AIR OR WATERS — ALL CAN BE MEASURED AT DIFFERENT TIMES IN DIFFERENT PLACES. THERE ARE MANY DOTS THAT CALL FOR CONNECTION, BUT THE VOICE OF OUR GOVERNMENT HAS REMAINED SILENT. STILL, THERE IS A WEALTH OF DATA AVAILABLE IN TODAY'S LABORATORIES, LIBRARIES AND LAPTOPS. CONNECTIONS CAN BE MADE.

WORLD GRAIN PRODUCTION, PRIMARILY WHEAT, RICE AND CORN, IS THE MOST COMMONLY NOTED AND QUOTED INDICATOR OF OUR PLANET'S ABILITY TO FEED ITSELF.

. . . WORLD GRAIN PRODUCTION FIGURES SHOW SIGNS OF CROP FAILURE CAUSED BY WATER SCARCITY AND HIGHER TEMPERATURES.

FROM 1950 TO 1984 WORLD GRAIN PRODUCTION GREW FASTER THAN POPULATION, WHEREAS SINCE 1984 THE REVERSE HAS BEEN TRUE. THERE ARE SEVERAL FACTORS, SOME NATURAL AND SOME MAN-MADE, THAT HAVE PUSHED THIS ROLE CHANGE. AS EVIDENCE OF GLOBAL WARMING MOUNTS, WORLD GRAIN PRODUCTION FIGURES SHOW SIGNS OF CROP FAILURE CAUSED BY WATER SCARCITY AND HIGHER TEMPERATURES.

THESE CONDITIONS ARE NOT LOCALIZED. THEY CAN BE FOUND IN MANY PLACES, BUT THEIR TRUE IMPORTANCE MAY LIE IN THE DEGREE TO WHICH THEY ARE ABLE TO ALTER THE CROP CAPACITY OF TEMPERATE ZONE AGRICULTURE.

WATER IS THE KEY, THE ESSENTIAL ELEMENT. WITHOUT IT THERE IS NO FOOD, NO LIFE. IN THE LAST HALF-CENTURY OF OUR TECHNOLOGY REVOLUTION WE HAVE DEVELOPED THE MEANS AND THE NEED TO DRILL DEEP WELLS FOR IRRIGATION, AIR CONDITIONING, RECREATIONAL PURPOSES AND HUMAN CONSUMPTION. THESE WELLS DRAW UPON SUB-SURFACE WATER THAT HAS BEEN HELD IN AQUIFERS FOR LONG PERIODS OF TIME. THEIR RATE OF REPLENISHMENT IS SLOW AND FALLS FAR SHORT OF THE WITHDRAWALS MADE POSSIBLE BY HIGH SPEED AND VOLUME PUMP TECHNOLOGY. SOME SUB-SURFACE WATER SOURCES, ONCE EXHAUSTED, CAN NEVER BE REPLACED.

HERE WE SHOULD POINT OUT SOME BASIC MATH THAT BEARS ON OUR PRESENT ENVIRONMENTAL CONCERN:

- 1) 1,000 TONS OF WATER IS REQUIRED TO PRODUCE 1 TON OF FOOD. WORLD WATER USE IS APPLIED 70% TO IRRIGATION, 20% TO INDUSTRY AND 10% TO RESIDENTIAL PURPOSES.⁸
- 2) WITH EACH 1° CELSIUS INCREASE IN TEMPERATURE

DURING THE GROWING SEASON WHEAT, RICE AND CORN YIELDS ARE REDUCED BY 10%.⁹

3) DURING THE PRESENT CENTURY, UNLESS REMEDIAL ACTION IS TAKEN, THE EARTH'S AVERAGE TEMPERATURE IS EXPECTED TO RISE BY 1.4° — 5.8° CELSIUS (2° — 10° FAHRENHEIT). IF SO FARMERS WILL FACE CROP-RAISING TEMPERATURES HIGHER THAN ANY PREVIOUSLY KNOWN.¹⁰

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WATER AND GRAIN PRODUCTION ARE NOT OUR ONLY AREAS OF LIFE SUSTENANCE CONCERN. EQUALLY CRITICAL CIRCUMSTANCES EXIST IN THE INCREASING DEMAND AND DIMINISHING SUPPLY OF GRAZING LAND FOR LIVESTOCK AND FOR INTERNATIONAL FISHERIES.

IN THE LAST FIFTY YEARS, BOTH FOR ECONOMIC AND PUBLIC HEALTH REASONS, EFFORTS WERE MADE TO INCREASE FISH AND REDUCE BEEF CONSUMPTION. IN 1950 THE WORLD'S FISH CATCH AND BEEF PRODUCTION WERE ABOUT EQUAL AT 20 MILLION TONS. IN 2003 THE FISH CATCH ALMOST REACHED 100 MILLION TONS AND BEEF PRODUCTION WAS JUST UNDER 60 MILLION.¹¹

PERCENTAGE INCREASES OF THIS SIZE (APPROX. 385% FOR FISH AND 300% FOR BEEF) ARE SIMPLY NOT SUSTAINABLE OVER LONG PERIODS OF TIME IN A NATURAL SYSTEM OF SPECIFIC BOUNDARIES, RESOURCES, AND LIMITS WHICH PRESCRIBE IN VERY FINE TERMS OUR ABILITY TO LIVE EITHER AS INDIVIDUALS OR IN GROUPS.

THE GROWING DIFFERENCE FOR US IN THE ABUNDANCE/SCARCITY EQUATION HAS BEEN NOTABLY TILTED TOWARDS SCARCITY AS THE RESULT OF THE UNCONTROLLED GROWTH OF THE WORLD'S POPULATION.

IN 1950 IT WAS 2.5 BILLION AND BY 2000 HAD REACHED 6 BILLION. THIS INCREASE OVER A MERE FIFTY YEARS WAS GREATER THAN FOR THE PRIOR 4 MILLION YEARS. MORE IMPORTANTLY, IN THE NEXT HALF-CENTURY WE ARE PREDICTED TO ADD ANOTHER 3 BILLION PEOPLE, BRINGING THE TOTAL TO 9 BILLION, OR A 360% INCREASE IN JUST ONE CENTURY.¹²

WITH A FEW MORE GENERATIONS OF SUCH GEOMETRIC INCREASES, WE WILL IN ALL PROBABILITY FIND THE PRECIPICE IN SPITE OF THE CLEAR WARNING SIGNS OFFERED BY OUR POPULATION GROWTH, INCREASED INDUSTRIALIZATION, DIMINISHING ARABLE LANDS, AND THE WATER/ FOOD FACTORS ALREADY NOTED.

ON A LONG TERM SCALE THE POPULATION PROBLEM DOES NOT LEND ITSELF TO A WIDE VARIETY OF SOLUTIONS. FAMILIES WITH 2 CHILDREN PROVIDE A BASIS FOR A STABLE FUTURE. HIGHER FERTILITY WILL PROVE EXPLOSIVE AND ANYTHING LESS WILL, OVER TIME, PRODUCE DECLINE. WITH THE MATH AS CLEAR AS IT IS, A COMMON GROUND SHOULD BE RELATIVELY EASY AND IN THE INTEREST OF ALL TO ACHIEVE. SADLY, SUCH HAS NOT BEEN THE CASE.

THE RELATIONSHIP BETWEEN THESE VARIOUS ELEMENTS PLAYS OUT DIFFERENTLY, BUT INEXORABLY, IN DIFFERENT TIMES AND PLACES. FOR ALL OF OUR HISTORY UNTIL A FEW YEARS AGO THE GREAT ATLANTIC FISHERY OFF THE COASTS OF CANADA AND THE US PROVIDED AN ABUNDANT SOURCE OF FISH THAT FED US AND THE WORLD. TODAY, THESE FISHERIES NO LONGER EXIST AND THE EUROPEAN CATCH STRUGGLES TO SURVIVE, DUE TO A HIGHLY MECHANIZED INDUSTRY WHICH IS ABLE TO VERY EFFICIENTLY LOCATE, EXTRACT, PROCESS AND STORE WHATEVER FORMS OF MARINE LIFE LIE IN ITS PATH.

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THE EFFECTS OF THE RAPID RISE IN WORLD POPULATION OVER THE PAST HALF-CENTURY COULD HAVE BEEN FAR MORE SERIOUS HAD THEY NOT BEEN ACCOMPANIED AND REDUCED BY AN INCREASE IN GRAIN YIELDS.

FOLLOWING WW II, POPULATIONS GREW AND SPREAD, CLAIMING LAND THAT HAD PREVIOUSLY BEEN PUT TO AGRICULTURAL USE. TO MAKE UP FOR THIS LOSS OF CAPACITY, SCIENTISTS WERE ABLE TO DEVISE NEW AGRICULTURAL AND CHEMICAL TECHNOLOGIES THAT INCREASED CROP YIELDS. THESE INCREASES WERE MAINTAINED UNTIL THE END OF THE LAST CENTURY, BUT IN THE DECADE SINCE HAVE COME DOWN FROM THEIR PEAKS.

WORLD FOOD PRODUCTION IS BASED ON THE AMOUNT OF LAND UNDER CULTIVATION AND THE PHOTOSYNTHETIC EFFICIENCY OF ITS LOCATION DETERMINED BY LENGTH OF DAYS, TEMPERATURE, AVAILABILITY OF SUNLIGHT, ETC.

THE TECHNOLOGY IMPROVEMENTS OF THE LAST FIFTY YEARS ENABLED GROWERS TO COAX ADDITIONAL YIELDS FROM THIS NATURAL PROCESS. BUT IT HAS LIMITS WHICH WE APPEAR TO HAVE REACHED. THERE IS NO REASON TO BELIEVE THAT THESE PAST INCREASES CAN BE MAINTAINED, AND EVERY REASON TO THINK THAT OTHER ACCUMULATING ENVIRONMENTAL PROBLEMS WILL CAUSE THEM TO DECLINE.

ONE OF THESE FORCES IS SOIL EROSION BY WIND AND WATER AND, WHEN IT REACHES ITS MOST EXTREME FORM, DESERTIFICATION OF LARGE AREAS OF LAND. POPULATION PRESSURE HAS MOVED AGRICULTURE TO LESS DESIRABLE AND LEVEL GROWING AREAS WHERE WATER RUN-OFF CARRIES WITH IT PRODUCTIVE TOPSOIL.

. . . TWENTY-SIX BILLION TONS OF ARABLE TOPSOIL ARE REMOVED FROM THE WORLD'S CROPLAND EVERY YEAR.

BUT THE GREATEST DAMAGE IS CAUSED BY WIND EROSION. ACTING UPON LAND THAT HAS BEEN DRIED BY HIGHER TEMPERATURES AND WATER SCARCITY, IT SIGNIFICANTLY REDUCES NUTRIENT VALUES OF CROPLAND

AND RANGELAND. ATTEMPTS TO PLANT OR HARVEST SUCH LAND ONLY MAKE MATTERS WORSE, AS THE LOOSENED SOIL BECOMES AIRBORNE AND IS CARRIED AWAY BY THE WIND. WHETHER BY WIND OR WATER, TWENTY-SIX BILLION TONS OF ARABLE TOPSOIL ARE REMOVED FROM THE WORLD'S CROPLAND EVERY YEAR.¹³

IN AREAS WHERE UNUSUALLY HIGH TEMPERATURES HAVE BEEN EXPERIENCED THE DRY SOIL IS EASILY LIFTED AND FORMS MOVING MASSES THAT WE CALL DUST STORMS. EVENTUALLY THEIR CONTENTS ARE REDEPOSITED BACK ONTO THE EARTH'S SURFACE.

BUT PERHAPS THE MOST SERIOUS THREAT FROM WIND EROSION COMES FROM MULTIPLE DUST STORMS DEPOSITING SO MUCH DUST IN AN AREA THAT IT COVERS EVERYTHING AND CREATES DESERT CONDITIONS. OVER TIME, THIS PROCESS OF DESERTIFICATION CREATES A MASSIVE, MOVING DESERT THAT IS CAPABLE OF EXPANDING ACROSS OPEN LAND AND BURYING EVERYTHING IN ITS PATH (MORE ABOUT DESERTIFICATION IN OUR SECTION ABOUT CHINA).

THE ESSENTIAL POINT TO UNDERSTAND ABOUT THE PROCESS AND PROGRESS OF WIND EROSION, OR ANY OTHER NATURAL PROCESS, IS THAT IT RESULTS FROM THE INTERRELATION OF CIRCUMSTANCES AND CONSEQUENCES OF WHICH WE ARE MOSTLY UNAWARE, AND THAT BY THE TIME THEY ARE BROUGHT TO OUR ATTENTION OUR REMEDIES ARE LESS THAN OPTIMALLY EFFECTIVE.

THIS MEANS THAT IN ORDER FOR US TO DEAL WITH THEM WE MUST ANTICIPATE THEIR DEVELOPMENT AND TAKE PREVENTIVE ACTION, SOMETHING FOR WHICH REPRESENTATIVE GOVERNMENTS ARE NOT WIDELY KNOWN. WHETHER FUNDING OR LEGISLATION IS REQUIRED, ELECTED REPRESENTATIVES, OR THEIR CHALLENGERS, FOCUS ON THE PRESENT OR THE PAST. WITH NATURE, BOTH MAY TURN OUT TO BE TOO LATE.

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WATER – THE LIQUID OF LIFE

HUMANS DRINK ABOUT 4 LITRES OF WATER A DAY EITHER STRAIGHT OR AS PART OF OTHER BEVERAGES. A LITRE IS 5% LESS THAN A QUART. BUT TO PRODUCE THE AMOUNT OF FOOD WE CONSUME DAILY REQUIRES 2,000 LITRES OF WATER – 500 TIMES AS MUCH AS OUR LIQUID INTAKE.¹⁴ THIS EQUATION EXPRESSES ITSELF AT MANY POINTS IN OUR ECONOMY AND WAY OF LIFE. IT EXPLAINS WHY 70% OF OUR PLANET'S WATER IS USED FOR IRRIGATION AND WHY OUR FOOD SUPPLY DEPENDS UPON HOW WE MANAGE AND USE OUR WATER RESOURCE.

WATER IS AVAILABLE FROM TWO SOURCES – SURFACE WATER IN RIVERS AND LAKES THAT COMES FROM

PRECIPITATION, AND SUBSURFACE COLLECTIONS IN GEOLOGIC STRATA THAT PERMIT ACCUMULATION (AQUIFERS). AQUIFERS CAN BE REACHED AND THEIR CONTENTS WITHDRAWN BY PUMPS. SOME AQUIFERS CAN BE REPLENISHED BY NATURAL MEANS. OTHERS CANNOT AND, ONCE EMPTIED, CEASE TO BE A SOURCE.

IN THE U.S. OUR LARGEST AQUIFER IS THE AGALLALA THAT REACHES FROM TX TO SD. IT IS A FOSSIL (NON-REPLENISHABLE) AQUIFER FROM WHICH OUR EXPANDING ECONOMY HAS EXTRACTED INCREASING AMOUNTS OF WATER FOR MANY YEARS.

IT IS NOT, HOWEVER, ONLY DIMINISHED AQUIFERS THAT ENDANGER US. MAJOR RIVERS IN ALL PARTS OF THE WORLD (INCLUDING THE COLORADO, YELLOW, NILE, GANGES AND OTHERS) SUFFER SO MANY DIVERSIONS AND WITHDRAWALS ALONG THEIR ROUTES THAT BY THE TIME THEY REACH THE SEA THEIR FLOW HAS EITHER VANISHED OR BEEN REDUCED TO INSIGNIFICANCE.

ONCE AGAIN, THE POPULATION FACTOR PLAYS A KEY ROLE. GIVEN THE AMOUNTS OF WATER NEEDED FOR PERSONAL USE AND IRRIGATION AND THEN ADDING INDUSTRIAL USE, IT IS CLEAR THAT WE ARE DEALING WITH A VERY WIDE BASE THAT WILL INCREASE PROPORTIONALLY TO WORLD POPULATION. THE INABILITY OF THE WORLD TO CONTROL ITS POPULATION IN THE PAST HAS BEEN REFLECTED IN FALLING WATER TABLES CAUSED BY EVER HIGHER DEMAND.

HERE, PAST MAY WELL BE PROLOGUE AND, IF SO, IT BODES ILL FOR THE FUTURE. RIVERS OFTEN PASS THROUGH SEVERAL DIFFERENT COUNTRIES AND ARE THE CAUSE FOR CONFLICTING CLAIMS AND AGE-OLD HOSTILITIES, ALTHOUGH THEIR PROPER MANAGEMENT COULD SERVE THE COMMON GOOD. THERE IS USUALLY LITTLE OF COMMON BENEFIT THAT EMERGES FROM WATER RIGHTS DISPUTES.

THOSE UPSTREAM HAVE LITERALLY POWER OF LIFE AND DEATH OVER THOSE DOWNSTREAM AND, EVEN IN CASES WHERE NATIONAL AGREEMENTS HAVE BEEN REACHED, LOCAL FAILURES TO ABIDE BY THEM ARE FREQUENT AND GO EITHER UNNOTICED OR UNPUNISHED.

THE LENGTH OF MAJOR RIVER COURSES MEANS THAT ENFORCEMENT PROCEDURES ARE DIFFICULT AND USUALLY PRECLUDE MILITARY ACTION. URBAN DEMANDS THAT REFLECT GREATER POPULATION DENSITY AND, THEREFORE, POLITICAL POWER GENERALLY PREVAIL OVER RURAL INTERESTS, AND IN MANY AREAS CULTURAL DIFFERENCES HAVE ATTACHED THEMSELVES TO WATER RIGHTS ISSUES, MAKING THEM EVEN MORE INTRACTABLE.

FROM WHATEVER SIDE WE VIEW THEM, HOWEVER, THERE REMAINS A DISCONNECT BETWEEN DIPLOMATS' DISCUSSIONS IN THE U.N. LOUNGE OVER A WHISKEY AND SODA AND THE DOWNSTREAM LANDOWNER OR VILLAGE FACED WITH THE DISAPPEARANCE OF THE LOCAL WATER SUPPLY.

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THE UBIQUITOUS AUTOMOBILE

AS THIRD WORLD COUNTRIES DEVELOP ECONOMICALLY, THEY ACQUIRE AUTOMOBILES, FIRST BY IMPORT AND THEN, IF POSSIBLE, BY MANUFACTURE. CARS PROVIDE STATUS, TRANSPORT, MOBILITY, JOBS, TAX REVENUES AND OTHER LESSER FORMS OF ECONOMIC AND/OR SOCIAL CONVENIENCE.

IN TURN, THEY REQUIRE LAND FOR PARKING, SERVICE AREAS, MAINTENANCE, STORAGE AND THE ROADWAYS UPON WHICH THEY MUST MOVE. THESE ADDED DEMANDS ARE RARELY NOTED OR FORESEEN AS NEGATIVES IN THE EARLY DAYS OF PURSUIT OF AN AUTOMOBILE ECONOMY.

ECONOMIC/SOCIAL PROGRESS THAT RESULTS FROM THE PRESENCE OF AUTOMOBILES IS TAINTED IN VARYING WAYS BY THEIR ENVIRONMENTAL IMPACT. THEY POLLUTE THE AIR, CAUSE TRAFFIC JAMS, REQUIRE HYDROCARBON FUELS AND, PERHAPS MOST IMPORTANT, REQUIRE CONSIDERABLE AMOUNTS OF LAND TO SUPPORT THEIR USE.

THE NUMBER OF CARS IN USE IN THE WORLD HAS GROWN TENFOLD FROM ABOUT 50 MILLION IN 1950 TO OVER 550 MILLION TODAY.¹⁵ JANET LARSON OF THE EARTH POLICY INSTITUTE HAS ESTIMATED THAT THE AMOUNT OF LAND REQUIRED TO BE PAVED PER CAR RANGES FROM A LOW OF .02 HECTARES IN DENSELY POPULATED COUNTRIES TO A HIGH OF .07 IN LESS POPULATED ONES SUCH AS THE U.S.¹⁶

IF WE TAKE AN AVERAGE OF .05 HECTARES PER VEHICLE AND MULTIPLY BY THE WORLD'S 550 MILLION CARS, WE ARRIVE AT A FIGURE 27.5 MILLION HECTARES. AS ONE HECTARE EQUALS 2.47 ACRES, THE EQUIVALENT ACREAGE IS JUST UNDER 68 MILLION. GENERALLY, THE QUALITY OF THIS LAND IS HIGH, AS TRANSPORT AND SERVICE USES REQUIRE IT TO BE NEAR OR TO ADJOIN POPULATION CENTERS.

SIXTY-EIGHT MILLION ACRES MAY NOT IMPRESS AT FIRST, BUT THIS FIGURE WILL REFLECT THE SAME RELENTLESS GEOMETRIC INCREASES THAT MOVE POPULATION AND CAR OWNERSHIP.

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CHINA

THE ELEPHANT IN THE ROOM

IT IS AN EARLY WARNING SYSTEM,
ALTHOUGH IT IS LATER THAN WE THINK.

CHINA, BY REASON OF ITS GEOGRAPHY, ITS RESOURCES, ITS RATE OF RECENT ECONOMIC GROWTH, ITS FORM OF GOVERNMENT AND ITS POPULATION OCCUPIES A UNIQUE PLACE IN ENVIRONMENTAL MATTERS. IT IS NOTHING

LESS THAN A LIVING LABORATORY WHERE MANY OF TODAY'S ISSUES OF CONCERN ARE PLAYING OUT IN SLOW MOTION AND FULL VIEW. IT IS AN EARLY WARNING SYSTEM, ALTHOUGH IT IS LATER THAN WE THINK.

TO CHINA'S CREDIT, IT INSTITUTED A POPULATION CONTROL POLICY IN RECENT YEARS. IN FACT, IT HAD NO CHOICE, AS WITHOUT INTERVENTION CHINA'S NUMBERS WOULD HAVE PROVED OVERWHELMING. STILL, ITS POPULATION IS NOW 1.3 BILLION — OVER FOUR TIMES OURS — AND GROWING, BUT WILL YIELD ITS STATUS AS OUR PLANET'S MOST POPULOUS COUNTRY TO INDIA IN THE NEXT FIFTY YEARS.

CHINA'S WATER SUPPLY IS IN DECLINE DUE TO AQUIFER DEPLETION, DESERTIFICATION AND THE GROWING DEMANDS OF AN ECONOMY BEING TRANSFORMED FROM AGRARIAN TO INDUSTRIAL.

AS WATER SCARCITY INCREASES AND MORE LAND IS CONVERTED TO SUPPORT THE NEW INDUSTRIAL BASE AND INCREASING POPULATION, GRAIN PRODUCTION HAS FALLEN. IN RECENT YEARS SMALLER THAN AVERAGE GRAIN HARVESTS HAVE EXHAUSTED CHINA'S SUPPLY OF STORED GRAIN AND FORCED IT TO BECOME THE WORLD'S LARGEST GRAIN IMPORTER.

THE SUDDEN EMERGENCE OF CHINA AS A DOMINANT IMPORTER OF GRAIN CAN ONLY PUT ADDED PRESSURE ON PRICES THAT ARE ALREADY MOVING UP DUE TO SHRINKAGE OF SUPPLY.

CHINA'S INDUSTRIALIZATION AND ITS GROWING MECHANIZATION OF AGRICULTURE HAS GREATLY INCREASED ITS NEED FOR OIL, AND HERE, TOO, WORLD PRICES ARE RISING.

ECONOMISTS AND POLITICIANS DISCUSS THESE MATTERS RATHER ABSTRACTLY AS IF THEY ARE DEALING WITH SOME THEORETICAL, ACADEMIC PROBLEMS. SCIENTISTS KNOW BETTER, AS THEY RECOGNIZE TWO REALITIES THAT AT SOME POINT WILL INTERVENE.

THE FIRST IS THAT NATURE'S BOUNTY OF NATURAL RESOURCES IS LIMITED. OVERCONSUMPTION, WHETHER BY TOO MUCH DEMAND OR TOO LITTLE SUPPLY, OR BOTH, WILL CAUSE ENORMOUS PHYSICAL, SOCIAL AND ECONOMIC DAMAGE AROUND THE WORLD.

AND THE SECOND IS THAT UNCONTROLLED TURMOIL IN SUCH BASIC PRICES AS THOSE FOR FOOD AND ENERGY, WHICH DETERMINE HOW WE LIVE, HAS THE POWER TO COLLAPSE AND DISMISS ALL POLITICAL SYSTEMS AND BRING ABOUT CIVIL UNREST.

CHINA HAS OTHER INTERNAL ENVIRONMENTAL CONFLICTS. IT HAS IMMENSE COAL RESERVES WHICH PROVIDE A CHEAP SOURCE OF ENERGY AND A SOURCE OF EMPLOYMENT FOR A SIGNIFICANT PART OF ITS LABOR FORCE. BUT ITS COAL INDUSTRY IS ALSO A SOURCE OF HEAVY AIR POLLUTION AND, AS CHINA MOVES CLOSER TOWARDS BECOMING AN AUTOMOTIVE TRANSPORT ECONOMY, ITS AIR POLLUTION WILL

STEADILY INCREASE.

BECAUSE OF THIS HIGHLY MOBILE FORM OF CONTAMINATION, THE FURTHER DETERIORATION OF CHINA'S AIR QUALITY WILL STRONGLY AFFECT OTHER COUNTRIES IN THE PATH OF PREVAILING WINDS.

NO DISCUSSION OF CHINA'S ENVIRONMENTAL PROBLEMS WOULD BE COMPLETE WITHOUT INCLUDING ITS DESERTIFICATION. ONE OF NATURE'S MOST CRUCIAL COMPACTS IS THAT LAND SUPPLIES MOISTURE AND NUTRIENTS TO PLANTS FOR THEIR GROWTH, AND PLANTS PUT DOWN ROOTS AND PROVIDE SHELTER FROM THE SUN AND WIND TO PROTECT TOP SOIL. NOT ALL COUNTRIES ARE RAVAGED BY DESERTIFICATION, BUT WHERE THE PROPER CONDITIONS EXIST, IT SHUTS DOWN ALL HUMAN, ANIMAL AND PLANT LIFE.

THE DESTRUCTION IMPOSED BY
DESERTIFICATION NOW EXTENDS TO
889,200 ACRES ANNUALLY . . .

IN NORTHERN AND WESTERN CHINA DESERTIFICATION HAS REACHED CRISIS CONDITIONS. DRIFTING SAND THERE HAS CAUSED INHABITANTS TO ABANDON THEIR HOMES OR TO TRY TO EXIST WITHOUT FUNCTIONING SOCIAL OR ECONOMIC SYSTEMS. SOME 24,000 VILLAGES HAVE BEEN AFFECTED.¹⁷ THE DESTRUCTION IMPOSED BY DESERTIFICATION NOW EXTENDS TO 360,000 HECTARES (889,200 ACRES) ANNUALLY¹⁸, AS DESERT AREAS GAIN IN SIZE, MOVE AND OFTEN MERGE INTO AN EVER-EXPANDING MASS THAT BURIES WHATEVER IT ENCOUNTERS.

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POLES APART — REPRISE

WE COMMENCED THIS REPORT WITH POLARIZATION AND WE MUST RETURN TO IT AT THE END. BOTH THE PROBLEM AND THE THREAT OF CLIMATE CHANGE ARE ENORMOUS AS HIGH ECONOMIC AND POPULATION GROWTH PUSH US INTO THE TWENTY-FIRST CENTURY.

POLARIZATION AFFECTS OUR ENVIRONMENTAL CRISIS THROUGH ITS GRIP ON OUR DEMOCRATIC AND OPEN MARKET SYSTEMS IN THE PURSUIT OF WHICH WE PERSISTENTLY INVOKE THE LAW OF SUPPLY AND DEMAND.

HERE WE SHOULD POINT OUT ANOTHER LESS VISIBLE, BUT VERY REAL, CONSEQUENCE OF OUR POLITICAL POLARIZATION. IT IS NOT LIMITED TO OUR ELECTORAL POLITICS, BUT IS REFLECTED IN HIRING AND FIRING PRACTICES THROUGHOUT OUR LOCAL, STATE AND FEDERAL GOVERNMENT STRUCTURES. THESE INCLUDE THE MANY DEPARTMENTS AND

INSTITUTIONS WHICH FORM OUR EXTENSIVE BUREAUCRACY WHERE “GO ALONG TO GET ALONG” IS THE DOMINANT WORK FORCE PHILOSOPHY.

BECAUSE OF THE SCOPE OF OUR ENVIRONMENTAL CRISIS, ANY ATTEMPTS TO MOUNT A NATIONAL AND INTERNATIONAL RESPONSE WILL ENGAGE A BROAD ARRAY OF GOVERNMENT ACTIVITIES – AGRICULTURE, SECURITY, TAXATION, TRANSPORTATION, IMMIGRATION, PUBLIC HEALTH, TRADE AND OTHERS. AS THE POLITICAL POLARIZATION IN THESE DEPARTMENTS GENERALLY MIRRORS THAT IN OUR LEGISLATIVE AND EXECUTIVE BRANCHES, THE DIFFICULTY IN FORMING AND EXECUTING OBJECTIVE POLICIES IS ONLY TOO CLEAR.

THIS BECOMES A FORMIDABLE TASK THAT WILL AGITATE POLITICAL EXTREMES AND PROVIDE A MULTITUDE OF SPECIAL INTERESTS, LOCAL OR NATIONAL, TO WEIGH IN WITH THEIR INTERPRETATIONS OF EXISTING AND NEW LAWS.

BUT THERE IS ANOTHER, NATURAL, LAW WHICH OUR ENVIRONMENT NOW CALLS TO OUR ATTENTION. IT IS THE LAW OF LIMITS, AND ONE QUESTION WE MUST ANSWER IS, “IS THE LAW OF SUPPLY AND DEMAND SUBJECT TO THE LAW OF LIMITS?”

WE THINK THAT IT IS, AND THAT IN A CIVIL SOCIETY GOVERNMENT MUST MONITOR AND INFORM THE PUBLIC OF ANY CONFLICTS BETWEEN THESE TWO LAWS.

FOR INSTANCE, WE FACE AN UNPRECEDENTED RISE IN EARTH’S TEMPERATURE AS NATURE RESPONDS BY GLOBAL WARMING TO MAN’S POPULATION INCREASE AND ECONOMIC/ INDUSTRIAL ACTIVITIES OF THE LAST TWO CENTURIES.

THIS IS A SUPPLY SIDE CLAIM AGAINST WORLD FOOD PRODUCTION WHICH WILL BE REDUCED BY RISING SEA LEVELS AND REDUCED CROP AND WATER SUPPLIES.

. . . DIFFERENT, BUT PERHAPS EQUALLY DIFFICULT, DEMANDS ON DEMOCRACIES AND DICTATORSHIPS ALIKE.

MEANWHILE INDIA’S AND CHINA’S INEXORABLE INCREASES IN THEIR POPULATIONS WILL FORCE THEM TO IMPORT GRAIN, THEREBY PROVIDING THE DEMAND SIDE OF A “DOUBLE WHAMMY” ON WORLD FOOD PRICES. SUCH WIDESPREAD PRESSURE ON PRICES MIGHT WELL MAKE DIFFERENT, BUT PERHAPS EQUALLY DIFFICULT, DEMANDS ON DEMOCRACIES AND DICTATORSHIPS ALIKE.

AND HERE IN VERY DIFFERENT, BUT VISIBLE, CIRCUMSTANCES THE LAW OF LIMITS BEGS TO BE HEARD. EVEN THOUGH CHINA’S AND INDIA’S PERCENTAGE INCREASES HAVE BEEN REDUCED, BOTH COUNTRIES’ POPULATIONS ARE GROWING BY MORE THAN 10 MILLION ANNUALLY.¹⁹ SIMILARLY, WORLD POPULATION NOW ADDS OVER 70 MILLION EACH YEAR, BUT THIS, TOO, WILL INCREASE.

THESE FIGURES, ESPECIALLY CHINA’S AND INDIA’S, WOULD NOT BE CAUSE FOR ALARM IF THEY COULD BE

ACCOMPANIED BY A CORRESPONDING GROWTH IN SUPPLY OR NATURAL RESOURCES, WHILE WE DO NOT KNOW EXACTLY WHERE NATURE’S LIMITS LIE NOR WHEN THEY WILL BE REVEALED, WE DO KNOW THAT OUR EARTH’S CARRYING CAPACITY, THE SUPPLY SIDE, HAS NOT BEEN ABLE TO KEEP PACE WITH RECENT POPULATION AND HAS ENTERED A NEW PERIOD OF SCARCITIES AND CONCERNS. THE OVERRIDING QUESTION IS WHETHER SPECIES HOMO SAPIENS WILL BE ABLE TO RESPOND MORE SUCCESSFULLY THAN OTHERS THAT HAVE PRECEDED US.

JARED DIAMOND IN COLLAPSE: HOW SOCIETIES CHOOSE TO FAIL OR SUCCEED²⁰ EXPLORES THE REASON FOR FAILURE OF A MIXED GROUP OF EARLY SOCIETIES THAT INCLUDES, AMONG OTHERS, THE MAYA, EASTER ISLANDERS, THE ANASAZI AND GREENLAND’S NORSE POPULATION. FROM OUR CURRENT HISTORICAL PERSPECTIVE HE IS ABLE TO IDENTIFY FIVE COMMON CAUSES THAT WERE AT WORK IN THE FAILURES OF THESE VERY DIFFERENT GROUPS.

THE CAUSES WERE NOT, OF COURSE, KNOWN AT THE TIME TO THOSE WHO SUFFERED FROM THEM. TODAY, WE HAVE A FAR MORE ADVANCED AND CLEARER UNDERSTANDING OF THE GLOBAL THREAT WE FACE. WE DO NOT YET HAVE ALL THE SCIENTIFIC ANSWERS THAT WE NEED, BUT THE KEY QUESTION THAT WILL DETERMINE OUR SUCCESS, AND PERHAPS SURVIVAL, FROM HERE ON IS “DO WE HAVE THE WILL?”

DIAMOND POINTS OUT THAT SOME SOCIETIES COULD COME TO GRIPS WITH ENVIRONMENTAL THREATS, WHILE OTHERS COULD NOT. IN OUR AGE WHAT WILL ALL SOCIETIES BE ABLE TO DO? HOW DO WE CHANGE THE THOUGHT/ACTION PROCESSES OF PLANET EARTH’S SOCIETIES WITH THEIR MANY DIFFERENT PEOPLES, NATIONS AND CULTURES?

WE HAVE NO EXPERIENCE OF SOMETHING SHARED BY ALL. IT IS A DAUNTING TASK. AND YET, WE MUST ATTEMPT IT.

AGAIN, THE THREAT WE FACE DOES NOT HAVE TO BE CATAclySMIC. IT CAN BE NOTHING MORE OR LESS THAN A WEAKENING AND FAILURE OF THE WEB OF INTERCONNECTED SYSTEMS AND INSTITUTIONS UPON WHICH WE HAVE BECOME MENTALLY, ECONOMICALLY AND PHYSICALLY DEPENDENT.

CONSIDER, FOR A MOMENT, THE ACT OF GOVERNING. WORLD FOOD PRICES OUT OF CONTROL? COMMERCE DISRUPTED? CIVIL UNREST? THE USUAL POLITICAL RHETORIC WOULD BE INEFFECTIVE AND MIGHT WELL ONLY FURTHER ANTAGONIZE THE PROTESTERS.

IN ANY EVENT, IF PUBLIC DISSATISFACTION AND ITS DEMONSTRATION “ GO GLOBAL”, ALL GOVERNMENTS WOULD BE WEAKENED, AND POLARIZATION WOULD THEN MOVE TO CENTER STAGE.

. . . THE ACTIVE INGREDIENT WHICH DETERMINES OUTCOMES AND DESTINIES.

UNDER SUCH A SCENARIO, POLARIZATION WOULD NO LONGER BE A POLITICAL PROFILE, BUT WOULD BECOME THE ACTIVE INGREDIENT WHICH DETERMINES OUTCOMES AND DESTINIES. VIGILANCE WILL BE NECESSARY.

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WHERE DO WE STAND?

TO ANSWER THIS QUESTION WE MUST REALIZE THAT IN TWENTY FIRST CENTURY AMERICA “WE” HAS TWO DIFFERENT MEANINGS WHICH WITHOUT DISTINCTION REFER TO BOTH OUR HISTORICAL, LOCAL AMERICA AND ALSO AMERICA, THE WORLD’S SOLE SUPERPOWER.

AS BOTH IDENTITIES ARE NOW AT RISK, WE MUST BE CLEAR AS TO THE THREAT WE FACE. IN ESSENCE, OUR RISK IS THAT AT A TIME AND PLACE OF NEITHER OUR CHOICE NOR KNOWLEDGE TWO OR MORE ELEMENTAL, NATURAL FORCES MAY COMBINE IN A WAY THAT CAN CREATE A NEW PROCESS AND MOMENTUM THAT CAN BE REPEATED, GRADUALLY OR QUICKLY, AND THAT HAS THE POWER, BY CHEMICAL OR PHYSICAL MEANS, TO THREATEN THE BALANCE OF THE NATURAL SYSTEMS THAT WE RELY UPON FOR LIFE ON EARTH.

THIS RISK HAS BEEN BROUGHT TO OUR ATTENTION BY GROWING CONCERN AMONG SCIENTISTS OVER THE CONSEQUENCES OF OUR GLOBAL USE OF NATURE’S RESOURCES. SCIENCE HAS IDENTIFIED THE PROBLEM AND IT IS SCIENCE, WE THINK, THAT MUST PROVIDE ITS SOLUTION.

THE BUSH ADMINISTRATION EXCUSED AMERICA FROM PARTICIPATION IN THE KYOTO CONFERENCE ON ENVIRONMENTAL CONCERNS AND, IN DOING SO, REASONED THAT OUR PARTICIPATION WOULD BE BAD FOR OUR ECONOMY.

WE VIEW THIS AS A SERIOUS MISTAKE, AS IT SHIFTS THE DEFINITION OF THE PROBLEM FROM ONE OF GLOBAL SCIENTIFIC IMPORTANCE TO THAT OF LOCAL ECONOMICS. ALTHOUGH IT MAY MOST ASSUREDLY HAVE ECONOMIC EFFECTS, ITS ORIGIN STEMS FROM NATURAL SCIENCE AND HUMAN BEHAVIOR.

IF WE TRY TO CRAFT OUR RESPONSE TO CLIMATE CHANGE AROUND ECONOMIC CONSIDERATIONS, WE WILL HAVE MISSED OUR TARGET AND, PROBABLY, OUR OPPORTUNITY. WHAT WE ARE FACING, ADMITTEDLY IN ITS EARLY STAGE, IS A POWER CAPABLE OF TRANSFORMING LIFE ON EARTH.

THINK BACK A GENERATION TO THE DISLOCATION BROUGHT ABOUT BY OPEC’S FIRST HIKE IN THE PRICE OF OIL, AND THE CONTINUING EFFECT IT HAS HAD SINCE IN OUR REALIZATION THAT THERE IS NO MORE CHEAP OIL.

AND THEN THINK ABOUT WHAT IT WOULD MEAN FOR THE WORLD TO RECOGNIZE THAT THE TIME OF CHEAP WATER AND CHEAP GRAIN HAS ALSO RUN OUT.

IN EXTREMIS THERE MIGHT COME A TIME WHEN — SEARED BY A RELENTLESS SUN AND RAVAGED BY THIRST AND

HUNGER — PEOPLE THE WORLD OVER MIGHT RECALL POLITICS, GOVERNMENT AND THEIR RHETORIC ONLY AS MYTHIC IMAGES FROM THE PAST.

THE SCALE OF ANY GLOBAL, NATURAL DISORDER IS SO OVERWHELMING THAT, ALTHOUGH ITS RISK MAY BE DISTANT OR SLIM, WE CANNOT TAKE THE GAMBLE OF IGNORING IT AND ASSUMING WE’LL GET BY WITH A “BUSINESS AS USUAL” APPROACH. THAT IS A BET WE SIMPLY CANNOT MAKE!

NO MATTER HOW INCONVENIENT IT MAY BE, WE MUST CHANGE OUR NATIONAL ATTITUDE TOWARDS NATURE FROM ONE OF DEVELOPMENT TO ONE OF ACCEPTANCE. THAT ACCEPTANCE, WHETHER IT DERIVES FROM THE MYSTICISM OF OUR NATIVE AMERICANS OR A MORE PRACTICAL RE-EVALUATION OF THE ROLE OF HUMAN LIFE ON EARTH, IS NOW BECOMING MORE EVIDENT.

AS THE WORLD’S SOLE SUPERPOWER WE TEND TO ASCRIBE TO OURSELVES THE ROLE AND QUALITIES OF LEADERSHIP. AND YET, WE HAVE AVOIDED ANY EXERCISE OF SUCH LEADERSHIP IN ENVIRONMENTAL MATTERS. THIS BECOMES INCREASINGLY UNTENABLE AS SMALLER COUNTRIES ATTEMPT TO DEAL WITH THE HIGH POLLUTION PRACTICES OF THE INDUSTRIALLY DEVELOPED MAJOR POWERS.

THE RESULT OF THIS POLARIZATION IS THAT OUR (AND OTHERS’) CREDIBILITY IS FURTHER REDUCED, THE LOSS OF CREDIBILITY IN INTERNATIONAL DISCOURSE THEN INCREASES POLARIZATION, AND THE CYCLE CONTINUES TO FORM AND REFORM ITSELF.

WHAT CAN WE DO?

WE MUST UNDERTAKE AN HONEST EVALUATION OF OUR ABILITY TO PROVIDE REAL LEADERSHIP — FIRST NATIONALLY AS ENVISIONED IN OUR CONSTITUTION AND THEN INTERNATIONALLY THROUGH OUR CLAIMED ROLE AS THE WORLD’S SOLE SUPERPOWER.

. . . WE CANNOT BE A LEADER UNLESS WE LEAD.

IN BOTH INSTANCES, IF WE ARE HONEST, IT MUST BECOME APPARENT THAT WE CANNOT BE A LEADER UNLESS WE LEAD. OUR LEADERSHIP SHOULD EXTEND TO PUBLICIZING, EVALUATING AND CONFRONTING ANY AND ALL ENVIRONMENTAL PROBLEMS, ESPECIALLY THOSE CAUSED BY GLOBAL WARMING.

ANYTHING LESS THAN PROVIDING SUCH DETERMINED LEADERSHIP SHOULD BE VIEWED AS “BUSINESS AS USUAL”. THIS IS A ROLE PLAYED AROUND THE WORLD IN MANY SHAPES AND WAYS AND ONE WITH WHICH THE U.S. HAS BECOME FAR TOO CLOSELY IDENTIFIED. IT WILL NOT DO THE JOB THAT IS CALLED FOR, AND SHOULD BE ABANDONED.

IN ESTABLISHING SOME FORM OF WORKABLE STRUCTURE FOR WORLD LEADERSHIP IN ENVIRONMENTAL MATTERS WE MUST RECOGNIZE THAT, REGARDLESS OF ITS MANY SERIOUS FLAWS, THE UN IS THE ONLY FUNCTIONING FORUM FOR WORLD OPINION. IN OUR NEW ROLE AS ENVIRONMENTAL LEADER WE WILL HAVE TO USE THIS FACILITY IN A VERY SPECIFIC AND LIMITED WAY.

WE MUST AVOID, AT ALL COSTS, BECOMING ENSNARED BY THE BUREAUCRACY AND CORRUPTION THAT PLAGUE BOTH THE FUNCTIONS OF ITS OPERATING DEPARTMENTS AND ITS EXECUTIVE HIERARCHY. THE SECURITY COUNCIL SEEMS THE BEST MEANS BY WHICH TO AVOID ANOTHER "FOOD FOR OIL" FAILURE.

BY "LIMITED" WE MEAN THAT WE CONFINE OUR EFFORTS TO THE SECURITY COUNCIL AS A HIGH LEVEL ENABLER, NOT AN ENFORCER. WHAT WOULD SEEM HELPFUL AND APPROPRIATE AT THIS STAGE IS FOR THE US TO CALL FOR AN ANNUAL REVIEW BY THE FULL SECURITY COUNCIL, NOT JUST THE PERMANENT POWERS, OF SCIENTIFIC RESEARCH AND DISCOVERY REGARDING CLIMATE CHANGE ISSUES.

THE USE OF THE FULL COUNCIL IS IMPORTANT BECAUSE IT COULD MITIGATE THE RESENTMENT OF THE FIVE PERMANENT POWERS FELT BY MANY U.N. MEMBER STATES, AND WOULD OFFER THE BEST OPPORTUNITY TO SECURE THEIR COOPERATION WITHOUT RISKING THE PARALYSIS AND POLITICAL POSTURING SO OFTEN ENCOUNTERED IN THE GENERAL ASSEMBLY.

WE ENVISION THE SECURITY COUNCIL ISSUING A PUBLIC INVITATION TO SCIENTISTS AROUND THE WORLD TO PROVIDE THEORETICAL OR FACTUAL INFORMATION IN WHATEVER FORM THEY PREFER TO A NEWLY FORMED ENVIRONMENTAL PRIORITIES COMMITTEE. THIS GROUP MIGHT BEST BE FORMED, FOR EXAMPLE, WITH SCIENTISTS OF ACHIEVEMENT FROM CENTERS SUCH AS THE SWEDISH AND ENGLISH ROYAL ACADEMIES OF SCIENCE, GERMANY'S MAX PLANCK INSTITUTE OR OUR AMERICAN ACADEMY FOR THE ADVANCEMENT OF SCIENCE. THERE ARE OTHER VALID SOURCES, BUT GOVERNMENT OR CORPORATE REPRESENTATION SHOULD BE AVOIDED.

THE FUNCTIONS OF THIS COMMITTEE WOULD BE TO GUIDE AND GATHER THE BEST OPINIONS AVAILABLE AND THEN TO ESTABLISH AND COORDINATE RESEARCH AT INSTITUTIONS SPECIALIZING IN NECESSARY DISCIPLINES SUCH AS FORESTRY, AGRICULTURE, WEATHER, BIOLOGY, WATER MANAGEMENT, OCEANIC/ATMOSPHERIC PATTERNS, TO NAME A FEW. IT WOULD TAKE THE DATA IT RECEIVED AND SUBMIT IT WITH COMMENT AS TO PREFERENCE AND PRIORITY TO THE FULL COUNCIL TWICE A YEAR. ITS FUNCTION WOULD BE TO ORGANIZE AND PRIORITIZE, IF POSSIBLE, THE FLOW OF ENVIRONMENTAL SUBMISSIONS AND TO CREATE THE FOCUS FOR A GLOBAL EFFORT.

THE SECURITY COUNCIL WOULD PUBLISH THE MATERIAL RECEIVED ONCE A YEAR AND WOULD MAKE IT

AVAILABLE UPON REQUEST FROM MEMBER GOVERNMENTS, THE PRIVATE SECTOR, ACADEMIA, ETC.

IN CIRCUMSTANCES WHERE SOME FORM OF DIPLOMATIC INITIATIVE OR INTERVENTION MIGHT BE DESIRABLE TO ACCELERATE OR CREATE TECHNOLOGICAL PROGRESS THE SECURITY COUNCIL COULD USE ITS INFLUENCE WITH EMPHASIS ON CREATING INTERNATIONAL COOPERATION ON MATTERS OF NATURAL CONCERN.

THE UN HAS FOUND ITSELF BOGGED DOWN IN THE POLARIZED ATTITUDES OF THE THIRD WORLD AND THE INDUSTRIAL POWERS REGARDING ALL ASPECTS OF POLLUTION. BY CREATING A DIFFERENT ROLE FOR THE SECURITY COUNCIL IT MAY BE ABLE TO ESCAPE THE BITTER DIFFERENCES OF THE PAST AND MOVE TOWARDS A NEW ADVISORY PERSPECTIVE FREE OF VETO CONFRONTATIONS AND ENFORCEMENT ACTIONS AND WITH MINIMAL FUNDING OBLIGATIONS.

IF THE U.S. IS ABLE TO SEE ITSELF IN A ROLE OF REAL LEADERSHIP IN ENVIRONMENTAL MATTERS THERE ARE SOME CHANGES IT MUST MAKE:

- 1) IT MUST ALTER ITS VIEW OF CLIMATE CHANGE AND OTHER ENVIRONMENTAL ISSUES AS BEING LOCAL ECONOMIC PROBLEMS. LARGER CONFLICTS ALWAYS PRODUCE LESSER, LOCAL RESULTS, BUT THE MULTIPLE EFFECTS OF PLANETARY CLIMATE CHANGE CANNOT BE EFFECTIVELY TREATED LOCALLY.
- 2) WE MUST STOP SEEING NATURE AS AN ACCUMULATION OF ZERO COST RAW MATERIALS TO BE WORKED INTO OUR GLOBAL BUSINESS PLAN.
- 3) WHILE ALL ASPECTS OF OUR PRESENT ENVIRONMENTAL CRISIS BEAR ECONOMIC CONSEQUENCES, THE PROBLEM, IS ONE OF SCIENCE, NOT ECONOMICS. AND SO IS ITS SOLUTION.
- 4) THE U.S. HAS TO FOREGO ITS USE OF CAMPAIGN-STYLE SPIN AND RHETORIC TO ADVANCE ITS CORPORATE GLOBAL ECONOMIC PROGRAMS.
- 5) IT SHOULD NOT ATTEMPT TO PORTRAY ENVIRONMENTAL ISSUES IN TERMS OF ECONOMIC IDEOLOGY. THE "PRIVATE SECTOR" SHOULD REMAIN JUST THAT AND NOT BE ASSIGNED THE RESPONSIBILITY FOR BRINGING ABOUT CHANGE. THERE IS ONLY ONE SECTOR THAT HAS PRIORITY, AND THAT IS THE HUMAN SECTOR. PROFITS ARE ALWAYS WELCOME, BUT SURVIVAL TAKES PRECEDENCE.
- 6) THERE IS CLEAR AND INHERENT RISK IN ASSIGNING MANAGEMENT RESPONSIBILITY FOR MASSIVE PROJECTS TO EITHER THE PRIVATE SECTOR (HALLIBURTON/IRAQ) OR THE GOVERNMENT (FEMA/NEW ORLEANS). GLOBAL COMMUNICATION AND COOPERATION WILL BE ESSENTIAL. AND A NEW MINDSET MUST BE ESTABLISHED FOR ALL. THIS WILL NOT BE EASY, AS THERE ARE NO WORKING MODELS.
- 7) THE U.S. MUST RECOGNIZE THAT IT HAS LOST A GREAT AMOUNT OF GENERAL CREDIBILITY AROUND THE WORLD

DUE ITS FAILURE TO ACHIEVE ITS STATED PURPOSE IN IRAQ. MORE SPECIFICALLY, ITS REFUSAL TO EVEN PARTICIPATE IN THE KYOTO CONFERENCE FURTHER REDUCES ITS CREDIBILITY IN ENVIRONMENTAL MATTERS. CREDIBILITY IN A PROGRAM THAT WILL REQUIRE GLOBAL COOPERATION IS A MATTER OF OVERARCHING SUBSTANCE. IT MUST BE RESTORED.

8) THE U.S. MUST ESTABLISH A VALID ENVIRONMENTAL IDENTITY FOR ITSELF IF IT IS TO FULFILL A LEADERSHIP ROLE. IT IS ESSENTIAL THAT IT SEPARATES THIS IDENTITY AND LEADERSHIP FROM OTHER ASPECTS OF SUPERPOWER STATUS SUCH AS ITS ECONOMIC, MILITARY OR DIPLOMATIC POWERS.

WE HAVE BECOME USED TO SEEING OUR SUPERPOWER PRESENCE AT ANY INTERNATIONAL FUNCTION AUTOMATICALLY ACCORDED TOP LEVEL IMPORTANCE. WE MUST RECOGNIZE THAT, IF AND WHEN AN ENVIRONMENTAL COMMUNITY IS FORGED FOR COOPERATIVE EFFORTS, WE WILL BE STARTING EVEN, AT BEST, WITH OTHERS.

A COMMON GLOBAL EFFORT TO ALTER AND/OR SURVIVE THE EFFECTS OF NATURAL PROCESSES HAS NEVER BEEN UNDERTAKEN BEFORE. IT CREATES A SCALE ALL ITS OWN IN RESEARCH, COMMUNICATION AND EXECUTION.

PREVIOUS JOINT EFFORTS BY GROUPS OF MILITARY/POLITICAL ALLIES AGAINST NAPOLEON, HITLER, STALIN, ETC. PALE BY COMPARISON. THEY INVOLVED MEMBERS OF THE SAME SPECIES HAVING AT EACH OTHER WITH MAN-MADE WEAPONRY. EVEN THE MANHATTAN PROJECT FAILS TO COME CLOSE TO WHAT WILL BE REQUIRED TO MOUNT AN EFFECTIVE, GLOBAL ENVIRONMENTAL REMEDIATION PROGRAM.

WE ARE CALLED TO EMBARK UPON A GREAT AND GLOBAL ADVENTURE THAT MAY DETERMINE THE POSSIBILITY OF WHETHER OUR SPECIES, AND EVEN OUR PLANET, LIVES OR DIES. WE PRESENTLY LACK MUCH OF THE TECHNOLOGICAL AND PSYCHOLOGICAL EQUIPMENT THAT MAY BE REQUIRED.

WE HAVE AN UNCERTAIN TIME FRAME FOR ACCOMPLISHING OUR PURPOSE AND AN EQUALLY UNCERTAIN UNDERSTANDING OF THE INTERRELATION AND OPERATION OF MANY NATURAL ELEMENTS WHICH HAVE HISTORICALLY APPEARED TO US AS PARTS, NOT AS A WHOLE.

THE WAY WILL NOT BE EASY, BUT THERE NOW EXISTS AN ENVIRONMENTAL ISSUE LEADERSHIP GAP THAT COULD BE FILLED BY THE US. WERE WE TO MOVE FORCEFULLY AND IMPARTIALLY TO FILL IT, WE WOULD GREATLY SERVE OUR OWN AND OTHERS' INTERESTS.

* * *

IN THE CORRIDORS OF HISTORY THE LIGHT FALLS ONLY ON THE PAST. THE PRESENT IS AN IMPENETRABLE MIST IN WHICH WE CAN VAGUELY DISCERN THE FORMS AND HEAR THE MUFFLED VOICES OF OUR FELLOW TRAVELERS.

SOMETIMES WE ARE JOSTLED OR PUSHED TO THE GROUND BY THOSE WHOSE WAY IS MORE AGGRESSIVE. THEY PASS ON. THE FUTURE LIES AHEAD SILENT, DARK, AND UNKNOWABLE. HISTORY'S CORRIDORS MAY BE PARALLEL OR INTERSECTING. WE ARE NOT TO GIVEN TO KNOW. IN HISTORY, IN LIFE, WE CAN ONLY KNOW WHAT IS PAST. ALL ELSE IS SPECULATION. AND HOPE!



* * *

LATE NEWS – LONDON 11/2/06 ²¹

SIR NICHOLAS STERN, CHIEF ECONOMIST OF THE WORLD BANK, HAS JUST DELIVERED HIS TIMELY AND EXTENSIVE REPORT TO THE HOUSE OF COMMONS ON THE ECONOMIC IMPACT OF CLIMATE CHANGE .

IN SUMMARY, HE STATES THAT A CONCERTED EFFORT TO TAKE WORLD WIDE REMEDIAL ACTION NOW WILL COST ONE PERCENT OF GLOBAL GROSS DOMESTIC PRODUCT (GGDP). FOR THOSE WHO MIGHT CITE THIS COST AS BEYOND REACH AND, THEREBY, REASON TO AVOID ACTION, HE STATES THAT ANY SUCH DEFERMENT WOULD INCREASE THE COST TO FROM FIVE TO TWENTY PERCENT AS TIME PASSES.

SIR NICHOLAS' REPORT GALVANIZED PRIME MINISTER TONY BLAIR TO MAKE A VIGOROUS PLEA FOR GOVERNMENT ACCEPTANCE OF THE STERN REPORT AND A PROMPT START TO TAKING ACTION.

WE CAN ONLY HOPE THAT THE STERN REPORT WILL BRING A NEW FRAME OF REFERENCE TO OUR OWN GOVERNMENT.

* * *

QUOTA QUOTE

HEREWITH ANOTHER QUOTION BY A PROMINENT AMERICAN REFERRING TO OUR IMMIGRATION PROCESS.

“IN THE FIRST PLACE WE SHOULD INSIST THAT IF THE IMMIGRANT WHO COMES HERE IN GOOD FAITH BECOMES AN AMERICAN AND ASSIMILATES HIMSELF TO US, HE SHALL BE TREATED ON AN EXACT EQUALITY WITH EVERYONE ELSE, FOR IT IS AN OUTRAGE TO DISCRIMINATE AGAINST ANY SUCH MAN BECAUSE OF CREED, OR BIRTHPLACE, OR ORIGIN. BUT THIS IS PREDICATED UPON THE MAN'S BECOMING AN AMERICAN, AND NOTHING BUT AN AMERICAN... THERE CAN BE NO DIVIDED ALLEGIANCE HERE. ANY MAN WHO SAYS HE IS AN AMERICAN, BUT SOMETHING ELSE ALSO, ISN'T AN AMERICAN AT ALL... WE HAVE ROOM FOR ONE SOLE LOYALTY AND THAT IS LOYALTY TO THE AMERICAN PEOPLE.”

– THEODORE ROOSEVELT

* * *

SOMETHING IN COMMON

WE INCLUDE WITH THIS ISSUE A QUOTATION FROM A MOST UNUSUAL SOURCE:

“NATURALLY THE COMMON PEOPLE DON’T WANT WAR; NEITHER IN RUSSIA, NOR IN ENGLAND, NOR IN AMERICA, NOR IN GERMANY. THAT IS UNDERSTOOD. BUT AFTER ALL, IT IS THE LEADERS OF THE COUNTRY WHO DETERMINE POLICY, AND IT IS ALWAYS A SIMPLE MATTER TO DRAG PEOPLE ALONG, WHETHER IT IS A DEMOCRACY, OR A FASCIST DICTATORSHIP, OR A PARLIAMENT OR A COMMUNIST DICTATORSHIP. VOICE OR NO VOICE, THE PEOPLE CAN ALWAYS BE BROUGHT TO THE BIDDING OF THE LEADERS. THAT IS EASY. ALL YOU HAVE TO DO IS TO TELL THEM THEY ARE BEING ATTACKED, AND DENOUNCE THE PACIFISTS FOR LACK OF PATRIOTISM AND EXPOSING THE COUNTRY TO DANGER. IT WORKS THE SAME IN ANY COUNTRY.”²²

— AIR REICHMARSCHALL HERMANN GÖRING
1893-1946

THIS QUOTE IS NOTABLE BOTH FOR ITS SOURCE AND FOR ITS CONTENT. WHAT IS SO EXTRAORDINARY ABOUT IT IS THAT, HAVING SPENT HIS ENTIRE ADULT LIFE AT WAR WITH OR LIVING UNDER THE POLITICAL REGIMES HE MENTIONS, HE SAYS THAT THEY ALL EMPLOY THE SAME TECHNIQUE TO ACQUIRE THEIR PEOPLES’ APPROVAL TO WAGE WAR.

TECHNICALLY, GERMANY DID NOT ENGAGE IN HOSTILITIES WITH OTHER EUROPEAN POWERS FROM 1918 TO THE INVASION OF AUSTRIA IN 1937, BUT DURING MOST OF THAT PERIOD IT WAS ENGAGED IN CLANDESTINE PLANNING AND PRODUCTION FOR WAR AND PREPARING ITS PEOPLE FOR IT.

ALSO, THE INITIAL BATTLES BETWEEN FASCISM AND COMMUNISM WERE FOUGHT BY LABOR ORGANIZERS AND WORKERS IN THE YEARS BETWEEN WWs I AND II IN THE INDUSTRIAL PLANTS OF EUROPE’S MAJOR ECONOMIES. WHILE THEY LACKED THE PUBLICITY OF MASSES MILITARY FORCES, THEY WERE BOTH VERY BLOODY AND PERSISTENT.

END NOTES

¹ THE END OF NATURE BY BILL MCKIBBEN, RANDOM HOUSE, NYC,NY. 1989.
² N.Y. TIMES, 9/12/06. A CONVERSATION WITH JAMES E. LOVELOCK BY ANDREW C. REVKIN. DR. LOVELOCK IS A BRITISH SCIENTIST WHO IN 1972 PROPOSED THE THEORY THAT EARTH AND ITS NATURAL FORCES COMPRISED A SELF-REGULATING SYSTEM WHICH CAN ADJUST TO AND SURVIVE CHANGING CONDITIONS. HE NAMED THIS SYSTEM GAIA. MANY CRITICS VIEWED THIS WORK AS AN ATTEMPT TO ERRONEOUSLY

ASSIGN “INTELLIGENCE” TO EVENTS AND OBJECTS, BUT HIS THEORY IS AN INTERESTING ONE AND HAS GAINED SOME PARTIAL, IF NOT TOTAL, ACCEPTANCE IN THE FIELD OF ENVIRONMENTAL SCIENCE.

³ CF. NOTE 1 ABOVE
⁴ ROBERT REVELLE AND HANS SUESS OF SCRIPPS INSTITUTION OF OCEANOGRAPHY IN TELLUS, 1957.
⁵ CF. NOTE 1 ABOVE
⁶ OUTGROWING THE EARTH, BY LESTER R. BROWN. EARTH POLICY INSTITUTE/W.W. NORTON & Co., NEW YORK AND LONDON 2004
⁷ IBID.
⁸ IBID.
⁹ INTERNATIONAL RICE RESEARCH INSTITUTE IN THE PHILIPPINES AND THE U.S. DEPARTMENT OF AGRICULTURE (USDA).
¹⁰ INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE. CLIMATE CHANGE 2001; THE SCIENTIFIC BASIS. CAMBRIDGE UNIVERSITY PRESS, NEW YORK, 2001
¹¹ CF. NOTE 6 ABOVE
¹² IBID.
¹³ WERNER FORNOS, THE POPULATION INSTITUTE. MARCH, 2005
¹⁴ CF. NOTE 6 ABOVE
¹⁵ IBID. MS. LARSON’S ESTIMATES ARE BASED ON INFORMATION OBTAINED FROM MULTIPLE GOVERNMENT AND PRIVATE SOURCES HERE AND IN OTHER COUNTRIES.
¹⁶ IBID.
¹⁷ IBID.
¹⁸ IBID.
¹⁹ UNITED NATIONS. WORLD POPULATION PROSPECTS: 2002 WORLD POPULATION GROWTH IS ESTIMATED AT 1.2%
²⁰ COLLAPSE BY JARED DIAMOND. VIKING PENGUIN, NYC, NY 2005
²¹ PALM BEACH POST – COX NEWS SERVICE, 10/31/06
²² WIKIPEDIA, 5/17/06

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MR. AULT IS RETIRED FROM BUSINESS, A GRADUATE OF YALE UNIVERSITY, AND THE AUTHOR OF A RETAIL FOOD STUDY (LA ROCHE & Co. NYC, NY 1957) WHICH DESCRIBED THE EMERGENCE AND GROWING DOMINANCE OF THE SUPERMARKET IN AMERICAN FOOD RETAILING.

* * *

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