

Union internationale pour la conservation
de la nature et de ses ressources

International Union for Conservation
of Nature and Natural Resources



Le Président
The President

Mr. Thomas Y. Canby
Senior Assistant Editor
National Geographic Magazine
Washington D.C. 20036
USA

10 June 1988

Dear Mr. Canby,

I hope you received my earlier letter concerning the article on the world food situation. As desired by you, I enclose an outline of the points I would like to see covered in the article. I look forward to working with you on this interesting project.

With warm personal regards,

Yours sincerely,

M. S. Swaminathan

M.S. Swaminathan
President

P.S. A C.V. is enclosed for your use.

Réponse à:/Reply to:

B4/142 Safdarjung Enclave, New Delhi 110029, India. Tel. (11) 679069

IUCN Headquarters:

Avenue du Mont-Blanc CH-1196 Gland - Switzerland
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OUTLINE OF AN ARTICLE FOR THE
NATIONAL GEOGRAPHIC MAGAZINE

THE WORLD FOOD SITUATION

I. Global Agriculture : Two Cultures

Some parts of the world, particularly North America and Western Europe are facing problems associated with uncomfortable surpluses of plant and animal products. Some other parts of the world like the Sahelian region of Africa and the Indo-China region (Vietnam, Kampuchea) of Asia are facing acute scarcities of food. There are many areas in the world which are green due to good rainfall but have had no 'green revolution' due to lack of technological progress. There are some countries like the United States where the family operated farm is getting extinct, while there are other countries like China and India where the number of farming families whose livelihood security depends on very small farms is increasing. However, the agriculture of both developed and developing countries share some problems in common. The common problems relate to ecological, economic and energy factors. The agriculture of developing countries is also beset with problems relating to equity (i.e., relative benefits to large and small farmers and benefits to women) and employment (i.e., whether the technologies lead to labour displacement causing more unemployment or labour diversification).

II. Changing nature of the food security challenge

Until the beginning of the eighties, physical access to food was the major food security challenge ⁱⁿ on most developing countries. Now, particularly in Asia and Latin America economic access to food has become the more important food security challenge. Inadequate purchasing power resulting from inadequate opportunities for skilled employment is becoming a major cause of under-nutrition.

In the 21st century, ecological access to food may become the most important food security challenge. The global agricultural scenario is a mosaic, ranging from the shifting cultivation method of land management to highly sophisticated systems of land and water management. Soil erosion, salinity, alkalinity, loss of biological diversity, acid rain and other forms of environmental damage are increasing in several parts of the world. The carrying capacity of land has already been exceeded in many developing countries. The great challenge therefore is achieving a balance between human and animal populations and the rest of the biosphere.

III. Emerging technologies

Modern technology helps to introduce "land saving" forms of crop husbandry and "^{grain}green-saving" forms of animal husbandry. Ecologically sound technologies are knowledge-intensive. They call for very effective extension services. Only when a package of technology is supported by appropriate packages of services and public policies, the desired degree of agricultural progress is achieved. Technology, financial resources and government policies (in areas like agrarian reform, pricing of inputs and output and rural infrastructure ^{development}) are all equally important for moving agriculture forward. In many countries in Africa, technologies are available but government policies are not tailored to the needs of agricultural progress. The recent work of Dr. N.E. Borlaug and his colleagues ⁹ in several countries of Africa has demonstrated that when this constraint is removed there is rapid progress in improving productivity. Lack of success in achieving food self-sufficiency is thus caused by many factors - technological, ecological, economic, social and political.

STRUCTURE OF THE ARTICLEI. Overview of the world food situation

Illustrations from North America (which continues to be the major food basket of the world) and from China which is feeding successfully over a billion people from a little over 100 million ha of arable land. The illustrations from USA will be from California show how the Imperial Valley, described as a "hopeless desert" at the beginning of this century has become a thriving agricultural area.

II. Green Revolution and its after-effects

Illustrations from India, Indonesia and Colombia

III. "Hot Spots" for Famine

Illustrations from Kampuchea and Ethiopia

IV. Ecological Challenge

Illustrations for Brazil, Niger and Nepal.

V. Challenge of Incentives

Illustrations from USSR and United Kingdom from Europe and Zimbabwe in Africa.

VI. Moving agriculture forward

Illustrations from the recent work of N.E. Borlaug and his colleagues in Ghana.

VII. Our agricultural future:

(a) Ecological, economic and ethical challenges

(b) New Opportunities opened by recent progress in biotechnology, information sciences and remote sensing.

(c) Working toward "Symphonic" agricultural systems characterised by ~~initially~~ ^{mutually} reinforcing packages of technology, services and government policies which lead to ecologically sustainable and economically viable systems of agricultural production.

**COUNTRIES TO BE INCLUDED FOR
CASE STUDIES AND ILLUSTRATIONS**

Asia : China, Kampuchea, Indonesia, Nepal and India.

Africa : Ghana, Niger, Ethiopia and Zimbabwe

Europe : United Kingdom, USSR

Latin America : Brazil, Colombia

North America : United States (California)

NOTES :

1. There will be no need to travel to several of the above mentioned countries, if suitable illustrations can be assembled.
2. A paper on "China in the Nineties" is enclosed, which summarises some of the important areas needing attention in developing countries.

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With warm personal regards,

Yours sincerely,

A CV is enclosed for your use (195)

National Geographic Magazine

WASHINGTON, D. C. 20036

THOMAS Y. CANBY
SENIOR ASSISTANT EDITOR

3 May 1988

Dr. M. S. Swaminathan
~~B-4/142 Safdarjang Enclave~~
New Delhi 110029, India

Dear Dr. Swaminathan,

It was a great pleasure to see you again at the Symposium, and to hear your fine talk. The points you made were all good, and you put them in a reasoned and persuasive way. I am so glad you were one of the presenters.

I have a large request to make of you. The Magazine owes its forty million readers a report on the world food situation: a statement of where the world stands now region by region where there is concern, and the prospects for the future of those regions; where the world is hurting, and where it will be hurting. Would you consider undertaking such an article for us? I have talked with Ted Williams of Winrock about this possibility, and he has encouraged me to contact you.

I will describe a tack that we might take, although of course all of this is up for discussion. As you know, we rely heavily on a first-person approach in our articles, counting on the writer's travels and observations to carry the reader with him or her. In your case, part of the article could be based on knowledge and experience gained from your lifetime of devotion to combating hunger. As a second element, perhaps you could temporarily become an itinerant journalist, traveling at Geographic expense to six or eight of the planet's key trouble areas and recording observations and conversations relevant to present and future problems. In each case you would be accompanied by a photographer. He probably would be James P. Blair, a brilliant photojournalist with more than 25 years of experience on the Geographic staff and a great admirer of yours.

In addition to covering all expenses we would of course pay you a writer's fee, probably somewhere in the neighborhood of \$10,000.

To give you a little better idea of subjects that might be included in the article, I went through your Symposium paper and a copy of your World Food Prize address that I obtained from Ted Williams. Here are some of the topics that leaped out at me (in no particular order):

Dr. M. S. Swaminathan

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3 May 1988

In Africa we face political problems; in Asia, land problems. China's attainment of food security for 20 percent of earth's people. India's food sufficiency but undernutrition through poverty. The growing job famine. The fear of the rich in sharing: "If others get more, I will get less." The international network of research centers, including your role at IRRI and elsewhere.

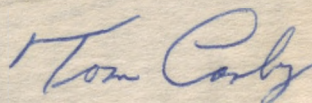
Also: The "ecological fires" of deforestation, erosion, desertification, water pollution, and overpopulation, and in developed countries the atmospheric pollution, acid rain, toxic wastes, and environmental mutagens and carcinogens. The Borlaug work in Africa--truly interesting. The increase in numbers of "environmental refugees." The perils and values of commodity aid. That ecological degradation can bring on, in effect, a nuclear winter. The threat of habitat destruction to biodiversity and continued crop improvement. The devastating effect of action in one part of our global village--say, sugar beet policy in Europe--on places thousands of miles distant, such as Philippine villages. Your small farm program, a truly interesting concept.

It also might be valuable to take a look at the Green Revolution, to see where it is advancing in pace with needs and whether it might be peaking in places, as a recent Wall Street Journal article claimed for Indonesia.

I have informed the Editor that I am contacting you, and he is definitely interested in your reaction. If this proposal interests you, would you be able in the next six weeks or so to draw up a brief outline of what you would like to see covered? The next meeting of our Planning Council, which consults with the Editor on prospective articles, will take place about July 1, and it would be nice to have material for discussion at that time.

I know you are one of the world's busier persons, and I certainly will understand if you cannot undertake such an article. Be assured, however, that we would be greatly honored if you could, and that we would enjoy working with you immensely.

Sincerely,



Science Editor

VIA D-H-L

DR. MONKOMBU SAMBASIVAN SWAMINATHAN

CURRICULUM VITAE

I. Born on 7 August 1925 in Kumbakonam in Tamil Nadu, India

II. Education:

- (a) B.Sc. from Travancore University in 1944.
- (b) B.Sc. Agriculture from Combatore Agricultural College, Madras University, 1947.
- (c) Associateship of the Indian Agricultural Research Institute, New Delhi, in Genetics and Plant Breeding in 1949.
- (d) Ph.D. from the School of Agriculture, University of Cambridge, U.K. in 1952.
- (e) UNESCO Fellow in Genetics at the Agriculture University at Wageningen, The Netherlands, during 1949-50.
- (f) Research Associate in Genetics at the University of Wisconsin, USA during 1952-53.

III. Honorary Degrees: D.Sc. from:

- (a) The Sardar Patel University, Vallabh Vidyanagar (1970)
- (b) The Haryana Agricultural University, Hissar (1973).
- (c) The Andhra Pradesh Agricultural University, Hyderabad (1973)
- (d) The Andhra University, Waltair (1972).
- (e) G.B. Pant University, Pantnagar (1974).
- (f) Jodhpur University, Jodhpur (1975).
- (g) Marathwada Krishi Vidyapeeth, Parbhani (1975).
- (h) Kumaon University, Nainital (1975)
- (i) Burdwan University, Burdwan (1976)
- (j) Agra Univerwity, Agra (1978).
- (k) Kerala Agricultural University, Trichur (1978).
- (l) Sri Venkataeshwara University, Tirupati (1979).
- (m) University of Agricultural Sciences, Bangalore (1980).
- (n) Banaras Hindu University, Varanasi (1981).
- (o) Technical University of Berlin, Berlin (West) (1981).
- (p) Mahatma Phule Agricultural Univ4rsity, Rahuri (1982).
- (q) Chandrasekhara Azad Agricultural University, Kanpur (1982).
- (r) University of Wisconsin, Madison, Wisconsin, USA (1983).
- (s) Delhi University, Delhi, India (1984).
- (t) University of the Philippines, Diliman, Quezon City, Philippines (1984).
- (u) Asian Institute of Technology, Bangkok, Thailand (1985).
- (v) University of Mangalore, Mangalore (1986).
- (w) University of Hyderabad, Hyderabad, India (1987).
- (x) Agricultural University, Wageningen, The Netherlands (1988).
- (y) Assam Agricultural University, Jorhat, Assam (1988).
- (z) Oregon State University, Corvallis. Oregon State, USA (1988).

IV. Honorary Professorship:

- (a) Universidad Nacional Agraria-La Molina, Lima, Peru (National Agricultural University of Peru).
- (b) University of Mangalore, Mangalore, India.
- (c) Zhejiang Agricultural University, Hangzhou, China.

V. Professional Profile:

A. Positions held:

- (a) Teacher, researcher and research administrator at the Central Rice Research Institute, Cuttack and at the Indian Agricultural Research Institute, New Delhi (1954-72).
- (b) Director General, Indian Council of Agricultural Research and Secretary to the Government of India, Department of Agricultural Research and Education (1972-79).
- (c) Secretary to the Government of India, Ministry of Agriculture and Irrigation (1979-80).
- (d) Acting Deputy Chairman, Planning Commission, Government of India (April-June, 1980).
- (e) Member (Agriculture, Rural Development, Science and Education) Planning Commission, Government of India (June 1980-April 1982)
- (f) Director General, International Rice Research Institute (IRRI), Los Banos, Philippines (April 1982-January 1988).

B. Honorary positions in international organizations

- (a) Vice Chairman, Technical Advisory Committee of the Consultative Group on International Agricultural Research (CGIAR) (1971-77).
- (b) Vice Chairman, Protein-Calorie Advisory Group of United Nations (1972-77).
- (c) Chairman, First Quinquennial Review, International Rice Research Institute (IRRI), 1976.
- (d) Chairman, U.N. Advisory Committee on Science and Technology for Development (1980-83).
- (e) President, International Federation of Agricultural Systems for Development (IFARD) (1976-1983).
- (f) Chairman and Member, Board of Trustees, International Council for Research in Agroforestry (ICRAF), (1977-1982).
- (g) President, International Bee Research Association (IBRA), (1978-1984).
- (h) Independent Chairman, FAO Council (1981-1985).
- (i) Member, Scientific and Technical Advisory Committee, Tropical Diseases Research, World Health Organization (1983-1985).
- (j) Honorary Vice President, World Wildlife Fund (WWF), (1985-)
- (k) President, International Union for the Conservation of Nature and Natural Resources (IUCN), (1984-).

VI. Recognition by Scientific Academies:

- (a) Fellow of the Indian National Science Academy (FNA), (1962).
- (b) Fellow of the Indian Academy of Sciences (F.A.Sc.), (1957).
- (c) Honorary Fellow of the National Academy of Sciences, India (1976).
- (d) General President, Indian Science Congress, Waltair (1976).
- (e) Honorary Fellow of the Swedish Seed Association, Sweden (1971).
- (f) Fellow of the Royal Society of London (FRS), (1973).

- (g) Foreign Associate, National Academy of Sciences of the United States, (1977).
- (h) Foreign Member, All-Union Academy of Agricultural Sciences, USSR (1978).
- (i) Founding Fellow, Third World Academy of Sciences (1983).
- (j) President, XV International Congress of Genetics, New Delhi (1983).
- (k) Foreign Member, Royal Swedish Academy of Agriculture & Forestry (1983).
- (l) Foreign Honorary Member, National Academy of Arts and Sciences, Massachusetts (1984).
- (m) Foreign Fellow, National Academy of Science of Italy (Accademia Nazionale delle Scienze detta Dei XL (1985).
- (n) Fellow of the Royal Society of Arts, London (1985).
- (o) Honorary Research Professor of the Chinese Academy of Agricultural Sciences (1987).
- (p) Honorary Research Professor in Genetics of the Chinese Academy of Sciences (1987).

VII. Scientific Awards:

- (a) Shanti Swarup Bhatnagar Award for contributions to Biological Sciences (1961).
- (b) Mendel Memorial Award of the Czechoslovak Academy of Sciences for contributions to Plant Genetics (1965).
- (c) Birbal Sahni Medal of the Indian Botanical Society for contributions to Applied Botany (1966).
- (d) Silver Jubilee Commemoration Medal of the Indian National Science Academy for contributions to genetical and agricultural research (1973).
- (e) Barclay Medal of the Asiatic Society for contributions to genetics (1978).
- (f) K. L. Moudgill Prize for contributions to standardization (1978).
- (g) Borlaug Award (1979).
- (h) Meghnad Saha Medal of the Indian National Science Academy (1981).
- (i) Rathindranath Tagore Prize of Visva Bharati University (1981).
- (j) R. D. Misra Medal of the Indian Environmental Society (1982).
- (k) R.B. Bennett Commonwealth Prize 1984.
- (l) Bicentenary Medal of the University of Georgia, USA (1985).
- (m) Albert Einstein World Science Award by the World Cultural Council (1986).

VIII. Awards by the President of India:

- (a) Padma Shri (1967).
- (b) Padma Bhushan (1972).

IX. A. Award for Community Leadership (1971):

Awarded the Ramon Magsaysay Award for Community Leadership in 1971, in recognition of contributions as "Scientist, educator of both students and farmers and administrator towards generating a new confidence in India's agricultural capabilities."

B. Award for serving the cause of Women in Development (1985):

First recipient of the Award instituted by the Association for Women in Development, Washington, D.C., United States, for "outstanding contributions to activities which foster development for women."

C. "Krishi Ratna" Award for serving the farming community by the Bharat Krishak Samaj/World Agriculture Fair Memorial Trust Society (1986).

This award was made on April 16, 1986 by His Excellency Giani Zail Singh, President of India for devotion "to the cause of agro-science" and for "being the benefactor of the farming community throughout the world."

D. General Foods World Food Prize

On 6 October 1987, Dr. Swaminathan received the First World Food Prize at the Smithsonian Institute in Washington, D.C. This prize is the foremost international award to recognize, encourage and reward outstanding individual achievement in improving the world food supply.

E. The Golden Heart Presidential Award

On 10 November 1987, Her Excellency Corazon C. Aquino, President of the Republic of the Philippines, conferred on Dr. Swaminathan The Golden Heart Presidential Award in recognition of his "contribution in resolving a wide range of problems in basic and applied genetics and agricultural research and development in the Philippines, for his accomplishments in the area of agricultural science and research highly beneficial to Filipino farmers and for having expanded considerably IRRI's capacity for upstream research to bring to all the Asian rice farmers the fruits of recent advances in science and technology".

F. In recognition of Dr. Swaminathan's contributions to the research, training and technology transfer programmes of the International Rice Research Institute (IRRI), the Board of Trustees named the Training and Technology Transfer Building of the Institute as "M.S. Swaminathan Hall". The IRRI Trustees also established a special fund for providing scholarships in the name of Dr. Swaminathan for candidates who wish to do research in the area of women in rice farming systems. This is in recognition of his services to the cause of women in agriculture.

X. Some Major Contributions:

Has worked in collaboration with colleagues and students on a wide range of problems in basic and applied plant genetics and agricultural research and development over a period of 30 years. Among the more important contributions are :

- (a) elucidation of the origin and differentiation of potato species.
- (b) understanding the genetic relationships among wheat species.
- (c) accomplishment of difficult crosses in potato and jute species.
- (d) standardization of techniques for the induction of polyploidy (i.e. doubling the number of chromosomes) in several economic plants.
- (e) elucidation of the factors influencing the induction and recovery of mutations in wheat and rice.
- (f) identification of the barriers to high yields in wheat and the initiation of the wheat breeding programme, involving the "Norin" dwarfing genes obtained from Mexico.

- (g) development of the concept of "crop cafeterias", "mid-season corrections in crop scheduling", risk-distribution agronomy and alternative cropping strategies for different weather conditions.
- (h) purposeful manipulation of genes in improving the yield, quality and stability of performance of wheat, rice and potato.
- (i) development of whole village or watershed operational research projects based on principles of ecology and economics.
- (j) development of disaster management strategies based on relief and rehabilitation measures in the most seriously affected (MSA) areas and improved crop productivity in the most favourable (MFA) areas.
- (k) Management of the disastrous drought of 1979 as Secretary to the Government of India in the Ministry of Agriculture.
- (l) Collection and conservation of plant genetic resources, particularly of rice and wheat.

The results of the above research studies have been published in about 200 scientific papers in international journals.

XI. Contribution to Education:

Over 50 students have done their Ph.D. thesis work under the guidance of Dr. Swaminathan. In 1972, he introduced the "Techniracy" concept of imparting training in the latest technical skills entirely through work experience, in order to bypass the problems created by illiteracy.

XII. General Contributions to National Development:

During 1980-82, Dr. Swaminathan chaired the following national committees set up by the Government of India:

- (a) Expert Group on Programmes for alleviation of poverty
- (b) Task Force for the study of eco-development in the Himalayan Region.
- (c) Task Force for developing an eco-development plan for Goa.
- (d) Committee for the development of the water resources of Western Ghats.
- (e) Expert Group on perishable agricultural commodities.
- (f) Study Group on fuel wood requirements.
- (g) Working Group on control of blindness.
- (h) Working Group on control of leprosy.
- (i) Chairman, Science Advisory Committee to the Cabinet of India.
- (j) Chairman, National Biotechnology Board
- (k) Member, National Commission on Agriculture (1971-77)

DR. M. S. SWAMINATHAN

M. S. Swaminathan is one of the world's leading agricultural scientists. He played a catalytic role in India's green revolution between 1960 and 1982. Since April 1982 he has been serving as director general of the International Rice Research Institute (IRRI).

For the decade prior to assuming his post with IRRI, Dr. Swaminathan was at the forefront of one of the most remarkable agricultural accomplishments in recent history -- moving India from having the largest food deficit in the world to producing enough grain to feed all of its people. From 1954 to 1972, he worked at the Indian Agricultural Research Institute, New Delhi, mainly in the field of wheat improvement. He served as director general of the Indian Council of Agricultural Research; secretary of the Department of Agricultural Research and Education (1972-79); and secretary of the Ministry of Agriculture and Irrigation (1979-80). He was the member in charge of agriculture and rural development in India's Planning Commission from 1980 to 1982.

Born in Tamil Nadu, India, Swaminathan was educated at Travancore and Madras Universities. He received his Ph.D. in Genetics from Cambridge University in 1952 and has since received 25 honorary doctorates from institutions spanning three continents. In addition to being a fellow of the Indian National Science Academy and the Royal Society of London, Dr. Swaminathan is a fellow, member or associate of national academies of agriculture and of science in Sweden, the United States, Italy and the USSR. He is currently president of the International Union for the Conservation of Nature and Natural Resources.

Over a period of 30 years, Dr. Swaminathan has worked in collaboration with scientists and policy makers on a wide range of problems in basic and applied plant genetics, and on agricultural research and development. Among his more important contributions are: manipulation of genes to improve the yield, quality and stability of wheat, rice and potatoes; identification of the barriers to high yields

in wheat and initiation of the dwarf wheat breeding program; and management of the 1979 drought as secretary to the government of India in the Ministry of Agriculture. At IRRI, he has placed issues relating to the ecological sustainability and economic viability of modern production technology top on the research agenda. He served as a Founder-Trustee and later Chairman of the Board of the International Council for Research on Agro-Forestry (ICRAF) during 1977-1982. In 1982, he organized a Society for the Promotion of Wasteland Development (SPWD) as a professional non-governmental organization committed to the ecological restoration of degraded land in different parts of India. He was founder-chairman of SPWD from 1982 to 1985. He served as chairman of the Advisory Panel on Food Security, Agriculture, Forestry and Environment to the World Commission on Environment and Development (WCED). The report of his panel has been published in March 1987 by Zed Books Ltd. under the title "Food 2000: Global Policies for Sustainable Agriculture."

He has published over 200 papers in international journals and several books, including "Building a National Food Security System" (Indian Environmental Society, 1981) and "Science and Integrated Rural Development" (Concept Publishing Company, New Delhi, 1982). Along with Prof. S.K. Sinha, he edited a book on "Global Aspects of Food Production" (Tycooly, 1987). He has chaired numerous national and international committees of experts, including the Indian Expert Group on Programmes for the Alleviation of Poverty and Eradication of Leprosy.

Among his 16 distinguished awards are the Ramon Magsaysay Award for Community Leadership (1971), the first award for serving the cause of women in development (1985), and the Padma Shri (1967) and Padma Bhushan (1972) awards from the President of India. In 1986, he received the Albert Einstein World Award on Science. On 6 October 1987, he became the first laureate of the General Foods World Food Prize.



Corazon C. Aquino
President of the Republic of the Philippines

To All To Whom These Presents Shall Come, Greetings:

For strengthening the International Rice Research Institute (IRRI) as a source of technological knowledge and expertise in the cause of furthering agro-science in the Philippines;

For his contribution in resolving a wide range of problems in basic and applied genetics and agricultural research and development in the Philippines;

For his accomplishments in the area of agricultural science and research highly beneficial to Filipino farmers;

For his untiring efforts in pursuing the establishment of a national rice research institute in the Philippines;

For having expanded considerably IRRI's capacity for upstream research to bring to all the ASIAN rice farmers the fruits of recent advances in science and technology;

For instituting since 1982 the Technology Transfer Workshop for the exchange of ideas and information, thus strengthening IRRI's linkages with the Department of Agriculture of the Republic of the Philippines;

I, Corazon C. Aquino, President of the Republic of the Philippines, by virtue of the powers vested in me by law, do hereby confer upon

Dr. Monkombu S. Swaminathan
Director General
The International Rice Research Institute

The Golden Heart Presidential Award

this 10th day of November, nineteen hundred and eighty-seven.

Corazon C. Aquino

National Geographic Magazine

WASHINGTON, D. C. 20036

THOMAS Y. CANBY
SENIOR ASSISTANT EDITOR

3 May 1988

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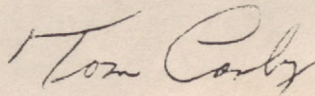
Also: The "ecological fires" of deforestation, erosion, desertification, water pollution, and overpopulation, and in developed countries the atmospheric pollution, acid rain, toxic wastes, and environmental mutagens and carcinogens. The Borlaug work in Africa--truly interesting. The increase in numbers of "environmental refugees." The perils and values of commodity aid. That ecological degradation can bring on, in effect, a nuclear winter. The threat of habitat destruction to biodiversity and continued crop improvement. The devastating effect of action in one part of our global village--say, sugar beet policy in Europe--on places thousands of miles distant, such as Philippine villages. Your small farm program, a truly interesting concept.

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Sincerely,



Science Editor

VIA D-H-L

outline of an article for the
National Geographic Magazine

The World Food Situation

Global Agriculture: Two cultures: Some

I Introduction: L Parts of the world,
particularly North America and
western Europe are facing problems
associated with ^{uncomfortable} ~~large~~ surpluses of
plant and animal products. ^{Some} Other
parts of the world like the Sahelian
region of Africa and the Indo-
China region (Vietnam, Kampuchea)
of Asia are ~~facing~~ ^{facing acute scarcities of food.} ~~famine~~. There

are many areas in the world
which are green due to good rainfall
but have had no "green revolution"
due to lack of technological progress.

There are some countries like the
United States where the family
operated farm is ~~on the way to~~ ^{getting extinct}
~~extinction~~, while there are other
countries like China and India
where the number of farming families
~~whose~~ whose livelihood security
depends on very small farms ~~is~~ ^{is}
increasing.

However,

↳ The agriculture of both

Both developed and developing countries

however ~~is~~ have some problems in common.

The common problems
~~These~~ relate to ecological, economic and energy factors.

~~In addition~~, the agriculture of developing countries ~~is~~ is also beset with problems relating to equity (i.e., relative benefits to large and small farmers ^{and} benefits to women) and employment (i.e., ~~is~~ whether the technologies lead to labour displacement causing more unemployment or labour diversification).

II Changing nature of ^{the} food security challenge

Until the beginning of the eighties, physical access to food was the major food security challenge in most developing countries. Now, particularly in Asia and Latin America

Economic access to food has become the more important food security challenge. Inadequate purchasing power ~~results~~ ^{resulting} from inadequate opportunities for skilled employment ~~is becoming~~ ^{is the major cause of undernutrition} ~~Hence the famine of jobs~~ needs equal attention.

In the 21st century, ecological access to food may become the most important food security challenge.

The global agricultural scenario is a mosaic, ranging from the shifting cultivation method of land management to highly sophisticated ~~developed~~ systems of land and ~~water~~ water management. Soil erosion, salinity, alkalinity, loss of biological diversity, acid rain and other forms of environmental damage are increasing in several parts of the world. The carrying capacity of land has already been

exceeded in ~~several~~ many developing countries. The great challenge therefore is achieving a balance between human and animal populations and the rest of the biosphere.

III Emerging technologies

Modern technology helps to introduce "land-saving" ^{forms of} crop husbandry and "grain-saving" forms of animal husbandry. Ecologically sound technologies are knowledge-intensive. They call for very effective extension services.

Only when a package of ~~appropriate~~ technology is supported by appropriate packages of services and public policies, ~~there is~~ the desired ~~of~~ degree of ^{is achieved} agricultural progress. Technology,

financial resources and government policies (in areas like agrarian reform, pricing of inputs and output and rural infrastructure development) are all equally important for moving agriculture forward.

In many countries, ^{in Africa} technologies are available but government policies are not tailored to the needs of

agricultural progress.] ~~There is~~ Lack of success in achieving food self-sufficiency is thus caused by many factors — technological, ecological, economic, social and political.

Structure of the article

~~The article~~

1. Overview of the world food situation

Illustrations from North America (which continues to be the major food basket of the world) and from China which is feeding successfully over a billion people from a little over 100 Billion ha of arable land.

The recent work of Dr. N.E Borlaug and his colleagues in several countries of Africa has demonstrated that when this constraint is removed there is rapid progress in improving productivity

6. The illustrations from USA will be from California
to show how the Imperial Valley, described as a "hopeless
desert" at the beginning of this century
Green Revolution and its after effects has
become
a thriving
agricultural
area

II

Illustrations from India,
Indonesia and ~~Colombia~~ Colombia

III

"Hot Spots" for Famine

Illustrations from Kampuchea and Ethiopia

IV

Ecological Challenge

Illustrations from Brazil, ~~and~~ Niger and Nepal

V

Challenge of incentives

VI

Moving agriculture forward

Illustrations from
USSR and United
Kingdom,
from Europe
and Zimbabwe
in Africa

Illustrations from the recent
work of N. E. Borlaug and his
colleagues in China

VII

Our agricultural future

a) Ecological, economic and
ethical challenges

b) New opportunities opened up by

by recent progress in ~~the~~ biotechnology, information sciences and remote sensing.

(4) Working toward "symphonic" agricultural systems characterized by mutually reinforcing packages of technology, services and government policies which lead to ecologically sustainable and economically viable systems of ^{agricultural} production.

—————
Countries to be ~~visited~~ ^{included} for case studies and illustrations

Asia: China, Kampuchea, Indonesia, Nepal and India and Zimbabwe

Africa: Ghana, Niger, ~~and~~ Ethiopia & Europe: United Kingdom, USSR

Latin America: Brazil, Colombia

North America: United States (California)

Notes

- ① There will ~~not~~ no need to travel to several of the above mentioned countries, if suitable illustrations can be assembled
- ② A paper on "China in the Nineties" is enclosed, which summarises some of the important areas needing attention in developing countries

(M. S. Swaminathan)

27 May 1988

Dr. Thomas Y. Canby
Senior Assistant Editor
National Geographic Magazine
Washington D.C. 20036

Dear Dr. Canby

I thank you very much for your letter of 3 May which I have just received. I shall be delighted to work with you in preparing an article for the National Geographic magazine on the 'world food situation'.

.. I am leaving for China tomorrow and I enclose a paper prepared for discussion there.

With warm personal regards

Yours sincerely

M.S. SWAMINATHAN

Encls:

National Geographic Magazine

WASHINGTON, D. C. 20036

THOMAS Y. CANBY
SENIOR ASSISTANT EDITOR

3 May 1988

Dr. M. S. Swaminathan
B-4/142 Safdarjung Enclave
New Delhi 110029, India

Dear Dr. Swaminathan,

It was a great pleasure to see you again at the Symposium, and to hear your fine talk. The points you made were all good, and you put them in a reasoned and persuasive way. I am so glad you were one of the presenters.

I have a large request to make of you. The Magazine owes its forty million readers a report on the world food situation: a statement of where the world stands now region by region where there is concern, and the prospects for the future of those regions; where the world is hurting, and where it will be hurting. Would you consider undertaking such an article for us? I have talked with Ted Williams of Winrock about this possibility, and he has encouraged me to contact you.

I will describe a tack that we might take, although of course all of this is up for discussion. As you know, we rely heavily on a first-person approach in our articles, counting on the writer's travels and observations to carry the reader with him or her. In your case, part of the article could be based on knowledge and experience gained from your lifetime of devotion to combating hunger. As a second element, perhaps you could temporarily become an itinerant journalist, traveling at Geographic expense to six or eight of the planet's key trouble areas and recording observations and conversations relevant to present and future problems. In each case you would be accompanied by a photographer. He probably would be James P. Blair, a brilliant photojournalist with more than 25 years of experience on the Geographic staff and a great admirer of yours.

In addition to covering all expenses we would of course pay you a writer's fee, probably somewhere in the neighborhood of \$10,000.

To give you a little better idea of subjects that might be included in the article, I went through your Symposium paper and a copy of your World Food Prize address that I obtained from Ted Williams. Here are some of the topics that leaped out at me (in no particular order):

3 May 1988

In Africa we face political problems; in Asia, land problems. China's attainment of food security for 20 percent of earth's people. India's food sufficiency but undernutrition through poverty. The growing job famine. The fear of the rich in sharing: 'If others get more, I will get less.' The international network of research centers, including your role at IRRI and elsewhere.

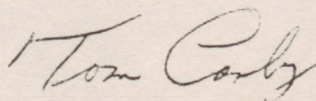
Also: The 'ecological fires' of deforestation, erosion, desertification, water pollution, and overpopulation, and in developed countries the atmospheric pollution, acid rain, toxic wastes, and environmental mutagens and carcinogens. The Borlaug work in Africa--truly interesting. The increase in numbers of 'environmental refugees.' The perils and values of commodity aid. That ecological degradation can bring on, in effect, a nuclear winter. The threat of habitat destruction to biodiversity and continued crop improvement. The devastating effect of action in one part of our global village--say, sugar beet policy in Europe--on places thousands of miles distant, such as Philippine villages. Your small farm program, a truly interesting concept.

It also might be valuable to take a look at the Green Revolution, to see where it is advancing in pace with needs and whether it might be peaking in places, as a recent Wall Street Journal article claimed for Indonesia.

I have informed the Editor that I am contacting you, and he is definitely interested in your reaction. If this proposal interests you, would you be able in the next six weeks or so to draw up a brief outline of what you would like to see covered? The next meeting of our Planning Council, which consults with the Editor on prospective articles, will take place about July 1, and it would be nice to have material for discussion at that time.

I know you are one of the world's busier persons, and I certainly will understand if you cannot undertake such an article. Be assured, however, that we would be greatly honored if you could, and that we would enjoy working with you immensely.

Sincerely,



Science Editor