

First Annual Awards Ceremony General Foods World Food Prize

Tuesday evening, October sixth
Six o'clock

National Museum of Natural History
Smithsonian Institution

Program

Welcome

ROBERT McC. ADAMS

Secretary, Smithsonian Institution

Introduction of
Honored Guests

A. S. CLAUSI

*Chairman, Council of Advisors
General Foods World Food Prize*

Remarks

JAMES L. FERGUSON

*Chairman, Executive Committee of
General Foods Corporation*

HIS EXCELLENCY

P. K. KAUL

The Ambassador of India

**THE HONORABLE
RICHARD E. LYNG**

The Secretary of Agriculture

NORMAN E. BORLAUG

*Distinguished Professor of
International Agriculture
Laureate, Nobel Peace Prize, 1970*

Slide Presentation

Awarding of the
First General Foods
World Food Prize

JAMES L. FERGUSON

Acceptance

M. S. SWAMINATHAN

*Director General, International
Rice Research Institute
Laureate, General Foods World Food Prize, 1987*

Remarks

JOHN DENVER

*Composer, Musician, Entertainer
Former Member
Presidential Commission on World Hunger*

Closing

A. S. CLAUSI

1987

General Foods

World Food Prize

Dr. M. S. Swaminathan

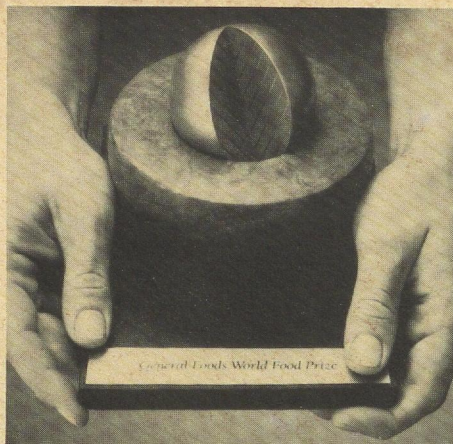
Director General

International Rice Research Institute

Republic of the Philippines

A prize for the world

The Commemorative of the General Foods World Food Prize was created by world-renowned designer Saul Bass. This basic, sensitive design symbolizes the world, its food and the nourishment of its people.



The General Foods World Food Prize is truly an award to benefit all humanity. Given annually, it seeks out the single most outstanding contribution to improving the world food supply – in quality, quantity or availability.

The Prize is not simply international – it is global in scope, seeing our world food

supply as a total system. Feeding the world's far-flung populations involves a fragile and intricate web that extends across the full breadth of our planet – a web that links the African farmer and the Indian scientist, the Italian merchant and the Chinese statesman.

Awarded for the first time in 1987, the \$200,000 Prize rewards achievement in any field that impacts our food chain: the food and agricultural sciences, food processing and preservation, nutrition and genetics, transportation and distribution, agricultural and economic policy.

It is fitting that the first Prize be awarded to a man whose career has contributed to practically every one of these disciplines – Dr. M. S. Swaminathan of India. His brilliant career and humane philosophy have enriched the lives not only of his countrymen, but also of individuals and entire populations across the globe.

M. S. Swaminathan: Scientist, educator, administrator, humanitarian

M. S. Swaminathan, first laureate of the General Foods World Food Prize.



“The word ‘impossible’ exists mainly in our minds,” his father once told him, “but given the requisite will and effort, great tasks can be accomplished.” In a career dedicated to alleviating human suffering, Dr. Monkombu Sambasivan Swaminathan has completed the work of many lifetimes.

He is widely recognized as the architect of the “Green Revolution” in India, which radically improved agricultural yields through the introduction of genetically superior grain varieties. This work alone

transformed India from a “begging bowl” to a “breadbasket” almost overnight, nearly doubling the total crop yield from 12 million tons to 23 million tons in four crop seasons.

His enthusiasm for passing on knowledge has earned him a reputation as a lucid educator. And his record of community service and political leadership has won him recognition as a profound humanitarian.

The impact of Dr. Swaminathan's work has reached far beyond the borders of his homeland. His worldwide reputation has made him an apt choice to chair many prestigious international conferences, including the U.N. World Food Congress in Rome in 1974. His foresight and inspiration have led to the establishment of renowned organizations to promote international scientific collaboration, notably the International Union for the Conservation of Nature and Natural Resources (where he currently serves as President), the International Crops Research Institute for the Semi-Arid Tropics, and the International Federation of Agricultural Research Systems for Development – the first significant efforts to promote scientific collaboration in developing countries.



THE WORLD FOOD PRIZE

Invitation to Nominate



THE WORLD FOOD PRIZE

Invitation to Nominate

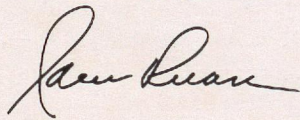
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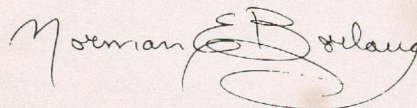
he World Food Prize is the highest individual honor for achievement in improving the world's food supply.

Each year, more than 2,500 institutions and organizations around the world are invited to nominate candidates for the prize. We are pleased to include you in this group.

If you know of someone whose work has measurably influenced the quality, quantity, or availability of food in the world, please let us know. This booklet explains how to submit a nomination.



John Ruan
Chairman
Council of Advisors



Norman E. Borlaug
Chairman
Selection Committee

A PRIZE FOR THE WORLD

The World Food Prize is the foremost international award recognizing outstanding individual achievement in improving the quality, quantity, or availability of food in the world.

The prize emphasizes the importance of a nutritious and sustainable food supply for all people. By honoring those who have worked successfully toward this goal, The World Food Prize calls attention to what has been done to improve the world food supply and to what can be accomplished in the future.

The prize recognizes achievements in any field involved in the world food supply, including food and agricultural science and technology, manufacturing, marketing, nutrition, economics, political leadership, the social sciences, and other related fields.

The laureate receives \$200,000 and a sculpture created by world-renowned designer Saul Bass. The award is based solely on individual achievement with no consideration of nationality, ethnic origin, political persuasion, religious beliefs, sex, or age.

NEED

Norman E. Borlaug — winner of the Nobel Peace Prize for his work in world agriculture — envisioned a prize that would honor individuals who have made significant and measurable contributions to improving the world's food supply. Beyond recognizing these people for their personal accomplishments, he saw the prize as a means of establishing role models who would inspire others. His vision was realized when The World Food Prize was created.

LAUREATES

Since its inception, four extraordinary individuals have been awarded The World Food Prize.

The first prize was awarded in 1987 to M. S. Swaminathan, architect of India's "green revolution." Dr. Swaminathan led the introduction of the high-yielding "miracle grains" of wheat and rice to Indian farmers. Today, India is self-sufficient in cereal production.

The 1988 laureate was Robert F. Chandler, Jr., founding director of the International Rice Research Institute (IRRI) in Los Baños, the Philippines. Under Dr. Chandler's guidance, IRRI developed and distributed new varieties of rice with double and triple the yield potential of traditional rice. Largely because of his efforts, famine in Asia was averted in the 1970s.

Vergheese Kurien, chairman of India's National Dairy Development Board, was awarded The World Food Prize in 1989. As founder of India's "Operation Flood," Dr. Kurien turned the milksheds of India into cooperatives that produce, process, and market milk in the urban centers of the country. More than six million dairy producers in 50,000 cooperatives are currently marketing milk in 500 cities and towns throughout India.

The 1990 laureate is John S. Niederhauser, whose discovery and utilization of a durable resistance to the potato late blight disease has boosted the food supply and improved nutrition for the peoples of many nations. In Mexico, for example, potato production increased sixfold in the last 30 years as a direct result of Dr. Niederhauser's role in developing a strong national program involving both scientists and farmers. Dr. Niederhauser pioneered similar dramatic potato production breakthroughs in India, Pakistan, Bangladesh, Turkey, Colombia, Costa Rica and other countries.

PRIZE YEAR

The World Food Prize laureate is announced each June, and the award is made in October during World Food Prize Week. This week is filled with special events and lectures hosted by prominent institutions.

GOVERNANCE

The World Food Prize is governed by the Board of Directors of The World Food Prize Foundation. The board is guided by a Council of Advisors in the establishment of prize policy and in the annual review of the prize. Members of the council represent a wide variety of sciences, disciplines and professions relevant to food policy development, research, production, processing, and distribution.

The administration of The World Food Prize is directed by The World Food Prize Foundation from its headquarters in Des Moines, Iowa, USA.

SELECTION

The Iowa State University College of Agriculture serves as secretariat for The World Food Prize, following policies set by The World Food Prize Foundation. In research, teaching, and extension programs, the University and the College work with people and institutions from many nations to address world food issues related to human nutrition and the production, processing, and distribution of food.

The secretariat reviews all nominations for appropriateness and completeness and forwards them to the selection committee.

The selection committee is composed of seven distinguished individuals who are knowledgeable about various aspects of nutrition and food production, processing, and distribution, including research, policy development, and business management.

It reviews the nominations, selects a candidate and alternate most worthy of the award according to the prize's objectives, and forwards its recommendation to the chairman of the Council of Advisors.

Members of the selection committee remain anonymous except for the chairman, Norman E. Borlaug. The minutes of the committee's meetings and the views expressed by its members are not made public in any way.

NOMINATION PROCEDURE

Any institution or organization may submit a nomination for The World Food Prize laureate. An organization may submit as many nominations as it sees fit, and all nominations are confidential. Nominations will not be accepted from individuals.

The nominee must be living and must personally have made a significant, applied contribution that has increased the quality, quantity, or availability of food. Normally, the prize is awarded to one person, but it may be shared by partners in a specific activity.

To submit a nomination, please give us the following information, in the order shown, in English, French, or Spanish:

Name	Nominee's name, affiliation, address, and telephone number. Attach a recent photograph of the nominee.
Biographical Information	Date and place of birth, education, positions held (in public and private organizations), professional affiliations, honors and awards.
Personal Contributions	In one or two typed pages, describe the nominee's personal contribution to increasing the quality, quantity, or availability of food. The candidate should be nominated for one specific, measurable achievement that has brought food to the world's people.
Nominating Organization	Name of nominating organization, address, and telephone number. The nomination must be signed by the chief executive officer of the nominating organization, certifying the accuracy of the information. The identity of the nominating organization is kept in strict confidence.

Date	Date of nomination.
Seconding Nominations	Letters seconding the nomination from three individuals who are familiar with the nominee's work.
Supporting Documents	Documents that support your description of the nominee's personal contribution. These may include general articles about the nominee's activities and trends in the nominee's field and appropriate, significant publications by the nominee. Please send only one copy of each document.

If your nominee is not selected to be the laureate, your nomination can be reconsidered for two years. However, you must send us written confirmation each year of your wish to renominate and provide updated supporting documents.

If your nominee becomes The World Food Prize laureate, the information contained in the description of personal contribution and the supporting documents may be used to prepare news materials about the winner.

Your nomination must be postmarked by December 31 to be considered for the next year's prize. Send your nomination to:

The World Food Prize
Office of the Secretariat
David G. Topel, Dean
College of Agriculture
Iowa State University
Ames, Iowa 50011
USA
Telephone 515-294-2518

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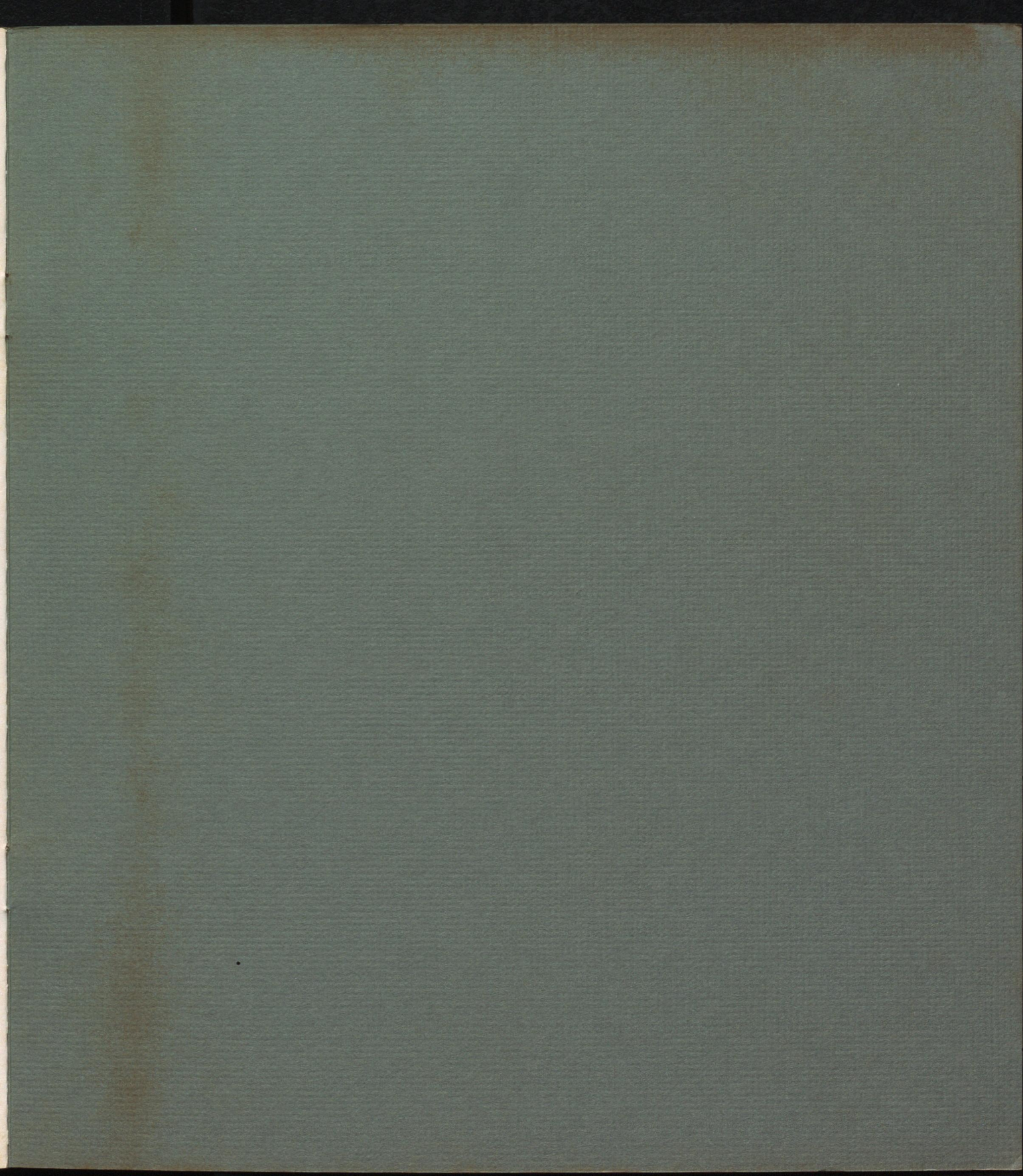
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White Plains, New York, USA

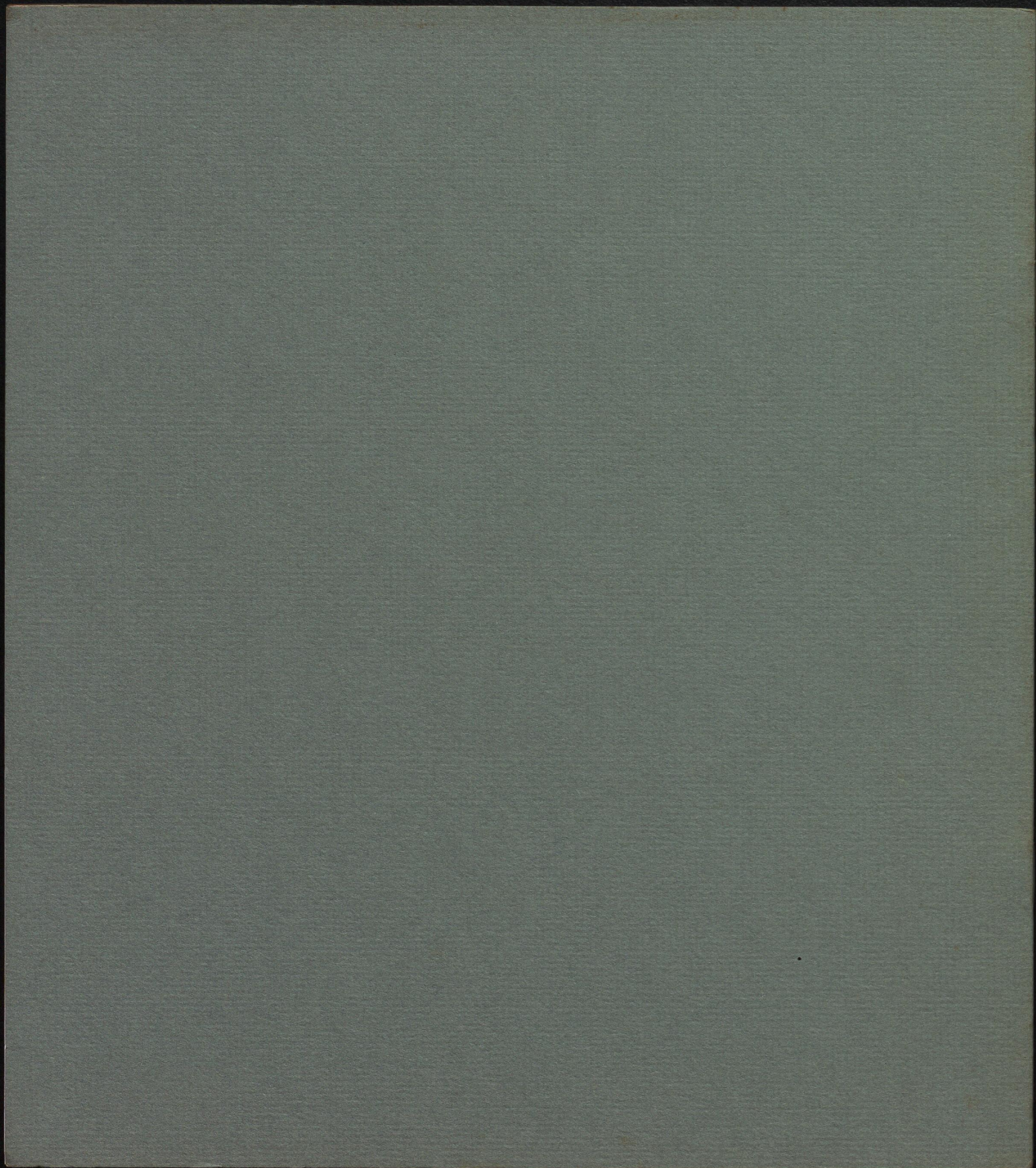
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The World Food Prize is sponsored by The World Food Prize Foundation, a private foundation established by The John Ruan Foundation, Des Moines, Iowa, USA.





THE STORY BEHIND THE
GENERAL FOODS WORLD FOOD PRIZE

NORMAN E. BORLAUG

October 6, 1987

TONIGHT WE CELEBRATE THE AWARDING OF THE FIRST GENERAL FOODS WORLD FOOD PRIZE TO ONE OF THE WORLD'S GREATEST SCIENTISTS, DR. M.S. SWAMINATHAN, FOR HIS OUTSTANDING CONTRIBUTIONS TOWARD INCREASING FOOD PRODUCTION AND IMPROVING THE EQUITY OF ITS DISTRIBUTION. HIS MANY AND DIVERSE CONTRIBUTIONS HAVE ALLEVIATED HUNGER AND MISERY, AND HAVE CONTRIBUTED GREATLY TOWARD IMPROVING THE WELL-BEING OF MILLIONS OF PEOPLE IN THE THIRD WORLD.

IT IS ESPECIALLY GRATIFYING FOR ME TO HAVE LIVED TO SEE THE ESTABLISHMENT OF THE WORLD FOOD PRIZE. THE ROAD WHICH FINALLY LED TO ITS ESTABLISHMENT HAS BEEN A LONG, AND OFTEN FRUSTRATING ONE. LET ME SHARE WITH YOU SOME OF THE TRIALS AND TRIBULATIONS ENCOUNTERED ALONG THE WAY, WHICH FINALLY LED TO THE HAPPY EVENT WE ARE CELEBRATING HERE TONIGHT.

IN 1970 I WAS AWARDED THE NOBEL PRIZE FOR PEACE FOR MY (AND MY MANY ASSOCIATES') CONTRIBUTIONS TOWARD INCREASING AGRICULTURAL PRODUCTION IN FOOD-DEFICIT THIRD WORLD COUNTRIES. OUR WORK CONCENTRATED ON INDIA AND PAKISTAN DUE TO THE MAGNITUDE OF THE PROBLEMS THERE -- DROUGHT AND THE HUGE FOOD SHORTAGES THAT RESULTED. SOME PROCLAIMED THAT THE SITUATION WAS HOPELESS, THAT MILLIONS WERE DOOMED TO STARVATION.

WIDESPREAD FAMINE WAS AVERTED. ABOUT 15 MILLION TONS OF GRAIN, MAINLY WHEAT, HAD TO BE IMPORTED. BUT, OF GREATER LONG-TERM SIGNIFICANCE -- IT WAS DURING THIS CRISIS THAT NEW, HIGH-YIELDING MEXICAN WHEAT VARIETIES, WITH AN ACCOMPANYING PACKAGE OF IMPROVED AGRONOMIC PRACTICES, WERE IN FINAL STAGES OF TESTING ON THOUSANDS OF FARMS IN INDIA AND PAKISTAN. THEIR GOVERNMENTS ALSO MOVED TO DISCARD CHEAP FOOD POLICIES -- WHICH HAD LONG ACTED AS A DISINCENTIVE TO PRODUCTION -- AND ADOPTED ECONOMIC POLICIES THAT FACILITATED AND ENCOURAGED THE WIDESPREAD USE OF THE NEW WHEAT PRODUCTION TECHNOLOGY (AND A COUPLE OF YEARS LATER THE NEW HIGH-YIELDING RICE TECHNOLOGY). YIELDS AND PRODUCTION OF WHEAT INCREASED SPECTACULARLY IN BOTH COUNTRIES IN 1968 AND 1969 AND WAS DUBBED THE "GREEN REVOLUTION" BY THE LATE MR. WILLIAM DAUD, OF USAID.

I SAW FIRSTHAND THAT THE SPECTACULAR SUCCESS OF OUR PROGRAMS IN INDIA WAS DUE IN NO SMALL PART TO THE WORK OF DR. SWAMINATHAN. HE WAS AN ENERGETIC VOICE FOR CHANGE WITHIN THE INDIAN POLICYMAKING ESTABLISHMENT. HE SPEARHEADED A NEW PHILOSOPHY THAT EVENTUALLY TOOK ROOT.

IN 1970, THE NOBEL COMMITTEE IN NORWAY DESIGNATED ME AS THE RECIPIENT OF THE NOBEL PRIZE FOR PEACE. IT CAME AS A GREAT SURPRISE TO ME AND TO THE WORLD. AS MOST OF YOU KNOW, THERE IS NO NOBEL PRIZE FOR EITHER AGRICULTURE OR FOOD. MOREOVER, THIS WAS THE FIRST TIME AN AGRICULTURAL SCIENTIST HAD RECEIVED A NOBEL

PRIZE. THE PEACE PRIZE WAS THE ONLY "WINDOW" THROUGH WHICH WORK ON AGRICULTURE AND FOOD PRODUCTION COULD QUALIFY FOR A NOBEL PRIZE. IT WAS JUSTIFIED UNDER PARAGRAPH ONE, WHICH STATES THAT THE AWARD OF THE PEACE PRIZE SHALL BE MADE TO THE PERSON "WHO, DURING THE PRECEDING YEAR, SHALL HAVE CONTRIBUTED THE GREATEST BENEFIT TO MANKIND."

ALFRED B. NOBEL HAD BEEN VERY CONSCIOUS OF THE IMPORTANCE OF FOOD, FOR HE ONCE WROTE: "I WOULD RATHER TAKE CARE OF THE STOMACHS OF THE LIVING THAN THE GLORY OF THE DEPARTED IN THE FORM OF MONUMENTS." NONETHELESS, WHEN HIS WILL WAS DRAWN UP IN 1885, THERE WAS NO PROVISION FOR A PRIZE FOR EITHER AGRICULTURE OR FOOD.

WE ALL KNOW THAT MAJOR PRIZES -- INCLUDING THE NOBEL PRIZE -- ARE GUARDED AND PROTECTED FROM INTRUSION BY APPARENT IMPOSTORS. THIS IS CERTAINLY TRUE OF THE NOBEL PEACE PRIZE, WHICH IS GENERALLY UNDERSTOOD TO BE THE TERRITORY OF OUTSTANDING POLITICAL LEADERS.

I REALIZED THAT IT WAS HIGHLY UNLIKELY THAT AN AGRICULTURAL OR FOOD SCIENTIST WOULD BE SELECTED FOR A NOBEL PEACE PRIZE AGAIN WITHIN THE NEXT SEVERAL DECADES. SO, I TOOK IT UPON MYSELF: FIRST -- TO FIND OUT WHY THERE WAS NO NOBEL PRIZE FOR AGRICULTURE OR FOOD, AND SECOND -- TO SEE IF SUCH A PRIZE COULD BE ESTABLISHED.

I WROTE SEVERAL LETTERS TO THE NOBEL FOUNDATION INQUIRING ABOUT THE POSSIBILITY OF ESTABLISHING A NOBEL PRIZE FOR AGRICULTURE AND/OR FOOD, AS HAD BEEN DONE IN 1968 IN ESTABLISHING THE NOBEL PRIZE FOR ECONOMICS (WHICH IS ACTUALLY FUNDED BY THE BANK OF SWEDEN). I EVEN PRESENTED MY CASE TO THE BOARD OF GOVERNORS OF THE NOBEL FOUNDATION IN STOCKHOLM AND TO THE NOBEL COMMITTEE FOR THE NOBEL PRIZE FOR PEACE IN OSLO. BEFORE DOING SO, I HAD DONE MY HOMEWORK WELL AND HAD BEEN ASSURED BY THE THREE MOST PRESTIGIOUS AGRICULTURAL AND FORESTRY ORGANIZATIONS OF DENMARK, NORWAY, AND SWEDEN THAT THEY WOULD FUND A NOBEL PRIZE FOR AGRICULTURE AND FORESTRY IF ONE COULD BE ESTABLISHED.

THE MEMBERS OF THE BOARD ASSURED ME THAT THE NOBEL FOUNDATION WAS WELL AWARE OF THE NEED FOR RECOGNITION OF WORK IN AGRICULTURE AND FOOD. NONETHELESS, THEY INSISTED THAT, SINCE A PRIZE FOR AGRICULTURE AND/OR FOOD WAS NOT PROVIDED FOR IN NOBEL'S WILL AND ENDOWMENT, IT WAS NOT LEGALLY POSSIBLE TO ESTABLISH A NEW PRIZE USING THESE FUNDS. WHEN I COUNTERED THAT FUNDS FROM OTHER SOURCES MIGHT BE USED, THIS ALSO WAS REJECTED ON THE PREMISE THAT THE ADDITION OF MORE AND MORE PRIZES WOULD DILUTE THE PRESTIGE OF THE NOBEL PRIZES. SO, MY EFFORTS TO ESTABLISH A NEW NOBEL PRIZE FOR AGRICULTURE AND FOOD HAD HIT A DEAD END.

FOR THE NEXT THREE YEARS I SEARCHED INEFFECTIVELY FOR A SPONSOR FOR A WORLD FOOD PRIZE, WORKING WITH THE LATE CARLETON SMITH, WHO HAD BEEN SUCCESSFUL IN ESTABLISHING THE PRITZKER

ARCHITECTURE PRIZE, AND THE WORLD WILDLIFE PRIZE SPONSORED BY KERR-McGEE.

FINALLY WE WERE SCHEDULED TO MEET WITH JAMES L. FERGUSON, CHAIRMAN OF GENERAL FOODS CORPORATION, TO DISCUSS THE ESTABLISHMENT AND FUNDING OF SUCH A PRIZE. UNFORTUNATELY, CARLETON SMITH'S UNTIMELY DEATH THE NIGHT BEFORE THE SCHEDULED MEETING, DELAYED A DECISION.

NONETHELESS, IN OCTOBER 1985, MR. FERGUSON AND THE GENERAL FOODS FUND, INC. -- A TAX-EXEMPT FOUNDATION FUNDED EXCLUSIVELY BY GENERAL FOODS CORPORATION -- DECIDED TO SPONSOR AND FINANCE AN ANNUAL WORLD FOOD PRIZE. THE MONETARY VALUE OF THE NEW GENERAL FOODS WORLD FOOD PRIZE (\$200,000) IS THE MONETARY EQUIVALENT OF A NOBEL PRIZE. FOLLOWING THAT DECISION, ORGANIZATIONAL MEETINGS WERE HELD EARLY IN 1986 UNDER THE LEADERSHIP OF MR. A.S. CLAUSI, THEN SENIOR VICE-PRESIDENT OF GENERAL FOODS, WITH PARTICIPANTS FROM UNIVERSITIES, FOUNDATIONS, GOVERNMENT AND INDUSTRIAL LABORATORIES, TO WORK OUT DETAILS ON HOW THE PRIZE WOULD BE AWARDED AND ADMINISTERED.

A COUNCIL OF ADVISORS, MADE UP OF EIGHT INTERNATIONALLY RECOGNIZED AUTHORITIES, REPRESENTING DIFFERENT LINKS IN THE FOOD CHAIN, LAID DOWN GUIDELINES AND PROCEDURES FOR NOMINATING CANDIDATES AND SELECTING THE WINNER.

THE SECRETARIAT OF THE PRIZE -- WINROCK INTERNATIONAL INSTITUTE FOR AGRICULTURAL DEVELOPMENT -- ADMINISTERS THE PRIZE -- IT REVIEWS NOMINATIONS FOR APPROPRIATENESS AND COMPLETENESS, AND PASSES THEM ON TO THE SELECTION COMMITTEE WHICH CHOOSES THE WINNER.

THE SELECTION COMMITTEE IS MADE UP OF NINE DISTINGUISHED INDIVIDUALS FROM AROUND THE WORLD, WHO ARE KNOWLEDGEABLE ABOUT VARIOUS ASPECTS OF FOOD PRODUCTION, PROCESSING, DISTRIBUTION, MARKETING AND NUTRITION, AS WELL AS THE FIELDS OF RESEARCH, POLICY DEVELOPMENT AND BUSINESS MANAGEMENT. MEMBERS OF THE SELECTION COMMITTEE REMAIN ANONYMOUS EXCEPT FOR THE CHAIRMAN, THE POSITION IN WHICH I SERVE.

THIS YEAR THE SELECTION COMMITTEE VOTED UNANIMOUSLY TO AWARD THE FIRST ANNUAL GENERAL FOODS WORLD FOOD PRIZE TO DR. MONKOMPU SAMBASIVAN SWAMINATHAN FOR HIS OUTSTANDING CONTRIBUTIONS TO EXPANDING PRODUCTION AND AVAILABILITY OF FOOD THROUGHOUT THE WORLD. THAT BRINGS US TO THIS GLORIOUS EVENING.

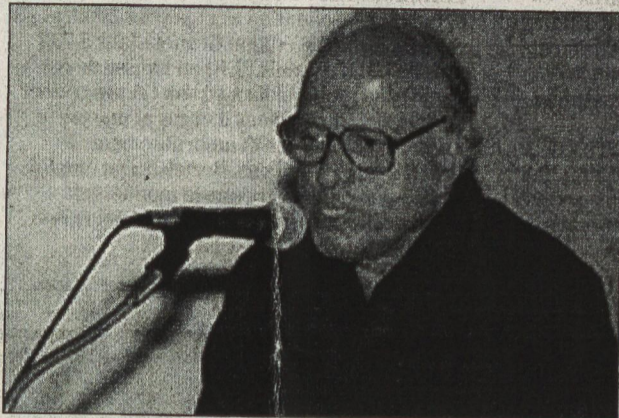
DURING THE 1960'S AND 1970'S, I PERSONALLY HAD THE GOOD FORTUNE TO SEE THE IMPORTANT AND DIVERSE ROLES HE PLAYED IN RESEARCH, EXTENSION, AND AGRICULTURAL POLICY, WHICH USHERED IN THE GREEN REVOLUTION IN INDIA. DURING THE 1980'S, I HAVE SEEN THIS TREMENDOUS POSITIVE IMPACT SPREAD TO MANY OTHER COUNTRIES.

IN CLOSING, DR. SWAMINATHAN, ON BEHALF OF ALL MEMBERS OF THE SELECTION COMMITTEE OF THE WORLD FOOD PRIZE, I HAVE THE VERY GREAT PERSONAL PLEASURE TO CONGRATULATE YOU FOR YOUR MANY GREAT CONTRIBUTIONS TOWARD THE IMPROVEMENT OF THE WELL-BEING OF MANKIND. I KNOW YOU WILL KEEP UP THE GOOD WORK. YOU HAVE OUR VERY BEST WISHES AS WE CONTINUE THE CELEBRATION HONORING YOUR ACHIEVEMENTS.

DR. SWAMINATHAN, WE ARE CONFIDENT THE TRAIL YOU HAVE BLAZED TOWARD INCREASING PRODUCTION, AND IMPROVING THE QUALITY AND AVAILABILITY OF FOOD FOR MILLIONS, WILL BE AN INCENTIVE TO ATTRACT SOME OF THE MOST TALENTED, CREATIVE AND BEST MOTIVATED YOUNG WOMEN AND MEN TO CAREERS IN THE FOOD SYSTEM. OUR WORDS TO YOU TONIGHT CAN HARDLY DO JUSTICE TO YOUR MANY ACCOMPLISHMENTS.

« Pas de progrès sans agriculture génétique »

Né en 1925, docteur en génétique de l'université de Cambridge, M. S. Swaminathan est titulaire de la chaire Unesco d'écotechnologie à l'université de Chennai (Etat de Madras), en Inde. Time le désigne comme l'une des vingt personnalités les plus influentes d'Asie. La troisième en Inde après Gandhi et Rabindranath Tagore. Expert en génétique, théoricien d'une révolution verte respectueuse de l'environnement, le professeur Swaminathan avait connu son premier succès en plantant des graines mexicaines au Punjab. Originaire de l'Etat du Kerala en Inde, il fustige les approches trop technocratiques de la Banque mondiale et préconise un développement adapté à la réalité villageoise. Faisant de l'accroissement de la production alimentaire à l'échelle de la planète une priorité absolue dans la lutte contre la pauvreté, il n'hésite pas à préconiser le recours aux dérivés transgéniques, sous certaines conditions.



M. S. Swaminathan considère qu'il est inutile de songer à accroître la productivité des terres arides par des moyens traditionnels. Seules les nouvelles technologies peuvent y parvenir. (DR.)

Propos recueillis par Richard Heuzé

LE FIGARO ECONOMIE. — La pauvreté devait être réduite de moitié dans le monde à l'horizon 2015. Vous pensez que cet objectif ne sera pas atteint. Pourquoi ?

M. S. SWAMINATHAN. — J'ai des doutes sur les méthodes employées. La pauvreté n'est pas une fatalité. On peut l'éliminer, même s'il n'y a ni issue facile ni remède universel. Les pauvres ne détiennent aucune richesse, seulement leur temps et leur travail. C'est cela qu'il faut valoriser. On peut y parvenir, à condition de modifier radicalement l'approche du problème. Ce que je critique, c'est la planification très centralisée, excessivement onéreuse de certaines institutions internationales, faisant appel à des experts grassement payés. Pour

des résultats. Les trois quarts des pauvres du tiers-monde vivent en milieu rural et dépendent entièrement de l'agriculture. Il faut tenir compte de leurs faibles moyens : pour une ferme moyenne de l'Inde, l'investissement est le millième de celui d'une plantation de l'Ohio. Cela devrait pourtant suffire à intensifier la production.

Mais les politiques agricoles nationales sont souvent ineptes ?

Il faut, c'est vrai, que les gouvernements du tiers-monde soient conscients des risques encourus par les agriculteurs et les protègent contre les chutes des cours qui menacent au moindre excédent. C'est le seul moyen d'encourager les augmentations de production. Cela implique que ces gouvernements annoncent au moment des semailles qu'ils interviendront pour racheter les excédents si les cours tombent en dessous d'un certain prix et

qu'ils honorent leurs engagements. Le gouvernement indien l'a fait : 40 millions

de tonnes de grains sont ainsi entreposés dans des silos publics. C'est le prix à payer pour garantir la sécurité alimentaire.

C'est le sens de votre proposition de nouvelle révolution verte ?

Je dirais plutôt : une révolution « toujours verte », c'est-à-dire compatible avec l'environnement, capable d'intensifier la production sans provoquer de catastrophe écologique. La révolution verte consiste à augmenter la production par des gains de productivité sur une terre donnée. Toutes les bonnes terres étant maintenant exploitées, il faut parvenir au même résultat en tenant compte des contraintes écologiques. La terre et l'eau sont des ressources fragiles. A l'avenir, il faudra produire davantage avec un potentiel de terres

arables et de réserves d'eau pour l'irrigation qui se restreint de jour en jour.

Vous prêchez donc pour les modifications génétiques ?

Jusqu'à présent, les principes génétiques mis au point par le moine autrichien Johann Mendel (1822-1884) ont permis de maintenir le taux de croissance de la production alimentaire au-dessus du taux d'expansion démographique de l'humanité. En tant qu'expert en génétique adhérant à l'école de Mendel, je suis d'avis qu'il ne peut y avoir révolution verte sans révolution génétique. Des étudiants de l'université de Madras ont développé, à partir de croisements d'espèces poussant dans les mangroves, des graines de moutarde et de tabac qui résistent à la salinité. D'autres étudient des variétés capables de supporter la sécheresse. En Suisse et en Allemagne, des savants développent des variétés de riz vitaminé. Beaucoup de choses sont possibles à partir des modifications génétiques. Les instruments existent. Il ne faut pas avoir peur de les utiliser.

A quelles cultures appliquer ces instruments génétiques ?

A toutes les cultures alimentaires. Cela permettra trois choses : des rendements plus élevés, une meilleure qualité des semences, une plus grande tolérance aux maladies végétales, à l'alcalinité, à l'acidité. Les progrès qui en découleront seront très importants. Encore faut-il prendre des précautions. Etre très clair sur le chapitre de la sécurité alimentaire, s'assurer de l'absence d'allergènes au stade de la consommation de ces produits, respecter à la lettre le codex alimentaire édicté par les Nations unies.

Que pensez-vous des productions transgéniques ?

Elles peuvent représenter un énorme pas en avant. Comparable à la découverte des vac-

dérations à faire. En premier lieu, la défense de leur biodiversité. Le remplacement des nombreuses variétés locales par un ou deux produits transgéniques risque d'entraîner une érosion de leur patrimoine génétique.

Comment répartir les bénéfices des découvertes ?

Il existe des conventions contraignantes à ce sujet : elles reposent sur le principe de l'équité. Encore faut-il qu'elles soient appliquées.

Prenez le cas du Prunas Africana, une plante médicinale du Kenya dont les tribus locales se servent de tout temps pour traiter la prostate. Les produits dérivés de cette plante génèrent un marché de 300 millions de dollars par an. Mais les laboratoires qui en vivent se gardent bien d'en faire profiter les tribus kenyanes.

Voyez-vous dans les produits transgéniques un moyen d'augmenter la production alimentaire ?

Sur les terres marginales, assurément. Sur ces terres arides, semi-arides, affectées

par la salinité, la désertification, qui représentent quand même la moitié de la surface du globe. Inutile de songer à en accroître la productivité par des moyens traditionnels. Seules les nouvelles technologies peuvent y parvenir. Encore faut-il prendre des précautions.

Lesquelles ?

D'abord, chaque pays devrait constituer une commission nationale chargée d'étudier le problème de la sécurité alimentaire. Cette commission serait ouverte à tous, experts, agriculteurs, médias, représentants des consommateurs, compagnies commerciales. Elle devrait travailler dans la transparence et soupeser avec attention les risques et les bénéfices de l'emploi de produits transgéniques.

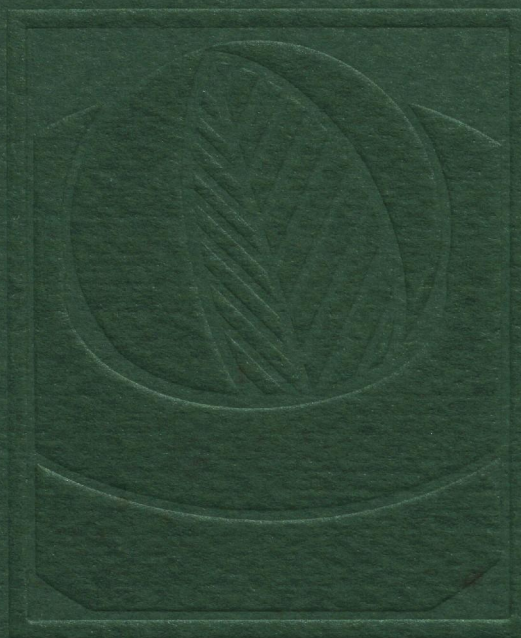
Nombre de gens craignent que ces produits ne permettent à un petit nombre de groupes de contrôler la sécurité alimentaire globale. C'est un souci légitime. Mais attention à ne pas barrer ainsi la route au progrès génétique.

Pour faire parvenir un dollar aux pauvres, on en dépense cinq en frais administratifs

faire parvenir un dollar aux pauvres, on en dépense cinq en frais administratifs. Mieux vaudrait donner directement ces cinq dollars à ceux qui en ont vraiment besoin et le problème serait résolu. La pauvreté est devenue un business qui fait vivre des milliers d'experts comme ceux de la Banque mondiale. Elle les enrichit. N'oubliez pas ce que recommandait Gandhi : « Soyez vous-même le changement que vous voulez apporter. »

La critique est aisée. Vous avez une solution ?

Il faut partir de l'entité de base, le village. En élaborant des stratégies centrées sur les besoins des communautés villageoises et visant à garantir la sécurité alimentaire. C'est l'approche du Fida (Fonds international de développement agricole), la seule qui conduise à



By their fruits the world shall know them.

1987

General Foods

World Food Prize

Dr. M. S. Swaminathan

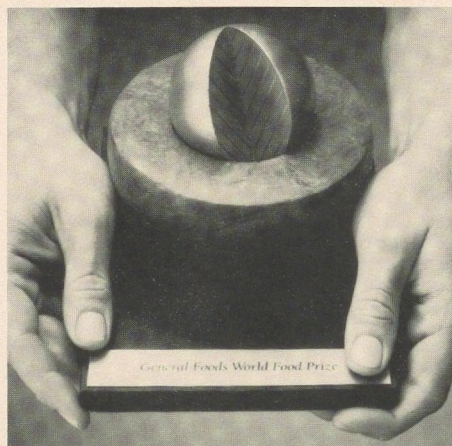
Director General

International Rice Research Institute

Republic of the Philippines

A prize for the world

The Commemorative of the General Foods World Food Prize was created by world-renowned designer Saul Bass. This basic, sensitive design symbolizes the world, its food and the nourishment of its people.



The General Foods World Food Prize is truly an award to benefit all humanity. Given annually, it seeks out the single most outstanding contribution to improving the world food supply – in quality, quantity or availability.

The Prize is not simply international – it is global in scope, seeing our world food

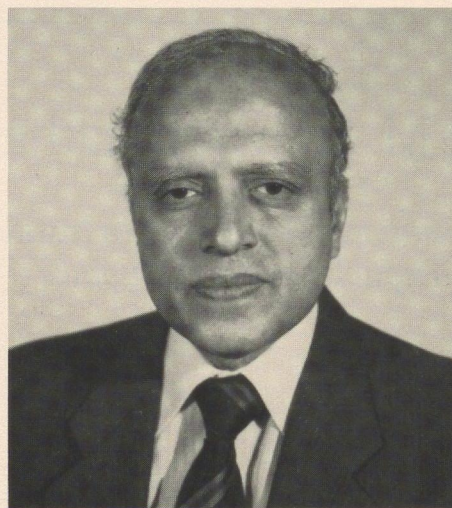
supply as a total system. Feeding the world's far-flung populations involves a fragile and intricate web that extends across the full breadth of our planet – a web that links the African farmer and the Indian scientist, the Italian merchant and the Chinese statesman.

Awarded for the first time in 1987, the \$200,000 Prize rewards achievement in any field that impacts our food chain: the food and agricultural sciences, food processing and preservation, nutrition and genetics, transportation and distribution, agricultural and economic policy.

It is fitting that the first Prize be awarded to a man whose career has contributed to practically every one of these disciplines – Dr. M. S. Swaminathan of India. His brilliant career and humane philosophy have enriched the lives not only of his countrymen, but also of individuals and entire populations across the globe.

M. S. Swaminathan: Scientist, educator, administrator, humanitarian

M. S. Swaminathan, first laureate of the General Foods World Food Prize.



“The word ‘impossible’ exists mainly in our minds,” his father once told him, “but given the requisite will and effort, great tasks can be accomplished.” In a career dedicated to alleviating human suffering, Dr. Monkombu Sambasivan Swaminathan has completed the work of many lifetimes.

He is widely recognized as the architect of the “Green Revolution” in India, which radically improved agricultural yields through the introduction of genetically superior grain varieties. This work alone

transformed India from a “begging bowl” to a “breadbasket” almost overnight, nearly doubling the total crop yield from 12 million tons to 23 million tons in four crop seasons.

His enthusiasm for passing on knowledge has earned him a reputation as a lucid educator. And his record of community service and political leadership has won him recognition as a profound humanitarian.

The impact of Dr. Swaminathan's work has reached far beyond the borders of his homeland. His worldwide reputation has made him an apt choice to chair many prestigious international conferences, including the U.N. World Food Congress in Rome in 1974. His foresight and inspiration have led to the establishment of renowned organizations to promote international scientific collaboration, notably the International Union for the Conservation of Nature and Natural Resources (where he currently serves as President), the International Crops Research Institute for the Semi-Arid Tropics, and the International Federation of Agricultural Research Systems for Development – the first significant efforts to promote scientific collaboration in developing countries.

The fruits of his labor

Dr. Swaminathan takes his teaching into the field, enabling small farmers to reap the most benefit from advanced technologies.



India, Dr. Swaminathan's homeland, is a country whose 780 million people comprise 20% of the Third World population; seven out of ten people live in rural areas. Dr. Swaminathan has long held that the key to enhancing the prosperity of India – and many other nations – is to make agriculture the cornerstone of the economy.

In the '60s, as a cytogeneticist and administrator of the Indian Agricultural Research Institute, he made major scientific advances, pioneering solutions to major agricultural problems in Asia. He led the way in introducing high-yielding varieties of wheat and rice to India – starting the "Green Revolution" that subsequently swept Southeast Asia.

By taking this new information to the farmer – at the farmer's level, with field demonstration plots – Dr. Swaminathan bypassed the stumbling block of illiteracy and converted a generation of Indians to a belief in the effectiveness of modern agriculture.

Dr. Swaminathan is noted for his understanding of the breadth of entire food systems. His service in government is testament to this: in several political leadership positions, he established programs of ecological rehabilitation, rural development and technology transfer. His programs effectively helped subsistence farmers reap their fair share

of credit and income while conserving national resources. "Ultimately," Swaminathan states, "it is the political will of the country to have policies in place which will stimulate production by small farmers. Without it, all research, technology ... any external advice will go in vain."

At his side throughout his career has been his wife, Mina, herself a noted author, teacher and community leader.

Today Dr. Swaminathan is Director General of the International Rice Research Institute (IRRI) in Los Baños, The Philippines. Here over 600 researchers from around the world work to increase yields of one of the world's most important food crops.

IRRI released the first improved rice varieties in the mid-1960s; today farmers grow improved varieties on 55% of the Third World's ricelands. Their increased production feeds 650 million more people than earlier varieties would have been able to do.

Dr. Swaminathan has proven that he is not only a brilliant scientist, but a capable administrator as well. His infectious enthusiasm and love of humanity have inspired and motivated thousands of others to give wholeheartedly to the cause he has chosen for his life's work: humbly serving the rural poor.

Curriculum Vitae

Dr. Monkombu Sambasivan Swaminathan

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

Education

B.Sc. from Tranvancore University (1944).
B.Sc. Agriculture from Coimbatore Agricultural College, Madras University (1947).
Associateship of the Indian Agricultural Research Institute, New Delhi, in Genetics and Plant Breeding (1949).
Ph.D. from the School of Agriculture, University of Cambridge (1952).
UNESCO Fellow in Genetics at the Agriculture University at Wageningen, The Netherlands (1949-50).
Research Associate in Genetics at the University of Wisconsin (1952-53).

Honorary Degrees (D. Sc.)

The Sardar Patel University, Vallabh Vidyanagar (1970).
The Andhra University, Waltair (1972).
The Haryana Agricultural University, Hissar (1973).
The Andhra Pradesh Agricultural University, Hyderabad (1973).
G. B. Pant University, Pantnagar (1974).
Jodhpur University, Jodhpur (1975).
Marathwada Krishi Vidyapeeth, Parbhani (1975).
Kumaon University, Nainital (1975).
Burdwan University, Burdwan (1976).
Agra University, Agra (1978).
Kerala Agricultural University, Trichur (1978).
Sri Venkateswara University, Tirupati (1979).
University of Agricultural Sciences, Bangalore (1980).
Banaras Hindu University, Varanasi (1981).
Technical University of Berlin, West Berlin (1981).
Mahatma Phule Agricultural University, Rahuri (1982).
Chandrasekhara Azad Agricultural University, Kanpur (1982).
University of Wisconsin, Madison, Wisconsin (1983).
Delhi University, Delhi (1984).
University of the Philippines, Diliman, Quezon City (1984).
Asian Institute of Technology, Bangkok (1985).
University of Mangalore, Mangalore (1986).
University of Hyderabad, Hyderabad (1987).

Honorary Professorships

Universidad Nacional Agraria-La Molina, Lima (National Agricultural University of Peru).
University of Mangalore, Mangalore.

Professional Profile

Positions held

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

Honorary positions in international organizations

Vice Chairman, Technical Advisory Committee of the Consultative Group on International Agricultural Research (CGIAR) (1971-77).
Vice Chairman, Protein-Calorie Advisory Group, United Nations (1972-77).

Chairman, First Quinquennial Review, International Rice Research Institute (IRRI) (1976).
Chairman, U.N. Advisory Committee on Science and Technology for Development (1980-83).
President, International Federation of Agricultural Research Systems for Development (IFARD) (1976-83).
Chairman and Member, Board of Trustees, International Council for Research in Agroforestry (ICRAF) (1977-82).
President, International Bee Research Association (IBRA) (1978-84).
Independent Council Chairman, U. N. Food and Agriculture Organization (FAO) (1981-85).
Member, Scientific and Technical Advisory Committee, Tropical Diseases Research, World Health Organization (WHO) (1983-85).
Honorary Vice President, World Wildlife Fund (WWF) (1985-present).
President, International Union for the Conservation of Nature and Natural Resources (IUCN) (1984-present).

Recognition by Scientific Academies

Fellow of the Indian National Science Academy (FNA) (1962).
Fellow of the Indian Academy of Sciences (F.A.Sc.) (1957).
Honorary Fellow of the National Academy of Sciences, India (1976).
General President, Indian Science Congress, Waltair (1976).
Honorary Fellow of the Swedish Seed Association, Sweden (1971).
Fellow of the Royal Society of London (FRS) (1973).
Foreign Associate, National Academy of Sciences, USA (1977).
Foreign Member, All-Union Academy of Agricultural Sciences, USSR (1978).
Founding Fellow, Third World Academy of Sciences (1983).
President, XV International Congress of Genetics, New Delhi (1983).
Foreign Member, Royal Swedish Academy of Agriculture & Forestry (1983).
Foreign Honorary Member, National Academy of Arts and Sciences, Massachusetts (1984).
Foreign Fellow, National Academy of Science of Italy (Accademia Nazionale delle Scienze) (1985).
Fellow of the Royal Society of Arts, London (1985).

Scientific Awards

Shanti Swarup Bhatnagar Award for contributions to Biological Sciences (1961).
Mendel Memorial Award of the Czechoslovak Academy of Sciences for contributions to Plant Genetics (1965).
Birbal Sahni Medal of the Indian Botanical Society for contributions to Applied Botany (1966).
Silver Jubilee Commemoration Medal of the Indian National Science Academy for contributions to Genetical and Agricultural Research (1973).
Barclay Medal of the Asiatic Society for contributions to Genetics (1978).
K. L. Moudgill Prize for contributions to Standardization (1978).
Borlaug Award (1979).
Meghnad Saha Medal of the Indian National Science Academy (1981).
Rathindranath Tagore Prize of Visva Bharati University (1981).
R. D. Misra Medal of the Indian Environmental Society (1982).
R. B. Bennett Commonwealth Prize (1984).
Bicentenary Medal of the University of Georgia, USA (1985).
Albert Einstein World Science Award by the World Cultural Council (1986).

Awards by the President of India

Padma Shri (1967).
Padma Bhushan (1972).

Award for Community Leadership

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."

Award for serving the cause of Women in Development

In 1985, first recipient of the Award instituted by the Association for Women in Development, Washington, D.C., for "outstanding contributions to activities which foster development for women."

"Krishi Ratna" Award

Awarded in 1986 for serving the farming community by the Bharat Krishak Samaj/World Agriculture Fair Memorial Trust Society. This award was made 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."

Some Major Contributions

Dr. Swaminathan 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. The results of these research studies have been published in about 200 scientific papers in international journals. Among the more important contributions are:

- Elucidation of the origin and differentiation of potato species.
- Understanding the genetic relationships among wheat species.
- Accomplishment of difficult crosses in potato and jute species.
- Standardization of techniques for the induction of polyploidy (i.e., doubling the number of chromosomes) in several economic plants.
- Elucidation of the factors influencing the induction and recovery of mutations in wheat and rice.
- Identification of the barriers to high yields in wheat and the initiation of the wheat breeding program involving the "Norin" dwarfing genes obtained from Mexico.
- Development of the concepts of "crop cafeterias," "mid-season corrections in crop scheduling," risk-distribution agronomy and alternative cropping strategies for different weather conditions.
- Purposeful manipulation of genes in improving the yield, quality and stability of performance of wheat, rice and potato.
- Development of whole-village or watershed operational research projects based on principles of ecology and economics.
- Development of disaster management strategies based on relief and rehabilitation measures in the "most seriously affected areas" and improved crop productivity in the "most favorable areas."
- Management of the disastrous drought of 1979 as Secretary to the Government of India in the Ministry of Agriculture.
- Collection and conservation of plant genetic resources, particularly of rice and wheat.

Contribution to Education

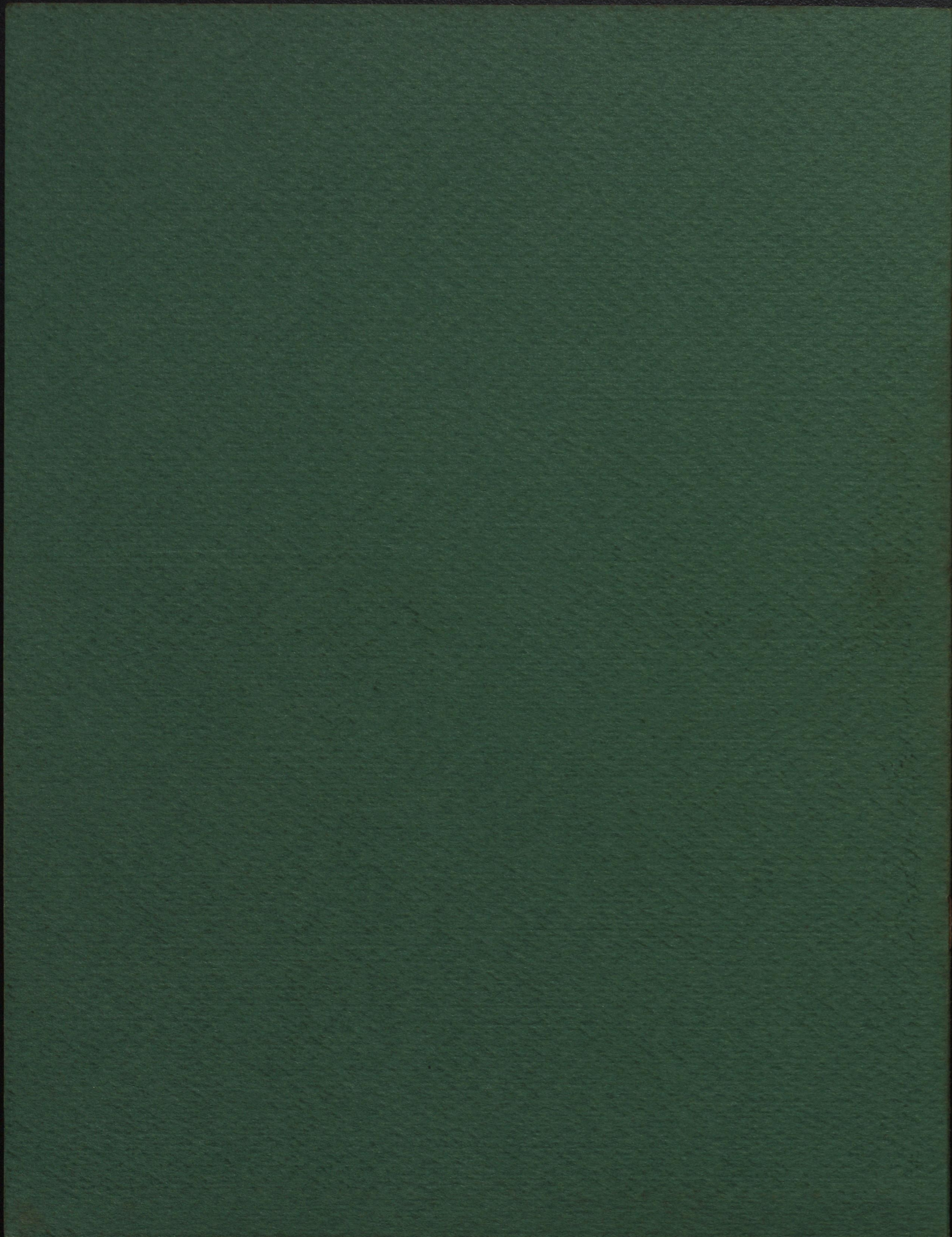
Over 50 students have done their Ph.D. thesis work under the guidance of Dr. Swaminathan. In 1972 he introduced the "Techniracy" concept of imparting training in the latest technical skills entirely through work experience, in order to bypass the problems created by illiteracy.

General Contributions to National Development

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

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

Administrator
General Foods World Food Prize
Winrock International
Petit Jean Mountain
Morrilton, Arkansas 72110 USA





THE WORLD FOOD-PRIZE



THE WORLD FOOD PRIZE

COUNCIL OF ADVISORS

A. S. Clausi, Chairman
Senior Vice President, Ret.
General Foods Corporation
White Plains, New York, U.S.A.

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Distinguished Professor
International Agriculture
Texas A&M University
College Station, Texas, U.S.A.

Ricardo Bressani, Ph.D.
Head, Division of Food and Agriculture Sciences
Research Coordinator
Instituto de Nutrición de Centro
America y Panama
Guatemala City, Guatemala

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Dean, School of Agriculture and
Life Sciences
Cornell University
Ithaca, New York, U.S.A.

Robert D. Havener
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Winrock International Institute for
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Pekka Linko, Ph.D.
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Helsinki University of Technology
Espoo, Finland

Thomas R. Odhiambo, Ph.D.
Director
International Centre of Insect
Physiology and Ecology
Nairobi, Kenya



BY THEIR FRUITS
THE WORLD SHALL KNOW THEM

"This award is a fitting tribute to accomplishments that will continue to inspire all who follow in the fight against world hunger."

Former President Ronald Reagan

INVITATION TO NOMINATE CANDIDATES

The World Food Prize, sponsored by the General Foods Fund, Inc., recognizes, encourages, and rewards outstanding achievements in improving the world food supply. It is meant to inspire young men and women to dedicate their talents to careers that address world food problems.

We have the honor of inviting you to submit nominations for next year's World Food Prize Laureate. Other organizations will be asked to submit nominations as well. All nominations will be treated confidentially.

Your nominee must have positively and measurably influenced the quality, quantity or availability of food in the world through achievements in any field. Examples of these disciplines include agricultural science, food science and technology, political leadership, manufacturing, marketing, nutrition, economics, and other social sciences or related fields of endeavor. The achievements, must have benefited the food supply for a significant portion of the world's population.

The World Food Prize is guided by a distinguished council of advisors that establishes the criteria for selecting the Prize laureate. Nominations will be thoroughly evaluated by a selection committee of experts from around the world.

A.S. Clausi
Chairman,
Council of Advisors
Senior Vice President, Ret.
General Foods Corporation

Norman E. Borlaug
Chairman, Selection Committee
Distinguished Professor of
International Agriculture
Nobel Laureate

THE NEED



The quest for food has always dominated the lives of people around the world. Without a safe, wholesome, and abundant supply of food, individuals — and entire nations — cannot achieve a satisfying quality of life. Indeed, they face the specter of malnutrition and starvation. Wars have been waged over food, and even today the economies of many countries hang in the balance, awaiting an ample harvest.

Improvements in the world food supply profoundly affect virtually every nation. But it is not enough merely to produce more food. The food also must be made available to every person in affordable, nutritious and appetizing forms.

To recognize past achievements and encourage improvements, The World Food Prize was created. The Prize was conceived of by Norman E. Borlaug, 1970 recipient of the Nobel Peace Prize. After receiving the Nobel Prize for his work in plant genetics, Dr. Borlaug spent years striving for the creation of a prize that would honor individual contributions to improving the world food supply. His vision was realized late in 1985 when the General Foods Fund, Inc., became the founding and principal sponsor of The World Food Prize.

THE PRIZE

The World Food Prize celebrates the food chain as a whole — from the farm to the table. It recognizes achievements in every field that affect the world's food chain. Candidates may be nominated by any private or public organization.

The Prize emphasizes the importance of a nutritious and sustainable food supply for all people. By honoring those who have worked successfully toward this goal, the Prize calls attention not only to what has been done to improve the world food supply but what can be accomplished in the future. The laureate receives a US\$200,000 cash award and a

commemorative sculpture created by world renowned designer Saul Bass.

The qualities the Prize honors are creativity, inspiration, enterprise, innovation, and service that resulted in bringing food to the tables of the world's population.

The World Food Prize is awarded solely on the basis of individual achievement with no consideration of nationality, racial or ethnic origin, religious beliefs, sex, or age.

THE LAUREATES

The first World Food Prize was awarded in 1987 to M.S. Swaminathan, Ph.D., former secretary of agriculture for India and architect of India's "green revolution." He led the successful introduction of the high-yielding "miracle grains" of wheat and rice to Indian farmers. Today, India is self-sufficient in cereal production.

The 1988 laureate was Robert F. Chandler, Jr., Ph.D., founding director of the International Rice Research Institute (IRRI) in Los Baños, the Philippines. Under Dr. Chandler's guidance, IRRI developed and distributed new varieties of rice with double and triple the yield potential of traditional rice. Largely because of this, famine in Asia was averted in the 1970s. His success at IRRI spurred the development of 12 other cooperative international agricultural research stations around the world, whose work has had a profound affect on food and agriculture.

Vergheese Kurien, chairman of India's National Dairy Development Board, was awarded The World Food Prize in 1989. As father of "Operation Flood," Mr. Kurien turned the milksheds of India into cooperatives that produce, process and market milk in the urban centers of his country. More than 5 million dairy producers in 50,000 cooperatives are currently marketing milk in 450 cities and towns. The success of Operation Flood's cooperative program has led to its application to other commodities, including fruits, vegetables and oil-seed; and adaption to other problems, like health care, sanitation and water supply.

“Until today, with the establishment of The World Food Prize, there has been no major award for outstanding accomplishment in bettering any part of the world food chain. We are learning more about hunger and malnutrition each day. The World Food Prize will call attention to what we can further do about it.”

*Norman E. Borlaug, Ph.D.
1970 Nobel Peace Prize Laureate*

THE SELECTION

All nominations for World Food Prize Laureates are reviewed for appropriateness and completeness by the secretariat. Nominations are then forwarded to the selection committee with recommendations.

The selection committee is composed of seven distinguished individuals who are knowledgeable on various aspects of nutrition and food production, processing, and distribution, including research, policy development, and business management.

The committee reviews and assesses the nominations and selects the candidate and alternate most worthy of the award according to the Prize's objectives. Members of the selection committee will remain anonymous except for the chairman, Norman E. Borlaug.

The minutes of the meetings of the selection committee and the views expressed by its members are not made public in any way.

The selection committee chooses the laureate and forwards its recommendation to the council of advisors. The Prize is presented each year at a special ceremony.

The Prize is normally awarded to one person, but it may be shared by partners in a project.

THE GOVERNANCE

The World Food Prize is guided by a council of advisors, a group of internationally recognized authorities. The council establishes policy regarding The World Food Prize. Its members represent a wide variety of sciences, disciplines, and professions relevant to food policy making, research, production, processing, and distribution.

The council of advisors is limited to eight members. Appointments are made by General Foods in consultation with distinguished experts.

THE ADMINISTRATION

The secretariat, Winrock International Institute for Agricultural Development, administers The World Food Prize following policies set by the council of advisors. Winrock International is a globally respected, private, nonprofit institution whose mission is to reduce poverty and hunger through sustainable agricultural and rural development. E.L. Williams, administrator at Winrock International, can provide additional information about nomination requirements.

"As a rule, the accomplishments of outstanding agricultural scientists are rewarded primarily by such things as peer recognition, plaques, and honorary degrees, not prizes convertible into dollars...With the establishment of The World Food Prize, exceptional scientists can be properly recognized for their achievement and for extending their influence for the benefit of humanity."

Science magazine
September 1987

THE NOMINATION PROCEDURE

Nominations for World Food Prize Laureate may be submitted by any institution or organization. A nominee must personally have made a significant and applied contribution to the quantity, quality, or availability of food.

An organization may submit as many nominations as it sees fit. Invitations to nominate are mailed in the month of June each year.

- ◆ The nominator must follow the specified format, stating how the nominee qualifies for the Prize. The candidate should be nominated for one specific, measurable accomplishment.
- ◆ Supporting documentation must be submitted, along with three seconding nominations from individuals familiar with the nominee and the nominee's work.
- ◆ General articles about the nominee's activities and trends in the nominee's field are appreciated.
- ◆ Information contained in the nomination and supporting materials may be used in preparing news materials about the winner.
- ◆ Nominations may be made in English, French or Spanish.
- ◆ The nominee must be a living individual.
- ◆ Nominations for the Prize for a given year must be postmarked by December 31 of the preceding year. Please submit nominations to:

Edward L. Williams, Administrator
World Food Prize
Winrock International
Petit Jean Mountain
Morrilton, Arkansas 72110-9537, U.S.A.
(Phone) 501/727-5435
(FAX) 501/727-5242



NOMINATION FORMAT

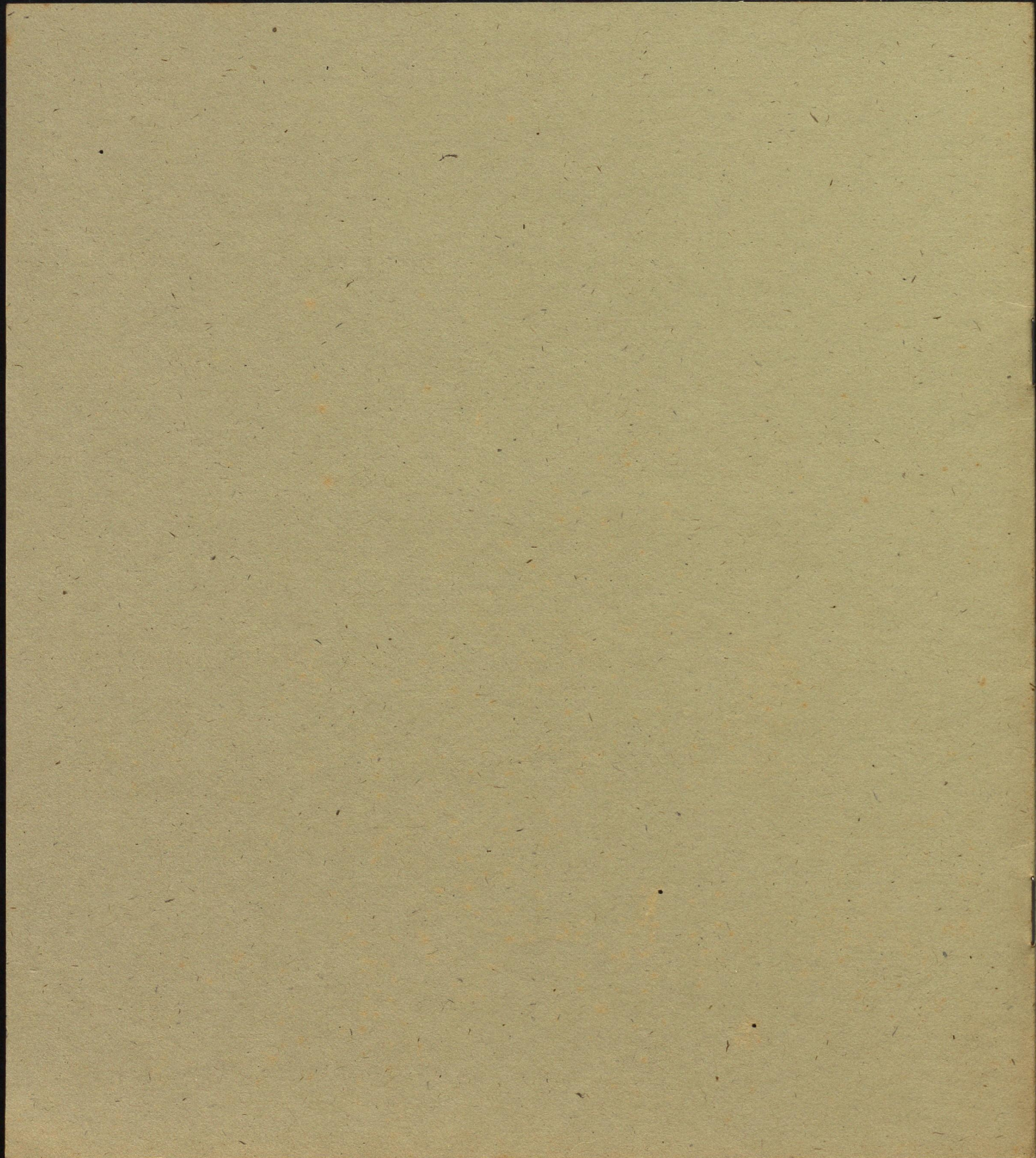
Please provide the following in the sequence shown:

- Name** Nominee's name, affiliation, address, telephone number.
(Attach a recent photograph of the nominee.)
- Biographical** Date and place of birth
Education
Positions held (public and private organizations)
Professional affiliations
Honors and awards
- Personal Contribution** A description of the nominee's personal contribution to the quantity, quality or availability of food (1 to 2 typed pages). Documentation must be provided.
- Nominating Organization** Name of nominating organization, address, telephone number. Entries must be signed by the chief executive officer of the nominating organization certifying the accuracy of the information. All information will be kept in strict confidence.
- Date** Date of nomination.
- Seconding Nominations** Seconding nominations from three individuals who are familiar with the nominee and the nominee's work.
- Supporting Documents** Relevant supporting documents, including, as appropriate, significant publications. Please do not send multiple copies.

Note: Nominations will be valid for three years, upon written annual confirmation of the nominator's wish to resubmit and the receipt of updated documentation.

• THE WORLD FOOD PRIZE

Sponsored by The General Foods Fund, Inc.





October 6, 1987

Washington, Smithsonian Institution

World Food Prize

Dr. Ferguson + NSS

Photo by RAJAN DEVADAS

Message of Commendation and Congratulation from the Secretary-General of
the United Nations on the occasion of the award of the General Foods
World Food Prize to Dr. M.S. Swaminathan

I am very pleased to extend commendation and congratulations to Dr. Swaminathan as the first recipient of the General Foods World Food Prize.

Dr. M.S. Swaminathan, a distinguished Indian agricultural scientist and currently Director-General of the International Rice Research Institute (IRRI), Philippines, is a living legend. He is popularly acclaimed as the father of the green revolution in India, which has contributed greatly to India's practical self-sufficiency in food today. His contributions to agricultural science in the area of seed and fertilizer technology, and his outstanding record of public service nationally as well as internationally, have made an indelible mark on food production in India and elsewhere in the developing world. By any standards, Dr. Swaminathan will go into the annals of history as a world scientist of rare distinction. His example should be a standing inspiration for all those who are dedicated to the eradication of hunger and poverty, and the application of science to the solution of human problems. I congratulate him most warmly on being the first recipient of the General Foods World Food Prize.

As this is the first time that the General Foods World Food Prize is being awarded, I would also like to express my appreciation to the General Foods Fund both for endowing the Prize in order to encourage and reward outstanding contributions that improve the quality, quantity, and availability of the world's food supply and to attract the most talented and dedicated young people anywhere in the world to careers in the fields of food production, storage, processing and distribution.

The inauguration of the Prize could not have come at a better moment. It may be recalled that in 1974 the United Nations World Food Conference solemnly resolved to eradicate hunger and malnutrition from the globe within ten years. Today -- thirteen years later -- the sad truth is that the world has more, not fewer, hungry and malnourished people, and the number continues to grow. The situation would have been much worse, of course, were it not for the outstanding contributions of talented individuals like Dr. Swaminathan and their collaborators. The institution of the General Foods World Food Prize at this historical juncture must therefore be applauded for the support and stimulus that it gives to the on-going struggle against hunger and malnutrition the world over.

THE NATIONAL ACADEMY OF SCIENCE AND TECHNOLOGY
OF THE PHILIPPINES

presents

A Special Convocation

in honor of

DR. M. S. SWAMINATHAN

*First Laureate,
World Food Prize*



Friday, 6 November 1987
9:30 o'clock in the morning
Elvira O. Tan Hall (PCARRD Auditorium)
Los Baños, Laguna



MONKOMBU SAMBASIVAN SWAMINATHAN

Born 7 August 1925 in Kumbakonam, Tamil Nadu, India

Educated at Tranvancore University (B.Sc.); Coimbatore Agricultural College, Madras University (B.Sc. in agriculture); Indian Agricultural Research Institute (associate in genetics and plant breeding); School of Agriculture, University of Cambridge, U.K. (Ph.D.); Agriculture University at Wageningen, The Netherlands (UNESCO fellow in genetics), and the University of Wisconsin, U.S.A. (research associate in genetics).

Held positions as teacher, researcher, and administrator with the Central Rice Research Institute, Cuttack, and the Indian Agricultural Research Institute, Cuttack, and the Indian Agricultural Research Institute, New Delhi; Director General, Indian Council of Agricultural Research; Secretary to the Government of India, Ministry of Agriculture and Irrigation; Member, Planning Commission, Government of India; and Director General, the International Rice Research Institute. More than 50 students have done their Ph.D. thesis work under his guidance, results of studies on a wide range of problems in basic and applied plant genetics and agricultural research and development have appeared in about 200 scientific papers published in international journals.

This synopsis of a curriculum vitae barely sketches the influence Dr. Swaminathan's leadership has had on many lives in many countries. More illustrative is the recognition his activities have brought.

Honorary degrees from 23 universities in India, Germany, the U.S.A., Thailand, and the Philippines. Fellow of 14 scientific academies in India, Sweden, United Kingdom, U.S.A., U.S.S.R., and Italy. Founding fellow of the Third World Academy of Sciences. Scientific achievements recognized through 14 awards from all over the world, including the 1986 Albert Einstein World Science Award by the World Cultural Council. Honorary chairman, vice chairman, president, vice president, and director of 11 international organizations, notably the International Union for the Conservation of Nature and Natural Resources (where he currently serves as president). Leadership awards include the 1971 Ramon Magsaysay Award for Community Leadership, the 1986 Krishi Ratna Award for service to the farming community, and the 1985 Association for Women in Development award.

In a career dedicated to alleviating human suffering, Dr. Swaminathan has completed the work of many lifetimes. His enthusiasm for passing on knowledge has earned him a reputation as a lucid educator; his record of community service and political leadership has won him recognition as a profound humanitarian.

Program

Philippine National Anthem	Madrigal Singers
Welcome	Dr. Paulo C. Campos <i>President, NAST</i>
Musical Number	Madrigal Singers
Remarks	Dr. Raul P. de Guzman <i>Chancellor, UPLB</i>
Remarks	Dr. Dioscoro L. Umali <i>National Scientist</i>
Remarks	Hon. Carlos G. Dominguez <i>Secretary of Agriculture</i>
Musical Number	Madrigal Singers
Remarks	Hon. Antonio V. Arizabal <i>Secretary of Science and Technology</i>
Remarks	Dr. Jose V. Abueva <i>President, UP System</i>
Remarks	Dr. Ramon V. Valmayor <i>Executive Director, PCARRD</i>
Musical Number	Madrigal Singers
Response	Dr. M. S. Swaminathan

Program Changes

1. The remarks of Dr. Raul P. de Guzman will be delivered by Dr. Domingo M. Lantican, Acting Chancellor – UPLB.
2. The remarks of Secretary Carlos G. Dominguez will be delivered by Hon. Dante Q. Barbosa, Acting Secretary of Agriculture.
3. Dr. Lantican and Dr. Abueva will exchange places in the program.

The U. P. Madrigal Singers

Prof. Andrea O. Veneracion
Choirmaster

Sopranos:

Ma. Christina Viguilla
Jennifer Villanueva
Concepcion Ongsiako
Roxanne Roque
Fe Candida Mabunga

Altos:

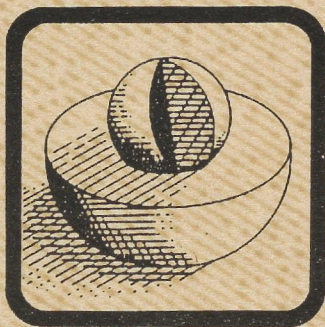
Margarita Austria
Paz Villanueva
Patricia Brillantes
Consuelo Reyes
Aurelia Malvar

Tenors:

Sal'my Neo Malaki
Renato Jose
Edward Granadosin
Eduardo Nepomuceno

Basses:

Jonathan Velasco, Asst. Choirmaster
Ronald Zaballa
Robert Delgado
Joy Lucero
Jonathan Zaens
Armando Robles



The Commemorative of the General Foods World Food Prize was created by world-renowned designer Saul Bass.

GENERAL FOODS WORLD FOOD PRIZE

... to recognize and reward those men and women who have made outstanding contributions to expanding and improving the quality, quantity, or availability of food throughout the world.

The Prize is an award to benefit all humanity. Given annually, it seeks out the single most outstanding contribution to improving the world food supply, in quality, quantity, or availability. Its scope is global, viewing the world's food supply as a total system that extends across the full breadth of our planet to feed the world's far-flung populations.

Every aspect of the production, processing, and distribution of food is considered, including farming, the agricultural sciences, food science and technology, nutrition and economics, technology transfer, governmental policies, transportation and distribution, and education. The Prize rewards achievement in any field that has impact on human access to food.

The Prize is sponsored by the General Foods Fund, Inc., a tax-exempt foundation funded exclusively by General Foods Corporation.

The National Academy of Science and Technology of the Philippines

requests the pleasure of your presence

at a

Special Convocation

in honor of

Dr. M. S. Swaminathan

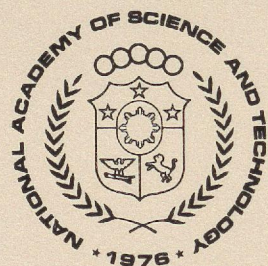
Director General, IRRI

The First Laureate of the World Food Prize

Friday, 6 November 1987, 9:30 o'clock in the morning

Elvira O. Tan Hall (PCARRD Auditorium)

Los Baños, Laguna



An Invitation



June 1989

Winrock International Project Profile

General Foods World Food Prize

The World

People Population: 5.2 billion (mid-1989), expected to be 6.1 billion in 2000 and 8.2 billion in 2025; 75% live in developing countries

Population distribution by continent: Asia 60%, Europe 13.5%, Africa 12.2%, North America 8.2%, South America 5.6%, Australia less than 1%

Annual growth rate: 1.7%, ranging from average of 2.1% in developing countries to 0.6% in developed countries

Life expectancy: 61.1 years, varying from average of 52 years in low-income developing countries to 76 years in developed countries

Dominant age group: 31.9% are under 15 years of age

Distribution: Urban 42.6%, rural 57.4% (1990 est.); rural population varies from average of 69% in developing countries to 28% in developed countries

First languages: Mandarin Chinese 825 million, English 431 million, Hindi 325 million, Spanish 320 million, Russian 289 million, Arabic 178 million, Bengali 178 million, Portuguese 169 million, Malay-Indonesian 135 million, Japanese 124 million, German 118 million, French 117 million (1988)

Food supply: 2,666 calories per person per day (1983-1985) (2,258 of vegetable products and 408 of animal products); developing countries: 2,424 calories per person per day (2,222 vegetable products, 202 animal products), developed countries: 3,374 (2,364 vegetable products, 1,010 animal products); ranging from Ireland 3,795 to Ghana 1,679

Geography Area: 196 million sq mi (507 million sq km)

Land area: 57.28 million sq mi (148.4 million sq km)

Land distribution by continent: Asia 30%, Africa 20%, North America 16%, South America 12%, Antarctica 9%, Europe 7%, Australia 5%

Arable land: 0.8 acres (0.3 ha) per person

Independent countries (excluding territories and colonies): 173

Countries becoming sovereign since 1945: 100

The Project

Official Name The General Foods World Food Prize

Funding Agency General Foods Fund, Inc.

Award US\$ 200,000

1989 Laureate Verghese Kurien, Chairman, National Dairy Development Board, Anand, India

Presentation Third presentation will be made October 17, 1989, at the Smithsonian Institution, Washington, DC, USA. Events will include an award ceremony honoring the laureate and a colloquium *Global Sharing of Food and Agricultural Innovation and Development*.

Summary The World Food Prize is the foremost international award to recognize, encourage, and reward outstanding individual achievement in improving the world food system. Candidates may be nominated by any private or public organization in the world. The prize was established by the General Foods Fund, Inc., and is administered by Winrock International. Beyond recognizing the laureate, it is intended to attract talented, creative, and dedicated young people to careers in food and agriculture.

The 1989 Laureate

Verghese Kurien is honored as The World Food Prize laureate for his significant impact on the productive capacity of Indian agriculture, notably the



1989 Laureate
Verghese Kurien
India
Chairman, National
Dairy Development Board

Economy Gross national product:

US\$ 16,800 billion (1986); about 80% produced in developed countries

Annual growth rate: 2.4% (1986)

Annual per capita income: US\$ 3,382; developing countries average US\$ 660 (36 countries have US\$ 450 or less), developed countries average US\$ 10,530 (United States US\$ 18,430 [1987])

Agriculture As percentage of gross domestic product:

Developing countries average 19% (lowest-income countries average 38%), developed countries average 3% (United States 4%)

Land use: Arable 10%, permanent crops 1%, meadows and pastures 24%, forest and woodland 31%, other 34%; includes irrigated 1.6%

Employment: 71% agricultural in low-income developing countries, 7% agricultural in developed countries

Chief crops: Wheat 536 million MT, maize 481 million MT, rice 476 million MT, soybeans 96 million MT, roots and tubers 592 million MT, vegetables and melons 414 million MT, fruits 326 million MT

Chief animal products: Cattle 1.272 billion head, swine 822 million head, sheep and goats 1.637 billion head, poultry 9.349 billion head; meat production 155 million MT, milk production 520 million MT

increased production and distribution of milk that has been called the white revolution.

Kurien's work began in 1948 in the state of Gujarat in western India and led to his leadership of the *Anand Pattern* of dairy production based on farmers' ownership of the cooperatives that produced, processed, and marketed milk. The pattern has been replicated throughout the country and now involves more than 5 million dairy producers in 50,000 cooperatives, marketing milk in 450 cities and towns.

The Anand Pattern begins by establishing a stable and remunerative market; confidence in the market leads farmers to invest in increased production and productivity. The cooperatives support that investment with inputs like feed and services like artificial insemination and veterinary treatment. The entire system is buttressed by research in production, processing, and marketing.

The farmer-owned, democratically controlled cooperatives have created a grassroots foundation to India's democracy. The success of cooperation has led to its local application to other problems like health care, sanitation, and water supply.

As a result of Kurien's work:

- The violent fluctuations in India's milk prices have stabilized, a benefit to both milk producers and consumers.
- India's towns and cities receive an adequate supply of hygienic milk, even in periods of drought.
- A computerized milk grid covers India, enabling the movement of fluid milk by road and rail from areas of surplus to areas of deficit.
- The small farmers and landless laborers who make up the majority of the dairy cooperative membership now have a regular daily source of income; every morning and evening, millions of families receive payment for their milk — a payment based on quality.

The Anand Pattern has been adapted to a major project in oilseeds and edible oil that now links 500,000 farmer-members of more than 3,000 oilseed-growers' cooperatives in a system that handled more than 400,000 tons of oilseeds in a drought year. A new activity is a fruit-and-vegetable cooperative to produce and market fresh produce in Delhi.

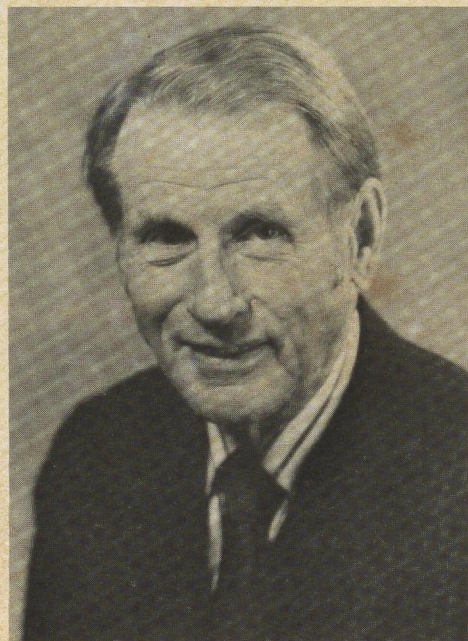
The need to attract, train, and motivate India's youth to work for the nation's farmers led Kurien to create the Institute for Rural Management. This institute has trained more than 300 of India's brightest young students who now manage cooperative enterprises throughout the country.

Kurien was born in Kerala state in 1921. He earned bachelor's degrees from Madras University in science (1940) and engineering (1943) and a master of science degree in mechanical engineering from Michigan State University (USA) in 1948. He studied dairy production and processing in India, New Zealand, and Australia. Four universities have awarded him honorary doctorate degrees. He received the Ramon Magsaysay Award for Community Leadership in 1963 and the Carnegie Peace Award in 1986.

Anand, India, has become a center for those interested in the application of cooperation to the problems of development. Eighty-three countries of Asia, Africa, and Latin America — inspired by Kurien's Anand Pattern — have expressed the desire to replicate this model.

Previous Laureates

- **1988: Robert F. Chandler, Jr., of the United States.** He is known for his skillful leadership in building institutions and training people to advance the science of agriculture for solving problems of humanity. Chandler designed and built the International Rice Research Institute in the Philippines and guided it through its first decade, seeing the early research manifested in the green revolution in Asia. Next, he set up the Asian Vegetable Research and Development Center in Taiwan, an institution that has improved and increased vegetable production in dozens of countries. Since retirement, Chandler has been a consultant to African and Asian governments, furthering the cause of world food production through improving their agricultural research systems.



Robert F. Chandler, Jr.
United States
1988 Laureate

● **1987: M. S. Swaminathan of India.** This renowned scientist-statesman is considered the architect of the green revolution in India. As director of the Indian Agricultural Research Institute, director general of the Indian Council of Agricultural Research, and Secretary of Agriculture, he led the successful introduction of the high-yielding "miracle grains" of wheat and rice to Indian farmers. The new seeds converted a generation of Indian farmers to a belief in the effectiveness of fertilizer and other modern farming practices. Swaminathan has played a leading role in worldwide activities to transfer new technologies from research institutions to the fields of small farmers, in the advancement of agricultural production systems that are economically and ecologically sustainable, and in improving the status of rural women in the third world. He was director general of the International Rice Research Institute from 1982 to 1988.

Background The award was conceived by Norman E. Borlaug, eminent agricultural scientist and member of the board of directors of Winrock International. Upon receiving the 1970 Nobel Peace Prize for his contributions to the green revolution, he dreamed of a comparable award to honor individual contributions to addressing and alleviating hunger and malnutrition. Borlaug's vision was realized late in 1985 when the General Foods Fund, Inc., became the sponsor of The World Food Prize.

Criteria The prize is awarded each year to that individual in any area of endeavor who has made what is judged to be the outstanding contribution to improving of the world food supply. The award is made without regard to race, color, creed, religion, national origin, age, sex, or political beliefs of nominees.

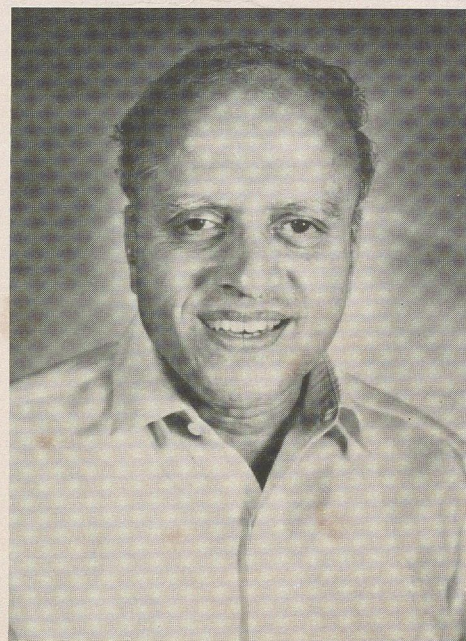
Procedure

Nominations: The call for candidates is made annually. December 31 is the deadline for nominations for the award to be presented the following October. Nominations remain active for three years. Any recognized organization may present candidates.

Selection: The nine-person Selection Committee — whose members remain anonymous — evaluates the nominations and recommends the laureate and alternate. The committee members represent many cultures and are knowledgeable about nutrition and producing, processing, and distributing food and are experts in research, policy development, and business management.

Governance The Council of Advisors establishes policy for the prize, including rules for selecting the award winner. The council members are internationally recognized authorities in professions concerned with researching, producing, processing, distributing, and making policy about food.

Administration The policies set by the Council of Advisors are carried out by the Secretariat, Winrock International.



M. S. Swaminathan
India
1987 Laureate

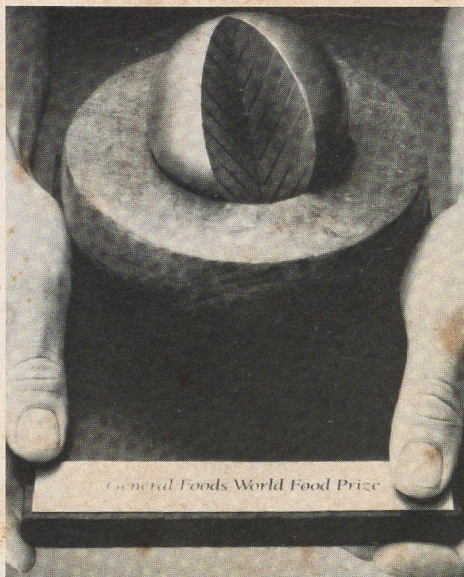
Average change in cereal output in developing countries, 1972-1974 to 1982-1984:

1.4% (selected countries: Paraguay 7.3%, Burma 6.1%, Indonesia 4.9%, China and Costa Rica 4.7%, Côte d'Ivoire and Philippines 4.3%, Niger and Pakistan 4.1%, Ghana -3.2%, Angola -4.2%, Congo -4.2%, Botswana -15.2%)

Average annual change of food production (1971-1984): Developing countries 3.2%, developed countries 2.1%

Additional References

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- *World Agriculture: Review and Prospects into the 1990s*. 1983. Winrock International, Morrilton, AR, USA.
- *World Development Report 1988*. 1988. Oxford University Press, New York, NY, USA.
- *World Resources 1988-89*. 1988. Basic Books, New York, NY, USA.



The commemorative of the General Foods World Food Prize was created by world-renowned designer Saul Bass. This basic, sensitive design symbolizes the world, its food, and the nourishment of its people.

Contacts

Council of Advisors: Mr. A. S. Clausi, *Chairman*
Council of Advisors, The World Food Prize
General Foods Corporation
White Plains, NY 10625, USA

Selection Committee: Dr. Norman E. Borlaug, *Chairman*
Selection Committee, The World Food Prize
Centro Internacional de Mejoramiento de Maíz y Trigo
Mexico 6, D.F., Mexico

Secretariat: Mr. Edward L. Williams, *Administrator*
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FAX: (501) 727-5242

Winrock International Activities in India

- The Management Support Services for Agriculture project is a 5-year contract of the U.S. Agency for International Development (USAID), under which Winrock is providing management and technical support in implementing the joint Government of India/USAID Agricultural Research Project (ARP) and other USAID-funded projects. The ARP is to enable the Indian Council of Agricultural Research to benefit from available technology in the United States and to strengthen the means for collaboration in long-range agricultural research between the two countries. September 1985 to September 1990.
- The Irrigation Training and Research project is a 6-year project supporting India's program to increase irrigated agricultural production through more-efficient irrigation systems and improved productivity of irrigation water delivered to farmers' fields. Louis Berger International is the lead institution in this USAID-funded project. Winrock is providing training and extension and on-farm agricultural management services. March 1986 to March 1992.
- The Natural Resource Economics Research and Capacity Building project, funded by the Ford Foundation, is to conduct research on soil- and water-resource economics as it affects productivity and sustainability in India's semiarid tropics and assist agricultural universities to conduct research and provide graduate education on soil- and water-resource economics in semiarid tropical agriculture. The International Crops Research Institute for the Semi-Arid Tropics (ICRISAT) is collaborating with Winrock in this project. January 1989 to December 1991.
- Winrock is compiling and publishing a collection of readings on agroforestry in India. The project is funded by a grant from the Ford Foundation.

Former Winrock Activities in India

Winrock International's association with India began in the late 1950s when the Agricultural Development Council — one of the organizations that merged in 1985 to create Winrock — first provided graduate-study fellowships to assist in strengthening the country's agricultural economics research. Over the next quarter-century, 36 Indian scientists received formal training under the council's auspices. Beginning in 1963, the council appointed a series of staff members to aid in development of the program. They were assigned to the Indian Agricultural Research Institute, the University of Mysore, and ICRISAT while maintaining close professional relationships with rural social scientists at other research institutions and universities throughout the country.



July 1989

Winrock International Project Profile

The Country

Official Name Republic of India

People Population: 817 million (1988); expected to be 1.2 billion by 2025

Annual growth rate: 2.0%

Life expectancy: 57.9 years

Dominant age group: 40% are under 15 years

Population density: 709 per sq mi (273 per sq km)

Distribution: Urban 28%, rural 72%

Ethnic groups: Indo-Aryan 72%, Dravidian 25%, Mongoloid 2%, others 1%

Religions: Hindu 83%, Muslim 11%, Christian 2.6%, Sikh, Jain, Buddhist, and others 3.4%

Languages: Hindi, English, and 14 other official languages; Hindi is the national language and primary tongue of 30% of the people. English is an important language for national government, business, academia, and science.

Literacy rate: Men 57%, women 29%

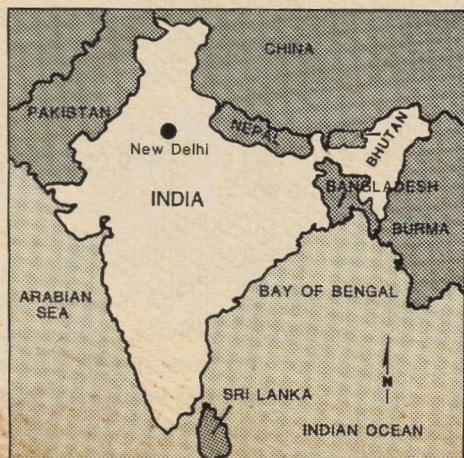
Education: 42% of persons ages 5 to 19 are enrolled in school; 9.5 million are enrolled in graduate and higher-level studies

Daily newspaper circulation: 16 per 1,000 persons

Radio sets: 70 per 1,000 persons

Geography Area: 1,268,884 sq mi (3,287,263 sq km)(one-third the size of the United States)

Location: Occupies most of the Indian subcontinent of South Asia. It is bordered



India: Management Support Services for Agriculture

The Project

Official Name Management Support Service for Agriculture

Term September 1985 to September 1990

Funding Agency U. S. Agency for International Development (USAID) through direct contract with Winrock International

Amount US\$ 3,149,029

Official Relationships Winrock International works with the Indian Council of Agricultural Research (ICAR) in planning and implementing the Agricultural Research Project (ARP).

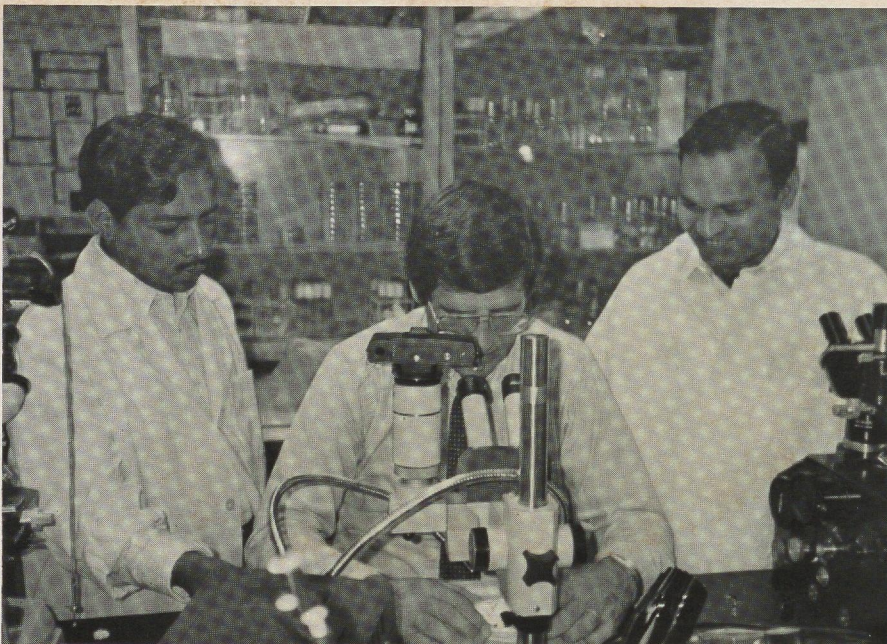
Summary Under a 5-year USAID contract, Winrock International provides management and technical support in planning and implementing the joint Government of India/USAID Agricultural Research Project. The ARP is to enable the ICAR to benefit from available technology in the United States and to strengthen the means for collaboration in long-range agricultural research between the two countries.

Objective To participate in planning and implementing the Agricultural Research Project by supplying short- and long-term technical assistance, facilitating scientist exchanges, planning and arranging participant training, and procuring scientific equipment.

Background The Management Support Services for Agriculture (MSSA) project is meant to enhance the capability of the national agricultural research system of India to efficiently design and effectively implement the ARP. Collaboration between Indian and U.S. scientists is of paramount importance to the success of the ARP. ICAR is the implementing agency. An Indo-United States Subcommittee on Agriculture identified a number of researchable problems. Several of these have been selected by ICAR and USAID for ARP subprojects. Eight are in operation (mid-1989) and several others have been designed for possible future funding.

Subproject Goals and Activities

- The soybean processing subproject is to enhance the nutritional adequacy of the basic diet of the Indian people. It focuses on making maximum use of soybean as a food source through improved processing and through greater use by low-income people.
- The work on post-harvest technology of fruits and vegetables aims to reduce losses of major horticultural crops of India, thus improving the nutritional quality of the diets. The research is to reduce losses during harvesting, storing, marketing, and processing for major crops such as mango, citrus, banana, guava, onion, potato, and tomato.
- The Government of India is promoting agroforestry, the farming system that integrates growing trees with producing other crop and animal commodities. The forestry faculty training subproject is supporting forestry training for agricultural scientists developing this new field of study. Under MSSA, more than 50 Indian



Dr. M.H. Siddiqui (left) and Dr. B.B. Jadhav (right) are studying tree crop propagation with Dr. Ronald Newton (center) of the Department of Forestry, Texas A&M University. They are receiving forestry and agroforestry training under one of the MSSA subprojects. Upon completing their one-year nondegree programs, they will return to their teaching posts in India, Dr. Siddiqui at Birsa Agricultural University in Bihar state and Dr. Jadhav at Konkan Drishi Vidyapeeth in Maharashtra state.

on the north by China, Nepal, and Bhutan; on the east by Bangladesh and Burma; and on the northwest by Pakistan. Sri Lanka is across a narrow strait off the southern tip of the peninsula. Water boundaries are the Bay of Bengal to the east, the Arabian Sea to the west, and the Indian Ocean to the south.

Cities: Capital—New Delhi 7 million, Calcutta 9.7 million, Bombay 8.6 million, Madras 4.6 million, Bangalore 3.2 million, Hyderabad 2.8 million, Ahmedabad 2.3 million

Terrain: The Himalaya Mountains extend along the northern border. Below is the wide, fertile Ganges Plain, one of the most densely populated regions of the world. The southern portion of the peninsula includes the Deccan Plateau, which is of moderate elevation.

Climate: The southern area has tropical heat while the northern mountains have near-Arctic cold. There are three well-defined seasons: cool from November to March, hot and dry from March to June, and hot and rainy during most of the rest of the year. Annual rainfall ranges from about 400 inches (10,160 mm) in the Assam Hills in the northeast to 5 inches (125 mm) in the Rajasthan Desert in the northwest.

Government Type: Federal republic
Independence: 1947

Principal agencies concerned with agriculture: Ministry of Agriculture, Ministry of Irrigation, Ministry of Environment and Forestry

agricultural scientists have completed one-year forestry study programs in the U.S., and more programs are scheduled.

- Germplasm of high-milk-producing *Bos taurus* cattle has been introduced into indigenous breeds to increase their production potential, thus making more milk available for India's large population of vegetarians. These exotic cattle and their crosses are highly susceptible to tick-transmitted blood diseases that retard growth, reduce milk yield, and even cause death of the animals. Prospects are excellent for developing vaccines to overcome this problem. Improved cattle health and increased milk production will assist India in its "white revolution" of milk production.
- The subproject on embryo transfer technology is to accelerate the genetic manipulation of specific useful traits to increase the productivity of animals, notably buffalo and cattle. Research activities are directed to generating greater numbers of offspring from genetically superior females in a given time period, then using this technology in the field throughout India.
- The subproject on the conversion of biodegradable wastes into animal feed is to increase the quantity and quality of feeds to better meet the nutritional requirements of Indian livestock. Research activities are examining the application of microbial techniques, processes, and equipment to convert waste materials into economic feeds. The proven technologies will be disseminated to small farmers, landless laborers, and officials of small industries in rural areas of India.
- A new subproject aims to strengthen agroforestry research in India to improve production of livestock, crops, and trees in the wide variety of agroecosystems of the country. The goal is to increase income opportunities for farmers, particularly those with small holdings on rainfed and marginal lands. Research topics include tree seed technology, computer modeling of mixed crop/tree farming systems, and nutrient cycling in agroforestry systems.
- The agrometeorology subproject is developing rainfall forecasting for localized areas and making farm-level recommendations that are based on expected rainfall, crop needs, soil characteristics, and the socioeconomic character of the region. Training and equipment are being provided to strengthen the capability of ICAR's agrometeorological research centers. The subproject also will help create a central facility to compile and analyze agrometeorological data and develop remote-sensing applications.

Winrock Contacts

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Host-country Official Contacts Dr. N. S. Randhawa, Director General, and Dr. R. S. Paroda, Deputy Director General (Crops), Indian Council of Agricultural Research, New Delhi, India

Funding Agency Representative Dr. John A. Becker, Director, Office of Agricultural Research and Education, U.S. Agency for International Development, New Delhi, India

Other Winrock Activities in India

- The Irrigation Training and Research project is a 6-year activity supporting India's program to increase irrigated agricultural production through more-efficient irrigation systems and improved productivity of irrigation water delivered to farmers' fields. Louis Berger International is the lead institution in this USAID-funded project. Winrock is providing training and extension and on-farm agricultural management services. March 1986 to March 1992.
- The Natural Resource Economics Research and Capacity Building project, funded by the Ford Foundation, is to conduct research on soil- and water-resource economics as it affects productivity and sustainability in India's semiarid tropics and assist agricultural universities to conduct research and provide graduate education on soil- and water-resource economics in semiarid agriculture. The International Crops Research Institute for the Semi-Arid Tropics is collaborating with Winrock in this project. January 1989 to December 1991.
- Winrock is compiling and publishing a collection of readings on agroforestry in India. The project is funded by a grant from the Ford Foundation.

Former Winrock Activities in India

Winrock International's participation in Indian agricultural development had its beginning in the programs of the Rockefeller Foundation to increase food supplies for the country's burgeoning population. In 1957, the foundation began cooperating in the development of the Indian Agricultural Research Institute's Graduate School and on improvement of wheat, maize, rice, sorghum, and millets. This work led to the formation of the All-India coordinated research programs for several basic food commodities, and the High Yielding Varieties Programme. The foundation's experience in India and in Latin America demonstrated that countries can make rapid agricultural progress given a dynamic program of sharply focused research and training and the commitment of government to promotion of agriculture. In 1975, the foundation created the International Agricultural Development Service (IADS) to provide technical agricultural services, as needed and desired by developing countries, on a thoroughly professional, nonpolitical, nonprofit, and cooperative basis. IADS and the Agricultural Development Council (A/D/C) were two of the organizations that merged in 1985 to form Winrock International. A/D/C began providing graduate-study scholarships to assist in strengthening India's agricultural economics

Economy *Gross national product:*

US\$ 200 billion (1987-1988)

Annual growth rate: 4.8%

Per capita income: US\$ 250

Natural resources: Coal, iron ore, bauxite, manganese, mica, chromite, limestone, barite

Chief industries: Textiles (cotton and jute), steel, processed foods, cement, machinery, chemicals, aluminum, fertilizers, consumer appliances, transportation equipment

Chief crops: Rice, wheat, other cereals, pulses, oilseeds, cotton, jute, sugarcane, tobacco, tea, coffee, fruits and vegetables

Chief animal products: Cattle and buffalo, swine, sheep and goats, fish

Agriculture 40% of GNP

Land area: 313 million acres (126.7 million ha)

Land use: Arable 55%, permanent crops 1%, meadows and pastures 4%, forest and woodland 23%, other 17%; includes irrigated 13%

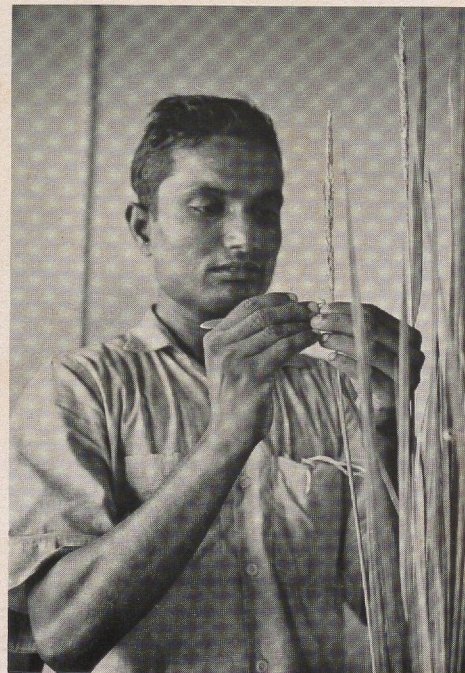
Cropped land: 49.5 acres (20 ha) per 100 persons

Employment: 70% agricultural

Food supply: 2,161 calories per person per day (1983-1985)(2,036 from vegetable products, 125 from animal products)

Indian agricultural scientists worked with international researchers to develop the high-yielding "miracle grains" of wheat and rice that led to the green revolution.

The new technologies provided a generation of Indian farmers with the modern technologies they needed for their country to become self-sufficient in food grains.



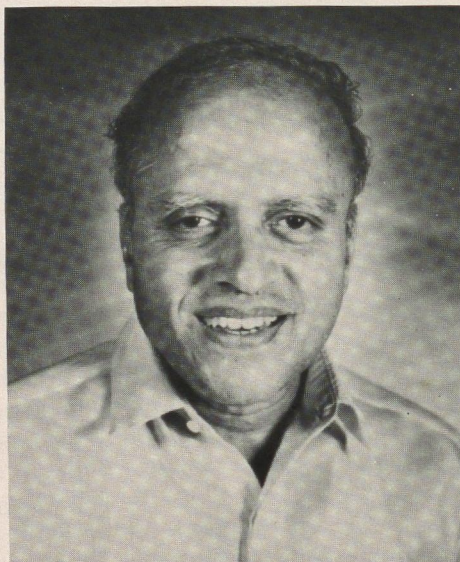
Additional Reading

- *A History of Agricultural Universities*. 1972. K. C. Naik and A. Sankaran. Oxford & IBH Publishing Company, New Delhi, India.
- *A History of Agriculture in India, Volume IV*. 1986. M. S. Randhawa. Indian Council of Agricultural Research, New Delhi, India.
- *A History of the Indian Council of Agricultural Research*. 1979. M. S. Randhawa. Indian Council of Agricultural Research, New Delhi, India.
- *Cooperative Dairy Development in Karnataka, India*. 1987. Harold Alderman. International Food Policy Research Institute, Washington, D.C., USA.
- *National Agricultural Research System in India and Its Impact on Agricultural Production and Productivity*. 1986. N. S. Randhawa, K. V. Raman, and M. Rajagopalan. Indian Council of Agricultural Research, New Delhi, India.

research late in the 1950s. Over the next quarter-century, 36 Indian scientists received formal training under the council's auspices. Beginning in 1963, the council appointed a series of staff members to aid in development of the program. They were assigned to the Indian Agricultural Research Institute, the University of Mysore, and the International Crops Research Institute for the Semi-Arid Tropics while maintaining close professional relationships with rural social scientists at other research institutions and universities throughout the country.

World Food Prize

Two laureates of the General Foods World Food Prize, administered by Winrock International, are from India. Verghese Kurien, Chairman, National Dairy Development Board, Anand, is the 1989 recipient for his significant impact on the productive capacity of Indian agriculture, notably the increased production and distribution of milk that has been called the "white revolution." The 1987 recipient was M. S. Swaminathan, a renowned scientist-statesman who is considered the architect of the green revolution in India, which introduced the high-yielding "miracle grains" of wheat and rice. The prize is awarded each October to an individual in any area of endeavor who has made what is judged to be the outstanding contribution to improving the world food supply.



M.S. Swaminathan
1987 World Food Prize Laureate



Verghese Kurien
1989 World Food Prize Laureate



Winword

Winrock International

Number 12, August 1987

Benefits of matrix are greater than costs, Havener says

Just when everyone thought it was safe to sit back and enjoy the familiar structure of a finally merged Winrock, President Bob Havener announced an administrative overhaul. Why?

The explanation starts with the merger itself, which was far less disruptive than it could have been because most program staff members were assigned to divisions that carried on the work of the organizations from which they came.

Former A/D/C programs were managed within Human Resource Development, IADS and most WILRTC international projects fell under the mantle of Technical Cooperation, and WILRTC's U.S. work went to Planning and Analysis.

The three institutions became one in name on July 1, 1985. The divisional structure allowed them to become one in fact more gradually. Within the three divisions, staff members could operate on familiar ground as the identity of the new Winrock crystalized.

But as the problems of merging diminished and those of establishing Winrock's future course increased, the flaws in the interim structure became more prominent.

"At headquarters we had no one whose job it was to look at things from the perspective of regions or individual countries," Havener says. There was no one, for example, charged with thinking strictly about agriculture and rural development in Nepal or Kenya or Honduras in the context of each country's culture, history, and politics.

Winrock's program themes also were not getting the attention they needed.

"We had someone waking up every morning worrying about each of the divisions, and within the divisions were people whose first thoughts were for particular projects," Havener says. But no one was concerned primarily about what Winrock was doing, say, in the area of managing renewable resources.

Yet from the very beginning, the program themes have been essential to Winrock's definition as an institution. They set the boundaries within which Winrock focuses its technical expertise and earns its reputation.

The most suitable new structure, Havener says, is a matrix with some managers whose primary perspective is geographic and other managers whose viewpoint is programs.

On July 1, Winrock's three division directors were replaced by regional coordinators (for Asia,

Africa and the Middle East, Latin America and the Caribbean, and the United States) and program leaders (for renewable resource management, agricultural systems, agricultural policy, human resource development, and national agricultural research and development systems).

In the Winrock matrix, each regional co-

(see *Matrix*, page 2)

Winrock takes new approach in Honduras irrigation project

Winrock's new project in Honduras takes a fresh approach to improving irrigation systems: it integrates the farmer's technical, social, economic, and production needs.

"We'll do much more than build the system and turn it over to the farmers," says Carlos Garces, agricultural engineer and chief of party for the Honduras Irrigation Development Project. "The farmers will be given access to credit for inputs, help to get organized with other farmers, and management training."

Most irrigation systems in Honduras are government operated. According to Jim Maner, regional coordinator for Latin America and the Caribbean, the irrigation systems tend to be large, maintenance problems are tremendous, and farmers have no training in on-farm water management so they do not use the systems efficiently. "There's a need for another type of system," Maner says. "One based on farmer initiatives."

The project emphasizes private-sector development. About 600 irrigation systems serving 3,000 farms will be built or rehabilitated. About 45 government technicians will be trained in water-management skills.

At the heart of the \$3.8 million, USAID-funded project will be teams at seven sites.

"There will be seven people at each site — engineers, draftsmen, surveyors, agronomists, and so on," Maner says. The teams will work with farmers — individuals and groups — based on need and feasibility.

USAID is putting up money for the irrigation systems. The farmers will get loans from public and private banks to maintain the systems. Individual farms are expected to be two to three hectares, but farmer groups will operate systems for larger areas.

(see *Honduras*, page 3)

Just when it seemed safe to relax . . . administrative overhaul. Why?

Matrix

(continued from page 1)

ordinator will provide support to the projects within his geographic area. Each project will also have the support of the leader of each program area that may be relevant to the project.

Details of just where each project will fit and how regional and program leaders will divide responsibilities are being worked out. Havener says the decisions will be made systematically. Field staff will be consulted and advised by their home office coordinators and the new regional leaders.

Will replacing three program directors with nine create a top-heavy administration? Will it be confusing for program staff to report to two or more bosses? Are there too many chiefs and not enough Indians in this structure?

Havener says every chief gets to be an Indian, too. The person who leads one team will be a member of some other team because these assignments depend not on people's positions or titles but on the skills that are needed to deal with a particular development challenge.

The matrix, Havener says, creates a more responsive organization by spreading responsibility to more members of the scientific staff. He says he recognizes tension will result from the new structure, but he is convinced the benefits of the change outweigh the costs.

Reorganization brings changes in staff titles, responsibilities

Winrock's reorganization and the requirements of conducting corporate business have brought changes in job responsibilities and titles for a number of U.S. staff members.

Last May Dil Athwal was promoted to senior vice president for programs, and Hugh Murphy was named vice president for finance and administration.

"One reason for appointing vice presidents," says President Bob Havener, "was that only officers of the corporation may sign legal documents. With my travel schedule and the demands on my time we needed someone else authorized to conduct official corporate business."

The change for Murphy is largely one in title — his day-to-day responsibilities are the same as before.

Athwal was made a senior vice president, Havener said, "because we believe in the supremacy of programs." He is now responsible for all projects and program activities. Under the new administrative structure, regional coordinators and program leaders report to him.

This change will let Havener spend more time on strategic planning, capital development, and public affairs.

One sign that Havener is placing more emphasis on public affairs is the appointment of Wayne Swegle as director of Public Affairs and Communication. He succeeds Communications Program Officer Mason Miller, who retired in July. Before coming to Winrock, Swegle was director of the Food and Agriculture Committee of the National Planning Association.

Havener also appointed four regional coordinators and four program leaders. Dick

Harwood is coordinator for Asia, Hank Fitzhugh for Africa and the Middle East, Jim Maner for Latin America and the Caribbean, and Frank Baker for the United States. Bill Bentley is program leader for renewable resource management, Hank Fitzhugh for agricultural systems, David Nygaard for both agricultural policy and human resource development, and Dil Athwal for national agricultural research and development systems.

Havener says Fitzhugh, Nygaard, and Athwal will not hold dual appointments indefinitely.

"As the size of our funding base increases and the work load warrants," he says, "we'll recruit — either from within or from the outside — the best people available to provide longer-term leadership in these key positions."

Staff contributions to support field personnel service projects

When a Winrock family sent a Kenyan woman to tailoring school and then bought a sewing machine to start her in business, the money did not come from Winrock's budget. It came from their own pockets.

When several families helped set up and equip a primary school on the remote Kiboko research station in Kenya, they made personal financial sacrifices to provide local children with an opportunity for education.

"I don't know of any expatriate families who aren't involved in some kind of community service," says Program Officer Dennis Child. "When you're in a developing country, you can see what is needed, and you want to help."

Winrock's staff giving program will make it easier for outposted families to offer this kind of help in the future.

Development Director Dick Huddleston surprised most U.S.-based personnel when he orchestrated last year's first-ever staff solicitation, but they responded by donating about \$4,000 to the fund. Seven headquarters staff members serve on the committee that decides how the money will be spent: secretaries Brenda Swain and Katy Kellar, program officers Avtar Kaul and Dennis Child, Program Grants Manager Janet Sturgeon, Systems Analyst Thom Hill, and Huddleston.

The committee faces some difficult questions, including, "What difference can so little money make in a world where needs are so great?" The outposted staff's tradition of community service offered an answer.

With a few hundred dollars, an entire village might be immunized against polio, a widow might be trained in a skill that would let her support her family, or a town might be able to install pumps that would provide safe drinking water.

So the committee decided to use the funds to make grants up to \$500 for local projects in countries where Winrock staff members are posted. The details for applying for a grant are given in the sidebar on page three. Huddleston said the committee would like to award seven or eight grants this year.

"It's a particularly meaningful way to support field staff," he said. "It makes us part of what our people are doing — beyond what they're paid to do — to help the communities in which they live. This ties us to their lives and to the people they serve."

*We believe in the
supremacy of
programs.*



Personnel file

Headquarters:

New Staff: Marian Barr, secretary, Administration ... Darrell Wallace, secretary, Administrative Services ... Wayne E. Swegle, director, Public Affairs and Communication ... Theresa Robertson, accounting clerk, Accounting Department ... Haley Adney, contracts assistant/secretary, Administration

Transfers: Benny Baker, from facilities manager to facilities/visitor services manager ... Betty Meaders from staff accountant/payables to staff accountant ... Cindy Taylor from accounting clerk to staff accountant/payables

Departures: Fred Roche, farming systems analyst, Technical Cooperation Division ... Kathy Cook, secretary, Administration ... Connie Freeling, secretary, Administration ... Lea Stoneburner, secretary, Human Resource Development Division ... Robert D. Hart, program officer, Planning and Analysis Division ... Bonnie Brown, guest and conference coordinator, Administrative Services ... Roberta H. Gottfried, fellowship manager, Human Resource De-

velopment Division ... Shirley Bridgeman, staff accountant, Accounting Department ... Mason E. Miller, senior program officer, Communication Department

Washington:

New Staff: Ava S. Flores, project assistant/secretary, F/FRED

Departures: Gary Todd, data processing specialist ... Bill Hyde, program officer.

Bangladesh

Departures: Leopoldo M. Villegas, associate production agronomist ... Eduardo R. Perdon, production agronomist ... Devan Markarian, horticultural specialist ... Nadarajah Vignarajah, associate production agronomist ... James R. Dickey, livestock specialist ... Brook A. Greene, agricultural economist ... Robert A. Gustafson, project supervisor ... Rogelio C. Lazaro, water management specialist ... Peter Thorpe, information specialist ... Carlos Garces, agricultural engineer (transferred to Honduras Irrigation Development Project as team leader) ... Sam Portch, soil fertility specialist (now serving short-term assignment to Pakistan), Bangladesh Agricultural Research Project - Phase II (project ending)

India

New staff: Thomas Kajer, training specialist, India Irrigation Management and Training Project

Brazil

Departure: Greg Baker, agricultural economist, SR-CRSP Economics Project (project ending)

Egypt

New staff: Amir Khan, agricultural mechanization specialist, Egypt National Agricultural Research Project (Cairo)

Haiti:

Departure: Edwin W. Geers, field project leader; Sara Guthrie, agricultural economist; Manuel Sanchez, animal scientist, National Goat Production Improvement Project (project ending)

Peru:

Departure: Nestor Gutierrez, agricultural economist, Economics Project (project ending)

Honduras

(continued from page 1)

Winrock is carrying out the project in cooperation with Agrotecnia, a Honduran agriculture and irrigation consulting firm; the Colorado Institute for Irrigation Management; the Chicago-based Harza Engineering Company; and the Honduran Ministry of Natural Resources.

Community service grants

Who can apply?

Winrock staff members and their families.

What kind of projects are eligible?

Any community service work in which Winrock staff members or their families are directly involved.

How much money can we get?

Grants will generally not exceed \$500.

How can we apply?

Write a short description (one or two pages) of the community service in which you are involved and what you would do with the money. Send the request to Dick Huddleston at headquarters.

When are grants awarded?

The committee meets once a month to review requests and award grants.



Swaminathan with Philippines President Corizon Aquino.

World Food Prize comes to life

All the hard work is beginning to pay off.

As secretariat for the World Food Prize, sponsored by General Foods, Inc., Winrock International manages the process of nominating, choosing, and recognizing the winner of the newly created \$200,000 award for individual contributions to the improvement of the world's food supply.

Ted Williams and Ann Swartzel of Winrock's staff, with the cooperation of General Foods personnel, have worked steadily for over a year to bring the idea to fruition. Their efforts were rewarded on June 18 when the first World Food Prize laureate was named in a news conference that was held simultaneously in New York and the Philippines.

M. S. Swaminathan, director general of the International Rice Research Institute, is the first winner of the award, which is intended to become the equivalent of a Nobel Prize for food and agriculture. Though he may be best known as the architect of the Green Revolution in India, Swaminathan's contributions to agriculture span a lifetime and several continents. He was chosen from a group of nominees who represented a score of disciplines in food and agriculture from 22 countries on 5 continents.

"A more perceptive and eloquent spokesman for the global food system and for the prize itself couldn't have been found," Williams said.

At the news conference, Swaminathan said he was honored to be the laureate but "would have liked to see the first prize go to a farmer, for it is the farmer who toils in the sun and the rain so that the rest of us can exist."

Williams and Swartzel now must bend their attention to preparations for the award ceremony, which will be at the Smithsonian Institution on October 6. The presentation of the award to Swaminathan will be the finale of a three-day international colloquium on science, food, and ethics sponsored by General Foods and the Smithsonian.

Work has already begun on the 1988 prize. Invitations to nominate candidates have been sent to more than 4,000 institutions throughout the world. Nominations must be received at Winrock headquarters by December 31. For more information, contact Williams.

In China

New project will focus on environmental issues

Over the last decade, many Chinese farmers have begun to taste the fruits of a free-market economy. Farm families in China have been given more leeway to decide what they will grow on their land and more opportunities to sell their produce in local open markets.

The system is serving many people well. The per capita income rate of \$236 a year is deceptive. The country is almost self-sufficient in food, and the Chinese standard of living is better than at any other time in history.

But, says China specialist and Program Grants Manager Janet Sturgeon, with the free-market benefits come problems such as the danger of environmental degradation. As individual initiative increases, the ability of communal systems to be watchdogs for resources declines. Now farmers are free to exchange traditional sustainable agricultural systems for practices that promise more cash today but may rob them of the resources for production tomorrow.

With a \$135,000 grant from the Rockefeller Brothers Fund, Winrock is starting a three-year project to help the Chinese address some of these resource issues. Economist Jim Nickum, who is posted in Beijing on another Winrock project, will work with a committee of Chinese policymakers and researchers to design a research-awards program in agroforestry and sustainable agriculture.

Research grants will be awarded to teams of people representing China's national and provincial research institutes, agroforestry practitioners, and pastureland dwellers. Their research must focus on one of two areas: farming systems with livestock and forage or with crops and trees.

Sturgeon, who is home-office coordinator for the new project, says a team might look at an area that is facing possible erosion to assess the prospects of a livestock-and-pasture system that would control erosion and produce protein for people's diets. That team might interview the local people to gauge their interest and to identify constraints to production and distribution. They would then look at what local, provincial, or national policymakers could do to remove those constraints.

Sturgeon says Winrock staff members and consultants will help the teams design their research and will provide training in how to carry out research involving both technical and social science points of view. When the teams have completed their projects, Winrock will host a conference at which all the research teams will present their results.

The per capita income rate of \$236 a year is deceptive.

Winword is a newsletter for the staff and members of the board of directors of Winrock International Institute for Agricultural Development. Please send news items, suggestions, or questions to:

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Winrock International Project Profile

The World Food Prize

July 1990

The World

People Population: 5.3 billion (mid-1990), expected to be 6.3 billion in 2000 and 8.2 billion in 2025; 75% live in developing countries

Population distribution by continent: Asia 60%, Europe 13.5%, Africa 12.2%, North America 8.2%, South America 5.6%, Australia less than 1%

Annual growth rate: 1.7%, ranging from average of 2.1% in developing countries to 0.6% in developed countries

Life expectancy: 61.1 years, varying from average of 52 years in low-income developing countries to 76 years in developed countries

Dominant age group: 31.9% are under 15 years of age

Distribution: Urban 42.6%, rural 57.4% (1990 est.); rural population varies from average of 69% in developing countries to 28% in developed countries

First languages (1989): Mandarin Chinese 844 million, English 437 million, Hindi 338 million, Spanish 331 million, Russian 291 million, Arabic 192 million, Bengali 181 million, Portuguese 171 million, Malay-Indonesian 138 million, Japanese 124 million, French 119 million, German 118 million

Food supply (1984-1986): 2,694 calories per person per day (2,274 of vegetable products and 420 of animal products); developing countries: 2,464 calories per person per day (2,245 vegetable products, 216 animal products), developed countries: 3,377 (2,357 vegetable products, 1,020 animal products); ranging from Belgium and Luxembourg 3,850 to Mozambique 1,608

Geography Area: 196 million sq mi (507 million sq km)

Land area: 57.28 million sq mi (148.4 million sq km)

Land distribution by continent: Asia 30%, Africa 20%, North America 16%, South America 12%, Antarctica 9%, Europe 7%, Australia 5%

Arable land: 0.8 acres (0.3 ha) per person
Independent countries (excluding territories and colonies): 174

Countries becoming sovereign since 1945: 101

The Project

Official Name The World Food Prize

Sponsorship Privately funded by individuals, corporations, and foundations

Award US\$ 200,000

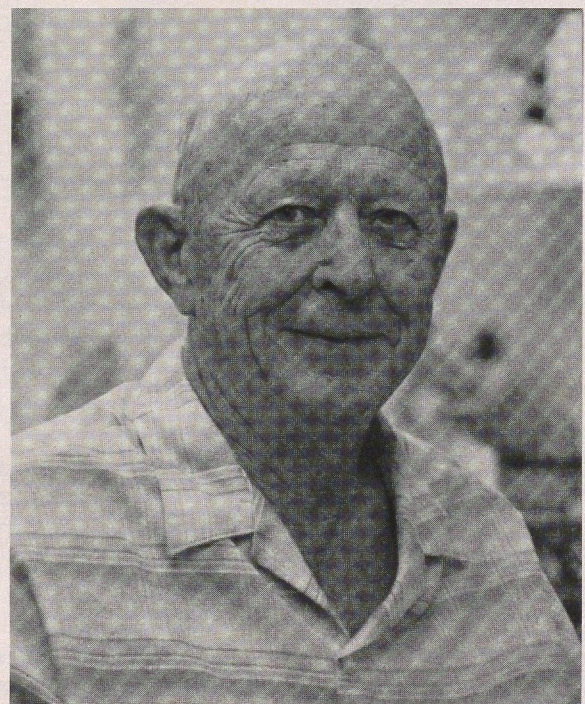
1990 Laureate John S. Niederhauser

Presentation Fourth presentation will be made October 17, 1990, at the Smithsonian Institution, Washington, DC, USA. Events will include an award ceremony honoring the laureate and a colloquium, *Food and Nutrition Security in Nonindustrialized Nations: Research, Policy, and Technology Diffusion*.

Summary The World Food Prize is the foremost international award that recognizes, encourages, and rewards outstanding individual achievement in improving the world food system. Candidates may be nominated by any private or public organization in the world. The prize was established in 1986 and first awarded one year later. It is privately funded by contributions from individuals, corporations, and foundations and is administered by Winrock International. Beyond recognizing accomplishments, it is intended to attract talented, creative, and dedicated young people to careers in food and agriculture.

The 1990 Laureate

John S. Niederhauser of the United States is honored as the World Food Prize laureate for his innovative leadership in advancing the production and



1990 Laureate
John S. Niederhauser
United States

Economy Gross national product: US\$ 17,100 billion (1987); about 80% produced in developed countries

Annual growth rate: 3.0% (1987)

Annual per capita income: US\$ 3,383; developing countries average US\$ 700 (42 countries have US\$ 480 or less), high-income countries average US\$ 14,430 (United States US\$ 18,530 [1987])

Agriculture As percentage of gross domestic product: Developing countries average 18% (lowest-income countries average 38%), developed countries average 3% (United States 3%)

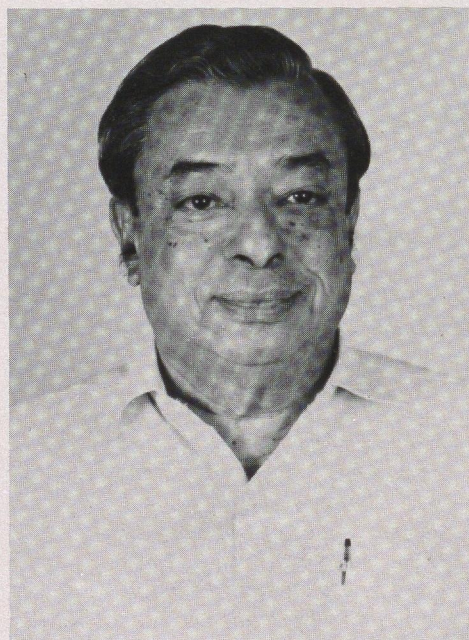
Land use: Arable 10%, permanent crops 1%, meadows and pastures 24%, forest and woodland 31%, other 34%; includes irrigated 1.6%

Employment: 61% agricultural in low-income developing countries, 9% agricultural in developed countries

Chief crops (1988): Wheat 509 million MT, maize 405 million MT, rice 483 million MT, soybeans 92 million MT, roots and tubers 571 million MT, vegetables and melons 426 million MT, fruits 329 million MT

Potatoes (1988): 269 million MT, 192 million MT in developed countries and 76 million MT in developing countries; Soviet Union 62.7 million MT (23% of world production), Poland 34.7 million MT (13%), China 29.5 million MT (11%), United States 15.8 million MT (6%)

Chief animal products (1988): Cattle 1.263 billion head, swine 823 million head, sheep and goats 1.693 billion head, poultry 10.967 billion head; meat production 163 million MT, milk production 523 million MT



Verghese Kurien
India
1989 Laureate

consumption of potatoes, which rank fourth among the world's staple foods after wheat, rice, and maize. During his 40 years in international agriculture, he has become known throughout the world as "Mr. Potato" because of his many contributions as a planner, catalyst, cooperater, and participant in potato development programs.

His major accomplishments have been the result of working through regional cooperative projects in which countries developed their own programs, according to their own needs, priorities, and commitment. Niederhauser began using this procedure with the Mexican Agricultural Program. More than 180 visiting scientists came to Mexico to learn his scientific methods and procedures, taking part in planning, planting, growing, and harvesting potatoes. This system of scientists of different countries working together to solve major agricultural problems became a keystone for the newly created international agricultural research centers.

Under Niederhauser's guidance, Mexico increased its potato production 6 times in less than 25 years. Per capita consumption tripled from 1947 to 1980, a period of rapid population growth. The value of Mexico's annual increase in potato production is 12 times higher than the total cost of the National Potato Production Program from 1947 to 1972.

His work quickly reached beyond Mexico to other countries of Latin America, Asia, and Africa as he worked with farmers, scientists, and decision-makers. Among the most successful programs were those in Bangladesh, Colombia, India, and Turkey. These countries more than doubled their area planted to potatoes, doubled or tripled the yield per planted area, and increased their total national production by 4 to 8 times. Their per capita potato consumption increased 70% to 100% in 30 years.

These international activities contributed to the founding of the Centro Internacional de la Papa (CIP: International Potato Center) in Peru in 1972. The new center adopted the basic characteristics of Niederhauser's program: (1) modest headquarters facilities, (2) cooperation with the best potato research institutions of Europe and the United States, (3) regionalization to give strength and continuity to national programs, and (4) creation of a germplasm bank to maintain a global pool of genetic material.

Niederhauser created the Programa Regional Cooperativo de Papa (PRECODEPA: Regional Cooperative Potato Program) in 1978 consisting of Mexico and countries of Central America and the Caribbean, plus CIP. It is renowned as a model for regional cooperation in agricultural research and may be the most important new development idea for transfer of technology since the creation of the network of international research centers in the 1960s.

As a scientist, Niederhauser is best known for his research to control late blight in potatoes. Early in his career, when the pathogen for late blight, *Phytophthora infestans*, was discovered in Central Mexico, Niederhauser identified natural resistance in some local varieties. These were then used to breed resistant varieties all over the world. Increased resistance means that farmers have less need to use fungicides and pesticides in growing potatoes. This research led Niederhauser to develop the concept of "horizontal resistance," which became important in developing new potato varieties and has implications for more efficient production of other food crops as well.

Niederhauser is a frequent visitor to Poland, the world's second largest potato-producing country. He is focusing his assistance on helping Polish farmers control late blight disease. The International Cooperative Potato Late Blight Project was launched in Warsaw in 1989 with Niederhauser as interim executive secretary. Its first activities were exchanges of Mexican and Polish potato scientists and providing Mexican germplasm to develop late blight resistant varieties in Poland.

Niederhauser was born in Washington state, USA, in 1916. He earned degrees from Cornell University, USA (B.S. 1939, Ph.D. 1943). His international career began in 1947 when he was appointed to the International Agricultural Program of the Rockefeller Foundation. For nearly two decades he was a plant pathologist for the wheat, corn, and bean programs of the Mexican Agricultural

Program. He was director of the Mexican Potato Improvement Program from 1951 to 1961, then for 6 years he directed the Inter-American Potato Program. From 1967 to 1972 he was Associate Director of Agricultural Science of the Rockefeller Foundation. He served on the CIP board of trustees (1972-1974), was director of the Regional Research and Training Program (1972-1975), and was a senior consultant (1975-1980). He was coordinator of PRECODEPA from 1978 to 1981. Since 1985 he has been adjunct professor of agriculture, University of Arizona, Tucson, Arizona, USA, working to improve food production in arid lands of the world.

Significance of the Potato

The potato is native to the western hemisphere and was a staple food for many indigenous people but did not achieve global importance until adapted to European conditions. It is the world's most important root and tuber crop, yielding more than twice as many calories per planted acre as wheat or rice. The potato is primarily a human food in the Americas; in Europe and Asia it is used for human food and animal feed. It also has industrial uses. Due to the research of Niederhauser and other potato scientists, there is now large scale production in parts of Asia and Africa where potatoes were not grown before, supplying large quantities of high quality food to consumers at all economic levels.

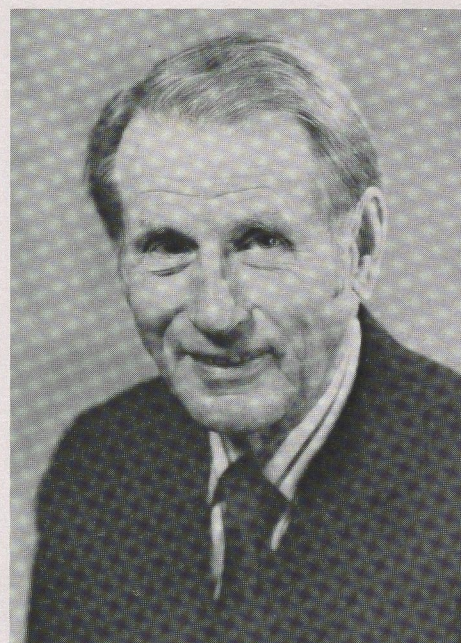
Previous Laureates

- **1989: Verghese Kurien of India.** His leadership in the "Anand Pattern" of dairy production based on farmer ownership of cooperatives that produced, processed, and marketed milk led to India's white revolution. The plan now involves more than 5 million dairy producers in 50,000 cooperatives that market milk in 450 cities and towns. As a result, India's milk prices are stable (a benefit to both consumers and producers), towns and cities of India receive adequate and regular supplies of hygienic milk, and small farmers and laborers who are dairy cooperative members receive a daily payment for their milk based on its quality. The farmer-owned, democratically controlled cooperatives have created a grassroots foundation for India's democracy. The Anand Pattern has been adapted to a major project in oilseeds and edible oils and to a new cooperative to grow fresh fruit and vegetables for New Delhi markets. Kurien is chairman of the National Dairy Development Board, Anand, India.

- **1988: Robert F. Chandler, Jr., of the United States.** He is known for his skillful leadership in building institutions and training people to advance the science of agriculture for solving problems of humanity. Chandler designed and built the International Rice Research Institute in the Philippines and guided it through its first decade, seeing the early research manifested in the green revolution in Asia. Next, he set up the Asian Vegetable Research and Development Center in Taiwan, an institution that has improved and increased vegetable production in dozens of countries. Since retirement, Chandler has been a consultant to African and Asian governments, furthering the cause of increased world food production through improving their agricultural research systems.

- **1987: M. S. Swaminathan of India.** This renowned scientist-statesman is considered the architect of the green revolution in India. As director of the Indian Agricultural Research Institute, director general of the Indian Council of Agricultural Research, and Secretary of Agriculture, he led the successful introduction of the high-yielding "miracle grains" of wheat and rice to Indian farmers. The new seeds convinced a generation of Indian farmers to believe in the effectiveness of fertilizer and other modern farming practices. Swaminathan has played a leading role in transferring new technologies from research institutions to the fields of small farmers, in advancing agricultural production systems that are economically and ecologically sustainable, and in improving the status of rural women in the third world. He was director general of the International Rice Research Institute from 1982 to 1988.

Background The World Food Prize was conceived by Norman E. Borlaug, eminent agricultural scientist and member of the board of Winrock International. Upon receiving the 1970 Nobel Peace Prize for his contributions to the green



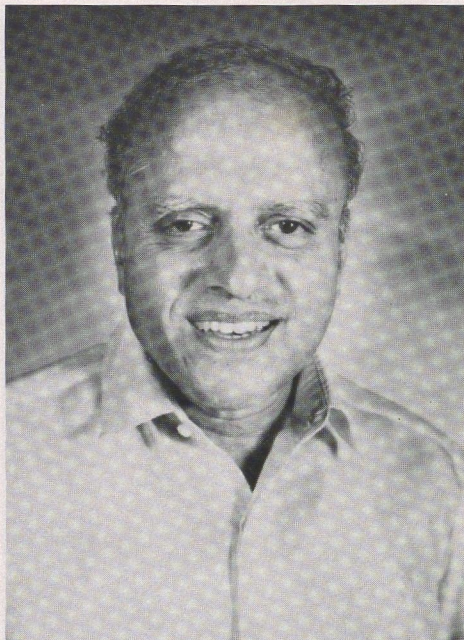
Robert F. Chandler, Jr.
United States
1988 Laureate

Average change in cereal output in developing countries, 1972-1974 to 1982-1984:

1.4% (selected countries: Paraguay 7.3%, Myanmar (Burma) 6.1%, Indonesia 4.9%, China and Costa Rica 4.7%, Côte d'Ivoire and Philippines 4.3%, Niger and Pakistan 4.1%, Ghana -3.2%, Angola -4.2%, Congo -4.2%, Botswana -15.2%)

Average annual change of food production (1971-1984): Developing countries 3.2%, developed countries 2.1%

Winrock International's mission is to reduce poverty and hunger through sustainable agricultural and rural development. Winrock actively seeks partnerships with public and private organizations to help people of developing areas strengthen their agricultural institutions, develop their human resources, design sustainable agricultural systems and strategies, and improve policies for agricultural and rural development. Its activities are funded by grants, contracts, and contributions from public and private sources and by its endowment. Winrock is recognized as a private voluntary organization by the U.S. Agency for International Development and as a publicly supported, nonprofit organization is exempt from income taxation under section 501(c)(3) of the U.S. Internal Revenue Code.



M. S. Swaminathan
India
1987 Laureate

Additional References

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- *Population Growth and Sustainable Agricultural Production: An Emerging Agenda.* 1989. Robert D. Havener. Winrock International, Morrilton, AR, USA.
- *Potatoes: Production, Marketing, and Programs for Developing Countries.* 1987. Douglas Horton. Winrock development-oriented literature series. Westview Press, Boulder, CO, USA.
- *Science, Ethics, and Food.* 1988. Brian W. J. LeMay, ed. Smithsonian Institution Press, Washington, DC, USA.
- *Seeds of Change.* 1986. Henry Hobhouse. Harper & Row, New York, NY, USA

**World Food Day
October 16**

The 7th World Food Day Teleconference will be held in Washington, DC, USA, on October 16, 1990. The theme is *Food for the Future: Science, Policy, and Ethics.*

revolution, he dreamed of a comparable award to honor individual contributions to alleviating hunger and malnutrition. Borlaug's vision was realized when the General Foods Fund, Inc., became the first sponsor of the World Food Prize. In 1990 the prize is funded by individual, corporate, and foundation contributions. Beginning in 1991 the prize will be sponsored by The World Food Prize Foundation, Des Moines, Iowa, USA.

Criteria The prize is awarded each year to an individual in any area of endeavor who has made what is judged to be the outstanding contribution to improving the world food supply. The award is made without regard to race, color, religion, national origin, age, sex, or political persuasion of nominees.

Procedure

Nominations: The call for candidates is made annually. December 31 is the deadline for nominations for the award to be presented the following October. Nominations remain active for 3 years. Any recognized organization may present candidates.

Selection: The seven-person Selection Committee — whose members remain anonymous — evaluates the nominations and recommends the laureate and alternate. The committee members represent many cultures; are knowledgeable about nutrition and producing, processing, and distributing food; and are experts in research, policy development, and business management.

Governance The Council of Advisors establishes policy for the prize, including rules for selecting the award winner. The council members are internationally recognized authorities in professions concerned with researching, producing, processing, distributing, and making policy about food.

Norman E. Borlaug
Centro Internacional de Mejoramiento
de Maiz y Trigo
Mexico, D.F., Mexico

Ricardo Bressani
Instituto de Nutricion de Centro
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David L. Call
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Robert D. Havener
Winrock International Institute
for Agricultural Development
Morrilton, Arkansas, USA

Pekka Linko
Helsinki University of Technology
Espoo, Finland

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International Centre of Insect
Physiology and Ecology
Nairobi, Kenya

Administration The policies set by the Council of Advisors are carried out by the Secretariat.

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PSS



Winrock International Project Profile

General Foods World Food Prize

The World

People Population: 5.0 billion, expected to be 6.1 billion in 2000 and 8.2 billion in 2025; 75% live in developing countries

Population distribution by continent: Asia 60%, Europe 14%, Africa 11%, North America 8%, South America 6%, Australia less than 1%

Annual growth rate: 1.7%, ranging from average of 2.0% in developing countries to 0.6% in developed countries

Life expectancy: 60 years, varying from average of 57 years in developing countries to 73 years in developed countries

Dominant age group: 33.7% are under 14 years

Distribution: Urban 41%, rural 59%; rural population varies from average of 69% in developing countries to 28% in developed countries

First languages: Mandarin Chinese 788 million, English 420 million, Hindi 300 million, Spanish 296 million, Russian 285 million, Arabic 177 million, Bengali 171 million, Portuguese 164 million, Malay-Indonesian 128 million, Japanese 122 million, German 118 million, French 114 million

Geography Area: 196 million sq mi

Land area: 57.28 million sq mi

Land distribution by continent: Asia 30%, Africa 20%, North America 16%, South America 12%, Antarctica 9%, Europe 7%, Australia 5%

Arable land and permanent crops: 6.4 million sq mi

Arable land: 0.8 acres per person

Independent countries (excluding territories and colonies): 173

Countries becoming sovereign since 1945: 99

Economy Gross domestic product:

US\$14,000 billion (1984); about 80% produced in developed countries

Annual growth rate: Developing countries average 4.3%, developed countries average 2.8%

Annual per capita income: Developing countries average US\$660 (36 countries have US\$450 or less), developed countries average US\$10,530 (United States US\$15,390 [1984])

The Project

Official Name General Foods World Food Prize

Term Annually beginning 1987

Funding Agency General Foods Fund, Inc.

Award US\$200,000

Presentation First presentation October 6, 1987, at the Smithsonian Institution, Washington, D.C. Events include an award ceremony and a colloquium on international food issues.

Summary The General Foods World Food Prize is the foremost international award to recognize, encourage, and reward outstanding individual achievement in improving the world food supply. Candidates may be nominated by any private or public organization. The prize has been established by the General Foods Fund, Inc., and is administered by Winrock International. Beyond the recognition component it is intended to attract talented, creative, and dedicated young people to careers in food and agriculture.

Background The award was conceived by Dr. Norman E. Borlaug, eminent agricultural scientist and member of the board of Winrock International. Upon receiving the 1970 Nobel Peace Prize for his contributions to the Green Revolution, he dreamed of a comparable award that would honor individuals' contributions to addressing and alleviating hunger and malnutrition. Borlaug's vision was realized late in 1985 when the General Foods Fund, Inc., became the sponsor of the General Foods World Food Prize.

Criteria The prize is awarded each year to that individual in any area of endeavor who has made what is judged to be the outstanding contribution to the improvement of the world food supply. The award is made without regard to race, color, religion, national origin, age, sex, or political persuasion of nominees.

Procedure Nominations: The call for candidates is made annually. December 31 is the deadline for nomination for the award to be presented the following October. Nominations remain active for three years. Any recognized organization may present candidates.

Selection: The nine-person Selection Committee — whose members remain anonymous — evaluates the nominations and recommends the laureate and alternate. The committee members represent many cultures and are knowledgeable about nutrition and producing, processing, and distributing food, and are experts in research, policy development, and business management.

Governance The Council of Advisors establishes policy for the prize, including rules for selecting the award winner. The council members are internationally recognized authorities in professions concerned with researching, producing, processing, distributing, and making policy about food.

Agriculture As percentage of GDP:

Developing countries average 19.9% (lowest-income countries average 36.3%), developed countries average 3.1% (United States 1.4%)

Employment: 63.2% agricultural in developing countries, 7.1% agricultural in developed countries

Nutrition level: 2,652 calories per person per day (1980-1982) (2,238 of vegetable products and 414 of animal products); developing countries 2,387 calories per person per day (2,192 vegetable products, 195 animal products), developed countries 3,395 (2,367 vegetable products, 1,028 animal products); ranging from Ireland 3,970 to Ghana 1,657

Chief crops: Wheat 514 million MT, maize 452 million MT, rice 318 million MT, soybeans 91 million MT, root crops 593 million MT, vegetables and melons 387 million MT, fruits 300 million MT

Chief animal products: Cattle 1.226 billion head, swine 778 million head; meat production 144 million MT, milk production 496 million MT

Average annual change in cereals production (selected countries 1971-

1984): Indonesia 5.2%, Philippines 4.5%, Pakistan 4.3%, Haiti -1.1%, Zambia -2.2%, Ghana -2.4%

Average annual change of food

production (1971-1984): Developing countries 3.2%, developed countries 2.1%

Additional references

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- *To Feed This World*. 1978. Sterling Wortman and Ralph W. Cummings, Jr. Johns Hopkins University Press, Baltimore. 440 pages.
- *World Agriculture: Review and Prospects into the 1990s*. 1983. Winrock International, Morrilton, Arkansas. 607 pages. (Executive summary 52 pages.)
- *World Resources 1986*. 1986. Basic Books, New York. 353 pages.

Administration The policies set by the Council of Advisors are carried out by the Secretariat, Winrock International.

Contacts

Council of Advisors: Mr. A.S. Clausi, *Chairman*
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The IRRI Reporter

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Swaminathan is first laureate of General Foods World Food Prize

The first General Foods World Food Prize was presented to M. S. Swaminathan, director general, IRRI, in ceremonies at the Smithsonian Institution in Washington, D.C., on 6 Oct 1987.

James L. Ferguson, chairman of the Executive Committee of General Foods Corp., presented the prize, which consists of a \$200,000 cash award and a commemorative sculpture.

The prize was conceived by Norman E. Borlaug, 1970 Nobel Peace Prize laureate, to recognize, encourage, and reward outstanding individual achievement in improving and increasing the world food supply. Another purpose of the prize is to attract talented, creative, and dedicated

young people to careers in the complex and challenging systems of food and agriculture. It is financed by the General Foods Fund, Inc., a foundation funded by General Foods.

Swaminathan announced that he would use the cash award to foster farmer-scientist partnerships to develop an integrated approach to biological and social engineering applied to technological development and diffusion under small-farm conditions.

Commendation letters

Many of the world's scientific and political leaders sent commendation messages. Several of them are excerpted here.

"Dr. M. S. Swaminathan . . . is a living legend. . . . His contributions to agricultural science . . . have made an indelible mark on food production in India and elsewhere in the developing world. By any standards, he will go into the annals of history as a world scientist of rare distinction. . . ."

— Javier Perez de Cuellar
Secretary General, United Nations

"This award recognizes what many in the global food and agricultural community have known for a long time—that your efforts have made a dramatic and lasting impact on improving world food supply. . . . You can be proud of these accomplishments as well as the dignity and self-reliance



M. S. Swaminathan, director general, IRRI, receives the General Foods World Food Prize from James L. Ferguson, chairman, Executive Committee of General Foods Corp., at ceremonies in Washington, D.C. on 6 October 1987. Swaminathan is the first recipient of the prize, which recognizes individual achievement in improving and increasing the world food supply.



M. S. Swaminathan, first laureate of the General Foods World Food Prize (extreme right) posed for this picture with administrators of the prize before the award ceremonies. From left are James L. Ferguson, chairman, Executive Committee of General Foods Corp.; Al Clausi, chairman, Council of Advisers of the prize; Norman E. Borlaug, 1970 Nobel Peace Prize laureate, who conceived the World Food Prize; and Swaminathan. The General Foods World Food Prize is funded by the General Foods Foundation, a philanthropic foundation financed by General Foods Corp.

you have helped to bring to the people you have served. . . .”

— Ronald Reagan
President, United State of America

“Of all the problems which the people of our world must tackle, none is more fundamental than insuring adequate food supplies. . . . To make a difference in the world’s capacity to feed itself is indeed an awesome accomplishment. . . . I am especially glad that this recognition comes when you are still actively at work. . . . May your efforts continue to be as productive and vital as they have [been] to the present.”

— Frank Press
President, US National
Academy of Sciences

“You certainly merit this award because of your great enthusiasm and engagement for the cause of improving the situation of the poor.”

— Dieter Bommer
Chairman, German Council for Tropical
and Subtropical Agricultural Research

NAST honors Swaminathan

On 6 November, the National Academy of Science and Technology of the Philippines (NAST) held a special convocation to honor Swaminathan as the first laureate of the World Food Prize.

The convocation was held at the Philippine Council for Agriculture, Forestry, and Natural Resources Research and Development in Los Baños.

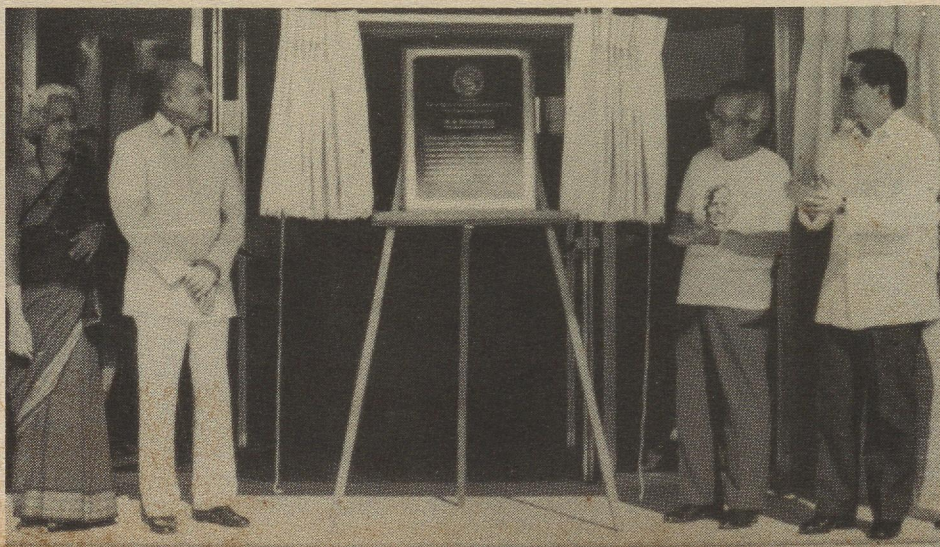
Golden Heart Award to MSS



Philippine President Corazon C. Aquino presented the Golden Heart Presidential Award to Dr. M. S. Swaminathan, director general, IRRI, on 10 November 1987 in a special ceremony at Malacañang Palace. Among the achievements President Aquino cited were Swaminathan’s role in strengthening IRRI as a source of knowledge and expertise to further agricultural science, his support in the establishment of the Philippine Rice Research Institute, the initiation of Technology Transfer Workshops for the exchange of ideas and information between the Philippine Department of Agriculture and IRRI, and the expansion of IRRI’s capacity for upstream research to bring the fruits of recent advances in science and technology to Asian rice farmers.

Swaminathan Hall dedicated

The IRRI Board of Trustees has named the Training and Technology Transfer Center as M. S. Swaminathan Hall, in honor of IRRI’s director general from 1982 to 1988. The Trustees also established a special fund in honor of Swaminathan to provide fellowships to scholars to work on technologies for women farmers and farm laborers. From left are Mina Swaminathan, Swaminathan, Prof. Kenzo Hemmi, chairman, IRRI Board of Trustees, and Carlos G. Dominguez, Philippine Secretary of Agriculture and vice-chairman of the IRRI Board.



Resistance to change perpetuates hunger

When M. S. Swaminathan, director general, IRRI, accepted the General Foods World Food Prize in Washington, D.C., on 6 October 1987, he used the occasion to focus on the irony of hunger in the midst of plenty. "Why," he asked, "have all of our intellectual, technological, financial, and spiritual resources failed to find a solution. . . .?" Highlights from Swaminathan's acceptance remarks suggest answers to that question.

"In no other area of human need and endeavor is there so much global interdependence as in agriculture. Yet the urban public seldom recognizes that we live in this world as guests of green plants, and of the farmers, who cultivate them.

"Experience shows that countries that take farmers and farming for granted come to grief sooner or later. . . . Complacency is creeping into the thinking of many planners and political leaders as they establish the priority accorded to the farm sector in national development plans. . . .

"Globally speaking, reserves of food grains, milk powder, and butter are growing daily. Simultaneously, the number of children, women, and men who go to bed hungry is also increasing. . . . Why?

"If statesmen who determine national policies and priorities would all become

conversant with food production and equitable distribution, hunger could be made a problem of the past sooner than otherwise would be possible. . . .

"Sixty years ago, Mahatma Gandhi said: 'It would . . . save a great deal of time and trouble if we cultivate the habit of never supporting resolutions . . . if we had not either the intention or the ability to carry them out.' I wish that this would become the guiding principle for government representative speaking in national and international forums. . . .

"The elimination of hunger and its real cause, poverty, should be at the top of the human agenda for common action. Unfortunately, the well-fed do not seem to be very concerned with the hunger of other people. . . . Most people fear that 'if others get more, I will get less'. . . .

"If we are really serious about eliminating hunger, we have to overcome the resistances to a change in systems that can bring this about. Economic interests, the sociopolitical interests of small groups, and sometime sheer ignorance or indifference combine to form a political will that makes the poor remain poor.

"The roots of such attitudes are many and varied, but . . . the tap root is fear—a fear of having to share power and resources. We . . . need to show that

helping the weak to become strong solidifies the whole community. . . .

"In most developing countries, a vertical growth in productivity and a higher intensity of cropping are the two major pathways through which the additional food needed will have to be produced. Many of them . . . have the capacity to increase both yields and cropping intensity with current technology. . . . small farmers have been able to double the average yields in several countries with chronic food shortages. . . .

"The quality of life of small farmers can be improved only through higher efficiency in the use of the land, water, labor, and credit resources available to each family. . . . However, a small farm family suffers from many economic and social handicaps. . . . These are problems which can be solved only by political leaders.

"Thus, scientists should bring the best in science and technology to upgrade, on a sustainable basis, the productivity of small farms. Political leaders and administrators should ensure that all farmers profit from new technologies. . . .

"The prospect for a world without hunger is a glorious legacy given to our contemporary world. . . . Until such a wholly attainable world becomes a reality, our task remains unfinished."

Lampe to be IRRI Director General

Dr. Klaus Lampe, a German agronomist, will succeed Dr. M. S. Swaminathan as IRRI Director General in mid-February 1988. This was announced on 14 October by Prof. Kenzo Hemmi, chairman of the IRRI Board of Trustees.

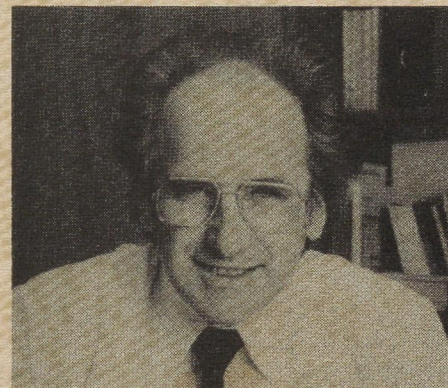
Lampe is currently senior advisor to the German Agency for Technical Cooperation (GTZ) in Eschborn, Federal Republic of Germany. He was head of GTZ's Department of Agriculture, Health, and Rural Development from 1975 to 1986. Previously, Lampe was head of the Agriculture Section of Germany's Federal Ministry for Economic Cooperation and of the Agriculture Department, Federal Agency for

Economic Cooperation. From 1963 to 1968, he worked in German agricultural development programs in Afghanistan.

He received his doctoral degree in Plant Production and Farm Mechanization from the University of Bonn in 1959. He holds MS and BS degrees in agriculture and economics from the same University.

Lampe serves on the Boards of Trustees of three international agricultural research centers: the International Institute of Tropical Agriculture in Nigeria; the Asian Vegetable Research and Development Center in Taiwan, China; and the International Centre for Integrated Mountain Development in Nepal.

Lampe was born in 1931 in Freiburg-Breisgaw, Germany. He and his wife



Klaus Lampe

Annemarie have two children, Rainer, 27, and Barbel, 25.

Swaminathan, IRRI's Director General since April 1982, will return to India where he will devote his efforts to environmental protection and sustainable agriculture with the help of nongovernmental organizations.

IRRI releases new farmer's primers on growing soybean, cowpea on riceland

Soybean and cowpea are high-value, nutritious crops that have great potential to fit into the rice-based cropping systems that dominate tropical agriculture.

To realize the full yield potential of soybean and cowpea, farmers must know how the plants grow, their critical growth stages, and how to prevent stress at each stage. Literature on growing the crops is available, especially for soybean, in temperate zones. But little has been published on the "why's" and "how's" of growing soybean and cowpea in the tropics.

IRRI and the International Institute of Tropical Agriculture (IITA) in Nigeria have jointly published two new books to fill that gap: *A farmer's primer on growing soybean on riceland* and *A farmer's primer on growing cowpea on riceland*. Dr. R. K. Pandey, an agronomist with IRRI's Rice Farming Systems Program, wrote the highly illustrated books to help small-scale farmers in the tropics increase their productivity and income. The new primers are also intended for extension workers and students.

"Soybean is widely grown in temperate zones, but not in the tropics," Pandey explains. "But a soybean crop can generate farm income in the off-season after the rice harvest, and help break the pest and disease cycle associated with continuous rice cropping." Soybean is also an excellent

source of protein and edible oil, and a raw material for the food and livestock feed industries.

"On the other hand, cowpea has been grown in the tropics for centuries and is well adapted to tropical environmental stresses," Pandey says. "Cowpea tolerates drought and can grow on poor, even acid, soils." Improved short- or medium-growth duration varieties from IITA can profitably fit into a wide range of rice-based cropping systems. Cowpea is used as a food, fodder, or a green manure crop that can be grown with minimum inputs.

"Both crops *fix* or draw nitrogen from the atmosphere, so planting them before or after rice enriches the soil and cuts fertilizer expenses," Pandey says. "And both crops add protein to the starchy diets of subsistence farm families."

The new Primers were patterned after *A farmer's primer on growing rice*, which is available in 33 languages and is almost certainly the most widely published agricultural text in existence. The new Primers are also designed for easy and inexpensive copublication.

The soybean Primer was released in mid-November 1987 and is already being translated into Cebuano, Hindi, Tagalog, and Thai. IITA will publish French editions of both books.

IRRI will release a fourth similar book, *A farmer's primer on growing upland [dryland] rice*, in early 1988. The upland rice primer was written by



R. K. Pandey (right), author of two new farmer's primers on growing soybean and cowpea on ricelands, discusses the books with a farmer in a field of cowpea near Los Baños, Philippines.

Michel Arrauudeau, a French plant breeder on assignment at IRRI from the Institute for Research on Tropical Agriculture, and IRRI plant physiologist Dr. Benito S. Vergara (author of the original Farmer's Primer). Arrauudeau has many years of experience in upland rice in Asia and Africa.

To prepare for the new Primers, IRRI conducted a research project on the effectiveness of the Tagalog and Hiligaynon editions of the original Primer in 1986. The transfer of rice technology information was measured among 84 small-scale farmers in Luzon and Negros, Philippines. IRRI used the findings of the study to *tailor* the three new primers for more effective use. A paper describing the research project is available from IRRI.

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airmail

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General Foods World Food Prize



. . . to recognize and reward those men and women who have made outstanding contributions to expanding and improving the quality, quantity, or availability of food throughout the world.

The Need

The quest for food has always dominated the lives of people around the world. Without a safe, wholesome, and abundant supply of food, individuals—and entire nations—cannot achieve a satisfying quality of life. Indeed, they face the specter of malnutrition and starvation. Wars have been waged over food and, even today, the economies of many countries hang in the balance, awaiting an ample harvest.

It is no wonder that improvements in the food supply profoundly affect most nations. But, it is not enough merely to produce more food. The food also must be made available to every person in affordable, nutritious, and appetizing forms.

The concept of “the total food chain” lies at the heart of the General Foods World Food Prize, for each link in that chain plays a vital role. Every aspect of the production, processing, and distribution of food needs to be considered, including farming, the agricultural sciences, food science and technology, nutrition and economics, technology transfer, governmental policies, transportation and distribution, and education.

The Prize

General Foods Corporation is proud to recognize and reward significant achievements in improving the world food supply by the establishment of an award of the highest stature. The General Foods World Food Prize is awarded annually beginning in October, 1987. Its purpose is to honor men and women whose work has made an important difference in the process of providing food for the people—from policy development to research, from production to processing, from distribution to human nutrition. It will consist of a \$200,000 cash award and a commemorative piece symbolic of the Prize.

The Prize is sponsored by The General Foods Fund, Inc., a tax-exempt foundation funded exclusively by General Foods Corporation.

The Nomination

Any recognized organization may nominate individuals whose efforts have contributed in a material way toward improving the quality, quantity, or availability of food. In order to give due regard to the accomplishments of individuals, institutions are not eligible. Achievement at any point in the food chain is worthy of consideration.

To assure communication and to help in identifying worthy candidates, institutions representing different disciplines have been designated "cooperating organizations." These include the International Union of Food Science & Technology, the International Union of Nutritional Sciences, the Consultative Group on International Agricultural Research, and the International Association of Agricultural Economists. The participation of other representative organizations is welcomed.

Winrock International serves as the Secretariat for the General Foods World Food Prize. Further information on nomination procedures may be requested from the Secretariat. Nominations must follow a prescribed format.

The call for candidates takes place annually, with a deadline of December 31 for nominations. Nominations will be valid for three years.

The Governance

The General Foods World Food Prize is guided by the Council of Advisors, a select group of internationally recognized authorities. The Council is the ultimate authority in establishing policy regarding the General Foods World Food Prize. Council members represent a wide variety of sciences, disciplines, and professions relevant to food policymaking, research, production, processing, and distribution.

The Council of Advisors is limited to a maximum of eight members. Appointments are made by General Foods, in consultation with distinguished outside experts.

COUNCIL OF ADVISORS

- | | |
|-------------------------------|---|
| A. S. Clausi, <i>Chairman</i> | Senior Vice President,
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Petit Jean Mountain
Morrilton, Arkansas, U.S.A. |
| Pekka Linko, Ph.D. | Department of Chemistry
Helsinki University of Technology
Espoo, Finland |

The Selection

All nominations for the General Foods World Food Prize are reviewed for appropriateness and completeness by the Secretariat. Nominations are then forwarded to the Selection Committee with recommendations.

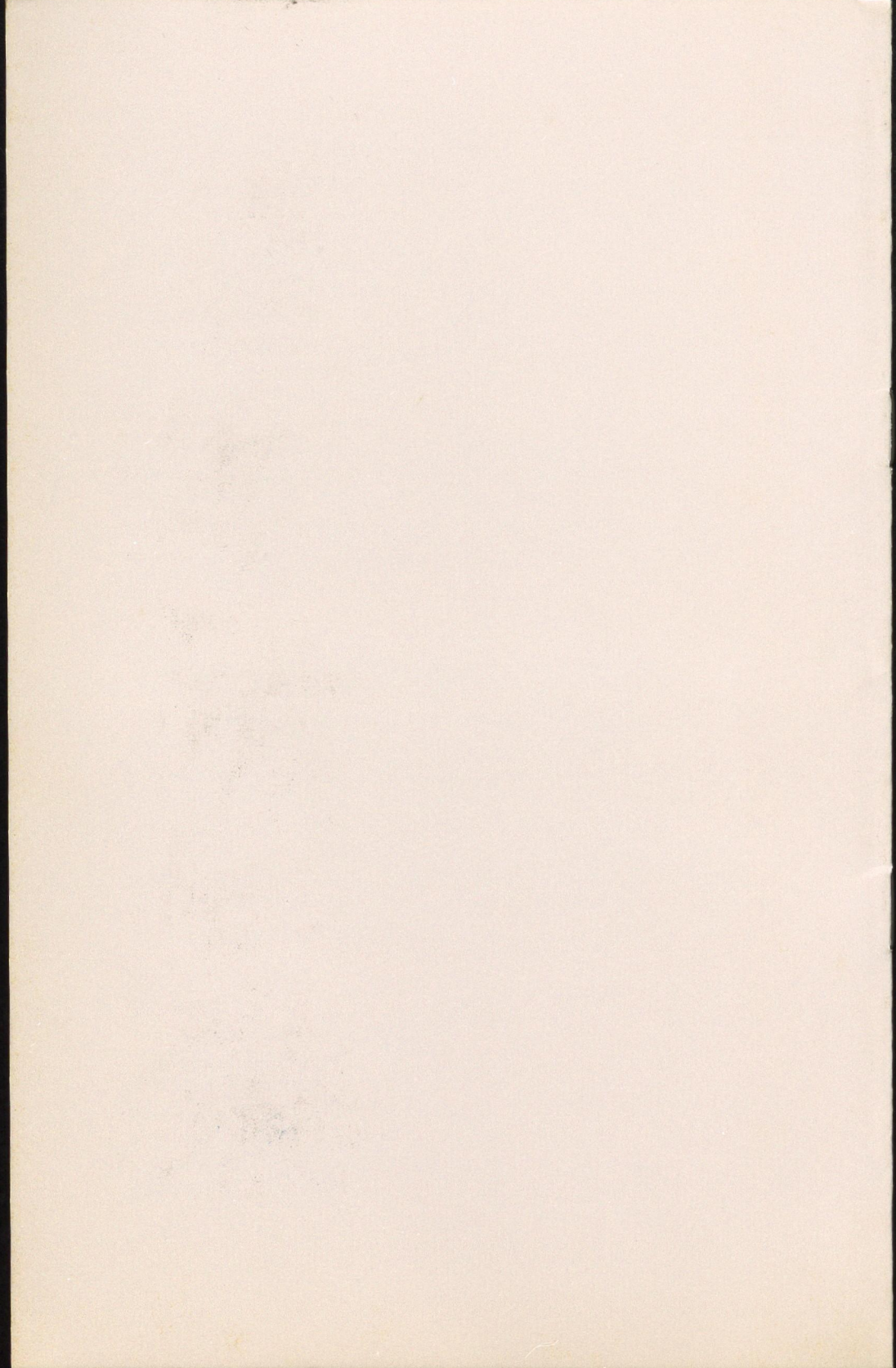
The Selection Committee is composed of nine distinguished individuals from around the world who are knowledgeable on various aspects of nutrition and food production, processing, and distribution, including research, policy development, and business management.

It is the Committee's responsibility to review and assess the nominations and to select the candidate most worthy of the award in accordance with the stated objectives. Members of the Selection Committee will remain anonymous except for the Chairman, Dr. Norman E. Borlaug, whose achievements in plant genetics research and application earned him the Nobel Peace Prize in 1970.

The Administration

The Secretariat, Winrock International Institute for Agricultural Development, is responsible for the administration of the General Foods World Food Prize, following policies set by the Council of Advisors. Winrock International is a globally respected, private, nonprofit institution whose mission is to alleviate poverty and hunger through agricultural development. Winrock International can provide additional information about nomination requirements. Address inquiries to:

Edward L. Williams
Administrator
General Foods World Food Prize
Winrock International
Petit Jean Mountain
Morrilton, Arkansas 72110, U.S.A.
Telephone: (501) 727-5435
Telex: 910 720 6616 WI HQUD
Dialcom: 41: TCN400







SCIENCE, ETHICS, AND FOOD

A SMITHSONIAN INSTITUTION INTERNATIONAL COLLOQUIUM

OCTOBER 6-7, 1987



Funded by The General Foods Fund, Inc., this colloquium is organized in conjunction with the presentation of the first General Foods World Food Prize.




As chairman of the Council of Advisors of the General Foods World Food Prize, I am delighted to welcome you as participants in the Smithsonian colloquium on "Science, Ethics, and Food." There is no issue of our times more pressing than that of an adequate, wholesome, and nutritious food supply for all people of the earth. Although great strides have been made in food science and agriculture, there still are too many people who are hungry and many more whose food intake could be improved. Much more needs to be done by political leaders, scientists, academia and industry—by people of good will throughout the world—to further the right of mankind to an adequate food supply.

At the end of the first day of this colloquium we will award the first General Foods World Food Prize to Dr. M. S. Swaminathan of India in recognition of his numerous accomplishments. The prize, while designed primarily to acknowledge and honor those who already have made contributions of significance, is also intended to encourage young people and thought leaders throughout the world to dedicate themselves to addressing food issues wherever they may be.

We are pleased to have helped make this colloquium possible. It is our hope that this and other such initiatives to come can succeed in forging an agenda for the future that will result in further progress toward solving world food problems.

A. S. CLAUSI



Behind a facade of technically complex problems and pervasive misunderstandings or failures of communication, improved global production and distribution of food undeniably looms as one of the very greatest challenges we face. The recurrent reality of famine and malnutrition refuses to disappear, in spite of heartening successes in certain sectors—notably, the “Green Revolution,” in which Dr. Swaminathan played such an instrumental part.

In order to develop long-term remedies for the wrenchingly human dilemmas associated with the world's food supply, we must formulate the issues in terms that draw upon a wide range of disciplines and arenas of action. Without that breadth, we will continue to be unable to give the myriad remaining problems coherent characterization. And, in a similarly broad fashion, we must establish priorities for our efforts. It is tragically ironic, for example, that, even while we rush headlong toward a time when further millions more of our neighbors will die of starvation, military expenditures worldwide continue to rise to unparalleled levels. In order to recognize the real nature of the trade-offs that we continually must make between investment in development and defense, or between the maintenance of worldwide biodiversity and meeting the land requirements of growing populations, it is imperative to override traditional boundaries of concern or specialization, and evoke new and pioneering forms of cooperation from what

are now seen as widely disparate subject matters.

The Smithsonian is therefore particularly proud to provide this forum for exploring some of the more important research developments in food science, and for coming to grips with some of the most critical economic and ethical issues involved in the global distribution of food. By bringing together this impressive gathering of authorities from a wide variety of fields, we hope to encourage a healthy cross-fertilization of ideas and strategies that might be employed in dealing with these perennial problems in the future.

ROBERT McC. ADAMS

PROGRAM

TUESDAY, OCTOBER 6

Auditorium, Hirshhorn Museum and Sculpture Garden
Independence Avenue at Eighth Street S.W.

9:30 AM OPENING REMARKS

Robert McC. Adams, *Secretary, Smithsonian Institution*

A. S. Clausi, *Senior Vice President Retired, General Foods, and Chairman, Council of Advisors, General Foods World Food Prize*

10:00 AM MORNING SESSION

Carla M. Borden and Brian W. Jacques Le May, *Colloquium Directors, Smithsonian Institution*
Introduction of Speakers

Moderator: Jessica T. Mathews, Vice President, World Resources Institute, Washington, D.C.

William J. Byron, S.J., President, The Catholic University of America, Washington, D.C.

"On the Protection and Promotion of the Right to Food: An Ethical Reflection"

Human rights are quite basic. They are present whenever human beings are. They do not depend on what human beings do; they are there precisely because human beings are human. Human rights are therefore present to the material side of human existence.

The human person, in function of being human, has a right to those material necessities without which human life and human dignity cannot be sustained.

There are rights, of course, in orders higher than that of material survival. But rights at higher levels are meaningless without the acknowledged presence and effective protection of rights at the basic level of existence consistent with basic human dignity. One such right is the right to food—the right to a nutritionally adequate diet.

I propose to offer in my paper a coherent but not comprehensive ethical reflection that goes well beyond classical liberalism's emphasis on individual rights and locates the human person, possessed of a right to food, in a broader communitarian context. I regard life in community as indispensable for the development of the human person. The communitarian context is essential for the realization of individual human potential and the protection of individual human rights.

After an exposition of the principles underlying the right to food, the paper addresses both the protection of that right, and its promotion through the generation of political will and the application of political means. Political devices, whether domestic or international, are necessary but insufficient means toward the end of eliminating hunger. Politics is people. Political will to end hunger will have to influence people's public- and private-sector activity, domestic and international, if the problem is to be solved. Without a worldwide awareness of the existence of a universal human right to food, the necessary political will is unlikely to emerge.

Discussion

Thomas R. Odhiambo, Director, *The International Centre of Insect Physiology and Ecology, Nairobi, Kenya*
"The Innovative Environment for Increased Food Production"

Several countries of Asia and Latin America have dramatically demonstrated the potential utilization of green-revolution technologies comprising cropland irrigation, high fertilizer and pesticide application, and the use of high-yielding seed in greatly increasing the production of food staples under tropical and sub-tropical conditions. For more than a decade these countries have shown a steady level of food self-sufficiency and have garnered a sizeable export trade in these commodities.

The story is different in other tropical countries, especially in Africa, where production relies on rain-fed agriculture, and where the large majority of the farming community (70 percent or more) is resource-poor. The kind of traditional crop production

system which had a strong ecological basis, supporting a sparse population distributed over a large eco-geographical area, can no longer be sustainable under an environment of strong economic pressure, rising urban/industrial population, and rapidly degrading ecologies.

The paper will present new approaches to sustaining a tropical agricultural production system which recognizes the traditional knowledge base as the starting point for building up a sustainable production system, and which answers to the needs of the developing tropical regions of the world. Strategic basic research in situ in the tropical environment will play a crucial role in the process, so as to prime the pump of R&D on those staples (grains, legumes, vegetables, plantains, and root and tuberous crops) which are of prime concern to those regions.

Discussion

12:30 PM LUNCHEON

*International Conference Suite, S. Dillon Ripley Center
1100 Jefferson Drive S.W.*

2:00 PM AFTERNOON SESSION

Moderator: Robert Paarlberg, Associate Professor of Political Science, Wellesley College, Wellesley, Massachusetts

Amartya K. Sen, Professor of Economics and Philosophy, Harvard University, Cambridge, Massachusetts
"Food Chains and Entitlement Problems"

Production, distribution, and consumption of food are linked together in the form of chain relationships, relating producers to markets, markets to purchasers, and purchasers to consumers. Food deprivation, hunger, and starvation can result from dysfunctioning of any of these links. A person suffers from food deprivation—and consequently undernourishment, morbidity, and possibly mortality—if he or she is unable to establish command over an adequate quantity of food.

A person's entitlement to food can be established either by growing food oneself (and having property rights over what is grown), or by selling other commodities (including one's laboring services at a wage) and buying food with the proceeds. Entitlement failures associated with famine as well as with endemic hunger and chronic undernourishment do not necessarily arise from production failures alone, or at all. Loss of income of the would-be purchasers as a result of some other economic change also can affect the ability of people to have the means of establishing command over food in the market.

The sequence of food chains does not end with the purchase of food, since there is the further problem of division of food within the family, based on purchases made on behalf of the family as a whole. There is some evidence of systematic biases related to gender and age (e.g., greater undernourishment of female children) in many developing countries. These distributional problems also have to be investigated to get a better understanding of the nature of food deprivation in the modern world.

The entitlement problems related to failures in food chains involve in addition the politics of state intervention and public policy, as well as the pressures generated by newspapers and opposition parties on the government to intervene in a situation of food deprivation. The combination of economic, political, and social considerations is inescapable in understanding food chains, their dysfunctionings, and the remedies of these problems.

There is no one magic solution to the problem of food deprivation in the modern world. But there is a unifying focus—related to entitlement problems in food chains—that can provide the basis for effectively analyzing the diverse problems and failures that force millions of people to die from starvation and hunger-related ailments, and also force hundreds of millions of people to remain chronically undernourished and debilitated. The aim of the paper is to relate the understanding of the problem that has emerged on the basis of economic, political, and social analysis in recent years to policy issues that have to be faced at different levels. Much is, of course, at stake.

Discussion

John W. Mellor, Director, International Food Policy Research Institute, Washington, D.C.
"Towards an Ethical Redistribution of Food and Agricultural Science"

While hundreds of millions of persons in the developing world currently lack the food they need to lead productive lives, farmers in many developed countries are paid to reduce their food production. At the same time that many countries lack the scientific means

for boosting food production, the scientific base to produce food is excessively large in the rich countries. Both of these situations represent a major assault on our ethical sensitivities. And both seem to call for a fundamental redistribution of food and science resources in the world.

There are, of course, many technical and political problems militating against such a redistribution of resources. On the technical side, it is not easy to transport surplus food from one area of the world to another. On the political side, it is even questionable to what degree governments are in favor of these resource transfers. But we must never forget that the present imbalance in food and science resources places an undue burden upon the poor. It is the poor who suffer the most from the effects of low and fluctuating food supplies. When food supplies are really tight, the poor are at best forced to go hungry; at worst, they face the prospect of starvation.

In the short term, food transfers from the developed to the developing countries represent the best means for protecting the poor. In many cases, food transfers also can be used for making much-needed improvements in the rural and urban infrastructure in the developing world.

In the long run, the best protection for the world's poor is through the transfer of scientific resources. The developing countries must acquire the resources necessary for implementing a widespread pattern of technological change in agriculture which raises domestic food production while it helps stimulate an equity-oriented pattern of development.

It will not be easy to effect such an ethical redistribution of food and science resources. Yet with proper perseverance, it should be possible to move closer towards a world in which hunger and poverty have been banished.

Discussion

6:00 PM THE GENERAL FOODS WORLD FOOD PRIZE AWARD CEREMONY AND RECEPTION



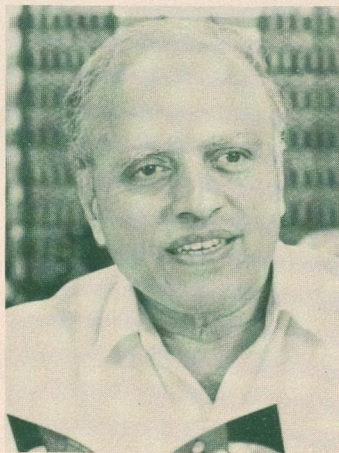
Baird Auditorium, National Museum of Natural History
Constitution Avenue at Tenth Street N. W.

WEDNESDAY, OCTOBER 7

*International Conference Suite, S. Dillon Ripley Center
1100 Jefferson Drive S.W.*

9:30–11:30 AM FINAL SESSION

Discussions designed to draw conclusions and establish an agenda for future international action on food issues will include colloquium speakers, invited commentators, and M. S. Swaminathan.



*M. S. Swaminathan
First Laureate
General Foods World Food Prize*

Commentators

Nyle C. Brady, *Senior Assistant Administrator, Agency for International Development, Department of State, Washington, D.C.*

J. E. Dutra DeOliveira, *Faculty of Medicine, São Paulo, Brazil*

Ronald Edwards, *Professor and Head, School of Biological Technologies, University of New South Wales, Kensington, Australia*

Mamdouh Gabr, *President, International Union of Nutrition Sciences, Cairo, Egypt*

C. Gopalan, *Director General, Nutrition Foundation of India, New Delhi, India*

Mogens Jul, *Associate Professor Emeritus, Department of Food Preservation, The Royal Veterinary and Agricultural University, Frederiksberg, Denmark*

Robert W. Kates, *Director, World Hunger Program, Brown University, Providence, Rhode Island*

Ignacio Narvaez, *Program Director, Global 2000 Inc., Khartoum, Sudan*

Shlomo Reutlinger, *Senior Economist, World Bank, Washington, D.C.*

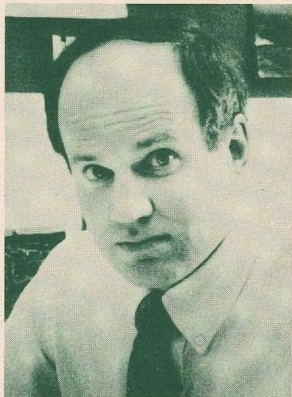
Setijati Sastrapradja, *Director and Botanist, Centre for Research in Biotechnology, Bogor, Indonesia*

Ruben L. Villareal, *Dean, College of Agriculture, University of the Philippines at Los Baños*

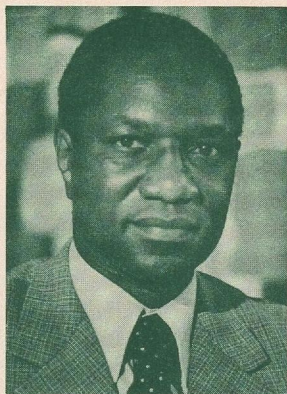
Qing Wang, *Director, Beijing Food Research Institute, Beijing, People's Republic of China*



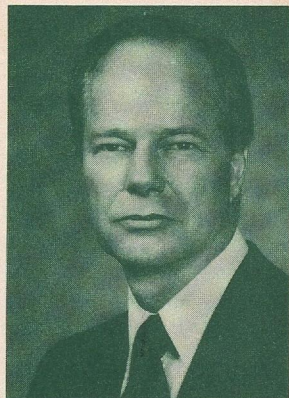
Jessica Tuchman Mathews



Robert Paarlberg

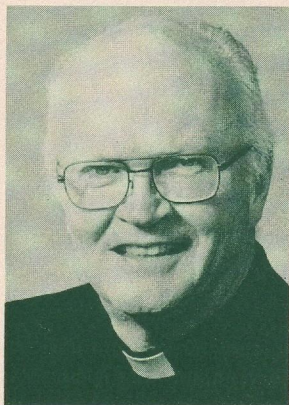


Thomas R. Odhiambo

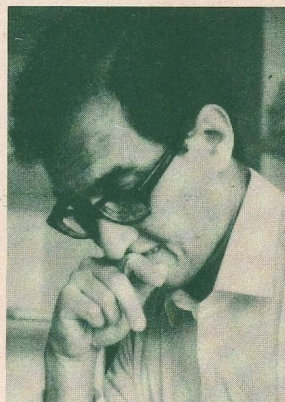


John W. Mellor

Moderators and Speakers



William J. Byron



V. Ramachandran

Amartya K. Sen

WILLIAM J. BYRON, S.J.

President, The Catholic University of America. Educated at St. Louis University (A.B. 1955, M.A. 1959), University of Maryland (Ph.D. 1959), specializing in philosophy and economics; holds two theology degrees from Woodstock College. Ordained to the Roman Catholic priesthood as a member of the Jesuit Order, 1961. Previous positions include presidency, University of Scranton (1975-82); deanship, College of Arts and Sciences, and associate professorship of economics, Loyola University (1973-75). Author, *Toward Stewardship: An Interim Ethic of Poverty, Pollution and Power* (1975) and approximately 100 journal, newspaper, and magazine articles on economics, social ethics, and educational issues; editor, *The Causes of World Hunger* (1982). Member, American Economics Association, American Society of Christian Ethics, American Association of University Professors, American Council on Education, Association of American Universities. Director, advisor, and trustee of numerous education, church, health, civic and business organizations. Address: The Catholic University of America, Washington, DC 20064

JESSICA TUCHMAN MATHEWS

Vice president and research director, World Resources Institute, Washington, D.C. Educated at Radcliffe College (B.A. 1967) and California Institute of Technology (Ph.D. 1973). Has published extensively on science, technology, energy, environment, health, natural resources management, chemical and biological warfare, human rights, and international physical resources issues. From 1977 through 1979 was director, Office of Global Issues on the staff of the National Security Council in the White House; subsequently joined the editorial board of the *Washington Post*. Member, Exploratory Committee on the Future of Nuclear Power, National Academy of Sciences; National Council of the Federation of American Scientists; Council on Foreign Relations; advisory group of United Nations Association Multilateral Issues and Institutions Program. Congressional science fellow, American Association for the Advancement of Science, 1973. Address: World Resources Institute, 1975 New York Ave. N.W., Washington, DC 20006

JOHN W. MELLOR

Director, International Food Policy Research Institute, Washington, D.C. Educated at Cornell University (B.Sc. 1950, M.Sc. 1951, Ph.D. 1954) and Oxford University. Previously chief economist, U.S. Agency for International Development; professor of economics, agricultural economics, and Asian studies, Cornell. Author, *The Economics of Agricultural Development; The New Economics of Growth: A Strategy for India and the Developing World*, a detailed statement of his concept of an agriculture- and employment-led strategy of growth; and numerous other publications. Edited and contributed chapters to *Agricultural Change and Rural Poverty: Variations on a Theme* by Dharm Narain (with G.M. Desai), *Accelerating Food Production Growth in Sub-Saharan Africa* (with C. Delgado and M. Blackie), *Agricultural Price Policy for Developing Countries* (with R. Ahmed). Contributing editor, *Environment*. Fellow, American Academy of Arts and Sciences, American Agricultural Economics Association. Member, board of directors, Overseas Development Council. Recipient of Wihuri Foundation International Prize (1985), the first social scientist so honored, and American Agricultural Economics Association award (1967, 1978, and 1986) for publications and research. Address: International Food Policy Research Institute, 1776 Massachusetts Ave. N.W., Washington, DC 20036


THOMAS R. ODHIAMBO

Director, International Centre of Insect Physiology and Ecology, with world headquarters in Nairobi, Kenya; president, African Academy of Sciences. Educated at Makerere College, Kampala, Uganda, and Cambridge University (B.A., M.A., Ph.D.). Research has concentrated on natural history and insect endocrinology, particularly in relation to insect reproductive biology, on which more than 100 technical papers have been written, concurrent with a focal interest in science policy and development in Africa especially. Has taught at University of Nairobi since 1965; has been visiting professor at many universities in Africa and India. Fellow, Kenya National Academy of Sciences, African Academy of Sciences, Third World Academy of Sciences, Indian National Academy of Sciences, Italian National Academy of the 40s, Pontifical Academy of Sciences and Royal Norwegian Academy of Science and Letters. Recipient, Africa Hunger Prize (1987), Albert Einstein Medal (1979). Address: The International Centre of Insect Physiology and Ecology, P.O. Box 30772, Nairobi, Kenya



ROBERT PAARLBERG

Associate professor of political science, Wellesley College; associate, Center for International Affairs, Harvard University. Educated at Carleton College (B.A. 1967) and Harvard University (Ph.D. 1975). His research on international food and agricultural policy has been supported by the Ford Foundation, Rockefeller Foundation, and National Center for Food and Agricultural Policy at Resources for the Future. Author of four books: *Diplomatic Dispute*, *Food in the Global Arena*, *Food Trade and Foreign Policy* and *Fixing Farm Trade*. Address: Center for International Affairs, Harvard University, 1737 Cambridge St., Cambridge, MA 02138



AMARTYA K. SEN

Professor of economics and philosophy, Harvard University; president, International Economic Association. Educated at Presidency College, Calcutta (B.A. 1953), and Trinity College, Cambridge University (B.A. 1955, M.A. 1959, Ph.D. 1959). Research interests include famines and food economics, endemic hunger, gender bias, welfare economics, economic development, social choice theory, ethics, and social and political philosophy. Previously taught at Trinity College, Cambridge; Jadavpur University, Calcutta; Delhi University; London School of Economics; Cornell University (Andrew D. White Professor); and Oxford University (Drummond Professor). Principal publications include *Choice of Techniques*; *Collective Choice and Social Welfare*; *Poverty and Famines*; *Choice, Welfare and Measurement*; *Resources, Values and Development*; and *Commodities and Capabilities*. Fellow, British Academy; fellow and past president, Econometric Society; foreign honorary member, American Economic Association. Mahalanobis Prize, 1976; Seidman Distinguished Award in Political Economy, 1986. Address: Dept. of Economics, Littauer Center, Harvard University, Cambridge, MA 02138

Staff



COLLOQUIUM DIRECTORS

Carla M. Borden, *Associate Director, Office of Interdisciplinary Studies, Smithsonian Institution*

Brian W. Jacques LeMay, *International Liaison Officer, International Activities, Smithsonian Institution*

SMITHSONIAN INSTITUTION

Robert McC. Adams, *Secretary*

David Challinor, *Assistant Secretary for Research and Acting Director, International Activities*

Wilton S. Dillon, *Director, Office of Interdisciplinary Studies*

Neil G. Kotler, *Special Assistant to the Director, Office of Interdisciplinary Studies*

William Schulz, *Public Affairs Specialist, Office of Public Affairs*

THE GENERAL FOODS WORLD FOOD PRIZE COMMITTEE

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Paul F. Hopper, *Corporate Director, Scientific Affairs, General Foods*

Peter A. Acly, *Associate Manager, Public Affairs, General Foods*

Edward L. Williams, *Administrator, General Foods World Food Prize, Winrock International*

Pamela Holdstock, *Secretary to Chairman, Council of Advisors*

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Elizabeth Dixon, *Designer*

Sigisbert Ratier, *Intern*

斯瓦米纳坦博士

菲律宾国际水稻研究所所长

Message delivered by Philippine President Corazon Aquino at news conference announcing winner of 1987 General Foods World Food Prize, June 18, 1987.

"I am very happy and proud to share this moment with the Director General of the International Rice Research Institute, Dr. Swaminathan. He fully deserves the distinction of being the first recipient of the World Food Prize which is awarded to those who have made significant improvements in the world food situation. He receives the award for his outstanding work in improving the quality and the productivity of Asia's staple food, rice. We are proud to have hosted the I.R.R.I. for the past 27 years. Its goals are the same as those toward which this government strives - a better life for the farmer, enough food and good health for all. I congratulate Dr. Swaminathan on the high honor that is here conferred upon him. My prayers for continued success go to him and to those like him who have dedicated their lives and great talents to improving the food situation in the world. There can be no greater project or nobler cause.

Thank you."

DR. MONKOMBU SAMBASIVAN SWAMINATHAN

CURRICULUM VITAE

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

II. Education:

- (a) B.Sc. from Tranvancore University in 1944.
- (b) B.Sc. Agriculture from Coimbatore 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 University, Agra (1978).
- (k) Kerala Agricultural University, Trichur (1978).
- (l) Sri Venkateswara 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 University, 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).

IV. Honorary Professorship:

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

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-present).

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).

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 18 June 1987, Dr. Swaminathan was designated as the First World Food Prize Laureate. This prize is the foremost international award to recognize, encourage and reward outstanding individual achievement in improving the world food supply.

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)

XII. Dr. Borlaug's Tribute

On the occasion of his receiving the Nobel Peace Prize in 1970, Dr. N. E. Borlaug wrote: "The green revolution has been a team effort and much of the credit for its spectacular development must go to Indian officials, organizations, scientists and farmers. However, to you, Dr. Swaminathan, a great deal of the credit must go for first recognizing the potential value of the Mexican dwarfs. Had this not occurred, it is quite possible that there would not have been a green revolution in Asia."

Press conference

Chinese Reporters:

- (a) Major contributions in Rice Research. (in recent years).
- (b) Details about General Foods World Food Prize.
- (c) Co-operation plans with Chinese Govt.

Chairwoman: ~~Chen~~

Miss Tian Ye

田 叶

Lady from HK Zhang Baotang

Miss

张 宝棠

Interpreters: Wang Hong

CHEUNG PO TONG

Zhou Yongao — interpreter at the Press Conference.

Chen Yun Peng.

Secretary General, Research center for Rural Development, The State Council.

Ai Yun Huang

Bureau Director.

Zheng Jing.

Research Assistant

Interview With Monkombu Swaminathan

Faith in the Power of Seed

Improved agriculture, says the first Third World president of IUCN, will aid conservation by feeding the poor and hungry

Interview by Norman Myers

Two years ago, Monkombu Swaminathan, an Indian who now lives in the Philippines, was elected president of the International Union for Conservation of Nature and Natural Resources (IUCN), one of the world's most prestigious international conservation organizations. He is also director of the International Rice Research Institute (IRRI), which develops new strains of rice for countries all over the world. Trained as a plant geneticist at Cambridge University, Swaminathan, now 61, was an architect of India's remarkable "green revolution" in the 1960s and 1970s. In this interview with *IW* roving editor Norman Myers, he offers the hopeful notion that modern agriculture holds the key to conservation.

Let's first talk about the green revolution in developing countries. What has the IRRI done since it was founded in 1960 to help bring this revolution about?

There have been three main achievements. The first has been the development of so-called miracle grains, which were provided to farmers along with a support package of technologies and services. Secondly, IRRI has trained over 4,000 rice scientists who are spearheading the rice revolution in their countries. Thirdly, we have assembled seeds of about 80,000 rice varieties in our gene bank at the Institute. We hope to collect another 40,000 by the year 2000. Unfortunately, many wild forms of rice remain uncollected, and many

exist in forest habitats which are being rapidly destroyed.

Why is it so important to collect new forms of rice?

The most widely grown variety of rice in Asia now carries resistance to the grassy-stunt virus because of a wild species discovered in India. This variety has added over \$1 billion worth of additional rice. Of course, it contains genes from a number of rice strains. But without the contribution of the wild species, it could not have achieved nearly so much.

What has been the effect of the "miracle" grains on India, where you served as Secretary of Agriculture?

Back in 1960, the situation in India was very bad. There were several years of severe drought and a large increase in population. In 1966, the United States gave India almost 10 million tons of grain, three times as much as Africa now receives. Yet thanks to the Green Revolution, India's annual wheat harvest went from 12 million tons in 1964 to over 45 million tons today. Now, India has grain reserves of more than 30 million tons. Several other Asian countries, such as Pakistan, Indonesia and the Philippines, have also substantially improved their food output.

It is indeed a remarkable achievement. But how do increased agricultural yields help the cause of conservation?

I am convinced that in the Third World, it is only when poor people are

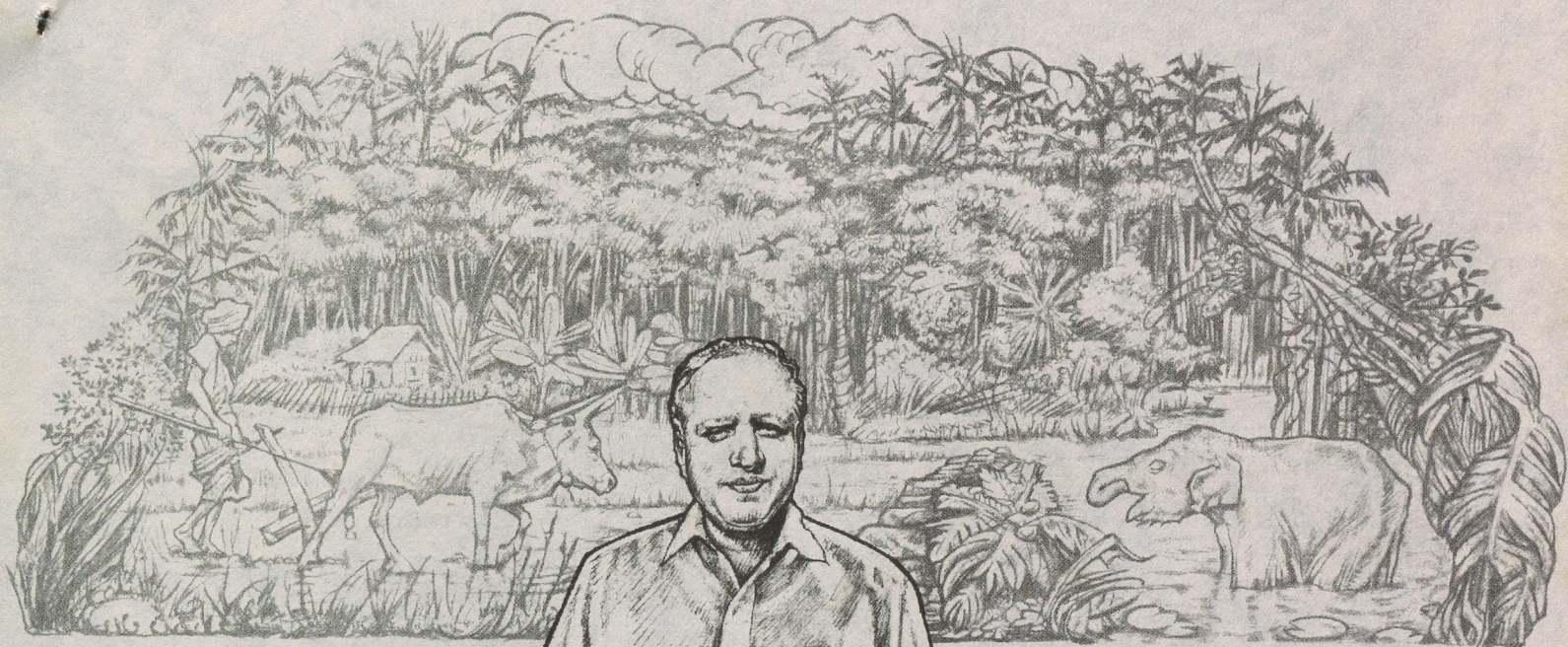
assured of their livelihood that they will help us to safeguard their natural environments. So long as people remain hungry, it is very difficult to talk to them about conservation. As a result, I believe that development and conservation are inseparable. Only when conservation takes on a dimension of helping the poor, the downtrodden, the destitute, will it have an enduring impact.

In addition to meeting basic human needs, would more intensive agriculture also leave more room for wildlife?

This is one of the great benefits of modern technology in agriculture. It relies not on expansion of area cultivated, but on increased crop yields. If you step up growth in agricultural productivity, then you can convert a lot of land back to forest and other natural ecosystems. This applies especially to the tropics, where we have abundant sunshine throughout the year and growing conditions are often favorable to produce several crops per year. So I would say that the greatest hope today for the conservation of forests, wildlife and so forth, is modern, ecologically sustainable agriculture.

Do you believe that even Africa, with the most severe environmental problems of any continent, can be helped by modern agriculture?

I think we can say with confidence that things will work out in Africa provided the right decisions and actions are taken. An eco-development strategy could help the continent go in just 15



years, as did India, from "beggar's bowl to bread basket."

What needs to be done?

African countries must concentrate on ecological rehabilitation. World attention has focused on emergency food relief to stem the drought crisis. But it has virtually ignored the equally important need to resolve underlying environmental problems that link drought and famine. Africa's plight has less to do with drought than with the fact that the continent can no longer feed itself. Africa's soils are more fragile than Asia's, and there is a need for widespread reforestation.

Let's move on to your role at IUCN. Do you have ideas on new directions for the organization?

When I was elected president, I picked out three areas where I thought that I can be of help. The first is the African situation, which is a challenge to IUCN because it is a clear case of environmental degradation.

The second area is population. Coming from India, which adds about 15 million more people each year, I am only too conscious of the importance of population stabilization. So IUCN has set up a task force to prepare a strategy on human population in relation to natural resources.

The third area is education. I believe in an old Chinese proverb. If you are thinking one year ahead, you plant rice. If you are thinking ten years ahead, you plant trees. If you are thinking 100 years

DEBORAH ANN HALL

ahead, you educate people. What is the use of a few scientists talking about conservation and how the world is going to the dogs, unless we can get other people to share our awareness?

All over the world, then, we should help local people to organize conservation/development clubs. They would be based, perhaps, at village schools. At meetings, people could discuss, for instance: "how do we meet our fuelwood needs?" Or, "how can we do more for ourselves—and where do we need help?" I hope that IUCN can trigger a global movement along these lines.

And you think that this grass roots type of conservation movement is beginning?

I see great signs for hope in the growth of local initiative. One example is the Indian Chipko movement, where illiterate women often hug trees when the logging contractor comes to cut them. It is truly a people's movement. In Kerala State in southern India also, there has been a big, successful movement to save the famous Silent Valley with its forests and unique wildlife.

So today, I am happy to see that many illiterate people who are very close to the Earth see how their own future, and that of their children, is endangered. They are now understanding that environmental degradation means the loss of hope for them. If we can capitalize on their insights—and provide them with basic human needs—then we can launch a new movement of environmentally sound development. ■

Commentary

M. S. Swaminathan

Helping Those Who Help Themselves

The International Rice Research Institute (IRRI), located at Los Banos in the Philippines, is the recognized leader in research on possibly the world's most important food crop. Its director-general, Dr. M. S. Swaminathan, talked to DEVELOPMENT INTERNATIONAL after a meeting in Washington, D.C., in late 1986.

DI: What is the IRRI's approach to rice research?

SWAMINATHAN: The challenge for rice research workers is to reduce the cost of production without reducing yield. They also have to look at the sustainability of the production process—the economic sustainability on the one hand and the ecological sustainability on the other. We must ensure that new pests and diseases do not come. We must ensure that there is adequate genetic diversity by means of varietal diversity. So one needs a highly integrated program of research, a multidisciplinary program designed to solve the field problems.

DI: What are your current areas of emphasis?

SWAMINATHAN: Most of the countries of south and southeast Asia are population rich but land hungry. Therefore, the only way that they can feed the growing population is to produce more and more food from less and less land. In other words, they have to improve the productivity of land and also what we call the intensity of cropping—four crops a year, three crops a year, multiple cropping—because in the tropics and subtropics, fortunately, sunlight is not a limiting factor.

There is one more aspect of rice research that is assuming great importance; we call it rice-farming-systems research. It is not just a problem of producing more food but a problem of producing more jobs in the rural areas in the off-farm and non-farm sectors and thus producing more income for the rural poor. In other words, the famine of jobs and the famine of purchasing power are becoming even more serious famines than the famine of food. The

hunger problem today in south and southeast Asia is better stated in terms of a million person-years of jobs rather than a million tons of food grains.

DI: How do you work with national programs?

SWAMINATHAN: We have very strong collaboration with national research systems. All our programs of



Dr. Swaminathan (left) talks with Seraplo San Felipe of Morong, Rizal, Philippines.

collaboration are decided by annual work plan meetings. National scientists and IRRI scientists sit together and develop a joint program of work to marry the complementary strengths. We respond only where we have the competence to do so. Wherever there is knowledge that is of value in helping the rice farmer, we try to get it, and then we work together with those national research systems.

DI: One criticism that is always leveled at the national research systems is that they are not effective in getting

through to the farmers. What do you think can further be done to get this knowledge to the countryside?

SWAMINATHAN: We don't have any role in extension. We work with the national research system up to the level of on-farm testing—the field verification. In fact, this is a very important aspect of farming-systems methodology developed by the IRRI. For farmers, seeing is believing, and any amount of lecturing won't convince them. But I can tell you, once the farmers are convinced of the economic viability of the technology, they will take to the technology like fish to water. But then, supposing it's a new variety of crop, somebody will have to multiply the seeds and make them available to others.

Three packages must be mutually reinforcing before agriculture can go forward: first, a package of technology that is socially relevant and acceptable and economically viable; second, a package of services, including credit, knowledge transfer, skill transfer, and supply of inputs; third, a package of government policies, particularly in the area of input-output pricing and marketing that could stimulate the small farmer with opportunities for remuneration and assured marketing. Just as a mineral fertilizer is a stimulus to the plant, it's only an assured remunerative marketing policy that is the fertilizer to the farmer, and it is very important to remember this.

DI: Doesn't the IRRI find, in some cases, that when you go into a country and you stop at the on-farm system the research gets lost because these "packages" aren't in place?

SWAMINATHAN: You see, God helps only those who help themselves. If a country does not have the policies that can help its own farmers, then international, bilateral, or other agencies cannot do anything at all. Ultimately, it is the political will of the country to have policies in agriculture that can stimulate production by small farmers. If those policies do not exist, then any amount of technology, any amount of external advice, will all go in vain. **D**



P. S. SRINIVASAN
NAR-II - BODOR

General Foods World Food Prize 1987

Edward L. Williams
Administrator

MEMORANDUM

March 1987

TO: Winrock International Field Staff

FROM: Edward L. Williams *ELW*

SUBJECT: General Foods World Food Prize

The members of the Selection Committee will meet from April 2 through 4 to choose the first recipient of the 1987 General Foods World Food Prize. They have received 73 excellent nominations from more than 20 countries. The laureate will be announced in September and will receive his/her award on October 6 at the Smithsonian Institution in Washington, D.C.

Much of the credit for this successful initial campaign goes to you of the Winrock field staff. You made an important contribution by taking the nomination materials to government leaders, agricultural officials, scientists, researchers, and other contacts in host countries. Many thanks!

Since nominations remain active for 3 years, it is not necessary to renominate anyone. However, I would like your help in continuing to develop interest in the prize and in recruiting new nominations for the 1988 award. Enclosed are some copies of the Winrock project profile on the General Foods World Food Prize, which explains the background and procedures and provides supplementary information on the world food situation. After each Winrock field staff member has been given a copy, there will still be a number for you to give to national opinion leaders and decision-makers. Please notify my office or the Winrock communications department if you want more copies.

Winrock International, Petit Jean Mountain, Morrilton, Arkansas 72110
Tel. (501) 727-5435 □ Telex 910 720 6616
Sponsored by The General Foods Fund, Inc.

EDELMAN

public relations

June 9, 1987

TO: Ted Williams
Winrock International

FROM: Steve Cook

Amanda Duckworth requested that I send you a copy of the attached memo.

Special focus on youth (4H, FFA) and food + ag young university students from U.S. and other countries

USIA and VOA special features

USAID and USDA special features

WTBS and CNN

AAAS and IMDI

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June 8, 1987

TO: Amanda Duckworth
FROM: Steve Cook Edelman/Washington
CC: Barry Polsky, Tracy Curtin

RE: Washington Assignments for General Foods World Food Prize

Please pardon my delay in getting back to you regarding recommendations for Washington activities for this program. The following suggestions reflect the points I made at the meeting in New York May 29. Following our recommendations for the Washington event, I list tasks assigned to the Washington office from the meeting.

A. RECOMMENDATIONS

1. One on ones. Because this is the first year of the prize's award, we propose a special effort to place publicity about Mr. Swaminathan, his positions on many issues, and the prize. We recommend that Washington-based media be included in the list considered for one on ones following September 18.

We also recommend a series of editorial board meetings, interviews with columnists and other top reporters during awards week. Targets include the Washington Post, U.S. News and World Report, UPI, USA Today, Los Angeles Times, New Republic.

2. Colloquium. We recommend promoting the colloquium as a news story in its own right, with internationally-known speakers addressing global food policy issues. We discussed holding a news conference or news briefing following the colloquium to air the agenda it develops, but agreed instead to arrange a speaking opportunity for the prize winner, Dr. Swaminathan apart from the colloquium and after the awards banquet.

We will use papers prepared for presentation at the colloquium to generate news interest, and we also recommend that during the day we build into the program a focus for the media, such as a wrap-up or final arguments, where positions are summarized, followed by a question and answer session with reporters.

We do not anticipate a large press turn-out for the colloquium, and will work closely with the Smithsonian and GF staff to arrange coverage. Special kit pieces will be necessary for the colloquium, including:

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- o Biographies of four principals;
- o Program of events;
- o News release announcing the colloquium;
- o Copies of papers presented for delivery, with summaries.

3. Awards Banquet. The awards ceremony itself will take place in the Baird Auditorium of the Museum of Natural History, 14th and Constitution Avenues, NW. We look forward to meeting with Kate MacDonough, Bob Wait and the Smithsonian staff to review arrangements.

Because of the novelty of the award and the competition for press attention during early October, we place a priority on securing a "name" for the event, either a political figure like the President or Vice President and/or an entertainment figure like John Denver. Such participation, even if the individual does not play a central role in the ceremony, will help attract coverage.

4. Speaking Engagement. Because there will not be adequate news to warrant a news conference, we recommend arranging a speaking opportunity for Dr. Swaminathan before the National Press Club, providing reporters an opportunity to meet and ask him questions en masse. Two venues are appropriate: an NPC luncheon the day following the award or a Newsmaker Breakfast the morning of the award, providing reporters an opportunity to get their interviews for AM deadlines.

June

- ~~o~~ Supply Edelman/ New York with international media lists for June 18 news conference.
- o Following June 18 news conference, meet with State Department desk officers to brief them on the prize and Dr. Swaminathan.
- o Distribute kits in Washington June 18 and field press calls.

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July

- o Review with Kate MacDonough, Bob Wait and others the arrangements for the evening banquet and the colloquium.
- o Draft kit pieces for October.

August

- o Arrange one-on-ones in conjunction with Edelman/ New York;
- o Complete kit pieces;
- o Approach NPC for speaking engagement;
- o Conduct research on potential competing events;

September

- o Complete all kit pieces, including colloquium;
- o Arrange editorial meetings and Washington interviews for Swaminathan;
- o Pitch colloquium;
- o Finalize speaking engagement;
- o Review plans for colloquium, awards, speaking engagement;
- o Invite press to all events.

October

- o Accompany Swaminathan on all interviews;
- o Confirm speaking engagement;
- o Staff colloquium and awards ceremony.
- o Follow up with all media to provide information.