LOOKING BACK

Dr. M. S. SWAMINATHAN

1995-1996

NEWSPAPER CLIPPINGS

The earth man

Often referred to as a 'scientist of the world', M.S. Swaminathan has demonstrated a capacity for both academic reserach and administration.

Illustration by AJIT NINAN

■ PROFILE

THEY say that one of the cardinal rules of profile-writing is to avoid making it read like a bio-data. But in Monkumbu Sambasivan Swaminathan's case, it is tempting not only to depart from the rule but to hopelessly transgress it.

For, far from being a dull or soulless list of achievements, Dr M.S. Swaminathan's curriculum vitae reads like a dizzy, breathless record that would find a place in any book of lists.

Take stock of this: How many Indians can boast of as many as 34 honorary doctorates and that too from universities as varied as Burdwan and Pondicherry in India and Bologna and Wisconsin abroad? Or of having, within the space of some two decades, ''scored a hat trick'' of presidential awards, having received the Padmashri, the Padmabhushan and the Padmavibhushan?

Who presently holds a lofty string of diverse honorary positions such as President, World Wide Fund for Nature; Chairman, International Commission on Peace and Food; President, National Academy of Agricultural Sciences; and Chief Adviser to the Chinese Academy of Sciences?

And, finally, who has won a clutch of some 15 major international awards, including the Ramon Magsaysay Award (1971, for contribution to agriculture); the World Food Prize (1987, for outstanding achievement in improving world food supply); the Commandeur of the Order of the Golden Ark of Netherlands (1990, for special services towards conservation of flora and fauna); and the Tyler Prize for Environmental Achievement (1991, for, among other things, conservation of biological diversity)?

Recently, the 70-year-old agricultural scientist was awarded the United Nations Environment Programme's (UNEP) Sasakawa Prize for ''outstanding global contribution'' to conservation and sustainable development. One more recognition for a lifetime in academic research, which led former UN secretary general Javier Perez de Cuellar to once describe him as a ''living legend... a man who will go into the annals of history as a world scientist of rare distinction''. And, of course, one more entry into a bio-data that is already an embarrassment of riches.

It is a lifetime in which he has demonstrated a capacity for both academic research and administration—areas, which may not be mutually exclusive, but not easy to straddle. On the one hand, he has published over 200 scientific papers in various national and international journals and his research on plant genetics and agricultural development (not to mention the key role he played in India's Green Revolution) has been widely recognised.

On the other, he has held a staggering variety of posts and was, at different times, Secretary to the Ministry of Agriculture, Acting Deputy Chairman of the Planning Commission, Director General of the Indian Council of Agricultural Research and, of course, Director-General of the International Rice Research Institute (IRRI) at Los Banos in the Philippines.

If his role during the Green Revolution was decisive in increasing agricultural productivity, his return to India from the Philippines in 1988 was crucial in another way. Armed with the World Food Prize money that he was awarded a year earlier, he set up the M.S. Swaminathan Research Foundation, which was registered as a non-profit scientific trust.

''Apart from locating pre-mises, we started looking for a research agenda and identifying critical gaps in existing research on agricultural and rural development,'' says Swaminathan. He spent months planning his project and one of the first areas of research that was selected was on coastal systems. The choice was determined by the lack of an integrated approach to coastal systems as a whole and also the fact that a sizeable population lives on or near the coastline.

By early 1990, the Foundation had established the Centre for Research on Sustainable Agricultural Development (CRSARD), which intially operated out of rented premises in Madras. It was only last year, that the Centre moved into its own very striking building which it leased from the Tamil Nadu Government.

But, according to Swaminathan, the philosophy of the Centre was already in place much earlier. ''We have adopted a human- centred approach. One that works concerns about ecology, social equity, employment into the matrix of rural development.''

Today, its green houses, mist propagation chambers and solar power generator lend an environmentally friendly feel to the Centre, which is manned by over 120 professional and support staff. The areas of research have enlarged and its programmes range from conserving mangrove forests and endangered plant species to devising ways of improving the livelihood of landless labour and marginal farmers.

Swaminathan says that he does little 'direct' research now but engages in ''interacting'' and ''associating'' with the many young researchers, who work at the Centre. A lot of his time is spent on trying to raise resources for the Centre.

He points out that he is already 70 now and would like to ''place the Centre on a sustainable financial base''. While the Centre does receive money from various sources, it has been helped to quite an extent by the infusion of prize money awarded to Swaminathan from time to time.

The last few years has seen the transition of Swaminathan from academic and administrator to institution builder. Going by his past record and the growing reputation of the Centre, it is bound to be an enduring success.

—Mukund Padmanabhan

Women tend to suffer more from food — insecurity

It is essential that all concerned with the future of our country help to generate an atmosphere where the electorate cares for the environment

VOTE FOR THE ENVIRONMENT

M.S. SWAMINATHAN
Chairman
M. S. Swaminathan
Research Foundation

A seaside mangrove turned to desert by incessant felling

I HAVE been defining ecological transition as "deceleration of damage to the basic life support system of land, water, forests, biodiversity and the atmosphere, and acceleration of efforts to eradicate poverty and achieve gender equity". Working towards such an ecological transition is fundamental to safeguarding national food and nutrition security on the one hand, and rural and urban livelihood security, on the other. It is hence a matter for concern that at the National Conservation Congress held at New Delhi in November 1994, a senior political leader held the view that "there are no votes in causes relating to the environment". In a democratic society like ours, calculations on the vote-attracting quality of different local and national issues will obviously determine political priorities and promises. It is, therefore, essential that all concerned with the future of our country help to generate an atmosphere where the electorate cares for the environment and ensures that politicians who do not care for nature are not elected.

The poor and the youth are the two genuine majorities of our country. Among the poor, women tend to suffer more from food-insecurity and deprivation at the household level. It is, therefore, important that political leaders are made to realise that if they really care for the poor, they must pay immediate attention to problems relating to the ecological security of the country. This can be illustrated taking the example of the commitment to supply rice at Rs two per kg, an important determinant of the outcome of the recent Assembly elections in Andhra Pradesh.

Selling rice at this price would involve the following steps, if subsidies are to be kept to the minimum.

(a) Raising productivity per units of land, water, energy, time and labour, in order to reduce cost and increase yield,

(b) Achieving sustainable intensification and diversification of rice farming system; this would imply that the higher productivity should come from ecotechnologies which depend on knowledge and farm grown biological inputs, rather than on capital and chemicals, and that greater investments should be made on post-harvest technologies which will help to add value to every part of the plant, such as rice straw, hull and bran,

(c) Conserving the ecological foundations essential for sustainable advances in productivity; this will call for greater attention to soil health care, restricting ground water use to the dynamic component, improved water harvesting and management, integrated pest management, integrated nutrient supply, conservation of biological diversity, protection of forests and natural enemies of pests and avoiding activities which can cause climate change, rise in sea levels and greater incidence of ultraviolet-B radiation.

To achieve the above, there will be need for a paradigm shift in agricultural research and development, leading to resource conservation and productivity enhancement becoming two sides of the same coin. For example, recent research at the International Rice Research Institute indicates that there are prospects for what has been termed in the media as "super rice varieties", capable of yielding upto 15 tonne of rice per hectare. To enable the rice plant to yield one tonne, the crop will need a minimum of 20 kgs of nitrogen and other major and micronutrients in appropriate quantities. Thus, 300 kgs of nitrogen alone will be needed to get a 15 tonne yield. If this requirement is met only through mineral fertilisers, there will be serious problems of soil and ground water pollution. Similarly, if pests are controlled only through chemicals, there will be both pollution and resurgence of pests. At the same time, we do need higher and higher yields if we are to lower the cost of the staple to resource poor consumers and meet the needs of the growing population.

HOW can we face this critical dilemma? We can face it provided there is action at four levels, namely, development of ecotechnologies, promotion of farmer-centred and farmer-controlled extension and input delivery systems designed to take new technologies to the unreached, group cooperation in the scientific management of water, pests and post-harvest operations among farmers living in a watershed or the command area of an irrigation project, and enactment of suitable legislation to prevent the diversion of prime farm land for non-farm uses and to protect ground water resources. The legislation which should be enacted after discussion with State Governments in the National Development Council can be titled *National Food Security Act* and should give concurrent and equal attention to the following:

(a) Conservation of soil, water, forests, biodiversity and the protection of the atmosphere,

(b) Development and dissemination of ecotechnologies which can help to raise crop, animal and aquatic productivity without environmental harm,

(c) Organisation of credit, insurance, extension and marketing systems on a group basis in order to foster community cooperation in pest and water management and post-harvest technology, and

(d) Promotion of nutrition security at the household and individual level through both protective and productive social security measures.

If the above steps are taken, the political decision to make available rice or other staples at prices affordable by the poor, can be achieved in a sustainable manner without an undue erosion of the financial resources needed for accelerated economic development.

"Super rice varieties" will cause serious problems of soil and ground water pollution

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I have explained at some length the relationship between the political decision to supply rice at low cost and the protection of the environmental capital stocks essential to make such a decision economically sustainable, because it is only a widespread understanding of such linkages that will lead to a change in the perception, "environment has no votes". In a recent book titled **Full House,** Lester Brown and Hal Kane have predicted that India may have to resort to an annual import of 45 million tonne of food grains by 2030 if a "business as a usual" approach persists in matters relating to safeguarding our soil and water resources. Even now, the total quantity of rice sold annually in the international market is only about 10 to 12 million tonne. Therefore, it is time we started paying serious attention to the basic maladies threatening sustainable agriculture.

ANOTHER aspect which needs consideration is the use of nature conservation and enhancement as a powerful instrument in poverty eradication programmes. Today, there is commercial interest in the exploitation of biodiversity, particularly in medicinal plants and micro-organisms. Unless the growing commercial interest in exploitation is matched by an equally powerful economic stake in conservation, protection of biodiversity will become a lost cause. This would imply in operational terms, first the introduction of a system of recognition and reward for the contribution of tribal and rural families in genetic conservation and enhancement, secondly, joint forest and national park management procedures involving foresters and local communities, and thirdly, a new social contract between private sector industry and resource poor families leading to the addition of economic value to the time of the poor and to conferring on them the advantages of scale in marketing.

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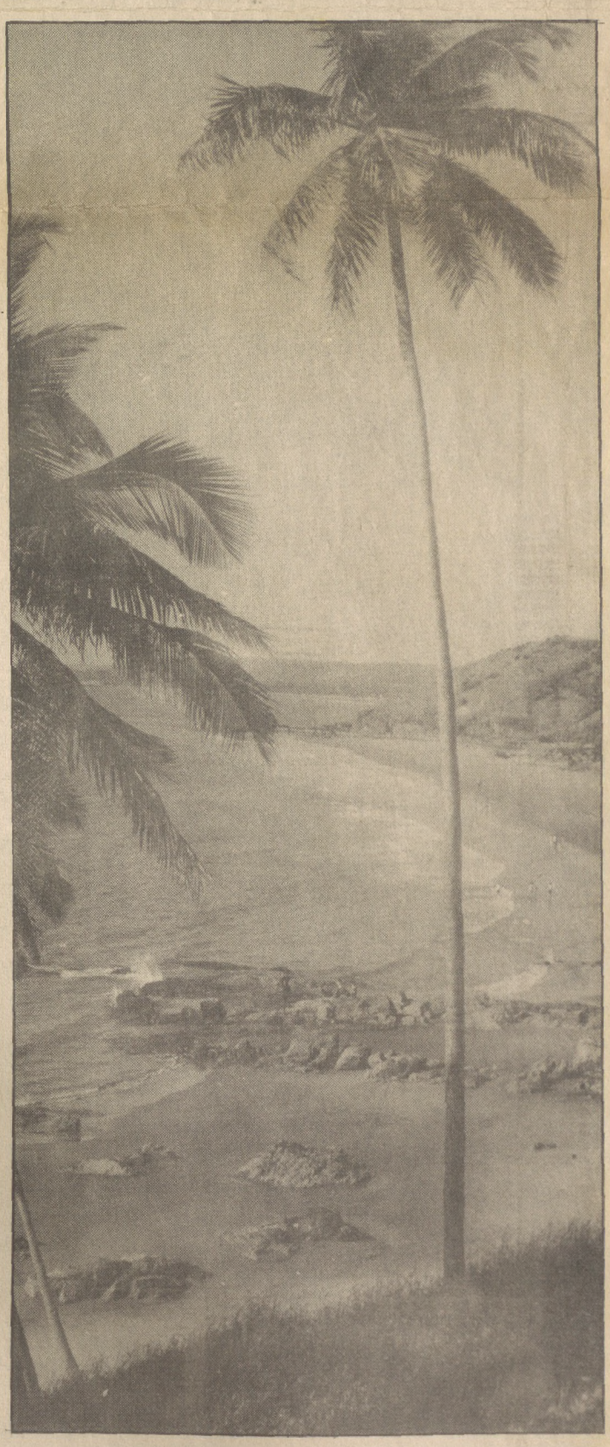
For over 10,000 years, agricultural evolution took place in an environment free from the concept of intellectual property rights (IPR). The provisions relating to "Trade-related Intellectual property Rights" of the World Trade Agreement will lead to the end of this situation and the beginning of an IPR era where profit and not just public good will determine research priorities and investments. We need to consider carefully the potential impact of the spread of an IPR environment in R and D efforts relating to food and health security.

Private profit and public good could become mutually reinforcing provided considerations of equity and ethics drive economics. One thing is clear — our population will reach a billion early in the 21st century. We will have less land and water per capita. Even protecting the less than three per cent of our era covered by national parks and protected areas will prove increasingly difficult. On the positive side, the UN Convention on the Law of the Sea, which came into force on November 16, 1994, provides us with an Exclusive Economic Zone of 2.1 million sq km. There is need and scope for the sustainable management and utilisation of this vast sea surface. We have also over 80 million ha of arable land classified as "waste land". Most of the 100 million new jobs, which will be needed by the year 2000 to ensure that young women and men can earn their daily bread, will have to come from land and water based occupations. It is time that political parties realise that their promises to the people for cheap food and a better life for all can be realised only through votes for the environment.



There is need and scope for the sustainable management and utilisation of the vast sea surface provided by the UN Convention.

Ontwikkeling van arme boeren vereist vooral tijd en

Swaminathan-instituut in India brengt biotechnologie bij de armen

Hoe kunnen ook de kleine boeren en landlozen in de Derde Wereld profijt trekken van de moderne biotechnologie? Je moet hen organiseren, leert een bezoek aan het Swaminathan-instituut in Zuid India, en wel zo dat ze inkomsten genereren. Zoals jasmijn telen, paddestoelen kweken, een koe houden, wc's bouwen, vis telen, zijderupsen kweken of veldsla verbouwen. Het doel is een 'ecotechnologische beweging' die de kloof tussen arm en rijk verkleint en de natuur spaart.

In haar donkere hut toont de Indiase vrouw ons trots een grijsbruine zak waaruit helderwitte schimmels groeien. Aan de stevige casuarina-stokken, die met suikerriet en palmbladeren het dak vormen, hangen nóg zeven zakken, maar daaruit steken alleen vuile stompjes. „De schimmels in die zakken heb ik pas vorige week geënt", legt ze uit. Ze ent paddestoelen door laagjes gekookt, kortgesneden rijststro af te wisselen met schimmelcultuur, iets waar ze zo'n twee uur per dag mee bezig is. Na twee weken kan ze de paddestoelen uit de zak plukken. De verkoop ervan levert haar maandelijks 120 roepies (zeven gulden) extra op en ze doet dit nu vijf maanden. Ratten zijn nog wel een probleem, vertelt ze, en er is niet altijd genoeg rijststro.

Met coördinator dr S. Hopper loop ik naar het volgende bedrijfje in dit 'biodorp'. Op zijn wat zakelijke manier vertelt hij hoe landloze vrouwen de dorpsvijver, waar nooit iemand iets mee deed, tot een bron van inkomsten hebben gemaakt. De vijver is met een startfonds van de overheid schoongemaakt, ontdaan van predatoren en bemest met koeiestront. Negen vrouwen uit de hutten rond de vijver halen er nu eens per jaar graskarpers, gewone karpers, zilverkarpers, Mrigal, Rohu en Catla uit. Vorig jaar mei vingen ze 430 kilogram vis, goed voor 10.000 roepies. Om deze opbrengst te krijgen, moeten de vrouwen elke dag naar het midden van de vijver zwemmen en een voernet vullen met rijst, tarwe en notencake. Maandelijks moeten ze de vijver schoonmaken en bemesten. Om erosie tegen te gaan, plantten ze aan de kanten grassen en vruchtbomen.

Als we bij de kippenfokkerij aankomen, is de baas net zijn vierhonderd door elkaar krioelende grijze kuikens aan het voeden. Hij kan niet op het land werken vanwege een handicap, vertelt hij, maar kippen voeren gaat prima. Marketingdeskundige mr S. Soundaradjane heeft eerst voor hem nagegaan of er voldoende markt was, en veedeskundige dr K. Danassegaran begeleidde hem met het uitproberen van twee kipperassen. Beide rassen passen zich goed aan in zijn lemen schuur, ervaart hij, maar de 'Ross' blijkt wel minder voer nodig te hebben dan de 'Starbro'. Belangrijk, want voer is duur.

Inkomen

Hoe zorg je ervoor dat ook de grote groep arme boeren en landlozen in de Derde Wereld profijt trekt van de moderne biotechnologie? Die vraag stelde zich de M.S. Swaminathan Research Foundation in Madras (Zuid India) bij haar oprichting in 1990. De discussianten – biologen, economen, sociologen, politici en ondernemers uit heel de wereld – kwamen tot het antwoord dat 'inkomen genereren' centraal moet staan. Om dit te bereiken, concludeerden ze, moet het Swaminathan-instituut de armen enerzijds technische en organisatorische hulp bieden, en ze anderzijds van startfondsen voorzien.

> „Mensen denken vaak dat mensenmest waardeloos is, maar dat is niet waar."

Het instituut – van de gezaghebbende Indiase veredelaar Swaminathan, die in 1988 een eredoctoraat van de Landbouwuniversiteit ontving – formuleerde een ideaal. Het stelde zich een platteland vol 'biovillages' voor. Een biodorp is een dorp met een rijk scala aan eenmansbedrijfjes, die allemaal gebruik maken van biologische technieken: paddestoelenkwekers, jasmijntelers, veldslakwekers, koehouders, kippenfokkers, zijderupskwekers, geitenhouders, vistelers, bijenhouders, toiletbouwers, touwmakers, etc.

Deze eenmansbedrijfjes zijn georganiseerd in spaargroepen. Elke maand leggen de jasmijnkwekers of vistelers – in principe vrouwen – een bedrag in. Hieruit betalen ze centrale voorzieningen zoals marketingadviezen of vervoer, en ze gebruiken het geld bij ziektes of gebrek aan eten, om zo minder afhankelijk te zijn van woekeraars.

In het ideaal worden de biovillages ondersteund door zogeheten 'biocentres', proefstations waar landbouwkundigen het biologisch materiaal testen en vermeerderen. Vanuit de filosofie dat jongeren op het platteland een uitdagende baan moeten kunnen vinden, stellen deze biocentra dorpsjongeren aan om te assisteren. Bij het ideaal is de gevestigde orde nadrukkelijk betrokken. Om te garanderen dat de biodorpen toegang hebben tot de beste rassen en de laatste informatie, is er regelmatig een vergadering van het 'Science and Technology Consortium'. Dit is een netwerk van onderzoekers uit universiteiten, bedrijven en overheidsinstituten. Zij leveren niet alleen materiaal, maar geven ook gespecialiseerde trainingen. Om produkt-afzet en fondswerving veilig te stellen, is er een 'Financial and Management Back-up Consortium', een raad van banken, donors, verzekeringsmaatschappijen en de industrie.

Hybride

Veredelaar S. Banumathy traint boeren en landloze vrouwen hoe ze hoogproduktieve, hybride rijstzaden moeten verbouwen, vertelt ze, terwijl ze met twaalf collega's van het biovillage-project op kraamvisite is bij de 'animator'. Het kruisen van mannelijke en vrouwelijke rijstlijnen vraagt speciale vaardigheden en Banumathy heeft nu voor de vrouwen een stuk land gehuurd om de techniek te leren. Het eerste jaar betaalt het Swaminathan-instituut alle kosten, inclusief salaris. Het tweede jaar betaalt het nog 75 procent en zo elk jaar minder. Uiteindelijk moet de spaargroep zichzelf kunnen bedruipen. Binnenkort gaan de vrouwen met hybride groentezaden aan de slag.

Banumathy helpt de boeren ook met het kweken van azolla. Wanneer ze dit razendsnel groeiende plantje op het land strooien, kunnen ze toe met de helft van de kunstmest die ze gewoonlijk gebruiken. „Deze techniek was bij de Landbouwuniversiteit in Madras al jaren bekend", licht ze toe, „maar de boeren wisten het niet. Toen ik anderhalf jaar geleden met azolla aankwam, wilden de boeren aanvankelijk ook niet meewerken. Ze vonden het teveel moeite. Maar ik heb een paar demonstratie-projecten opgezet. Nu zien ze dat het flink wat geld bespaart."

Ecoloog A. Savithri troont me mee naar een betonnen, witgeschilderd hokje op een kale plek aan de rand van een biodorp. Ze trekt naast de wc een deksel op de grond open, en wijst hoe je de cementen pot onder de wc om de vijf jaar moet vervangen door de tweede pot onder het deksel. De volle pot krijgt hiermee vijf jaar de tijd om in te dikken. De vrouwen hebben zelf aangegeven wc's te willen, vertelt ze, en samen is toen dit model van Unicef uitgetest. „Mensen denken vaak dat mensenmest waardeloos is, maar dat is niet waar." Zoiets schijnbaar eenvoudigs als wc's in het dorp, heeft ze intensief begeleid. Ze begon voorzichtig met twee wc's en vertelde de vrouwen regelmatig hoe ze deze moesten gebruiken, en waarom hygiëne zo belangrijk is. Toen dit naar wens verliep, bouwde ze met de dorpelingen nog tien wc's, waarbij de dorpelingen de helft moesten betalen. De volgende tien wc's moesten de vrouwen geheel zelf betalen en bouwen. „In het dorp hiernaast heeft de overheid twintig wc's gezet", vergelijkt ze, de deksel weer sluitend, „maar ze leerden niet hoe je naar de wc moet gaan. De vrouwen gebruiken die nu als opslagplaats voor veevoer."

Trickle down

De 'trickle down' filosofie, die ervan uitgaat dat technologie zich vanzelf verspreidt als hij maar goed is, gaat in India niet op. Zelfs de goedkoopste biotechnieken die in de universiteiten en instituten zijn ontwikkeld, hebben de meeste armen nooit bereikt. Dit komt omdat het vervolgtraject ontbreekt, analyseert het Swaminathan-instituut. De technieken blijven op de plank in de stad liggen, omdat er te weinig landbouwkundigen in India zijn die ze aanpassen aan de uiteenlopende natuurlijke omstandigheden in de dorpen, aan de gewoontes van de dorpelingen en aan de plaatselijke afzetmarkten.

Het instituut ontwikkelt nu een model voor precies dit vervolgtraject. Hiertoe staat het een 'participatief proces' voor. Elke stap in dit proces, zo blijkt uit het bezoek, vraagt bijzonder veel tijd en toewijding. Allereerst bereidt het instituut uiterst zorgvuldig de vraag voor wélke biotechniek het gaat overbrengen. Een marketing-deskundige gaat na waar er markt voor is. Tegelijkertijd testen landbouwkundigen zaden, diererassen, schimmelculturen en technieken op hun waarde voor het dorp. De uitkomsten stoppen ze in de groots opgezette data-base van het Swaminathan-instituut, zodat de gegevens weer bij een volgende dorp kunnen worden gebruikt.

Naast de technische ondersteuning gaat enorm veel energie naar het organiseren van de mensen. 'Social organisers' en 'animators' identificeren bestaande dorpsnetwerken, vormen zo nodig nieuwe (spaar)groepen, en begeleiden de groepsprocessen. Vervolgens worden de dorpelingen die iets willen, getraind om zich de nieuwe technieken en organisatievormen eigen te maken. En tenslotte bouwt het instituut dermate stevige netwerken op, dat de dorpelingen daadwerkelijk toegang hebben tot kapitaal, informatie, marketingadviezen en scholing.

„Zo participatief is het niet altijd", zegt coördinator Hopper nuchter. „Als wij bijvoorbeeld vragen 'Wie wil er een koe houden?' steekt elke vrouw haar vinger op. Maar voor zoveel koeien is natuurlijk niet voldoende markt. Dan bepalen onze social organisers wie het meest geschikt is."

Film

's Avonds gaan we naar een filmvoorstelling over het houden van koeien. Hopper heeft het ministerie van Landbouw gevraagd voorlichtingsfilms te draaien, omdat tien landloze vrouwen net een koe hebben gekocht. Terwijl we wachten op de voorlichters die 'zoals altijd te laat zijn', klampt één van de vrouwen tuin-

THE ECONOMIC TIMES NEW DELHI
21 JANUARY 1995

India misses the bus as govt drags feet on PVP law

Nivedita Prabhu
NEW DELHI 20 JANUARY

WITH THE government putting the proposed plant variety protection (PVP) law on the back burner, India has missed out on the chance to become the world leader in the implementation of farmers rights, says Dr M S Swaminathan.

The internationally recognised force behind India's Green Revolution, Dr Swaminathan, told *The Economic Times* that had the government taken the initiative to expedite a legislation on the subject, India would have been in an enviable position at the World Conference on Plant Genetic Resources (IUPGR) at Leipzig in June, this year. The conference, organised by the Food and Agriculture Organisation is likely to be a watershed in evolving a renegotiated International Undertaking on Plant Genetic Resources with a focus on farmer rights.

It may be recalled that India has also lost the opportunity to join the 1978 International Union for the Protection of New Varieties of Plants Convention (UPOV), considered to be more advantageous to developing countries as opposed to the 1991 UPOV.

Advocating a stronger focus on farmer rights in the proposed plant variety protection law, Dr Swaminathan says the title of the legislation could be Plant Variety Protection and Farmers' Rights Act. He feels, however, that it may be advantageous to have two separate legislations for PVP and farmers' rights.

A single PVP and Farmers' Rights Act or two separate Acts should have as their principal goal the task of strengthening the partnership between breeders and farmers, says Dr Swaminathan said. His suggestions together with precise recommendations on how to protect farmers rights have been submitted to the government and the FAO. The report was prepared after deliberations by the technical consultation on an implementation framework for farmers' rights which was held at Madras between January 15-18.

According to the scientist, early action in the enactment of a suitable legislation is essential for the protection of the work of the Indian plant breeders and plant breeding institutions.

The legislation should enable Indian breeders to obtain protection in other countries for the large number of varieties developed by them and to ensure that Indian breeders are not exploited commercially without any benefit accruing them. It would also facilitate the access of farmers and the seed industry to new and improved plant varieties which may be legally protected in other countries under plant breeder regimes.

The report which has also made detailed recommendations to the international community on the issue of farmers' rights, has focussed on the importance of a fair and equitable sharing of benefits arising from the use of agrobiodiversity. It also states that farming communities should be recognised for their contributions to conservation and agriculture. To this end, an international fund should be established and indicators developed for determining the criteria for contributions and disbursals under the fund.

The concept of farmers' rights was adopted by over 160 countries in 1989 under the IUPGR. However, little has been achieved since then to realise these rights due to difference of opinion on their meaning and nature.

Significantly, the Madras meeting organised by the M S Swaminathan Foundation and attended by international experts on property rights and eminent agricultural scientists could not arrive at a consensus on various aspects of farmers rights. For instance, there was no agreement on the conditions under which farmers may or may not sell seed when that seed is under intellectual property protection. The technical consultation strongly felt farming communities should be free to sell the harvest commodity, to save seed on a non-commercial basis for replanting.

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Significantly, the Madras meeting organised by the M S Swaminathan Foundation and attended by international experts on property rights and eminent agricultural scientists could not arrive at a consensus on various aspects of farmers rights. For instance, there was no agreement on the conditions under which farmers may or may not sell seed when that seed is under intellectual property protection. The technical consultation strongly felt farming communities should be free to sell the harvest commodity, to save seed on a non-commercial basis for replanting.

De Indiase plantenveredelaar M.S. Swaminathan, oprichter en directeur van het Centrum voor Duurzame Landbouw.

Foto Maaike Boxel

'Je echte beloning is de glimlach van de boer'

Swaminathan is een van de belangrijkste plantenveredelaars van de Derde wereld. Het grote succes van zijn Groene revolutie is dat hongersnoden verdwenen. Maar nu werkt Swaminathan aan gewassen voor de armen.

Marianne Heselmans

De Indiase plantenveredelaar dr. M.S. Swaminathan drukte een zwaar stempel op de 'Groene revolutie' door in India als eerste hoogproduktieve tarwerassen te introduceren. Maar er kwam spoedig kritiek. Deze heeft hij ter harte genomen. Tegenwoordig ontwikkelt hij — met het geld van zijn vele prijzen — milieuvriendelijke landbouwtechnieken, speciaal gericht op de noden van de armen op het platteland.

We lopen door zijn 'Centrum voor duurzame landbouw' in Madras (Zuid-India), dat opgezet is in de vorm van een DNA-streng. De grillige lijnen van het witte gebouw doen inderdaad aan de DNA-helix denken. En de gekartelde openingen en ramen, hier en daar in viertallen gegroepeerd, verwijzen naar de vier bouwstenen van het DNA.

"Zo enthousiast als wij in de jaren zestig waren, dat zie je niet meer", zegt Swaminathan in zijn kamer. "Er is veel zelfvoldaanheid onder Indiase landbouwonderzoekers en politici. De regering heeft nu immers een surplus van dertig miljoen ton graan. Maar ze vergeten dan dat er nog driehonderd miljoen mensen ondervoed zijn omdat ze niet genoeg voedsel kunnen kopen. Ik beschouw dat als de meest urgente opgave van deze tijd: het inkomen op het platteland te vergroten. Niet door de armen cadeautjes te geven, maar door ze té organiseren, ze technieken te leren."

Tot 1967 was India bekend om zijn hongersnoden. Bij droogte of hevige regens stierven de armen in de straten van Calcutta en Bombay. India's eerste minister Nehru had wel meteen na de onafhankelijkheid het adagium 'alles kan wachten behalve de landbouw' verkondigd, maar aanvankelijk baatten die inspanningen weinig: de graanproduktie bleef te laag om een reserve op te bouwen. In 1966, ten tijde van de Nederlandse actie 'Help India', liep de nood zelfs zo hoog op dat India land tien miljoen ton graan moest importeren.

Volle aar

In datzelfde jaar mocht Swaminathan, toen werkzaam bij het Indian agriculture research institute in Delhi, de eerste vruchten plukken van zijn jarenlange zoektocht naar het juiste tarweras. Probleem was dat de gangbare granen bij gebruik van kunstmest en extra irrigatie zo'n volle aar kregen dat ze omvielen. Al het speurwerk was dan ook gericht op tarwe met een korte stevige stengel, maar wel met een lange, volle aar. Swaminathan haalde in 1962 zo'n ras uit Mexico, kruiste dit met de Indiase tarwe, testte de planten meteen bij boeren en zette in plaats van de voorlichting in te schakelen zelf demonstraties op.

Het succes was overweldigend. Met de nieuwe rassen konden boeren hun produktie opvoeren van een ton tot meer dan vijf ton tarwe per hectare. Binnen tien jaar bezette de tarwe al vier miljoen hectare en exporteerde India graan. In 1968 bracht de Indiase regering een speciale postzegel uit met de titel 'Tarwerevolutie'. Vlak hierna viel in Amerika de term 'Groene revolutie', die behalve op de tarwe, ook op de zich in Azië verspreidende, kunstmestbestendige rijstrassen sloeg.

Swaminathan is nu een veelgeroemd man. Het verhaal gaat dat hij nooit te bereiken is omdat hij altijd op weg is om ergens in de wereld een prijs in ontvangst te nemen. In 1987 ontving hij de Wereldvoedselprijs, in 1986 de Albert Einstein wereldwetenschapsprijs, in 1991 de Tyler- en Hondaprijs en afgelopen november nog weer een milieuprijs van de VN. Die prijzen kreeg hij niet alleen voor zijn kunstmestbestendige tarwe maar ook voor vernieuwingen als milieuvriendelijke bestrijdingsmethoden in de katoenteelt. Daarnaast wordt hij geëerd wegens vele politieke functies die hij bekleedde, waaronder het voorzitterschap van VN-commissies.

Hij wordt geroemd om zijn sociale bewogenheid. De vele discussiebundels die hij heeft uitgegeven, en die als rode draad een rechtvaardiger en natuurvriendelijkere landbouw hebben, getuigen hiervan.

Tegelijk heeft Swaminathan juist bloot gestaan aan kritiek. Als 'uitvinder' van de kunstmestbestendige tarwe en als directeur van het internationale rijstinstituut het IRRI in de Filippijnen (1982-1988) staat hij symbool voor de Groene revolutie, die op haar beurt weer symbool staat voor ecologische rampen en ontwrichte sociale verhoudingen die de moderne landbouw in de Derde wereld teweeg heeft gebracht. Als IRRI-directeur heeft hij demonstraties mee mogen maken van boeren die zich verzetten tegen de 'imperialistische IRRI-zaden'. En in 1988 protesteerden Wageningse studenten nog tegen het eredoctoraat dat de Landbouwuniversiteit aan Swaminathan toekende, verwijzend naar de destructieve effecten van de Groene revolutie.

"Kijk, achteraf is het makkelijk kritiek te hebben op de Groene revolutie", reageert Swaminathan. "Maar men moet niet vergeten dat het in die tijd maar om één ding ging: meer voedsel. Die hongersnoden waren verschrikkelijk. Wij waren alleen daar mee bezig, en we werkten nauw samen met het ministerie. Ik heb dat later niet meer zo meegemaakt. Stimulerend was dat we zoveel resultaat zagen. Van één ton naar vijf ton graan per hectare. Als je dan vraagt of ik als veredelaar niet kon voorzien dat het mis zou gaan... Ik heb al meteen in 1968, in mijn lezing tijdens de Indian Science Congres, ervoor gewaarschuwd dat zonder begrip van traditionele systemen, zonder wetenschappelijke onderbouwing, zonder goed onderwijs en zonder management, de Groene revolutie uit zou lopen op een ecologische ramp. En ik noemde precies die dingen waar later milieugroeperingen voortdurend op zouden wijzen: vergiftiging door ongelimiteerd gebruik van bestrijdingsmiddelen, uitdroging en verzilting wanneer men zonder beleid zou irrigeren, en grootschalige ziekten als men niet lette op voldoende diversiteit in de rassen. Maar echt, men vroeg mij in die tijd wat me bezielde om zo somber te zijn. Iedereen leefde in de euforie dat nu eindelijk de hongersnoden verleden tijd waren."

De Indiase activiste Vandana Shiva schaart Swaminathan denigrerend onder de 'Rockefeller-onderzoekers'. De miljonair Rockefeller zette na de oorlog zijn rijkdom in om de Derde wereld met 'Amerikaanse' landbouwtechnologie te ontwikkelen. Shiva, die vorig jaar in Nederland de aandacht trok omdat ze de Alternatieve Nobelprijs kreeg, heeft de kritiek op de Groene revolutie scherp verwoord. In haar boek 'The violence of the Green revolution' betoogt ze dat de beloftes van de kunstmest- en irrigatiebestendige rassen de traditionele Indiase methoden de kop in hebben gedrukt.

"Ja, de zaadtechnologie en de kunstmest kwamen uit het Westen", erkent Swaminathan. "Maar het is niet waar dat wij in 1965 met dat pakket een Westerse ontwikkelingsweg wilden opleggen die niet aansloot bij de traditioneel Indiase situatie. Met die eerste programma's beoogden we niet meer dan dat boeren de nieuwe graanrassen en kunstmest gingen gebruiken. Ons uitgangspunt was dat ze hun eigen irrigatie en zaaduitwisseling zouden behouden. Later gingen boeren op eigen houtje veel te intensief telen. Boeren gingen tomaten en aardappelen verbouwen, waarbij ze te veel water en bestrijdingsmiddelen verbruikten. Maar het is onzin dat de Groene revolutie een komplot was tussen de overheid, onderzoekers en de chemische industrie."

Swaminathan blijft er niet onverschillig onder, nu het over zijn critici gaat. Hij haalt er onder zijn naam verschenen 'Tarwerevolutie' bij, een discussiebundel van alle onderzoekers, ambtenaren en politici die in de jaren zestig bij de introductie van de tarwerassen betrokken waren. In de bijlagen zit zijn lezing uit 1968. Het blijkt dat hij ook al had voorspeld, dat het mis zou gaan wanneer boeren louter aan winst zouden denken. Het lijkt er op dat dat dus is gebeurd.

"Nee", zegt hij, "wat fout ging is dat er drie dingen niet zijn gebeurd die hadden moeten gebeuren. En die hebben alle drie te maken met management. Management is de belangrijkste landbouwtechnologie die er is. Het eerste is management van de overheid. Ik heb altijd gezegd: de Groene-revolutietechnieken zijn zowel voor kleine als grote boeren ge-

> *'Landbouwsociologen zijn lang bezig geweest met het aantonen dat de Groene revolutie de armen niet bereikte. Dat was inderdaad zo. Maar ze pakten dat niet op om er iets aan te doen.'*

schikt, ze zijn schaal-neutraal. Maar ze zijn niet neutraal als het gaat om kapitaal, macht en voorkennis. Dat wisten we al vanaf het begin: arme boeren kunnen de zaden en kunstmest niet betalen en weten vaak ook niet van de mogelijkheden.

"Daarom hebben we er ook meteen voor gepleit dat de overheid de armen subsidies, leningen en goede prijzen garandeert, en zorgt voor wegen, elektriciteitsvoorzieningen, voorlichting en scholen. Ze begon daar op een gegeven moment ook wel mee, maar een democratie kan nu eenmaal niet zo snel reageren. Het ging ook allemaal zo snel. Het was echt een revolutie, geen evolutie. Niemand was op die hoge produktie voorbereid. Dat gaf allerlei problemen. De opslag van de oogst bijvoorbeeld. De eerste jaren werden hiervoor scholen gebruikt.

"Het tweede dat niet is gebeurd, is het ontwikkelen van de boodschap dat de verbeterde rassen ook met weinig kunstmest en bestrijdingsmiddelen hogere opbrengsten kunnen geven dan de traditionele rassen. Alleen zaden, kunstmest en pesticiden leveren is natuurlijk ook makkelijker. De boer hoeft er niet veel voor te doen. Hij ziet meteen resultaat en hij is overtuigd. Bij ecologische landbouw zie je dat resultaat echter niet zo snel. Daarom heb je daar een uitgebreide voorlichting voor nodig, gesteund door onderwijs en media. Zij moeten de boer overtuigen van de waarde van organische mest, van waterbesparende beheersmaatregelen, en van bijvoorbeeld het sparen van natuurlijke vijanden. De Groene-revolutielandbouw noem ik een 'chemische' landbouw: kunstmest en bestrijdingsmiddelen bepaalden de produktieverhoging. We moeten nu toe naar een produktie die op kennis is gebaseerd."

"En wat ten slotte niet is gebeurd", vervolgt hij, nadat hij de telefoon voor de derde keer heeft beantwoord, "is het organiseren van de armen. Een irrigatie-systeem of verwerkingsfabriek opzetten — dat kan als arme boer alleen als je georganiseerd bent. Boeren kunnen ook alleen samen besluiten om natuurlijke vijanden te kweken, want als de buurman flink pesticiden blijft spuiten, krijgen die vijanden natuurlijk geen kans. Dit is echt een groot probleem van de ontwikkelingslanden: het platteland is niet georganiseerd.

"Misschien hadden de landbouweconomen en -sociologen dit proces kunnen ondersteunen. Zij zijn echter lang alleen bezig geweest met het aantonen dat de Groene revolutie de armen niet bereikte. En dat was correct, maar ze pakten dat niet op om er iets aan te doen."

Plattelandsontwikkeling

Naar verluidt is het in India 'bon ton' om, eenmaal gepensioneerd, je tijd en geld in te zetten voor de armen. Het stikt er inderdaad van de maatschappelijke organisaties. Deze variëren van een voormalig ambtenaar van Economische zaken die in zijn eentje met één typemachine en een telefoon nu een consumentenorganisatie is, tot vijf ex-landbouwhoogleraren die gezamenlijk een proefstation op het platteland hebben opgezet. Swaminathan en zijn vrouw maken zich nu persoonlijk hard voor plattelandsontwikkeling. Het landbouwcentrum in Madras hebben ze gebouwd met het geld van al Swaminathan's prijzen. Het is de tegenhanger van de grijze laboratoria die landbouwcentra meestal zijn: het ademt een lichte, vrolijke en open sfeer. Marktkundigen, biologen, veredelaars, sociaal werkers en dierkundigen zitten in kantoortuinen projectgewijs bij elkaar. Als ze er zijn, want het merendeel van de 120 medewerkers zit de halve week op het platteland.

Eén van de projectgroepen onderzoekt hoe landloze vrouwen aan extra inkomsten zijn te helpen — het houden van een koe, het kweken van paddestoelen in een zak gekookte rijststro, het telen van groenten of bloemen rond de hut, of het kweken van vis in de dorpsvijver. Eenvoudige technieken, maar toch wordt elke techniekoverdracht door de groep uiterst grondig voorbereid. De marktkundige heeft uitgezocht of er markt voor is, de veredelaar heeft uitgetest welke zaden of schimmels het geschiktst zijn, de *social organiser* is nagegaan wie van de vrouwen de activiteit moet beginnen en de ecoloog adviseert hoe de vrouwen aan mest kunnen komen. Bovendien worden er met het opzetten van de activiteiten 'spaargroepen' in het leven geroepen. Alle vrouwen die een koe houden, vormen een groep en leggen geld opzij waar ze van kunnen lenen. De *animator* (aangesteld om te motiveren) begeleidt het proces.

Een ander idee dat het instituut uitwerkt is een database van landbouwmethodes. "Je móet voor je weg gaat een paar minuten met de mensen van onze database praten", zegt hij enthousiast. "Zij vragen goede boeren in Zuid-India hoe ze zo'n hoge opbrengst weten te krijgen en slaan hun strategieën zo toegankelijk mogelijk op in de computer. Zo kunnen boeren van elkaar leren, iets wat altijd het snelst gaat. Met die database willen we ook aantonen dat een mix van traditionele en moderne technieken het beste werkt. Critici van de Groene revolutie wijzen nogal eens alle moderne technologie af en doen alsof het vroeger allemaal zo goed was. Maar we kunnen niet terug. Landbouw evolueert in sprongen, dat deed het ook voor de Groene revolutie. Toen in de jaren dertig irrigatiesystemen werden gepropageerd, veranderde de landbouw ook."

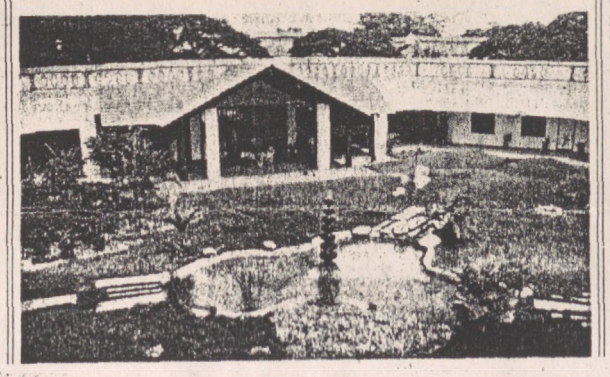
Kluif

Met de database wil het instituut ook de onderzoekers en voorlichters overtuigen die juist géén oog voor traditie hebben. Dat wordt misschien nog wel de grootste kluif. "Het probleem is dat overheidsambtenaren en onderzoekers in de stad zitten en niet graag naar het platteland gaan", analyseert Swaminathan hoofdschuddend. "Vaak werken ze alleen om salaris te krijgen en niet om de voldoening boeren te helpen. Als mensen bij mij klagen over hun salaris zeg ik altijd: 'de uiteindelijke beloning moet de glimlach van de boer of boerin zijn'. Je zult het zien als je meegaat naar de dorpen, hoe blij de mensen zijn als ze ons zien."

Eigenlijk zou Swaminathan nog wel een revolutie in gang willen zetten, zo doet ons gesprek vermoeden. Onlangs heeft de Indiase regering nieuwe gemeenteraden ingesteld. Deze raden, zegt hij gedreven, wil hij aangrijpen om in 1995 een 'eco-technologische' beweging op gang te brengen. De meest gemotiveerde raadsleden gaat het centrum trainen in het doorgeven van milieuvriendelijke biotechnieken. Ook gaat het overheidsvoorlichters trainen, zodat die de ondersteuning kunnen overnemen.

In die eco-technologische beweging wil Swaminathan ook de gevestigde orde betrokken zien. Wellicht dankzij zijn status, heeft hij ook hier al een eerste begin mee kunnen maken. Hij heeft een raad ingesteld met vertegenwoordigers uit universiteiten, onderzoeksinstituten en bedrijven, en deze instellingen geven de armen trainingen, materiaal, informatie en technieken. Daarnaast is er, om verzekeringen, leningen, startersfondsen en produktafzet veilig te stellen, ook al een ondersteunend comité van banken, verzekeringsmaatschappijen, donors en bedrijven.

Of deze 'eco-technologische' revolutie al vruchten afwerpt? "Bij de Indiase jongeren is weinig belangstelling om te werken aan inkomensverhoging van de armen. Ik weet niet waarom. Er zit geen druk achter en zonder druk gaan mensen achterover leunen. Toch blijft het onbegrijpelijk. Een miljard mensen op de wereld leeft onder de armoedegrens. En de kloof tussen de mensen die wel toegang hebben tot de moderne technologieën en deze armen wordt steeds groter. Zij moeten daarom geholpen worden bij het toepassen van technieken. Ik zeg altijd: wanneer je iets doet speciaal voor de armen, hebben de rijken daar ook profijt van."



Het Centrum voor Duurzame Landbouw in Madras (India) werd opgericht met het geld van de prijzen van Swaminathan.

Nieuw materiaal zet lichtflitsjes direct om in geluid

Tegenwoordig worden glasvezelkabels steeds meer ingeschakeld in het telefoonverkeer. Alleen glasvezels en optische schakelcomponenten bieden namelijk de benodigde transmissiesnelheden en bandbreedtes die nodig zijn om te voldoen aan de eisen die de elektronische snelweg stelt. Wel staat een aantal knelpunten een algemene introductie nog in de weg. Een daarvan is het probleem dat de uit de kabel tredende laserpulsjes weer moeten worden omgezet in elektrische pulsen, die vervolgens op conventionele wijze worden omgezet in geluid.

Een onnodige omweg? Als het aan Kenji Uchino van Pennsylvania State University ligt wel. Onlangs presenteerde hij tijdens een najaarsbijeenkomst van de Materials Research Society een nieuw materiaal dat lichtflitsjes direct omzet in geluid (*Science*, vol. 266, pagina 1807).

De metaaloxide-verbinding van Uchino combineert twee al veel langer bekende verschijnselen, het *fotovoltaïsch effect*, dat licht omzet in elektriciteit, en het *piezo-elektrisch effect*, waarbij elektriciteit wordt omgezet in beweging. Hoewel het mechanisme nog niet volledig is opgehelderd, bestaat het vermoeden dat allereerst elektronen van de in het kristal aanwezige lanthaan- en lood-atomen worden aangeslagen door het binnenvallende licht. Deze beginnen zich door het kristalrooster te bewegen en hopen zich uiteindelijk aan één kant op, waardoor er een spanningsverschil ontstaat. Tenslotte worden positief geladen titanium- en zirconium-ionen door die negatieve lading uit hun evenwicht gebracht, waarbij het kristal in één richting van lengte verandert. Door de spanning van buitenaf van teken te laten wisselen, wordt de oorspronkelijke toestand weer verkregen.

Uchino wist op een slimme manier dit effect te benutten in een prototype van een luidspreker. Daartoe lijmde hij twee strijpes van zijn materiaal aan weerszijden op een elektrode. Het spanningsverschil dat in de ene strip een lengteverandering introduceert, zorgt er — via de elektrode — voor dat in de andere strip de evenwichtstoestand weer wordt verkregen. Door de lichtpulsjes steeds om en om de beide kanten te laten belichten, begint het geheel heen en weer te klapperen. Hoewel de frequentie van het zo opgewekte geluid tot nu toe niet hoger was dan 80 Hertz, hetgeen voor mensen nauwelijks hoorbaar is, is er goede hoop dat spoedig een door mensen hoorbar signaal zal worden gegenereerd, waarmee de eerste 'fotofoon' zal zijn geboren. (Rob van den Berg)

Krokodillebloed geeft extra zuurstof af waar dat nodig is

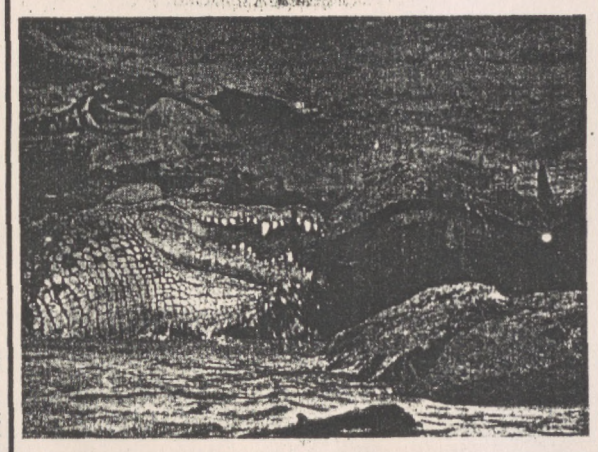
Krokodillen hebben een tamelijk originele manier om hun prooi de baas te worden. Een Nijlkrokodil die bijvoorbeeld een Wildebeest tussen zijn kaken heeft, houdt het slachtoffer gewoon een tijdje onder water. Op den duur houdt het gespartel dan vanzelf op. Zelf kan de krokodil zijn adem zo nodig wel een uur of twee inhouden zonder te stikken. Engelse en Japanse onderzoekers beschrijven in Nature (19 januari) hoe hij dat klaarspeelt.

De dieren beschikken over een speciale vorm van hemoglobine, het eiwit dat het zuurstoftransport in het bloed verzorgt. Als de krokodil zijn adem inhoudt, krijgt het hemoglobine in het bloed een signaal, waarna het meer zuurstof afgeeft aan het bloed en vervolgens naar de lichaamsweefsels. De krokodil kan dit zuurstofvoorraadje gebruiken en hoeft zolang geen adem te halen. Alligators en andere verwante krokodillen beschikken over een soortgelijk mechanisme. Dit in tegenstelling tot de grote zeezoogdieren zoals walvissen en bruinvissen. Zij slaan hun extra zuurstofvoorraden niet op in het bloed, maar in hun spierweefsel (in het myoglobine om precies te zijn).

Het bewuste signaal bestaat uit bicarbonaationen (CO_3^{2-}). Zij vormen normaal gesproken het eindprodukt van de ademhaling. Een bicarbonaat-signaal wordt dus door het bloed opgevat als een 'roep om nieuwe zuurstof'. In het menselijk lichaam wordt, net als bij de krokodil, een bicarbonaatsignaal afgegeven als wij bijvoorbeeld kopje onder gaan, maar ons hemoglobine reageert er niet op.

Onderzoekers uit Engeland en Japan hebben precies uitgezocht welk stukje van het hemoglobinemolecuul het signaal ontvangt. Het blijkt om 12 aminozuren te gaan — aminozuren zijn de bouwstenen van de eiwitten. Vervolgens is dit stukje krokodille-eiwit ingebouwd in menselijk hemoglobine (dat overigens qua aminozuursamenstelling behoorlijk van dat van de krokodil verschilt). Het veranderde menselijk hemoglobine blijkt zich, althans in de reageerbuis, net zo te gedragen als dat van de krokodil. Volgens de onderzoekers zou je een dergelijk mechanisme in principe bij mensen kunnen inbouwen.

Betekent dat dat we in de toekomst zonder zuurstoffiessen kunnen duiken? In elk geval nooit een uur lang, zo veronderstellen de onderzoekers. Zij vermoeden dat de krokodil nog over andere, onopgehelderde mechanismen beschikt. Volgens de onderzoekers vormt hun werk een belangrijke stap op weg naar het produceren van kunstbloed. Het onderzoek wordt uitgevoerd samen met het farmaceutisch bedrijf Somatogen in Colorado, dat aan kunstbloed werkt. Misschien ook kan het nu ontdekte mechanisme worden benut in ander onderzoek, bijvoorbeeld bij het gebruik van monoklonale antilichamen, die vreemde indringers in het lichaam of kankercellen precies moeten kunnen 'treffen' en doden. (Marion de Boo)



Opmerkelijke serie naschokken na diepe aardbeving bij Tonga

Sinds lang is bekend dat er een opvallend verschil bestaat tussen ondiepe en diepe aardbevingen. Ondiepe bevingen (zoals die van Kobe) vinden plaats op een diepte van minder dan 70 km, terwijl diepe bevingen plaatsvinden op diepten van meer dan 300 km. Ondiepe aardbevingen worden altijd gevolgd door een serie naschokken. Ook bij bevingen in het middeldiepe gebied tussen 70 en 300 km zijn wel eens naschokken geregistreerd, maar bij diepe bevingen zijn tot nu toen zelden duidelijke naschokken gesignaleerd.

Volgens sommige aardonderzoekers wijst dit verschil er op dat de twee soorten bevingen op verschillende manieren ontstaan. Ondiepe bevingen ontstaan door het bezwijken van gesteente waarin door het ophopen van spanningen als gevolg van tektonische bewegingen de breuksterkte wordt overschreden. Diepe bevingen zouden het gevolg kunnen zijn van een plotselinge, lokale faseverandering of rekristallisatie in het gesteente. Op grote diepten is het gesteente namelijk plastisch en vervormbaar en kan het dus niet bezwijken.

Amerikaanse geofysici hebben nu bekendgemaakt voor het eerst bij een diepe beving wèl een duidelijke serie naschokken te hebben waargenomen. Dat was de beving die op 9 maart vorig jaar plaatsvond in het gebied van de Tonga-eilanden, in het zuidwesten van de Stille Oceaan. Deze beving had een kracht van 7,6 op de schaal van Richter en was daarmee de krachtigste diepe beving van de afgelopen 20 jaar. Hij vond plaats op een diepte van 564 km en werd geregistreerd door een netwerk van mobiele seismometers, dat toevallig kort daarvoor op enkele van de eilandjes was geïnstalleerd.

De instrumenten registreerden in de 42 dagen na de hoofdbeving minstens 82 naschokken. Hun frequentie nam op dezelfde manier af als die van een ondiepe beving. De onderzoekers bepaalden uit de signalen van de seismometers de lokaties van de hoofdschok en naschokken in de aardmantel. De meeste naschokken bestrijken een gebied van 50 bij 65 km op een vlak dat een zeer grote hoek maakt met het aardoppervlak. Dit vlak hangt waarschijnlijk samen met de lithosfeerplaat die hier steil omlaag in de aardmantel duikt: de Tonga-plaat (*Nature* 372, p. 540).

Volgens recent onderzoek zouden diepe bevingen als deze worden veroorzaakt doordat gesteente in een wigvormig gebied van metastabiel olivijn door een faseverandering wordt omgezet in spinel. De breedte van het gebied met naschokken is echter veel groter dan de breedte van het wigvormige gebied dat men op deze diepte bij de Tonga-plaat verwacht. Enkele naschokken vonden onmiskenbaar plaats buiten het gebied van het metastabiele olivijn. Dit betekent volgens de onderzoekers dat er (nog) een ander mechanisme dan een faseverandering moet bestaan. (George Beekman)

Farm research and IPRs — I

By M. S. Swaminathan

THE year 1995 marks the fulfilment of the mission launched by Mahatma Gandhi in the beginning of this century for ending skin colour-based apartheid. It was appropriate that the South African President, Mr. Nelson Mandela, was the chief guest at the Republic Day this year. This is therefore an appropriate year to intensify our efforts to achieve the other great transitions for which Gandhiji worked — promotion of tolerance and love of diversity and pluralism in human societies, eradication of hunger, poverty and gender discrimination and achieving harmony between humankind and nature.

The United Nations has declared 1995 as the International Year for Tolerance. The U.N. conferences held at Rio de Janeiro, Vienna and Cairo in 1992, 1993 and 1994 on the themes of environment, human rights and population have all recognised the need for ending unsustainable lifestyles and unacceptable poverty. Eradication of poverty and unemployment will be the major themes for the U.N. Social Summit scheduled to be held at Copenhagen in March 1995.

The recent international conventions on climate, biodiversity, desertification and the law of the sea are all indicative of the emerging trend towards cooperative and concerted global action in arresting further damage to our basic life support systems of land, water, flora, fauna and the atmosphere. To this list of multilateral mechanisms for the management of the global commons and economy, the most recent addition is the World Trade Organisation, which was established on January 1 this year with its headquarters in Geneva.

However the most serious negative aspects of the contemporary developmental pathways are: the growing rich-poor divide among and within nations, jobless economic growth, environmental degradation and numerous mini-conflicts arising from a sense of injustice, either perceived or real, on the part of distinct ethnic or minority groups. The built-in seeds of discrimination against the poor in the present development paradigm is evident from the data on the distribution of annual global income. (See Table A).

Nearly 30 per cent of the world's poor are in India. Despite a gradual decline in fertility, our country annually adds more people (17 millions in 1991 and 1992) to the global population than any other country. Our total population of 846 millions, according to the 1991 census, grew to over 900 millions at the end of 1994. It is likely to cross the billion mark by 2001. Population growth coupled with enhanced purchasing power would lead to a considerable escalation in the demand for food and other agricultural commodities.

The demographic profile of our country dictates that agriculture has to be intellectually satisfying and economically rewarding, if we are to attract and retain the youth in farming. The share of land in the total assets of rural households was 60.3 per cent, according to the agricultural census of 1981-82. The same census indicates the ownership of land holdings. (See Table B).

Since most of the jobs in rural areas are in the primary sector, the problem of rural poverty can be solved only through the intensification and diversification of farming. The smaller the farm, the greater is the need for increasing the marketable surplus. Thus, productivity improvement and producer-oriented trade are essential for improving the income of households with small farm holdings.

It is clear that the flagship of a job-led economic growth strategy rooted in the principles of ecology, equity and renewable energy utilisation, has to be agriculture. It is in this context that the prediction of experts like Lester Brown and Hal Kane (1994) that India may have to import 45 million tonnes of foodgrains annually by the year 2030 has to be viewed seriously. Such predictions are based both on diminishing land and water resources per capita and the near stagnation of scientific efforts in improving aquatic and terrestrial productivity.

It is time we wake up and take steps to conserve and protect the ecological foundations essential for sustainable advances in agricultural productivity.

In a predominantly rural and agricultural country like ours, importing food is equivalent to importing unemployment. According to the Union Planning Commission, the number of new jobs created during the first three years of the Eighth Five Year Plan has been of the order of 6.5 millions a year, as against the target of 10 millions a year. There is general agreement that most of the new jobs will have to come from land and water based occupations, i.e., crop and animal husbandry, forestry, fisheries and agro-industries. But there is no political will to enforce discipline in land and water use. Prime farm land continues to be diverted for non-farm uses and those who have money have no restriction on the unsustainable exploitation of ground water. It is time we wake up and take steps to conserve and protect the ecological foundations essential for sustainable advances in agricultural productivity.

Compounding the problems arising from shrinking per capita land, water and biodiversity resources and expanding biotic and abiotic stresses is the new situation arising from the spread of an intellectual property rights (IPR) regime in agricultural research. For over 10,000 years, agricultural innovations and development have progressed under an environment free of considerations of ownership of knowledge and skills. With the coming into existence of the World Trade Organisation and the World Trade Agreement on January 1, 1995, we are entering a new era where competition will replace cooperation, possessiveness will substitute sharing and private profit rather than public good will provide the prime motivation for innovative research.

The World Trade Agreement in the field of agriculture has four main components which need our attention. These are: market access, domestic support and export subsidies, sanitary and phytosanitary measures, and trade related intellectual property rights (TRIPS). In the area of market access, non-tariff border measures will be replaced by tariffs that provide substantially the same level of protection. Tariffs on agricultural products are to be reduced.

If developed countries *do reduce tariffs in real terms* and also reduce the Total Aggregate Measure of Support (AMS) including export subsidies, there will be a real opportunity for India to export more farm goods. This will however call for a massive investment in post-harvest technology, including much greater attention to sanitary and phytosanitary measures. The new "sun-rise" industries like horticulture, aquaculture, medicinal plant products, feedgrains, hybrid seeds, biological software products like biofertilizers and biopesticides and different kinds of organically grown and tissue culture raised plant products, need integrated attention at the levels of technology, training, techno-infrastructure and trade if initial successes are to be sustained over time.

(Excerpts from the presidential address at the Second National Agricultural Science Congress held in Hyderabad).

Table A

Year	Income going to the richest 20% of the population (%)	Income going to the poorest 20% of the population (%)
1960	70.2	2.3
1970	73.9	2.3
1980	76.3	1.7
1989	82.7	1.4
1993	84.7	1.4

Source: UNDP Human Development Reports

Table B

	Households (%)	Area (%)
Owning no land	11.33	—
Sub-marginal holdings (below 0.5 ha)	36.88	2.75
Marginal holdings (1 ha & below)	18.43	9.47
Small holdings (1 to 2 ha)	14.70	16.49
Medium holdings (2 to 5 ha)	14.68	38.03
Large holdings (over 5 ha)	3.98	33.26

Farm research and IPRs — II

By M. S. Swaminathan

AN area of great concern in our country has been the potential impact of Trade Related Intellectual Property Rights (TRIPS) on the easy availability of the fruits of modern plant breeding and biotechnology to resource poor farming families. The position in this matter is as follows: There is a general obligation to comply with the substantive provisions of the Paris Convention (1967) with reference to patents. The agreement requires that a 20-year patent protection be available for all inventions, whether of products or processes. Inventions may be excluded if their commercial exploitation is prohibited for reasons of public order or morality; otherwise, the permitted exclusions are for diagnostic, therapeutic and surgical methods, and for plants and (other than micro-organisms) animals and essentially biological processes for the production of plants or animals (other than microbiological processes). Plant varieties, however, must be protectable either by patents or by sui generis system (such as the breeder's rights provided under the UPOV Convention).

Issues relating to the sui generis system of plant variety protection have been discussed at many fora in our country during the last year. At the Centre for Research on Sustainable Agriculture and Rural Development in Madras, an international dialogue was held on this topic last January. The result was a draft legislation which provides for: (a) the recognition of the intellectual contributions of both breeders and farmer-conservers, (b) the protection of the rights of farmer-cultivators to retain seeds for their own use and for limited exchange and (c) conversion of the licence of rights from exclusivity to non-exclusivity where public interest warrants such a change.

The Madras Draft Act provides a transparent and administratively implementable mechanism for recognising and rewarding the contributions of tribal and rural women and men to plant genetic resources conservation and enhancement. Since the draft Plant Variety Protection Act prepared by the Union Ministry of Agriculture has not been made public, we can only hope that the cause of plant breeding will be advanced under it and not retarded. It should not be forgotten that we have one of the world's largest and dynamic plant breeding establishments in the public sector, solely devoted to public good. Similarly, there is a large network of research institutions under the Consulative Group on International Agricultural Research (CGIAR), all devoted to the cause of international public good and the food security of developing countries.

The World Trade Agreement is a reality; so also is TRIPS and all other agreements. They provide opportunities for enlarged trade. We should act now to derive maximum benefits from new trade opportunities. At the same time, we should take steps to avoid damage to (a) the ecological security of the nation, arising from the over-exploitation of natural resources, (b) the food and nutrition security through disproportionate emphasis on crops for export, and the livelihood security of the poor due to their being bypassed by technological innovations and losing their traditional sources of income.

The World Trade Agreement is a reality; so also is TRIPS and all other agreements. We should now act to derive the maximum benefits from the new trade opportunities.

These should be the basic considerations guiding our post-World Trade Agreement agricultural research and development policy. Fortunately, the GATT Agreement provides several provisions which can be used to insulate the poor from further marginalisation and to expand investment in scientific research intended to promote public good. Such provisions should be clearly understood and woven into the policy fabric. For example, investments in scientific research and extension are excluded from the calculation of subsidies and Total Aggregate Measure of Support. Therefore, it will be prudent to create a National Trust Fund for Science for Sustainable Food Security with an initial allocation of at least Rs. 1000 crores for expanding strategic, anticipatory and participatory (with farming families) research designed to ensure that India becomes a major agricultural power in the world.

I am not pleading for greater investment in national and international agricultural research devoted to public good just because I have worked in a tradition where the sole purpose of agricultural science was the eradication of hunger and rural poverty. I plead today for greater investment in public sector agricultural research mainly because location specific varieties and resource management technologies are essential for converting the concept of sustainable agriculture from rhetoric to reality.

The commodity-centred research characteristic of private companies often tends to bypass the poorly endowed and fragile resource systems such as mountain and coastal regions, tribal belts and arid and semi-arid zones. In the absence of the needed biophysical resource base, these areas are unable to take advantage of the fund of knowledge and material created through commodity driven research. These are the very areas which account for much of the poverty and household food insecurity prevalent in our country. Therefore, research programmes for such resource-scarce areas have to be reformulated on the basis of optimum land and water use. Resource scarce areas need high value agriculture, so that the people of the area can derive greater income. Both high yield, low risk areas and low yield, high risk areas need specific strategies based on concurrent attention to resource management, productivity improvement and poverty alleviation. If the research agenda is entirely market-driven, orphans will remain orphans and the urgently needed resource management-cum-commodity improvement orientation to agricultural research may never come about.

The plea for adequate investment in public sector research through ICAR institutions and agricultural universities does not imply that private sector research is either not necessary or should not be encouraged. In fact, the dynamic growth of private sector research will stimulate the growth of relevance and excellence in research supported from public funds. The proposed Plant Variety Protection Act will help to attract greater private investment in plant breeding. However, the ability of resource poor farmers as well as of farmers living in less favourable environments, to derive benefit from private sector plant breeding will be proportional to the help they receive from ICAR institutions and agricultural universities in the improvement and sustainable management of their natural resource endowments. Thus, public and private sector research can become mutually reinforcing.

In conclusion, I would like to share my personal conviction with reference to three major questions facing us today in the farm sector.

First, can we produce enough food to feed the growing population?

My answer is yes, provided we take steps both to enable resource poor farming families to derive advantage from the untapped yield reservoir existing even at currently available levels of technology and to defend and enlarge the gains in the most favourable areas and in high yield, low risk environments and crop seasons. Particular attention needs to be paid to assist farmers in rainfed and semi-arid areas as well as in the entire eastern region.

Second, can we produce food in a sustainable manner, without damage to the basic environmental capital stocks of land, water, forests, biodiversity and the atmosphere?

My answer is again, yes, provided political leaders are willing to enforce discipline in the use of natural resources, while at the same time generating the necessary public opinion in favour of nature conservation. The numerous Central and State land use commissions and boards which today exist on paper need to be empowered and placed under professional leadership.

Third, can we ensure that food is accessible to all?

Yes, provided we promote higher consumption through both protective social security measures and greater opportunities for skilled employment in the farm and off-farm sectors. An aggressive programme of market-driven knowledge and skill dissemination among the poor is urgently needed.

Thus, I am cautiously optimistic about our agricultural future. My optimism stems from the receptivity and innovativeness of our farm families and creativity of our young agricultural scientists. Science is an exciting adventure. The greater the challenge, the greater is the impetus for creativity.

(Concluded)

இந்த ஆண்டிற்கான சிறந்த மனிதர் என்ற மயிலாப்பூர் அகடமி விருதை நீதிபதி சிவராஜ்பட்டீல், பிரபல விஞ்ஞானி டாக்டர் எம்.எஸ்.சுவாமிநாதனுக்கு வழங்குகிறார். அண்ணா பல்கலைக்கழகத் துணைவேந்தர் டாக்டர் எம்.அனந்தகிருஷ்ணன், மயிலாப்பூர் அகடமி தலைவர் எஸ்.வி.நரசிம்மன் உடன் உள்ளனர்.

எம்.எஸ்.சுவாமிநாதனுக்கு மயிலாப்பூர் அகடமி விருது

சென்னை, பிப். 4—

பிரபல வேளாண்மைத்துறை விஞ்ஞானி டாக்டர் எம்.எஸ்.சுவாமிநாதனுக்கு மயிலாப்பூர் அகடமி விருது வழங்கப்பட்டது.

மயிலாப்பூர் அகடமியின் 41வது ஆண்டு விழா நிகழ்ச்சிகள் நேற்று ராஜா அண்ணாமலைபுரம் சிருங்கேரி ஜகத்குரு பிரவசன மண்டபத்தில் நடைபெற்றது.

இந்த விழாவின்போது பிரபல வேளாண்மைத்துறை விஞ்ஞானி டாக்டர் எம்.எஸ்.சுவாமிநாதனுக்கு இந்த ஆண்டிற்கான சிறந்த மனிதர் என்ற விருது வழங்கப்பட்டது.

விழாவிற்கு தலைமையேற்று டாக்டர் எம்.எஸ்.சுவாமிநாதனுக்கு இந்த ஆண்டிற்கான சிறந்த மனிதர் என்ற மயிலாப்பூர் அகடமியின் விருதை சென்னை உயர்நீதிமன்ற நீதிபதி சிவராஜ்பட்டீல் வழங்கி பாராட்டி பேசினார்.

அப்போது அவர் பேசியதாவது:

கடந்த நாற்பது ஆண்டுகளாக மயிலாப்பூர் அகடமி திறமைமிக்க பலரைக் தேர்ந்தெடுத்து, திறமைகளைப் பாராட்டி, விருதுகள் வழங்கி வருவதைப் பாராட்டுகிறேன்.

டாக்டர் எம்.எஸ்.சுவாமிநாதன் மாநில, தேசிய மற்றும் உலக அளவில் பல விருதுகளைப் பெற்றுள்ளார். இவரைப்போல அதிக விருதுகள் பெற்றவர்கள் யாரும் இருக்க முடியாது. அவர் புகழின் உச்சிக்கு சென்று விட்டார். மயிலாப்பூர் அகடமி அவரைப் பாராட்டி விருது வழங்கியதால் மயிலாப்பூர் அகடமி பெருமையடைந்துள்ளது.

இவ்வாறு நீதிபதி சிவராஜ் பட்டீல் பேசினார்.

இந்தியன் வங்கியின் தலைவர் எம்.கோபாலகிருஷ்ணன் வாழ்த்திப் பேசும்போது, நாட்டுப்பற்று மிகவும் கொண்ட டாக்டர் எம்.எஸ்.சுவாமிநாதன், வசதிபடைத்த அயல் நாடுகளுக்கு சென்று தங்காமல், நம்நாட்டில் நம்மோடு இருக்க அறிவியல் ஆராய்ச்சி செய்து வருகிறார் என்று கூறினார்.

அண்ணா பல்கலைக்கழகத் துணைவேந்தர் டாக்டர் எம்.அனந்த கிருஷ்ணன் பாராட்டிப் பேசும்போது, டாக்டர் எம்.எஸ்.சுவாமிநாதன் சென்னையில் தங்கி அறிவியல் ஆராய்ச்சி செய்து வருவதால் சென்னை நகரம் அறிவியல் அறிஞர்களுக்கு கற்றுவாத் தலமாக மாறிவிட்டது என்று கூறினார்.

சென்னை நகர போலீஸ் கமிஷனர் டாக்டர் ஆர்.ராஜகோபாலன் பேசும்போது, வேதங்களில் இருந்து சிறந்த தோத்திரங்களை ஒப்புவிக்கும் மாணவர்களுக்கு ஆண்டுதோறும் வழங்கப்படும் ஒன்றை மயிலாப்பூர் அகடமிக்கு வழங்குவதாகக் கூறினார்.

சென்னை டெலிபோன் துறை பொது மேலாளர் (வடசென்னை) ஆர்.சுந்தரராஜன் வாழ்த்திப் பேசினார்.

முன்னாள் ஜனாதிபதி ஆர்.வெங்கட்ராமன், கவர்னர் சென்னா ரெட்டி, பாண்டிச்சேரி முதல்வர் வைத்தியலிங்கம், மத்திய அமைச்சர் பல்ராம் ஜாக்கர் உட்பட பலர் வாழ்த்துச் செய்திகள் அனுப்பியிருந்தனர்.

மயிலாப்பூர் அகடமி தலைவர் எஸ்.வி.நரசிம்மன் வரவேற்புப் பேசும்போது, டாக்டர் எம்.எஸ்.சுவாமிநாதன் இந்த நூற்றாண்டின் சிறந்த மனிதர் என்று கூறினார்.

மயிலாப்பூர் அகடமி செயலாளர் சி.எஸ்.வீரராகவன் அறிக்கை வாசித்தார்.

டாக்டர் எம்.அனந்த கிருஷ்ணன், எம்.கோபாலகிருஷ்ணன், ஆர்.ராஜகோபாலன், ஆர்.சுந்தரராஜன் ஆகியோருக்கும் நீதிபதி சிவராஜ் பட்டீல் விருதுகள் வழங்கி பாராட்டினார்.

டாக்டர் எம்.எஸ்.சுவாமிநாதன் ஏற்புரை நிகழ்த்தினார்.

வழக்கறிஞர் எஸ்.சுகராகவாச்சாரி நன்றி கூறினார்.

'Don't abandon paddy cultivation'

By P Venugopal

KOCHI – Agricultural scientist M.S. Swaminathan has advocated a three-pronged strategy to arrest the alarming fall in rice production in Kerala.

In an interview to *Indian Express* here on Wednesday, Dr Swaminathan said his recipe for reviving paddy cultivation includes application of new technologies to improve the yield, introduction of efficient management practices to bring down the cost of cultivation and income diversification through exploitation of the commercial uses of various parts of the biomass of paddy such as hull and bran.

Mr Swaminathan, who is here to attend the ongoing World Spice Congress, said the economics of paddy or any other crop for that matter depends on what he called the ''cost-risk-return structure''. Viewed from any angle, paddy cultivation has lost its appeal to the average farmer.

The cost of cultivation is perhaps the highest for paddy among all other crops cultivated in Kerala. As factors such as fluctuation in prices, natural calamities and pest diseases are beyond the control of farmers, the element of risk faced by them is comparatively high.

In terms of returns too, the paddy growers are far from satisfied.

To quote a little bit of official statistics, Kerala now produces only less than one third of its actual requirement of rice which is over 30 lakh tonnes per year.

Production of rice in the State which stood around 13.40 lakh tonnes in 1981-82, plummeted to 10.85 lakh tonnes in 1992-93. During this period, the area under paddy cultivation came down from 8.07 lakh hectares to 5.38 lakh hectares.

Although the Kerala Land Use Act prohibits conversion of paddy fields for non-agricultural purposes, the Act is observed more in its breach than in practice. In view of the phenomenal rise in cost of land, paddy farmers are lured by real estate agents into disposing of their land for construction of houses, brick kilns, etc.

According to a study conducted by the Farming Systems Research Station of the Kerala Agricultural University, the net annual returns from a two-crop rice system average Rs 4,000 per hectare compared with Rs 29,000 from coconut, Rs 35,000 from arecanut, Rs 40,000 from banana and Rs 1 lakh from pineapple.

Those who still hold on to paddy cultivation stand to lose substantially in comparison with their counterparts who cultivate other crops.

But that is no reason to give up paddy cultivation altogether, Mr Swaminathan cautions. ''I'm not advocating that every State should be self-sufficient in food production. But each State should try a mixture of food crops to achieve minimum food security'', he said.

Referring to the tendency of Kerala farmers to switch over from food crops to cash crops, Mr

Dr M S Swaminathan

Swaminathan said that that is no crime.

He recalled a comment made by late Mr Jagjivan Ram during his visit to the State as the Union Minister for Agriculture. He had said: ''By producing export-oriented cash crops, you (Keralites) are serving the nation as much as the Punjabis do by producing food crops for domestic consumption.''

But, Mr Swaminathan said, Keralites should not abandon rice cultivation altogether. Even the Japanese, with all their affluence, have refused to give up paddy cultivation because they are concerned that if their relationship with the United States, the main supplier of rice to the Japanese, comes under strain, they would have to fend for themselves.

''If Kerala abandons paddy cultivation, the Punjabis would have to learn parboiling to cater for Kerala palates'', he said.

Group farming could go a long way in reducing the cost of cultivation. There is immense scope for development of agro-based industries which, according to him, would not only be a boost to agricultural production, but also ensure higher returns to the farmers for their produces.

''The fact that we have 32 million tonnes of grain in stock should not instil a sense of complacency in us. Recent figures show that food production is on the decline throughout the country. We need to step up production at any cost to check the downhill trend'', he said.

Budget and jobs

By M. S. Swaminathan

IN his budget speech, the Finance Minister stated that since 1992-93, six million new jobs are being added each year. Most studies show that a majority of the new jobs will have to come from the unorganised, rural farm and non-farm sectors. The Finance Minister has announced several measures to revive the flow of credit to the farm sector and to strengthen rural infrastructure through a new Rural Infrastructural Development Fund to be established within the National Bank for Agriculture and Rural Development. These are welcome measures, particularly since the investment required to create employment per person is far less in the unorganised, informal and self-employed sectors as compared to the organised sector.

The majority of the poor are in the unorganised sector, but the benefits of the economic reforms and liberalisation presently under way go predominantly to the well-to-do and to the organised sector. Globally and nationally, the rich-poor divide is widening, leading to the rapid spread of social unrest and class conflicts. It will be therefore useful to review the employment situation in greater depth. In this context, I will like to summarise some of the major suggestions made at a dialogue held recently in Madras on the topic "A New Deal for the Self-Employed: Role of Credit, Technology and Public Policy."

The organised sector, including Government services, provides jobs to less than 10 per cent of the adult population of India. Over 90 per cent depend on different forms of self-employment, largely in the unorganised, independent sector. Farming and landless labour families constitute the majority among the self-employed. In spite of the importance of the unorganised, informal, self-employed sector for the economic and social development of the country, most policies, programmes and legislative support are designed to promote the well being of the organised sector. Adjustments of salaries against inflation, periodic salary revisions and various social security measures including opportunities for higher education and specialised health care, are all available mainly to the salaried classes. The few public policy measures that exist for the unorganised sector are designed in a welfare and poverty alleviation framework and not in a prosperity generating mode. As a result of poverty alleviation strategies often failing to achieve their intended impact, there are as many persons below the poverty line today as the entire population of India at the beginning of the First Five Year Plan. Yet, poverty eradication has been the principal goal of all the Five Year and Annual plans of the country. What has gone wrong?

The VI Plan (1980-85) in a sub-chapter titled "A new deal for the self-employed" called for a disaggregated and location-specific approach to find meaningful solutions to this complex and challenging problem. The plan recommended for this purpose a District Manpower Planning and Employment Generation Council in every district of the country. One of the tasks assigned to such councils was linking training and skill generation programmes more closely with market-driven employment opportunities. Unfortunately, the chapter was dropped in subsequent plan documents and the new deal is therefore yet to come.

Any policy framework designed to promote economically, environmentally and socially sustainable self-employment will have to be based on a malady-remedy analysis with reference to the strengths and weaknesses of the unorganised sector. The organised sector, for example, is supported by an industrial policy, export and import policies, packages of incentives, infrastructure support and opportunities for professional growth. The organised industry is also supported by organisations like CII, FICCI and ASSOCHAM.

In contrast, there is no holistic or integrated/ long term policy for the unorganised and self-employed sectors. Programmes largely based on a poverty-alleviation and beneficiary approach like IRDP, DPAP, TRYSEM and various Rozgar Yojanas are introduced from time to time. Wasteland development and social forestry programmes conceived as instruments for job creation for the poor also often fail to achieve this goal. Most employment generation programmes cast on a poverty alleviation mode, cater only to the needs of unskilled labour. The growing unemployment problem faced by educated youth is yet to be addressed seriously. The Prime Minister's yojana for educated youth is yet to strike roots, although the project is a timely initiative.

The beneficiary approach, based on an attitude of patronage, ignores the fact that self-employed individuals constitute the dominant productive sector in the country. This non-recognition and the low social prestige and status to the work assigned to women in occupations like construction, vending, domestic help and home based production, are responsible for the perpetuation of poverty and gross social and gender inequity in the country. While the organised industrial sector looks at the human head as the source of intellectual property, the construction industry looks at the heads of poor women as vehicles for carrying sand and stone. This tragic contrast is ignored not only by the Government agencies but also by universities and research institutions. Unless there is a change in the mindset of the political and administrative systems, from the point of view of looking at the poor as beneficiaries of their programmes, rather than as partners in economic progress, the rich-poor divide will continue to grow with serious consequences to social stability.

The unorganised, self-employed sector needs not charity but an enabling and encouraging environment to survive and expand.

The unorganised, self-employed sector urgently needs not charity but an enabling and encouraging environment for it to survive and expand. An enabling environment for the self-employed will include measures for training and skill upgradation, eco-technologies supported by appropriate techno-infrastructure, access to market information and timely and adequate credit, risk insurance, protective social security and land and asset reform. In addition, empowerment mechanisms such as the formation of coalitions of self-employed organisations, mutually beneficial forms of social contract between private and public sector companies and resource poor rural and urban families and a greater advocacy role of the mass media in "voicing silence" leading to greater social recognition and prestige to the contributions of women, will be needed.

There are growing opportunities for gainful self employment in both the farm and non-farm sectors in rural areas. Similarly, new opportunities are emerging for skilled self-employment in areas such as bio-and information technologies, electronic and biological software enterprises and consultancy services. A great merit of many of the emerging eco-technologies is their suitability for decentralised adaptation and adoption. To take advantage of such emerging opportunities, there is an urgent need for a review and restructuring of programmes relating to skill upgradation, credit supply and access to information and markets.

In the area of credit, NABARD and the scheduled banks are trying to do their best, but the poor are yet to derive full benefit from the over 150,000 rural credit outlets available in the country. It is clear that in addition to strengthening the formal credit systems, a supplementary credit system, in the form of "self-help and thrift groups", registered or unregistered, but capable of flexibility and ability to respond speedily to location specific needs with the support of the voluntary sector will have to be fostered.

In the field of training, for example TRYSEM imparts specific skills but does not equip the trainee to run a successful enterprise. Training programmes for women should keep in view the fact that poor women are already over-worked. What they need is not more work but more economic value to the hours they spend in work.

A new deal for the self-employed will facilitate employment and income generation in a sector largely untouched by reforms. It will enable the Government to keep its promise of providing employment at relatively low cost. Above all, by spreading real benefits among the poor, it will help to make the reform process more socially and politically sustainable. It is time that a well planned public policy framework for promoting economically and socially sustainable self-employment is developed.

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THE HINDU, Wednesday, March 29, 1995

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THE SUNDAY TRIBUNE, APRIL 30, 1995

Conserve land, water, forests: Swaminathan

Tribune News Service

LUDHIANA, April 29 – Dr M.S. Swaminathan, president, The National Academy of Agricultural Sciences today called for the introduction of a national food security act for the conservation of land, water, forests, biodiversity and the protection of atmosphere, enhancing production through "ecotechnologies, improving distribution in order to eliminate endemic hunger maintenance of adequate food security reserves and efficient research, education, extension, marketing systems to take full advantage of emerging opportunities in international trade and to ensure that research and extension designed to promote public good receives support.

Dr Swaminathan who was delivering his address at the Punjab Agricultural University also suggested the setting up of a national trust fund for ecotechnology with an initial outlay of at least Rs 1000 crores to foster research designed to promote new social contacts between the corporate sector and the rural families so that there is value addition to the time of the poor.

Dr Swaminathan said that the Green revolution originated in Punjab in 1968 when Punjab farmers brought about a quantum jump in wheat production by taking to hybrid varieties with great enthusiasm. Since then, Punjab has also been the home of the rice and potato revolutions. All this was possible because of the scientific and educational support given by the Punjab Agricultural University.

Dr Swaminathan said, the most important gain for the country was the saving of forests and land, thanks to the productivity improvement associated with high yielding varieties. This year, our farmers are likely to harvest over 60 million tonnes of wheat as compared to six million tonnes at the time of independence in 1947. Punjab farmers have raised the yield of wheat this year to about 40 quintals per hectare.

Dr Swaminathan pointed out that industrial countries were responsible for much of the global environmental problems such potential changes in temperature, precipitation, and incidence of ultraviolet-B radiation. While further agricultural intensification in industrialised countries will be ecologically disastrous the failure to achieve agricultural intensification and diversification in our country will be socially disasterous. This is because agriculture including crop and animal husbandry, forestry and agro-forestry, fisheries and agro-industries provide livelihood to over 75 per cent of our population. The smaller the farm, the greater is the need for higher marketable surplus for increasing income," he emphasised.

The Magsaysay award winner scientist of the world said, "eleven million new livelihoods will have to be created every year in our country and these have to come largely from the farm and rural industrial sectors. Importing food and other agricultural commodities will be similar to importing unemployment. Thus what we need now is an environmentally sustainable and socially equitable green revolution".

Dr Swaminathan recommended the initiation of a well planned hunger free areas programme (HFAP) to totally eradicate hunger through ensuring availability of food through maintaining the growth in food production over the population growth through the development and dissemination of ecotechnologies.

Agricultural strategy should concurrently aim at more food, more jobs and more income," he stressed.

Dr Swaminathan said that many of the environmental problems associated with agriculture arose from excessive and unscientific uses of chemical pesticides and mineral, fertilisers as well as the abuse of land and groundwater, sustainable green revolution is an ecological and economic necessity of our country of small holdings.

Dr Swaminathan emphasised, "what we need is the promotion of sustainable greed revolution and curbing of the greed revolution", failure to make a distinction between green and green revolution often causes confusion in public mind and will do harm to public good", he warned.

Earlier, Dr A. S. Khehra, Vice-Chancellor, Punjab Agricultural University urged the Scientists to exploit the potential of agriculture and allied fields.

APRIL 30, 1995

Swaminathan moots eco-tech fund

LUDHIANA

THE president of the National Academy of Agricultural Sciences, Dr M. S. Swaminathan, has impressed upon the government to set up a national trust fund for eco-technology with an initial outlay of Rs 1,000 crore to promote research aimed at encouraging sustainable public good in the farm sector.

Speaking on the ecological green revolution at Punjab Agricultural University here, on Saturday, he said this fund was necessary to ensure that the national effort for achieving eco-technological empowerment of farm and rural families does not suffer under the changing economic environment where profit may get precedence over public good.

The celebrated farm scientist said there was an excessive and unscientific use of chemical pesticides and fertilizers as well as abuse of land and groundwater. Dubbing this as "greed revolution", he called upon scientists to curb this trend and promote sustainable green revolution which he termed was an economic and ecological necessity.

Calling for a blend of traditional wisdom with modern technology to achieve this objective, he urged agricultural universities to become fountainheads of eco-technology. Since PAU happened to be the harbinger of green revolution in the country, he appealed to it to rise to the occasion once more and provide leadership for sustainbale green revolution.

At the same time, Dr Swaminathan emphasised that farm productivity must be raised substantially so that the growing hiatus between demand and supply of foodgrains was bridged. The present stock of 30 million tonnes available with the government and the hope of harvesting 60 million tonnes of wheat in the current season, he said, must not make the country complacent because by 2030 A.D., India would have to import 40 million tonnes of foodgrains every year to feed its teeming population.

According to Dr Swaminathan, widespread malnutrition was still prevalent among the economically underprivileged sections of the society. He recommended launching of a well planned hunger-free area programme to totally eradicate endemic hunger.

And he mooted a five-point strategy to attain this: ensuring sustainable availability of food through maintaining growth of food production over the population growth through development and dissemination of eco-technologies, sustaining productivity of natural resource base by conserving and improving ecological foundations, ensuring adequate household incomes through promotional social security, providing entitlement to food through protective social security and enactment of a national food security Act.

In his view, the proposed Act should be based on the principe under which "food security should imply livelihood security for households and all members within which ensures both physical and economic access to balanced diet, safe drinking water, environmental sanitation, primary education and basic health care."

In his welcome address, the eminent soil scientist, Dr M. S. Bajwa, Ddean of the College of Agriculture, said the PAU Chapter of the National Academy was formed in December last to further the cause of the academy in the region and this lecture was the first in the series planned by it. He said the 21 fellows of the academy here would act as a think tank for promoting sustainable green revolution in the granary of the country. ◆ENS

★ தினமணி

சென்னை, மதுரை, கோவை, பெங்களூரிலிருந்து பிரசுரமாகிறது

மலர் 61 இதழ் 242 | சென்னை | யுவ வைகாசி 4 | வியாழக்கிழமை 18-5-95 | ஹிஜ்ரி 1415 துல்ஹஜ் 17

மக்களவையில் மானியக் கோரிக்கை

ரங்கராஜன் வெட்டுத்தீர்மான

எம்.எஸ். சுவாமிநாதனுக்கு ஐ.நா. விருது

சென்னை, மே 17—

இந்தியாவின் புகழ்பெற்ற வேளாண்மை விஞ்ஞானி டாக்டர் எம்.எஸ். சுவாமிநாதனுக்கு ஐ.நா. சுற்றுச் சூழல் பாதுகாப்பு பரிசு வழங்கப்பட்டுள்ளது. இவரோடு அமெரிக்காவைச் சேர்ந்த பால் மற்றும் எர்லீச் ஆகிய இரண்டு விஞ்ஞானிகளுக்கும் இத்தகைய விருது வழங்கப்பட்டுள்ளது.

சுற்றுச் சூழல் பாதுகாப்புக்காக இவர்கள் ஆயுள் முழுவதும் ஆற்றியுள்ள அரும் பணிகளைப் பாராட்டி இப்பரிசு வழங்கப்பட்டிருக்கிறது.

வேளாண்மைப் பொருளாதாரத்தின் தந்தையாக டாக்டர் சுவாமிநாதன் போற்றப்படுகிறார்.

உருளைக்கிழங்கு, கோதுமை, நெல் போன்ற பயிர்களின் மரபுக் கூறுகளைப் பராமரிப்பதில் அவர் நடத்திய ஆராய்ச்சிகளின் பலனாகவே, உணவு உற்பத்தியில் பலமான நிலையை இந்தியா வகிக்க முடிந்திருக்கிறது.

மாக்ஸேஸே விருது உள்பட பல்வேறு வகையான விருதுகளை டாக்டர் சுவாமிநாதன் ஏற்கெனவே பெற்றிருக்கிறார். இவையனைத்துக்கும் மகுடம் போல இப்போது ஐ.நா. விருது இவருக்கு வழங்கப்பட்டிருக்கிறது.

அமெரிக்க விஞ்ஞானிகள் இருவரும் ஸ்டான்ட் போர்ட் பல்கலைக் கழகத்தில் பணி

யாற்றி வருகிறார்கள். மக்கள் தொகை- சுற்றுச் சூழல் பாதுகாப்பு குறித்து இவ்விருவரும் ஆற்றியுள்ள பணிக்காக இப்பரிசைப் பெறுகிறார்கள்.

செல்லுலர் தொலைபேசி: டிசம்பருக்குள் விரிவு

புது தில்லி, மே 17—

செல்லுலர் தொலைபேசி வசதி இந்த ஆண்டு இறுதிக்குள் நாட்டில் அனைத்து நகரங்களிலும் விரிவுபடுத்தப்படும். இத்தகவலை மத்திய தகவல் துறை அமைச்சர் சுக்ராம் தெரிவித்தார்.

தகவல் துறை குறித்த மானியக் கோரிக்கை மீதான விவாதங்களுக்கு அவர் புதன்கிழமை பதிலளித்த போது அவர் இவ்வாறு கூறினார். செல்லுலர் தொலைபேசி வசதி தற்போது நான்கு பெரு நகர்களில் மட்டும் உள்ளது.

காஷ்மீர் மக்களுக்கு தொடர்ந்து ஆதரவு: பேநசீர்

முல்தான், மே 17—

போர் தொடுப்பதாக இந்தியாவிலிருந்து மிரட்டல்கள் வந்தபோதிலும், இந்திய ஆட்சியை எதிர்த்துப் போராடிவரும் காஷ்மீர் மக்களுக்குப் பாகிஸ்தான் தொடர்ந்து தார்மீக மற்றும் அரசியல் ஆதரவு அளித்துவரும் என்று பாகிஸ்தான் பிரதமர் பேநசீர் புட்டோ புதன்கிழமை கூறினார்.

பஞ்சாப் மாகாணத்திலுள்ள முல்தான் நகருக்கு வந்திருந்த அவர் செய்தி நிறுவனம் ஒன்றுக்குப் பேட்டியளித்தார். காஷ்மீரிகளுக்கு அளித்துவரும் ஆதரவை நிறுத்த நிர்பந்திக்கும் நோக்கிலேயே இந்த மிரட்டல்கள் வருகின்றன என்றார் அவர்.

ஆனால், போர் எதுவும் நடக்காது. காஷ்மீர் மக்களுக்குப் பாகிஸ்தானின் தார்மீக மற்றும் ராஜதந்திர ஆதரவு தொடரும் எனவும் அவர் சொன்னார்.

தினமணி
நிமிர்ந்த நன்னடை நேர்கொண்ட பார்வை
நிலத்தில் யார்க்கும் அஞ்சாத நெறிகள்

சென்னை –சனிக்கிழமை – மே 20, 1995

'தலைவிதி'யை மாற்றிய இரு தமிழர்

உலக அரங்கில் பல்வேறு துறைகளிலும் அளப்பரிய ஆற்றலோடு அரும்பணி ஆற்றியதன் மூலம், தென்னகத்துக்குப் பெருமை சேர்த்த மாமேதைகள் சிலருண்டு. டாக்டர் எஸ். ராதாகிருஷ்ணன், சர். ஆர்.கே. சண்முகம் செட்டியார், டாக்டர் சி.ஆர். ரெட்டி, டாக்டர் ஏ.எல். முதலியார், மால்கம் ஆதிசேஷையா போன்றவர்களின் வரிசையில், சர்வதேசப் புகழ்பெற்ற வேளாண்மை விஞ்ஞானி டாக்டர் மான்கொம்பு சாம்பசிவன் சுவாமிநாதனும் இடம்பெற்றுள்ளார். வேளாண் விஞ்ஞானத்திலும், குறிப்பாக ஆராய்ச்சித் துறையிலும், இவர் புரிந்த சாதனையைப் பாராட்டி தேசீய அளவில் மட்டுமன்றி சர்வதேச அளவிலும் பெருமைமிக்க பலப்பல விருதுகள் இவருக்கு வழங்கப்பட்டுள்ளன. குறிப்பாக, உலக அரங்கில் இவர் பெற்றுள்ள 15 விருதுகளுக்கு முத்தாய்ப்பாக ஐக்கிய நாடுகள் சுற்றுச்சூழல் பாதுகாப்பு பரிசும் அண்மையில் இவருக்கு அளிக்கப்பட்டிருக்கிறது. தமிழ் மண்ணில் பிறந்த இந்த இணையற்ற விஞ்ஞானிக்குக் கிடைத்துள்ள புகழ், தமிழகத்துக்குப் பெருமை சேர்ப்பதாகும்.

திரைப்படத் துறையைப் போல அரசியலும் சதா சர்வ காலமும் மக்களின் கவனத்தை எளிதில் ஈர்க்க முடிவதால், அரசியல் தலைவர்களுக்குக் கிடைக்கும் விளம்பர வெளிச்சம், அறிவியல், மொழியியல், கல்வித் துறை, தொழில் நுட்பம், படைப்பிலக்கியம் போன்ற துறைகளில் அபூர்வ பணியாற்றும் மேதைகளுக்குக் கிடைப்பதில்லை. இன்னும் சொல்வதென்றால், அந்தக் கண்கூசும் செயற்கை அரசியல் வெளிச்சமே இந்த மேதைகளை மங்கலான அகல் விளக்குகளாக மாற்றிவிடுகிறது. அதோடு, இவர்களின் பணியின் தன்மையும் பவித்ரமானது. சுமார் 27 ஆண்டுகளுக்கு முன், அமெரிக்கப் பயணத்தை முடித்துக் கொண்டு தமிழகம் திரும்பிய அண்ணா, அனுபவத்தின் மூலம் அமெரிக்காவில் கண்ட உண்மை ஒன்றை வெளியிட்டார். 'தமிழ்நாட்டில்தான் அரசியல் அளவுக்கு மீறிய முக்கியத்துவத்தைப் பெற்றிருக்கிறது. அமெரிக்கா போன்ற மேனாடுகளில் அரசியலுக்கு இவ்வளவு பெரிய இடம் அளிக்கப்பட்டிருக்கவில்லை' என்று வருத்தத்தோடு குறிப்பிட்டார்.

அதிலும், பொது வாழ்க்கை என்பது சமுதாய சேவைக்குரிய சாதனம் என்ற நிலை மாறி, விளம்பரம், புகழ், அதோடு கூட சொத்து சேர்ப்பதற்கும் குறுக்கு வழியாக ஆகிவிட்டிருப்பதால்-காற்று எல்லா இடங்களிலும் பரவியிருப்பது போல-அரசியல் எல்லாத் துறைகளிலும் புகுந்து ஆதிக்கம் செலுத்தி வருகிறது. அறியாமையும் ஏழ்மையும் மிகுந்துள்ள சமுதாயத்தில், அரசியல்வாதிகள் இதிகாசப் புருஷர்களைப் போல மதிக்கப்படுவதில் ஆச்சரியமில்லை.

பாரதத்தைப் பொருத்த அளவில், 40 ஆண்டுகளுக்கு முன் உணவு உற்பத்தியில் பெரிய அளவுக்குப் பற்றாக்குறை நிலவி வந்ததால், வெளிநாடுகளிலிருந்து கோதுமை போன்ற பண்டங்களை இறக்குமதி செய்தாக வேண்டிய நிலை இருந்து வந்தது. உணவுப் பிரச்சினை தேசீயப் பொருளாதாரத்தின் தலைவலியாகவே நீண்ட காலம் இருந்துவந்துள்ளது. பற்றாக்குறை உற்பத்தி நாட்டின் தலைவிதி என்றே கருதப்பட்டு வந்த சமயத்தில், இந்த விதியை மாற்றி எழுதிய பெருமை இருவரைச் சாரும். அந்த இருவரும் தமிழர்களே என்பது தமிழகம் பூரிக்கத்தக்க உண்மையாகும். ஒருவர் சி. சுப்ரமணியம், இன்னொருவர் டாக்டர் எம்.எஸ். சுவாமிநாதன். சி. சுப்ரமணியம் மற்ற அரசியல்வாதிகளிடமிருந்து வேறுபட்டவர். கவர்ச்சி அரசியலும், ஆர்ப்பாட்ட அரசியலும் அவருக்குப் பழக்கமில்லாதவை. எந்தத் துறையின் பொறுப்பை ஏற்றுக் கொண்டாலும், அதன் பல்வேறு அம்சங்களையும் ஆழமாக ஊடுருவி நோக்கி, சாதனைகளைப் புரிவதில் தனி அக்கறை காட்டக் கூடியவர். மத்திய அரசின் உணவு அமைச்சராக அவர் பதவி வகித்த காலத்தில், அவருடைய அரு முயற்சியால் பசுமைப் புரட்சித் திட்டம் இந்தியாவில் செயற்படத் துவங்கியது. இத் திட்ட செயற்பாட்டுக்கு வேண்டிய எல்லா ஏற்பாடுகளிலும், குறிப்பாக வேளாண் துறை ஆராய்ச்சிகளில், தோள் கொடுத்து நின்றவர் டாக்டர் சுவாமிநாதனே. இவருடைய ஆராய்ச்சிகள் வெறும் நூல் நிலைய அலங்காரங்களாக நின்றுவிடாமல், மண்ணுக்குள் வேரோடி விவசாயத் துறையில் மகத்தான மாற்றங்களை விளைவித்தன. கோதுமை, உருளைக்கிழங்கு, நெல் போன்றவற்றின் மரபு மூல அணு ஆராய்ச்சிகளின் விளைவே, பசுமைப் புரட்சிக்கு மூல விசை ஆகியது.

இப் புரட்சியின் வெற்றியே பற்றாக்குறை பாரதத்தை உணவு உற்பத்தியில் தன்னிறைவு உடையதாக ஆக்கிவைத்திருக்கிறது. இந்த மாற்றத்தில் டாக்டர் சுவாமிநாதனின் பங்கு மகத்தானது மட்டுமல்ல; வரலாறு பூர்வமானதும் கூட

INSIDE . . .

THE HINDU MAGAZINE

Towards an evergreen revolution

The Green Revolution has worked in India, but present rates of population growth and environmental degradation imply that we may be driven to import foodgrains early next century. The present imperative, in a country of one hundred million farm families, is a sustainable process, writes M. S. SWAMINATHAN.

THE term Green Revolution was coined by the American Dr. William Gadd in 1968, when our farmers brought about a quantum jump in wheat production by taking to semi-dwarf, non-lodging varieties with great enthusiasm and when similar progress appeared feasible in rice. Punjab took the lead because of the scientific and educational backing given by the Punjab Agricultural University on the one hand and on the other, by the presence of the essential prerequisites for progress such as land consolidation and levelling, rural communication, rural electrification and above all, owner cultivation. C. Subramaniam in his recent memoirs ("Green Revolution", Vol. II. published by the Bharatiya Vidya Bhavan, 1995) has chronicled the events and policies which led to the green revolution. His book is a wonderful record of an exciting period in our scientific and social history. Our country is in deep debt to him for spreading at a critical time a climate of confidence in our agricultural destiny.

Twentyseven years after the term "Green Revolution" was coined, we are in a position to draw a balance sheet and chalk out a strategy for the future. Apart from erasing the "begging bowl" image of our country, the most important gain has been the saving of forests and land, thanks to the productivity improvement associated with high yielding varieties. This year, our farmers have harvested over 600 million tonnes of wheat, as compared to six million tonnes at the time of our independence in 1947. Punjab farmers have raised the average yield of wheat to over 40 quintals per hectare. Likewise, Tamil Nadu farmers have raised the average yield of rice to over 50 quintals per hectare. If the yield improvement associated with the Green Revolution in wheat and rice had not taken place, we would have needed another 70 million hectares to produce the wheat and rice we now harvest. Thus, the productivity improvement associated with the Green Revolution is best described as forest or land saving agriculture.

Improved purchasing power will enhance the demand for food . . .

. . . but per capita availability of arable land is shrinking .

Our population is growing. The average Total Fertility Rate of our country in 1992-93 was 3.39. Only Kerala, Tamil Nadu, Goa and Mizoram have so far achieved a demographic transition to low birth and death rates. Besides population increase, improved purchasing power among the poor will enhance the demand for food, since under-nutrition and poverty go together. In contrast, per capita availability of arable land is shrinking. Water use efficiency is still, on the whole, low and water disputes are growing. In addition to the gradual decline in per capita availability of land and water, various forms of biotic and abiotic stresses are spreading.

There is still a widespread mismatch between production and post-harvest technologies, in perishable commodities like fruits, vegetables,

Continued on page II

MADRAS MONDAY 14 AUGUST 1995

Scientist flays 'patronage approach' in bank lending

Our Madras Bureau

MADRAS 13 AUGUST

EMINENT agricultural scientist, Dr M S Swaminathan has deplored the "patronage approach" adopted in the distribution of bank loans to farmers, weaker sections and other categories.

"Why should they be called beneficiaries and target groups when they are actually honourable customers of banks?" he posed while delivering the key note address at the 13th conference of Corporation Bank Officers' Association (CBOA) in Madras on Sunday. Further, he said that such a "Government mentality approach would only perpetuate poverty levels in the country ".

The Union Planning Commission has estimated that 300 million people are below the poverty line. This was the population of India in the first Plan, he reminded the officers. Dr Swaminathan also expressed concern over the "undervaluation of human resoruces" and the excess emphasis on the monetary value of land, property and gold. Whereas, "Asian Tigers" like Korea, Taiwan, Hong Kong and Singapore spend more on HRD, he pointed out.

It is the knowledge-based industry which is going to play a crucial role in the coming years and even on trade matters the intellecutal property rights have come to occuy a signiifcant place, he observed.

This called for more investment in new skills and technology and educaiton. He also envisaged a major role for the banking sector in tackling the problems arising out of modern development. These included issues like growing rich-poor divide, environmental degradation, jobless led growth and faminisation of poverty.

In his inaugural address, Mr K R Ramamoorthy, chairman and managing director of Corporation Bank said while the Indian banks have weathered the storm of prudential norms, their profits are under pressure this year. If at all they are managing the show it is mainly due to lower input cost (interest on deposits).

He said the banks have to focus on building up their core competence. They should focus more on changing customer needs, develping new products, updating the technology and spending more on advertising. Among the public sector banks, only Corporation Bank has emerged success in the cash management services and earned Rs 20 crore as on non- fund based income.

He sought the full co- operation of the staff and officers in the matter of house keeping and accounts tallying so that the services would not fail.

Mr K R Shenoy, executive director of the bank referred to the increasing competition from new private banks. Already six of them have entered the field and another six have got in principle clearance from RBI.

Stressing the need for making HRD fledible, he expected the support from unions on matters like increasing productivity, redeploying personnel, cutting costs and adopting latest technology. Branch level managers should be willing to share powers with suboridnates who could be given more responsibility.

Mr R N Godbole, chairman, All India Bank Officers' Confederation (AIBOC) said the banks were always healthy and it is the political system that have placed them under red. How is that in one year the banks were able to show profits? he asked.

INDEPENDENCE DAY SPECIAL

Poverty alleviation and food-for-all by the turn of the century are the twin targets that India has set for itself. To realise these mighty ambitions, the country will have to improve on an already impressive agricultural performance. Renowned agro-scientist **Dr. M. S. SWAMINATHAN** chalks out the strategies that can provide India deliverance from want

INDIA
ASIA'S NEWEST GATEWAY TO TECHNOLOGY

EVERGREEN INDIA

A CENTURY ago, the then British India comprising India, Pakistan and Bangladesh had a total population of 281 million. Nevertheless, famines claimed about 30 million lives between 1870 and 1900.

Today, we have a population of nearly 920 million. One of the most remarkable accomplishments of Independent India has been the stopping of recurrent famines. The last big famine we had was the great Bengal famine of 1943 which claimed 3 million lives. The famine eradication strategy of Independent India has relied on concurrent attention to both food production and distribution.

While government agencies contributed for the development of irrigation facilities and the needed rural techno-infrastructure, our scientists developed high-yield technologies leading to what is commonly known as the *green revolution*. The credit for this revolution, however, goes to our hardworking farm men and women and agricultural labourers who helped to falsify prophets of doom.

Thus, this year our farmers harvested over 63 million tonnes of wheat and 81 million tonnes of rice in contrast to 6 million and 20 million tonnes of wheat and rice respectively in 1948. Our total food production this year will be nearly 190 million tonnes in contrast to less than 50 million tonnes at the time of our Independence. Much of this increase has come about through increased yield per hectare and not from area expansion.

FREEDOM FROM WANT: *Agricultural intensification and diversification are vital to meet India's projected demand for food*

REALITY BITES

The growth rate in food production has been so far kept above the population growth rate, through mutually reinforcing packages of technology, services and public policy. Widespread under-nutrition, however, still prevails largely due to the inadequate purchasing power.

Poverty level is measured by the Planning Commission by the expenditure required to acquire the minimum caloric needs calculated at 2,400 calories per capita per day for rural areas and 2,100 calories per capita per day in urban areas. An expert group on the estimation of poverty in a report submitted to the Planning Commission in 1993 estimated that 39.3% of the population or 313 million children, women and men are below the poverty line.

Thus, today, the food security challenge is more in the area of increasing purchasing power than on production. The government's response to this situation has been through an expanded public distribution system and various rural employment programmes. The Prime Minister has announced that starting on Aug. 15, 1995, there will be several additional intervention programmes to insulate the poor from deprivation and malnutrition. This is probably the single largest social security package to be introduced so far on a national scale.

The time is thus opportune for developing and introducing a national Hunger-Free Area Programme through concurrent attention to the conservation of natural resources, food production, distribution and income generation. Since several non-food factors affect food security, we should also redefine our concept of food security as follows:

"Sustainable food security involves strengthening the livelihood security of all members within a household by ensuring both physical and economic access to balanced diet, including the needed micronutrients, safe drinking water, environmental sanitation, basic health care and primary education."

INDIVIDUAL NEEDS

The increasing feminisation of poverty necessitates that we look at food security from the point of view of each individual and not just on a household basis.

A review of the various production scenarios suggests that if a 'business-as-usual' approach to food security is pursued, we will not be able to resolve the problem of poverty and ensure food security for all even by 2010. The twin basic food security challenges of the present and the decades ahead are sustaining the availability of food and of expanding the economic access to food. Recognition of food security as a fundamental right is cardinal to the success of a Hunger-Free Area Programme.

This recognition has to be backed by political commitment and public policies, and matched with investment with respect to the sustainable management of resources, building productive capabilities and access to income and entitlement to food.

Strategies:

Reflecting the holistic concept of food security, a set of strategies for attaining food security can be designed based on five integral elements, viz:

- Ensuring sustainable availability of food through maintaining the growth in food production over the population growth, as has been possible during the past decades;
- Sustain the productivity of the natural resource base over the period by keeping the economic and environmental costs to the minimum;
- Ensuring adequacy of household incomes through promotional social security measures such as accessing assets, employment and empowerment;
- Providing entitlement to food through protective social security measures to the vulnerable groups; and
- Enlarging support for national and international agricultural research designed to promote public good.

Sustainability of Food Availability:

Sustainability of food availability is sought to be achieved through a set of strategies consisting of:

- Changes in the planning process from commodity-based to resource-based planning, including investment in research, delivery systems, support services and infrastructure;
- Systems perspective and integrated use and management of biophysical (land and water) and human resources to maximise income and employment;

POTENT POLICIES

- Interventions that ensure economic viability, environmental compatibility and social equity to sustain the production capabilities of the resource base and to minimise the environmental and economic costs through resource-friendly land use systems and policies, user-friendly water management systems and policies, integrated management systems for nutrients, energy and pest control, and conservation of genetic resources for biodiversity.

Following from the above guidelines, the need to introduce policies for the sustained use of resources emerges. Land use policies, particularly those which will restrain the diversion of prime agricultural land irrevocably to other uses, are of major concern. User-friendly water management, including pricing policies to increase efficiency and to conserve these finite resources are also urgently needed.

To eliminate hunger at the level of the individual, it will be necessary to pay integrated and concurrent attention to the following:

- Sensitise and mobilise public opinion through the mass media leading to appropriate political action;
- Achieve agricultural intensification and diversification, so that the income and employment potential of small farm agriculture is enhanced through economically and ecologically sustainable farm and off-farm enterprises;
- Ensure access to food at affordable prices both by maintaining food security reserves

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INDEPENDENCE DAY SPECIAL

Man management a must

■ Continued from Page 5

facilities for vocational training. India needs a large stock of competitive and efficient workers, if high growth is to be sustained. Quality of education and training is extremely crucial.

High growth and dynamics of competition will also require attention to development of scientific and technological skills. We have large stock of S&T manpower, but it is not sufficient; neither quantitatively nor qualitatively. Focus of education policy should be to promote interest in S&T and quality of S&T manpower must receive priority. This has lot to do with quality of teaching that must be improved.

Indeed, there is need for appropriate manpower planning, keeping in view the needs of a fast-growing economy and directions of growth. This has been all along a neglected aspect of our development strategy, but has to be given the necessary attention now. No strategy for human resource development can succeed without an appropriate manpower planning. Similarly, even education policy will lack focus.

Infrastructure assumes equal significance in building momentum for growth and competitiveness. Many of the fast-growing countries are faced with limitations on account of inadequacy of infrastructure. The lesson is that if high growth has to be sustained and drudgeries of life minimised, the existing infrastructure has to be upgraded and new facilities to be created.

ACHILLES' HEEL

Maintenance of infrastructure is India's weak point and progress in creation of new facilities is tardy. Private sector has been *given* a significant role in the development of this sector. Response is encouraging, but far from adequate. Policy package is not comprehensive and lacks clarity. Procedural bottlenecks are also enormous.

With adequate and appropriate infrastructure in place in all parts of the country, a sense of confidence develops. People will find opportunities for self-employment and can be self-reliant. It improves the quality of life, by saving physical energy and time. For agriculture and industry, it boosts productivity and efficiency. Nations acquire competitive advantage on the strength of infrastructure. Hence, the need for a sense of urgency.

Current economic policy is aimed at reform of the economic system and production conditions. Unfortunately, a vast segment of the economy, namely agriculture, remains outside the purview of the new economic policy. Can we afford to leave this sector as it is? Obviously, no! We need agricultural production to grow at 4-5% a year. This is necessary for the much desired transition in the rural economy. One of the key issues is: how to improve productivity of agriculture? This requires many structural improvements and effective support to the small and marginal farmers. Pattern of land-holdings and land-use needs change. Operation of market forces has to be encouraged and export-orientation of the techniques of cultivation to be supported.

Imagine the impact on the domestic market, when over 650 million rural people (growing at 1.8%) begin to have the lifestyle of even urban lower middle class. The Indian economy would be an awe-inspiring walking giant. International community will watch India with respect. It is time to usher in rural economic revolution, something like what is happening in China. We can do it and we must do it.

Performance of the economy support the arguments in the favour of continued reform. Public sector reform, complete liberalisation of industrial investment, opening up of the insurance sector, changes in the labour laws, deregulation of interest rates, capital account convertibility, etc. are some of the important items in the long list of unfinished agenda.

The extent of state control on production, investment, pricing, distribution, marketing, etc. is still very large. Taking state control as a factor in competitiveness, the World Competitiveness Report (1994) puts India on 36th position in the list of 41 countries. The process of de-control must be carried through in a systematic and continuous process. In the 21st century we cannot do with 20th century (in some cases even 19th century) laws.

REFORM NOW!

There is urgent need for state-level reforms. There are plenty of laws and rules at the state-level that are out of tune with the needs of development and come in the way of building a dynamic competitive national economy. Also, because of the inter-state differences in the economic and social infrastructure, state-level laws, taxes and duties, etc. investment climate varies widely across the country. This has been acting against the interest of the poor states and perpetuating regional disparities.

It is ironical that ours is an economy with many disjointed markets and stark regional disparities in levels of development. We can make a big dent on poverty by removing these disparities. Can we not think of a single common market of India in which there would be no 'tariff' and 'non-tariff' barriers in inter-state movement of goods?

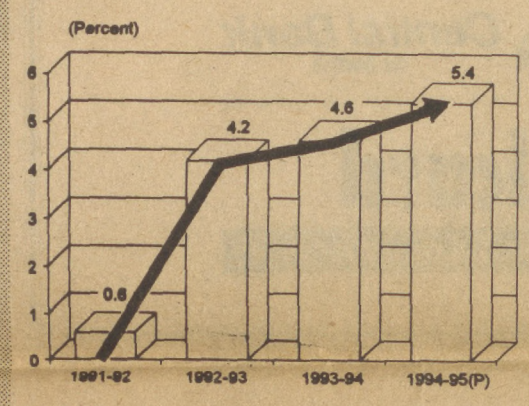
Economic development is a matter of internal surge for a better living standard, a desire for growth and prosperity and impatience and distaste for poverty. Once this surge is there, everything follows. People begin to work hard, productivity and efficiency improves, knowledge is gained faster and finds best application. This urge has to be aroused by giving people a vision of prosperity and better life. The people of India are of world class quality. This vision has to be conceived, jointly by the political leadership, the bureaucrats and the business, and shared with the people. Fulfilment of the vision will call for partnership of all concerned and involvement of the states. At the same time, the deregulation process is to gradually ensure that irrespective of political changes, the economy will move forward on the growth path.

The de-linking of politics from the economy is a positive fallout of the liberalisation policies.

The opening of the economy since 1991, the turnaround achieved, the reach of media, especially TV, the purchasing power growth and expanding middle class — these, and more, give the confidence that India is ready for Take Off, that India can now see ahead a new vision for itself, that India can achieve the forecast of being the fourth strongest economy in this world by 2020.

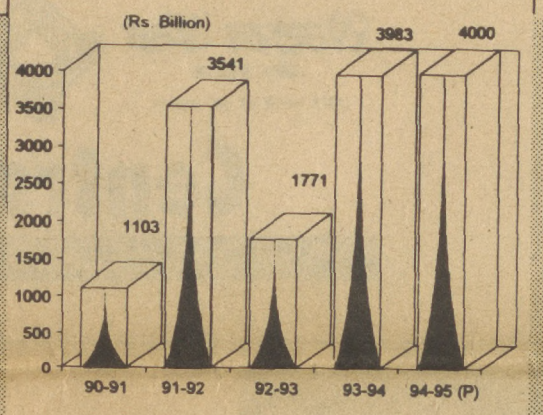
INDIA
ASIA'S NEWEST GATEWAY TO TECHNOLOGY

Changes in the Gross National Product (1980-81 Prices)



Source: Economic Survey, 1994-95(P)

Market Capitalisation



Source: CMIE Vol. 1 Aug 1994

Ending endemic hunger

■ Continued from Page 9

and by operating an efficient public distribution system;

- Ensure universal and compulsory school education;
- Develop an integrated health security system, involving attention to sanitation, hygiene, preventive and curative health measures, reproductive health and access to safe and acceptable contraceptive services;
- Initiate public action for providing (a) *protective social security* for the assetless and vulnerable sections of the population, such as employment guarantee and food for nutrition programmes; (b) *promotional social security* involving access to information, technological empowerment through training in new skills, credit and remunerative self-employment and marketing opportunities; and
- Mobilise the voluntary sector and private sector industry for promoting literacy, ensuring health security and fostering a job-led economic growth strategy.

Such a programme for achieving freedom from endemic hunger will succeed only where there is public commitment to political (i.e. democracy and independent judiciary and mass media), social (such as group action) and technological empowerment of all citizens, and more particularly of the economically and socially disadvantaged sections of the population.

MANPOWER MUSCLE

India has enormous capacity in the field of promoting sustainable advances in crop, animal and fish productivity. We have a large network of scientific institutions and agricultural universities working towards converting the *green revolution* of the past two decades into an *evergreen revolution* based on the integration of the principles of ecology, equity and employment with those of economics.

Given appropriate public policy support, it should be possible to extend the benefits of modern agri-business to resource poor farming families. Our country's agricultural exports are largely primary products. Hardly 8% of the exports involve value addition. In contrast, over 60% of the agricultural exports from Israel have a value addition component.

We have considerable opportunities and expertise in the biological software industry. We can produce a wide range of hybrid seeds and planting material developed through tissue culture. We can foster a global green health movement, based on the cultivation and use of medicinal plants.

An *evergreen revolution* in agriculture and aquaculture will depend upon success in blending traditional wisdom and technologies with frontier technologies such as biotechnology, space and information technologies, renewable energy technologies and above all, management technology.

Such technology blending results in ecotechnologies. Because of a combination of biological wealth and biotechnological strength, India is poised to become a world leader in ecotechnology. India can thus play a vital role in the movement for achieving freedom from hunger on a sustainable basis.

ACKNOWLEDGEMENTS

- **CO-ORDINATOR:** Sarosh Bana
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- **ADVERTISING:** H. S. Notay
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- **PRODUCTION:** Shaik Rasheed, Sabrina Gomez, P. D. Saldanha, Roque S. Dias, Shridhar Sarvankar, V. Thapliyal, Kishore J. Jogadia
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December 10, 2001

To

Dr. Pedro Medrano
Country Director
World Food Programme

Dear Sir,

I enclose three bills for boarding and lodging, and transportation. We will be thankful to you if you kindly settle the above bills at your earliest.

Thanking you,

Yours Sincerely,

N Parasuraman
Manager Estate

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HE HINDU, Thursday, August 31, 1995 1

The agenda for women

By M. S. Swaminathan

A U.N. Decade for Women was launched 20 years ago followed by a series of conferences. The Fourth World Conference on Women will be held next month in Beijing. The draft plan of action for the Beijing conference sets out what needs to be done to improve women's health, education, employment, human rights and environment. It also attempts to define the rights of the girl child.

In a recent interview, Ms. Cecilia Lopez Montano, Minister for Environment in Colombia, who led the Colombian delegation to the Nairobi Conference on Women ten years ago, said "Lots of things have happened durin the last 10 years but there have been mo quantitative advances than qualitative on We have so far not touched the real so problem, which is dependence of women on men. My message is that projects in education and health, while necessary, do not touch the essential relations of power in society. We must have a qualitative leap now. We must start a process which attacks the subordination of women to men, and this is much more difficult."

India also made a commitment at Nairobi that all forms of gender discrimination will be fought. At the public policy level much progress has been made including the setting up of a National Commission for Women. A major step has also been taken in the socio-political empowerment of women by reserving 33 per cent of the seats in panchayats and nagarpalikas for women. Nevertheless, gender-related violence, sex ratios adverse to women, higher illiteracy and IMR among girl children, feminisation of poverty, and most men opting out of the responsibility for family planning, all underline the significance of Ms. Montano's call for a qualitative change in addressing this issue. It is clear that such a qualitative change cannot be brought about without men's enlightenment and involvement.

A large proportion of the policy making and implementation responsibilities is in the hands of men world wide. Hence, there is need to consider concurrently policies for women's empowerment and men's gender sensitisation.On the eve of the Beijing Conference a group of men led by Drs. Lincoln Chen and Balla Silla of the Harvard University, the U.S., have stressed that many men support gender equality and that the benefits of gender equality would accrue to all members of the society. In a statement titled "Action for Gender Equality" this group, of which I am one, has proposed an action plan. How can the twin goals of female empowerment and male enlightenment be achieved, so that gender equity becomes a reality? This is where we now have a unique opportunity. Problems such as poverty, population and gender inequity look large if viewed from a national standpoint. Many of them appear chronic and insurmountable when national statistics are presented. However, they become manageable and solvable when the problem gets disaggregated into village and town level, since the same problem then gets divided into about 6,00,000 segments. This is why the elected bodies at the village and town level offer new opportunities for tackling old problems.

The 73rd and 74th Constitution Amendment Acts of 1993 stipulate that 33 per cent of the seats in panchayats and nagarpalikas should be reserved for women. In the States where elections to such grassroot level democratic institutions have already been held, a silent social revolution has begun. The Expert Group set up by the Government of India under my chairmanship for drafting a National Population Policy Statement, recommended that the time has come for bringing about a paradigm shift in the planning process by adopting the principle "think, plan and act locally and support nationally." Such a paradigm shift is feasible since the establishment of elected panchayats and nagarpalikas is now mandatory. These peoples' bodies can take up planning at the micro-level on meeting their unmet minimum needs, based on their own aspirations, priorities and potentials.

Taking advantage of the new opportunities offered by the democratic decentralisation process, India can become a role model by the time the next world meet on women is held in 2005.

The role of women in national development was highlighted in the form of a separate plan chapter for the first time in a Five Year Plan Document during the VI Five Year Plan (1980-85). I then had the privilege of formulating the chapter titled "Women and Development", which was approved for inclusion in the VI Five Year Plan Document by the National Development Council. This chapter called for the internalisation of a gender dimension in all plan projects. The VI Plan goals in this area were stated as follows:

"The major thrust of the VI Plan in the field of welfare of women is their economic upliftment through greater opportunities for salaried, self and wage employment. For this purpose, appropriate technologies, services and public policies will be introduced. The technological package will include imparting new skills and upgrading existing skills. The service package will pay attention to training and credit needs and to marketing. The public policy package will include measures in the area of ownership rights, enforcement of wage laws and employment impact assessment with reference to the employment of women in development projects. However, the improvements in the socio-economic status of women would depend to a large extent on the social change in the value system, attitudes and power structure prevailing in the country."

The planning tool at the central and state level is a five year plan document disaggregated into five annual plans. The planning tool recommended by the Expert Group on Population Policy for use at the village/town/city level is a socio-demographic charter, which would help to view population and social development issues in the context of local conditions.

A few of the major components of such a local level planning tool are the following:

i. Environmental hygiene, including mechanisms for the safe disposal and recycling of garbage, sewage and other human wastes. Houses should be designed to harvest sun and rain. Sewage treatment and waste disposal should form a part of housing design. Water storage tanks should be mosquito proofed. ii. Supporting or carrying capacity of the ecosystems with particular reference to water, land and common property resources. This is important because many human activities still by far exceed the limit of the biosphere's carrying capacity and hence are unsustainable. iii. Health security, including reproductive health and provision of acceptable and affordable contraceptive services. iv. Education, including techniracy, i.e. imparting the latest technical skills through the pedagogic method of learning by doing, as well as adult literacy. Particular attention will have to be paid to the education of the girl child. v. Nutrition security enabling access to balanced diets (including the needed micro-nutrients) and safe drinking water for each member of the household. vi. Gender code, outlining the steps needed for promoting gender equality.

Thus, there are opportunities now for the joint participation of men and women in preparing local level action plans which can help to sensitise each other on gender-related priorities and problems. Starting with the SNDT University in Bombay, founded by Maharishi Karve, we now have five women's universities and over 20 autonomous women's studies centres. There are also many excellent non-governmental centres.

It would be appropriate if the Ministry of Human Resource Development of the Government of India, the University Grants Commission and all major national scientific organisations jointly sponsor and support an All India Project for the Empowerment of Women in Panchayats and Nagarpalikas. A corresponding exercise is needed for the gender sensitisation of elected men members of the grassroot democratic bodies. A national grid of institutions can help to optimise the impact of the elected women and men members of grassroot democratic structures and at the same time promote joint planning exercises involving men and women so that gender sensitivity gets internalised in the planning and decision making process. The village/town socio-demographic charter prepared by women and men working together will help to accelerate the process of shared perceptions concerning a realignment of power in decision making.

Using a Gender-related Development Index (GDI), the 1995 Human Development Report of UNDP places India in the 99th position among 130 countries in relation to the status of women. The GDI criteria can be incorporated for the purpose of monitoring the impact of the gender code of the socio-demographic charters of villages and towns.

Through addressing this complex and age-old problem in a disaggregated manner by taking advantage of the new opportunities offered by the democratic decentralisation process, we can become a role model for other nations by the time the next World Conference on Women is held in the year 2005. What is needed is a qualitative change in our mind-set and methods and not one more national Yojana.

M

An innovative legislation

A tribal woman dries leaves of medicinal plants.

IT was 12,000 years ago, when the human race survived by hunting and gathering food, that some wise women set about collecting seeds of wild plants they knew well. Thus began the era of domestication of plants to meet the various needs of humankind. Soon a variety of useful plants were identified, and selected mostly by women, and they were cultivated near human settlements. Natural selection of the best performing plants was the order of the day.

The organised plant breeding efforts began only in the last century, and it was mostly in the hands of research institutions and private companies. It was better organised with the re-discovery of Mendel's law of heredity. Then to provide incentives for innovation and investment, in Europe, the issue of plant breeders' rights or Plant Varieties Protection Act was brought in fifty years ago.

These and the intellectual property (IPR) issues come to the fore in the context of the World Trade Organisation and the GATT treaty to which India is a signatory. The need for creating an economic stake in biodiversity conservation has now become crucial. "The question of integrating principles of equity in the intellectual property rights (IPR) regime governing biotechnology is now receiving worldwide attention. This is because of the realisation that unless local communities have an economic stake in the conservation of biodiversity, saving genetic wealth will be a lost cause," explains Prof. M. S. Swaminathan, Chairman of the M. S. Swaminathan Research Foundation, Madras.

The agreed version of the GATT negotiations (Uruguay Round) approved on December 14, 1993, under Section 3 of Article 27 on "Patentable Subject Matter" states:

"Members may also exclude from patentability: (a) diagnostic, therapeutic and surgical methods for the treatment of humans and animals. (b) plants and animals other than micro-organisms, and essentially biological processes for the production of plants or animals other than non-biological and microbiological processes. However, Members shall provide for the protection of plant varieties either by patents or by an effective "sui generis" system or by any combination thereof. The provisions of this sub-paragraph shall be reviewed four years after the entry into force of the Agreement Establishing the MTO."

The Global Biodiversity Convention which became operational on December 1993 states: "...reaffirming that States have sovereign rights over their own biological resources", and "...reaffirming that States are responsible for conserving their biological diversity and for using their biological resources in a sustainable manner".

"India is a signatory to both these international agreements. It is therefore essential that legal, administrative and scientific measures are initiated without delay, so as to ensure that these agreements strengthen and not erode the food security of the nation and the livelihood security of the nearly 100 million farming families in the country. It is also important that any legislation formulated to take follow-up action on the GATT agreement and the Biodiversity Convention is mutually consistent and reinforcing," says Prof. M. S. Swaminathan.

The Indian Government has prepared a draft Plant Varieties Act, 1993, which is yet to be tabled in Parliament. This draft has several shortcomings, and it has not been prepared in consultation with experts, farmers' representatives and nurserymen, according to its critics.

A quick run through the history of plant protection systems will offer a better perspective to the whole scenario. According to Prof. Swaminathan, for over 60 years different forms of protection of new plant varieties through systems of Plant Breeders' Rights (PBR) have been in existence in industrialised countries. In 1961, a Union Internationale Pour la Protection des Obtentions Vegetales (UPOV – International Union for the Protection of New Varieties of Plants) was established in Geneva for coordinating the inter-country implementation of PBR.

The purpose of the UPOV Convention is to ensure that the member-states of the Union acknowledge the achievements of breeders of new plant varieties, on the basis of a set of uniform and clearly defined principles. To be eligible for protection, varieties have to be –

(i)distinct from existing, commonly known varieties,

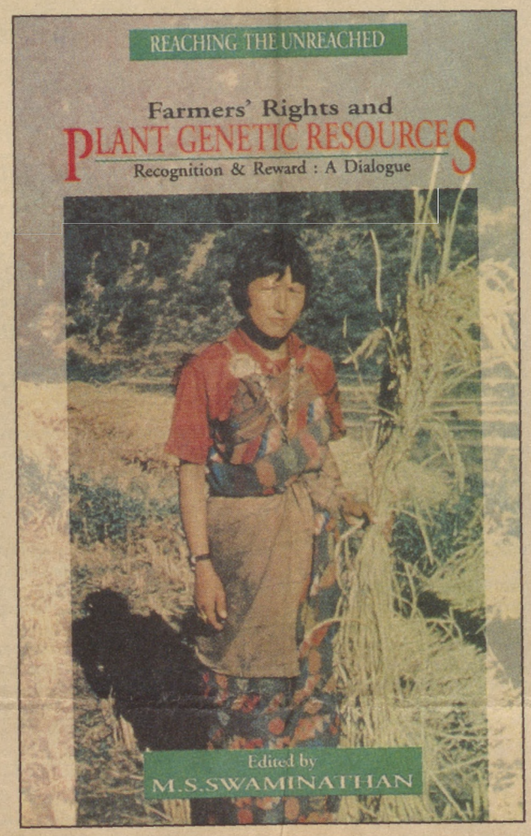
(ii) sufficiently homogeneous,

(iii) stable and

(iv) new in the sense that they must not have been commercialised before certain dates established by reference to the date of the application for protection.

Although the Convention was signed in Paris in 1961, it came into force in 1968. It was revised in Geneva in 1972, 1978 and 1991. The 1978 Act came into force in 1981. The 1991 Act is yet to enter into force.

From 1961 to 1991, the UPOV Convention provided breeders and farmers with the privilege of using protected varieties for specific purposes. However, with growing privatisation of plant breeding research on one hand, and the increasing size of farm holdings on the other, in industrialised countries, the demand for eliminating the "breeders' exemption" and "farmers' privilege" grew. This resulted in a modification of the UPOV Convention in 1991 in two significant respects. First, UPOV strengthened the position of the PBR holder by eliminating the breeder's exemption for an "essentially derived variety". This is defined as a variety predominantly derived from another (initial) variety which retains the expression of the essential characteristics from the genotypes or combination of genotypes of the initial variety. One consequence of the change is that a breeder who inserts a single new disease-resistance gene into a PBR-protected variety will now have to obtain permission from the holder of the original rights before marketing the new variety.



Seeds of indigenous plants.

On March 1, 1993, UPOV had 22 member-states, and most of them are bound by the 1978 Act. Several of the member-states have signed but ratified the 1991 Act. Many non-member-states now have proposals for laws to protect plant varieties before legislatures.

From the inception of UPOV in 1961, farmers have been allowed to use their own harvested material of the protected varieties for the next production cycle on their own farms. On-farm seed saving is still a practice in UPOV countries.

The 1991 UPOV Convention provides countries with the option of choosing both patent and PBR systems of legal rights, thereby enabling plant breeders using the tools of molecular genetics to obtain both types of protection, as appropriate.

Starting with the establishment of an International Commission on Plant Genetic Resources by the FAO Council at its meeting held in November, 1983, under the chairmanship of Prof. M. S. Swaminathan, the concept that informal innovation by tribal and rural women and men in the field of genetic resources conservation and improvement needs recognition and reward has taken concrete shape, women in particular have played a key role in seed and plant selection and preservation. The term "Farmers' Rights" was developed in the forum of International Commission on Plant Genetic Resources of the FAO to denote, "the rights arising from the past, present and future contributions of farmers in conserving, improving and making available plant genetic resources, particularly those in the centres of origin/diversity".

There is now no difference of opinion on the need for recognition and reward of the contributions of tribal and farming families to the conservation of genetic wealth. The legally binding Global Biodiversity Convention which came into force on December 29, 1993, recognises "the close and traditional dependence of many indigenous and local communities, embodying traditional lifestyles on biological resources, and the desirability of sharing equitably benefits arising from the use of traditional knowledge, innovations and practices relevant to the conservation of biological diversity and the sustainable use of its components."

"India should now choose a system which on the one hand will help to protect the work of

Need to reverse adverse impact of climate change

From Our Science Correspondent

MADRAS, Dec. 4.

An international workshop on "Impact of climate change on food and livelihood security: an agenda for action" organised by the M. S. Swaminathan Research Foundation here today stressed the importance of anticipatory work on climate change in relation to temperature and sea level rise and rainfall patterns, which in turn affect agricultural patterns and food security.

On the first day of a three-day dialogue in which scientists, government representatives, corporate entities and media are participating, the need for large scale changes to prevent or reverse the adverse impact of climate change, better and more refined climate models, and formulation of strategies to protect the most vulnerable sections were emphasised.

In his introductory remarks, the Chairman of the workshop, Dr. M. S. Swaminathan said there was increasing understanding that livelihood security was linked to environmental security. While in the period 1900 to 1980 it had been physical access which had determined food security, this had then changed to economic access. From 2,000 it would be ecological access which would determine food security, he said.

It had once been thought that the climate was beyond change. But it had now been seen that the conditions under which life prospered on this planet — biological diversity, biological productivity, climate and radiation regulation and decomposition and waste recycling — were being threatened.

In several countries forests were getting degraded, fish catch and grain production was going down and coastal eco-systems were being destroyed, he added.

Dr. John Topping, president of the Climate Institute, Washington (co-organisers of the workshop), quoted an eight country study which examined the implications of climate change for the Asian region, and said the potential impact tended to be adverse on balance. The impact related to rise in temperature, rise in sea level and resultant inundation, erosion and saline intrusion into coastal water supplies, increased risk of storm related damage and disruption of fisheries and aquaculture.

The study, which covered Bangladesh, India, Indonesia, Malaysia, Pakistan, the Philippines, Sri Lanka and Vietnam, included development of inventories of greenhouse emissions. In India, the figure for carbondioxide emissions from the energy sector alone is expected to rise from 614,360 gigagrams in 1990 to 1,688,000 gigagrams in 2010.

Giving a presentation on the climate change implications for Pakistan agriculture, Dr. Ata Quereshi, Director, Global Environment Programmes, Climate Institute, said simulations had predicted that Pakistan's wheat production would decrease dramatically, and that adaptation strategies tested would not completely compensate for yield reduction.

The Chairman of the Centre for Atmospheric Sciences, Indian Institute of Science, Bangalore, Prof. Sulochana Gadgil, said climate model predictions had to be verified before they were applied. She made out a case for looking at climate variability, and improving crop models to incorporate the climate component.

Dr. M. Lal of the Centre for Atmospheric Sciences, Indian Institute of Technology, New Delhi, however felt that the latest climate models did have some validity. The recent climate models for India suggested a one degree celsius rise in surface temperature by the middle of the next century and a decline in monsoon rainfall, he said. However, these projections should be used only for flexible planning strategies.

Dr. Y. P. Abrol of the Indian Agricultural Research Institute, New Delhi, spoke of the "positive" effects of rise in carbondioxide levels.

Mr. Vijay Sharma, Joint Secretary, Ministry of Environment and Forests, described the intricacies involved in the ongoing negotiations to evolve an international protocol on climate change.

Award for Dr. M. S. Swaminathan

Dr. Swaminathan, has been given the Global Environment Leadership Award of the Climate Institute, Washington, for his outstanding achievements in encouraging village level responses for climate change. The award citation describes Dr. Swaminathan as a catalyst in international efforts to promote global food security through agricultural innovation, and as a pioneer of the concept of rural sustainable development.

Correction: The incident of pouring liquor on the statue of Dr. Ambedkar on November 13 occurred on the premises of Dr. Ambedkar Medical College in Bangalore and not Gulbarga as published in the report 'A test for Deve Gowda' in these columns on December 4.

The Hindu
BUSINESS LINE

Action plan to counter global warming urged

Our Senior Correspondent
MADRAS, Dec. 7

A CALL to identify areas in the country that will be seriously affected by global warming was given by the participants at a three-day workshop on 'Impact of climate change on food and livelihood security,' organised at the M. S. Swaminathan Research Foundation (MSSRF) here.

According to the action plan prepared at the end conclusion of the workshop, the identification of these areas would have to be supplemented with the identification of the most favourable areas for development in the various agro-ecozones of the country. Suitable cropping systems and component technologies could then be developed in the areas.

The action plan recommended that each State set up a coastal zone management authority having adequate finance and power to carry out its functions.

Eco-tourism must be promoted to generate funds for the conservation of coastal biodiversity. "Any organisation or individual deriving benefits using the coastal resources should contribute to the conservation and enhancement of the coastal ecology," the action plan said. For example, approvals for aquaculture farms should require the developer to adopt an equivalent mangrove ecosystem for its protection and enhancement.

The action plan urged the Government authorities to examine and modify all policies affecting coastal management. Excessive ground water pumping should be avoided since it caused subsidence of land, which could exacerbate the effects of sea level rise. The plan suggested that the Government take into account sea level rise and related impacts when planning new development projects in the coastal areas.

The participants stressed the need to develop, identify and compile environment-friendly agro-techniques.
According to them, there was a need to develop heat-resistant crop varieties to suit the anticipated warmer climatic conditions. They demanded that an area be selected for an integrated study of the combined effects of sea level rise, storm surges, waves and river floods.

The workshop demanded that a database on daily weather parameters and agricultural data be created at MSSRF and the 30-year data on temperature, humidity, solar radiation, available at the India Meteorological Department to be analysed for trend and variability. Similarly, satellite-derived information on soil temperature, soil wetness and vegetation cover data should be analysed by climatologists to the finest resolutions.

The participants said incentives for the manufacture of energy-efficient equipment and devices for large-scale use by people in urban and rural areas must be provided. There was a need for anticipatory indigenous research and technology transfer from developed countries to produce refrigeration systems that replaced chlorofluoro carbons (CFCs) with hydrofluoro carbons (HFCs) and hydrochlorofluoro carbons (HCFCs).

The workshop recommended that rural communities be involved in formulating, implementing and evaluating local-level initiatives to improve food production sustainability.

THE HINDU — BUSINESS LINE

'Protect India's public sector breeding enterprise'

— Dr. M. S. Swaminathan and Dr. S. Nagarajan

Harish Damodaran

THE year 1998-99 was a landmark for Indian agriculture, with the total foodgrains production crossing 200 million tonnes, which is four times that produced when the country became a Republic. This "success story", for all its limitations, is thanks largely to the country's agricultural scientists, who have been responsible for developing high-yielding varieties responsive to irrigation and fertiliser application and evolving farm management techniques suitable to the new intensive cropping regime.

Business Line spoke to two of them: Dr. M. S. Swaminathan (MSS) and Dr. S. Nagarajan (SN). While the former is a legendary crop scientist and institution builder, the latter heads the Directorate of Wheat Research (DWR) at Karnal (Haryana), which co-ordinates wheat research all over India.

Excerpts from the interview:

Dr. Swaminathan, what is your reaction to this year's record wheat harvest of nearly 71 million tonnes?

MSS: It is a tribute to the farmers' enthusiasm, particularly Punjab. The record wheat crop this year is the greatest gift to the tercentenary of the Khalsa and is a very appropriate way of celebrating 300 years of the Sikh movement. Guru Nanak's main point, after all, was that there should be no hunger.

I am reminded of a meeting we had in Delhi immediately after the new semi-dwarf Green Revolution wheat varieties were introduced. At that time (mid-1960s), India used to hardly produce around 10 million tonnes of wheat. I remember at that meeting, the eminent economist and planner, Dr. V. K. R. V. Rao stated that he would consider the new varieties to be a success, if they somehow enable us to touch 15 million tonnes. And, today, we are talking of over 70 million tonnes!

So this whole jump from 6-10 million tonnes in the 1950s to 20 million tonnes by the late 1960s and to over 70 million tonnes now...Has the Green Revolution then basically been a Wheat Revolution? The share of wheat in the total foodgrains production, too, is over 35 per cent now, from 12-13 per cent in the 1950s...

MSS: It has been wheat as well as rice revolution. For wheat, it is more obvious because 85 per cent of the area under it (25-27 million hectares) is irrigated. Whereas,

Dr. S. Nagarajan, Project Director, Directorate of Wheat Research, Karnal.

for rice, out of the total acreage of 40-42 million hectares, about 60 per cent is still unirrigated and rainfed. The rice grown in the whole of eastern India is still largely monsoon dependent. If you take the irrigated rice area alone, the performance is definitely comparable to that of wheat.

Therefore, on the whole, I would describe the Green Revolution as a wheat *and* rice revolution. Of course, there has also been tremendous progress in the oilseeds production, which has doubled from 12 million tonnes to 24 million tonnes after the launch of the Technology Mission. Similarly, in animal products such as poultry, production has gone up nearly hundred times in recent times. Milk output too has shot up from 20 million tonnes to over 70 million tonnes.

Only in pulses and coarse cereals, has the production lagged behind. This is unfortunate because the so-called coarse cereals such as ragi and bajra are actually very nutritious cereals. My feeling is that these crops have not done as well as others mainly because of insufficient market demand. Crop production is largely conditioned by demand which, in turn, is influenced to a great extent by the public distribution system.

People, after all, started consuming wheat products only after the grain was made available through ration shops. I remember when I was a boy, I never saw any *chappati* or *puri*. Wheat came to South India only after the Second World War, when the government began distributing the PL-480 wheat imported from the US. And when the PDS feeds you with only rice and wheat, even those who do not consume wheat begin to use it.

So, the progress of the Green Revolution was most in the case of crops, where production and marketing have been linked into a system that has stimulated farmers to produce. And here an important element has been the government's announcement of a floor price to farmers before sowing and *implementing* the floor price through actual purchases. As you know, at one stage, the government had over 30 million tonnes in its godowns.

Not many countries have done this. The African countries, for example, simply do not have the capacity to do it. They may sometimes announce a floor price but when production goes up, market prices crash like what we recently saw for onions here. In wheat and rice, the progress has been due to government policies in input-output pricing, apart from just technology. And within this, you are right to note that the maximum progress has taken place in wheat.

Would you identify any specific reason for wheat registering the maximum progress compared to even rice?

MSS: First, the scientific underpinnings have been very strong for wheat, especially in terms of anticipating and planning for new problems and incidence of pests and diseases. This is unlike in rice, and what we are seeing now for cotton, where pest problems are very serious.

Though in the case of wheat, and rabi crops as a whole, fungal (rust) diseases are more important than insect pests, the scientists here have done good work in their gene deployment strategy and planning, which has insulated farmers from violent yield fluctuations. For example, now they are planning against a new race of yellow rust — virulence against Yr9 gene, as they call it.

All this and the implementation of a floor price has given farmers the right stimulation to produce wheat. They are not so sure about cotton, whose yields are very low in this country. Ultimately, farmers' decisions are conditioned by three factors — the cost of production, the risks involved and the expected return.

SN: In wheat, what we have done is to keep our breeding programme one step ahead of pathogenic evolution. For example, till the early 1990s, a major part of the wheat area in North Western India used to be covered by two varieties — HD- 2329 and HD-2285 — which have now become susceptible to brown and yellow rusts. We have succeeded in phasing out these and replacing them with alternative varieties, such as PBW-343, UP- 2338 and WH-542, with in-built resistance against rust.

In fact, this year we deliberately "created" the rust epidemic in our test fields and what we saw was that even with these man-made rust conditions, the new varieties were able to withstand the disease pressures very well. We are now preparing for a new yellow rust race, which have virulence against the Yr9 resistance gene and have entered India about three years ago from West Asia. Through our advanced screening process, we have been able to identify lines that are resistant to this new virulence of yellow rust. We hope to incorporate these genes in our varieties in due course.

The broad strategy has been to diversify the resistance base against rust pathogens and keep the varietal dynamics shuffling year to year to safeguard against pathogenic hazards. Today, in the Indo-Gangetic plain, where some 18.5 million hectares are under wheat, nearly 60 varieties are grown under different sowing dates, creating a genetic mosaic that acts as a temporal and spatial hurdle against the spread of rusts.

That raises an important point...There is this view that the genetic (physiological) yields of the Green Revolution wheat varieties have plateaued in recent times, and whatever new varieties being introduced now are basically those that are only resistant to various biotic and abiotic stresses and do not embody any significant increase in yield potential per se...

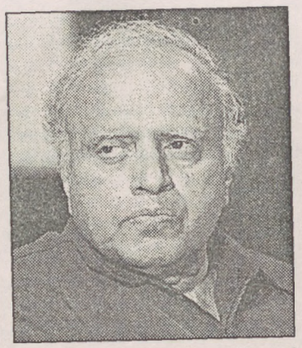
MSS: Well, I feel that this so-called plateauing of yields is largely a Western concept and more relevant to those countries where usually a single crop is taken. Here, we have multiple cropping. Punjab farmers, for example, grow basmati or a short-duration, high-yielding variety of rice and then wheat and probably a crop of potato in between. So, really speaking, what is relevant here is yield per day, not per crop. The plateau comes only when you start looking at yield per crop.

In the West, you basically have a long-duration winter wheat which gives yields of up to nine tonnes. Here too, it is potentially possible to get 7-8 tonnes with the existing varieties and with the proposed hybrid wheat being talked about, the yields can go up even further. But, ultimately, what we should look at is the yield per hectare per year from, say, the irrigated cropping systems of North-West India and not just from one crop. And if you see the yield of the whole system, you will find that it has steadily improved and not gone down. This is despite farmers confronting problems of salinity and moisture stress in their soils.

The confusion comes only when one takes the yield of a high-yielding variety such as Kalyansona in 1968, which was 6.5 tonnes, and then say that yield levels have not increased much since then. But, then, in those days, there was hardly any wheat crop in Punjab. They used to grow a crop of bajra or something like that, mostly rain-fed. Now, they have the wheat-rice rotation, as a result of which the whole system has changed. In fact, I have always been telling scientists that, in our publications, it would be more appropriate to indicate yield per hectare per day in a multiple cropping system.

Dr. Nagarajan, could you elaborate further on this aspect of viewing cropping systems' productivity as a whole, rather than simply yields of individual crops?

SN: As Dr. Swaminathan has noted, in the early days, the cropping intensity even in many parts of Punjab and Haryana was very low. Since there were no crops during the rains, and farmers there were mostly growing only a single crop of wheat per year, the issue of systems interaction did not arise in the first place.



Dr. M. S. Swaminathan, the architect of the Green Revolution.

But with access to irrigation and wheat varieties of varying maturity periods — a major contribution of the Green Revolution is that you have today wheat varieties of maturities ranging from 100 to 145 days — and by choosing an appropriate variety, farmers could go ahead with higher cropping intensity. This has happened in the last 20 years or so. Rice-potato-wheat is a reality in many parts of Punjab and we have to, therefore, look into systems productivity by examining aspects such as systems nutrition — how much fertiliser we apply — and at the same time develop varieties that will fit into this intensive system of farming.

That is one of the reasons why we are trying to develop wheat varieties by growing them from the beginning in the rice fallows (left-back fields of rice), evaluating the early generation material and conducting our station and yield trials in that rice-wheat ecosystem so that it is finetuned from Day One to the slot it has to eventually fit into.

The availability of varieties of different maturity periods has enabled us to sow wheat now even as late as the first week of January. About 30 years ago, nobody would have believed this could have happened. But today we have varieties that can be sown in the first week of January and still give you a three- tonne yield. This is a breakthrough because wheat at the time of harvesting under late sown conditions has to face very harsh environment and being a cold season crop, it is not meant for it.

Therefore, we have incorporated resistance to heat in these new varieties, which means they can be sown even in the month of January. That is a big technological breakthrough in plant breeding, especially in the eastern region along the river, where water does not get drained off easily and the field can be prepared only after the water level goes down by December. So there is substantial area starting from Eastern Uttar Pradesh going up to Bengal, where wheat is sown late and the new varieties have helped.

The other breakthrough we have made in the systems approach to cropping is in the development of new techniques such as zero tillage, reduced tillage and raised-bed cultivation to reduce seed rate and unit fertiliser and water application. The Pantnagar zero-tillage machine has been demonstrated on almost 5,000 acres in Haryana alone. In this case, without preparing the field after harvest of rice, using the residual moisture, the farmers are able to sow a crop of wheat. This also suppresses the weeds and optimises the time and thereby gives a yield advantage.

Then came the sprinkler irrigation in about half a million hectares of Rajasthan and Madhya Pradesh. Getting three- four tonnes of wheat in MP today is not a problem at all because there are varieties which respond to just 1-2 irrigations and yet give substantial yields. So, I believe that in the next couple of years, you will be seeing a big growth in wheat production coming out of these non-traditional areas by access to new technologies. Sprinklers are a new technology. Zero tillage is a new technology. Short duration wheat is a new technology.

Dr. Swaminathan, one of the reasons for the success of the Green Revolution has been the free international flow of germplasm and our access to material from institutions such as the Consultative Group on International Agricultural Research (CGIAR) network. Do you feel that with the global intellectual property regime now in place, this free flow would be impeded and undermine the potential for a second Green Revolution? Would you suggest any alternative framework in this direction?

MSS: I think that the free flow of germplasm fortunately is still continuing and in the immediate future, lack of available germplasm will not be a constraint. True, as every country develops its own *sui generis* system of plant variety protection and IPR regimes, secrecy and privatisation of research can create problems. But, at the moment, the world has, in my view, enough germplasm available. The CGIAR institutions hold nearly six lakh accessions. Dr. Nagarajan's institute here has 10,000 strains. And these are not merely accessions, but value-added accessions in the sense that one knows what they contain.

If I see the next 10 years down the road, scientists in the public sector — I am talking about institutions such as the Indian Council of Agricultural Research and the CGIAR — have adequate genetic resources which have not been fully utilised still. The International Rice Research Institute, Manila, has 100,000 strains of rice available. Even our gene bank at Delhi (National Bureau for Plant Genetic Resources) has some 400,000 accessions.

The real issue is how to use the gene banks and analyse what those germplasm contain. And that is going to be expensive. Collecting and putting them in cold-storage is only one aspect...the tip of the iceberg. But analysing, cultivating them and identifying the genes — there is a lot of work to do there. Moreover, with the modern biotechnology and genetic modification recombinant DNA experiments, it has also become possible to incorporate genetic factors from totally unrelated species more easily.

Of course, novel genetic combinations are available with some people, particularly private companies which will certainly create them out of pre-existing material in nature. Take Monsanto's Bollgard cotton. Bt. toxin exists in nature, but Monsanto has put it into cotton itself. So, those kinds of new genotypes — novel genetic combinations — which did not exist in nature will be created year after year, though it would be only from pre-existing material. If the Bt. gene did not exist, then the Bollgard, too, would not have. Therefore, you require genes, which only, after all, can be recombined in a new way using recombinant DNA technology.

It is precisely for this reason of protecting the genetic resources we have today and preventing others from exploiting our work that we should enact as soon as possible these two very important pieces of legislation — the Biodiversity Act and the Plant Varieties Protection and Farmers Rights Act. It is in our own interest to enact them, particularly since India has the largest public sector breeding enterprise in the world, and it is necessary that its public good character is protected.

dustry captains ... of deals" had been finalised and several Indian and German firms ... industrial ... sourcing software from India but ... setting up research centres to ... net 24 hours a ... dial-up times and pesky busy sig-

THE HINDU 4/2/96

Borlaug asks scientists to improve global food stocks

From T. S. Shankar

MADRAS, Feb. 3.

The crumbling of the former Soviet Union and the disturbances in the Eastern Europe have been the major contributing factors for the low global food stocks at this trend may continue if drastic economic changes are not initiated in the erstwhile Soviet Union and the Eastern Europe, observed the Nobel laureate and renowned agricultural scientist, Dr. Norman E. Borlaug.

One of the major reasons for the rise in prices of foodgrains was the change in diet practices witnessed in China and there was a dire need to arrest this "price rise" keeping in mind the weaker sections of the society, said Dr. Borlaug in an interview to *The Hindu* today at the Madras airport shortly after arriving from Ahmedabad.

Expressing deep concern over this prevalence of low food stocks globally, Dr. Borlaug, who is now the president of the Sasakawa Africa Association (SAA), Mexico, said there was a dire need for decision makers and agriculture scientists to pay serious attention to improve this position with special focus on the Asia Pacific region.

Dr. Borlaug, considered to be the greatest hunger fighter of all times, is in the city to participate in the Asian Regional Workshop on "Ecotechnology and Shaping the Future" organised by M. S. Swaminathan Research Foundation (MSSRF) and the UNESCO at Tharamani beginning on Sunday. He explained that he was currently engaged in a Japanese funded programme in eight countries including South Africa and pointed out that the famine-ravaged Ethiopia was now turning the corner in "maize and wheat production". This recent development in Ethiopia for the past two years symbolises how that country could make notable progress in agriculture.

Referring to ecotechnology concept and its future, he said ecotechnology and sustainable technology would be the catchwords for the future and urged the agriculture scientists to keep abreast with the emerging trends at the international level and put to use these modern techniques that would help the farmers community.

Dr. Borlaug, who had also visited Anand, Gujarat, said he was impressed by the progress made in the "Operation Flood" and he was immensely happy to have a first hand view of the working of Anand.

Dr. Borlaug, had a distinguished academic record at the University of Minnesota, with the Rockfeller Foundation's Maize and Wheat Programme in Mexico. Dr. Borlaug was invited in 1962 by the Indian Government to visit wheat breeding stations. Based on this visit, he sent a wide range of material. It is from this material that outstanding varieties like Kalyan Sona and Sonalika were identified and released for general cultivation. Thus began the wheat revolution in India which resulted in a quantum jump in wheat production by the year 1968. He received the Nobel prize in 1971.

Dr. Borlaug was received at the airport by agriculture scientist and Chairman of the MSSRF, Dr. M. S. Swaminathan.

The Nobel laureate is also scheduled to deliver a special lecture on emerging issues in global food security at the MSSRF on Sunday evening besides interacting with agriculture scientists attached to the Foundation.

$ 200,000 'ecotechnie' chair set up at Swaminathan institute

EXPRESS NEWS SERVICE

MADRAS, Feb.4: A 'UNESCO-Cousteau Ecotechnie Chair' will be set up at the M.S. Swaminathan Research Foundation (MSSRF), under the auspices of the United Nations body, with a total grant of 200,000 US dollars covering the Asian network of this academic programme.

United Nations Educational, Scientific and Cultural Organisation (UNESCO) director general Federico Mayor made this announcment here on Sunday, while inaugurating the 'Asian regional workshop on Ecotechnology and shaping the future'. The chair will be held by the eminent agricultural scientist M. S. Swaminathan.

'Ecotechnie' has been defined as a 'new approach to decision making that integrates economics, technology, and the natural and social sciences in an effort to consider management alternatives and the long term consequences of development.' Noting that universities, departments or professors attempting to provide students - future decision makers - with such high quality multi-disciplinary education were still a minority, Mr Mayor said that the newly launched UNESCO-Cousteau ecotechnie programme aimed 'to identify, and promote such trans-disciplinary university efforts through networking and financial assistance.'

The first ecotechnie chair was created at the Free University of Brussels, in Belgium, and the network has since expanded to many universities in the world. The idea of such an 'International Academic Network and a laboratory for action' was adopted at a meeting of the 'Cousteau Society' in 1986, after which UNESCO joined the effort. (Commandant Jacques-Yves Cousteau, a renowned ecologist, is a member of the Academie Francaise and the United States National Academy of Sciences.)

RIGHTS OF FUTURE GENERATIONS: Mr Mayor said that UNESCO proposed to form a 'declaration of the rights of future generations.' "We have to be the voice of the voiceless. We will have to draw up a strategy for social change in which education and respect for different cultural values are inseparable from progress. We participate, therefore we are."

He warned against the phenomenon of exclusion - economic, social, geographic, cultural and educational exclusion. "Life long, permanently achievable, education is the goal. Some one who misses the bus, is forever out of the mainstream of education. This system must change," he said.

He urged the network to promote 'eco-jobs' - jobs which provide employment in the field of environment conservation. "The network should create the human resources for such eco-jobs." He referred to a recent UN meeting, at the end of which there were not conclusions but commitments. "We must say, we shall commit ourselves to..."

Nobel Laureate and eminent agricultural scientist Dr Norman E. Borlaug, currently president of the Sasakawa Africa Association, Mexico, said that policy-makers and even senior scientists often found it difficult to initiate new approaches due to "fear of the unknown." He stressed the need to work towards more parity in the distribution of agricultural produce. There are surpluses in some parts of the world, but in other areas, people were in want due to lack of purchasing power.

Former Maharashtra Governor C. Subramaniam called for a 're-organisation of Indian science' as was done for agricultural science in the sixties which enabled India to become self-reliant. "Otherwise liberalisation will not succeed. We cannot become dependent on imported technology. A corresponding programme for the rural and agricultural sectors is also needed."

Welcoming the gathering, Mr M. S. Swaminathan said that the J.R.D. Tata trust would provide core support to the tune of Rs 1.84 crore, for an 'eco technology centre' at MSSRF. The centre, to promote environmentally sound technologies, will be built on land adjoining MSSRF, provided by the state government. Mr P.R.Das Gupta, secretary, ministry of human resource development, welcomed on behalf of the government of India.

MSSRF head of informatic centre Dr V. Balaji proposed a vote of thanks.

Picture on page 4.

UNESCO Chair to be set up at MSSRF

From Our Staff Reporter

MADRAS, Feb. 4.

A UNESCO-COUSTO Chair to promote ecotechnology programme throughout the Asian region and a "JRD Tata Centre for Ecotechnology" are to be set up at the Dr. M. S. Swaminathan Research Foundation (MSSRF) here.

The Chair was being established in recognition of the contribution of the Foundation in a number of areas, Prof. Federico Mayor, Director General, UNESCO, announced here today. In addition, a network linking the entire Asian region to "widespread" the emerging ecotechnology would also come up at a cost of US $200,000, he said. The modalities of the network would be worked out soon.

An outcome of the network would be creation of employment related to the safeguarding of environment, called "ecojobs," he said.

Prof. Mayor was inaugurating the Regional Workshop on "Ecotechnology and Shaping the Future," organised jointly by UNESCO and MSSRF.

The ecotechnology centre, to be established at a cost of Rs. 1.84 crores, would focus on research, development and diffusion of environmentally sound technologies in rural areas based on a participatory mode. It would examine the environmental, social and economic sustainability of various technological options resulting from the blending of traditional technologies with biotechnology, information, space, renewable energy and management technologies, Dr. Swaminathan said. It would also encourage information dissemination, undertake research on public policies and promote capacity building and awareness generation.

Prof. Mayor said the scientific community and academicians should join the endeavour for mobilising rebellion against the present global situation wherein 20 per cent of the population was enjoying 80 per cent of the resources. This disparity was the root-cause for many of the complexities in the world. The joint target should be "inclusion of the excluded".

Speaking further on exclusion, he said educational exclusion was at the root of disparities. Even the traditional systems were not free from this. Everybody should be made literate so that all could participate in the process for a real democracy.

Nobel laureate and author of "Green Revolution," Dr. Norman E. Borlaug, said a large majority of people in the advanced world were unaware of the ecology of production and did not know where their food came from even as many in the third world were eking out a living from a "piece of land". The third world was suffering for want of food, despite surplus production of foodgrains worldwide.

Govt. decides to revive FCI, HFC units

From Our Special Correspondent

KOCHI, Feb. 4.

With a view to sustaining the urea production in the country, the Union Department of Fertilizers has decided to implement a revival plan for the Fertilizer Corporation of India (FCI) and the Hindustan Fertilizer Corporation (HFC) by pumping in more than Rs. 2200 crores, said Mr. Ram Lakhan Singh Yadav, Union Minister for Fertilizers and Chemicals, here today.

Addressing a press conference at the Udyogamandal headquarters of FACT here this morning, the Minister said the BIFR which had declared the two major fertilizer units as 'sick' had appointed the Industrial Credit and Investment Corporation of India as the operating agency for FCI and HFC. The revival package envisages rehabilitation of Sindhri, Ramagundam and Talcher units of FCI and Durgapur, Barauni and Namrup units of HFC through revamp. This would entail a fresh investment of Rs. 1736.20 crores for FCI and Rs. 464.93 crores for HFC apart from capital restructing and other financial concessions. The Minister said efforts were being made for tie-up funds from external sources to reduce the budgetary support and in principle, the Union Government had approved it. The implementation of these revival packages would enable the sustenance of indigenous urea production capacity to the tune of 23 lakh metric tonnes per annum. A final decision would be taken in the next two months said the Minister.

He pointed out that the Essential Commodities Act allocation of urea for rabi crop (95-96) had been enhanced to 108 lakh metric tonnes, seven per cent higher than the previous year. The sale of urea in the rabi season up to January 15 amounted to 53.5 lakh metric tonnes nearly the same level for the corresponding period of last year.

To meet the requirements of urea during the current rabi season, a significant step up, both in indigenous production as well as imports, has been effected, he said. The indigenous production of urea has been 122.5 lakh metric tonnes till January middle this year. Similarly 32 lakh metric tonnes of imported urea has been handled from April to January, which is 8 lakh metric tonnes higher than that of the corresponding period last year.

Cauvery: Kerala's plaint against Centre

From Our Staff Reporter

KOCHI, Feb. 4.

The Irrigation and Culture Minister, Mr. T. M. Jacob, today said the Central Government was lukewarm to Kerala's claim for its share of the Cauvery waters.

At a seminar on water management organised by the Rotary Club here on Sunday, he said some 147 tmcft. of Kerala water went into the Cauvery system. But, of the total 740 tmcft. of Cauvery waters, the State got only 11 tmcft and it had a right to the remaining 136 tmcft. Kerala had staked its claim for only 99 tmcft, but the Centre was not even ready to call Kerala to take part in the negotiations. He hinted that the Centre was biased against Kerala over the Cauvery waters.

He said no Government in the past had taken the initiative to press for the State's share from the Cauvery waters. The present Government had appointed a liaison officer in Delhi to take care of Kerala's interests.

He said the State had presented 21 water projects to the Centre for clearance but so far only one had been approved. The Kerala Water Authority had plans for Rs. 2000 crores worth of projects, but money was standing in the way of implementation.

States urged to adopt uniform granite policy

MONDAY FEBRUARY 5 1996

Nobel laureate Borlaug, C. Subramaniam, Federico Mayor, M.S. Swaminathan and Mohamed T. El. Ashry at the inauguration of the eco-technolgy workshop on Sunday. *Express*

'Indigenous solution vital for sustainable growth'

From Our Staff Reporter

MADRAS, Feb. 5.

The need for sustainable development, a positive approach towards ecotechnology and an Indian model for development dominated a public discussion on "ecotechnology and shaping the future" at the Indian Institute of Technology (IIT) here today.

The course of reforms adopted by the country, the pursuit for greener pastures abroad and the working pattern of the IITs also came in for criticism at the discussion organised by the Dr. M. S. Swaminathan Research Foundation in association with the IIT.

Striking a highly critical note against the reforms route and the brain drain from the country, Dr. Ashok Khosla, Chairman, Development Alternatives, said the ongoing changes would result in a situation worse than that existed before. Already there were indications to this effect.

The modern economic growth would need at least US $ 100,000 for creating a work place alone. Therefore, to create employment for all, it would need ten times the country's GNP which was impossible. Though marketplace was extremely effective, it was "greedy and totally insensitive to issues like poverty and environment". The country needed development that could be sustainable and hence the answer should arise indigenously. Turning to the students of the IIT, he said the IITs had no future if they continued the present trend of producing talents for the western market at public expense. The country gained nothing from this huge investment.

Answering the oft-repeated complaint that India did not have challenging opportunities for the technically qualified people, he said, designing sustainable projects for the poor was the most intellectually demanding task. The villages offered more challenges than the companies in the west. He called on the students and the public not to forget the people in the villages. "Where will they get the expertise from?," he asked. To a question, he said there were enough feasible Indian models of development.

Dr. (Ms.) Wakako Hironaka, former Minister for Environment, Japan, said environmental policy and economic growth could be mutually supportive. Indian economic growth should integrate with environmental protection, she said referring to the pollution control drive undertaken by her country in the seventies following rapid industrialisation. The lesson Japan learnt during the post-war industrialisation was that taking precaution was more effective than taking a remedial step later.

Prof. Federico Mayor, Director General, UNESCO, said the approach towards ecotechnolgy should stem from local experience and should be reflective of the experience of the people in the local area. In the advanced world, sharing of working hours was turning out to be the alternative in creating jobs.

Dr. Mohamed T. El-Ashry, Chairman, Global Environment Facility, said energy development resulted in pollution and hence management of energy development in effect was management of pollution. India was one of the beneficiaries of the US $ 2 billion Global Environment Fund, he said. Dr. Norman Myers, world leader on Environmental Issues, said due to environmental pollution, the world was losing a large number of species every day.

Some members of the audience suggested that the reform model could be given a try after several years of protected environment. While some rebuked the pursuit of 'dollars' by IIT students and the yearning to earn foreign exchange through exports to flooded western markets, some argued that there the country had no infrastructure to offer to the IIT products.

Dr. M. S. Swaminathan, reknowned agricultural scientist, introduced the speakers. Dr. R. Natarajan, Director, IIT was present on the occasion.

'India will be Security Council member soon'

6/2/96

EXPRESS NEWS SERVICE

MADRAS, Feb.5: India is likely to become a member of the United Nations Security Council 'before long', United Nations Educational, Social and Cultural Organisation (UNESCO) director-general Federico Mayor said here on Monday.

Talking to mediapersons, he said there was a definite need to "update" the Security Council to reflect a changed world scenario, and along with India, Japan and Germany were also likely to be included.

UNESCO resident representative in New Delhi John Kingston added that this was likely to happen within 18 months, depending upon the next UN General Assembly. "Most of the western countries would vote for India, as would the Latin American countries. One or two of the Asian countries may not," he said.

Prof Federico Mayor, director general, UNESCO, addressing a press meet at the M S Swaminathan Research Foundation, Taramani, on Monday. On his right is Dr John V Kingston, UNESCO representative to India.

Mr Mayor, who is in the City to participate in an ecotechnology workshop organised by the M.S. Swaminathan Research Institute, said there was need to invest the Security Council with a capacity for "rapid action," and a capacity for dealing effectively with human rights. "Look at what happened in Bosnia, they were so unprepared."

ERADICATION OF POVERTY: The director general has declared 1996 as the 'International Year for the Eradication of Poverty.' "The gap between the rich and the poor is not just a transnational issue, but an 'international issue.' Even the richest countries have poor people. The 'fork' can be as high as one to 25.

"Countries should commit themselves to the task of eradicating poverty, and we believe that the first step is the empowerment of women and girls through education. At a recent UNESCO meeting in New Delhi, nine populous countries, including India, have agreed to set aside six percent of the Gross National Product (GNP) for this purpose, by year 2000. It is intended to have women holding 30 percent of decision-making posts by this period," he said.

The World Bank in 1990 was lending one billion dollars per year to UNESCO for educational programmes. In 1996 this had increased to three billion dollars. "But we must remember, these are loans. Each country has to create capacities for itself." Loans and the like contributed to an "immense inertia" against change, he said. Stressing the importance of the concept of life-long education, and 'Learning without frontiers (LWF) - without age, language, cultural, and geographical frontiers, he said that a whole team had been set aside for the purpose.

He also noted that capital flow through electronic systems were to the tune of one trillion dollars per day. Such transfers facilitated money laundering, he observed.

The USA and the UK had withdrawn from UNESCO mainly because of 'communication' problems. But Mr Clinton had recently stated 'unequivocally' that America would be rejoining UNESCO. "They are already participating in many programmes."

THE HINDU, Tuesday, February 6, 1996

UNESCO chief for change in Security Council format

From Our Staff Reporter

MADRAS, Feb. 5.

The functions and composition of the Security Council should be changed to enable it to tackle the threats faced by the present world, Prof. Federico Mayor, Director General of UNESCO said here today.

The Security Council should represent the present world and not the world in 1945, he said, strongly advocating the entry of India, Japan and Germany.

The global scenario at the time of the formation of the Security Council had changed considerably and so also the threats facing the world. The massive human rights violation like the genocides in Rwanda, Cambodia and Bosnia were representative of the problems of the contemporary world and hence the Council should be equipped to face them.

Prof. Mayor, who is in the city for attending the Asian Regional Workshop on 'Ecotechnology and Shaping the Future' jointly organised by UNESCO and Dr. M. S. Swaminathan Research Foundation (MSSRF), was speaking to reporters.

The UNESCO chief said the best method the eradication of poverty was education women. Thirty per cent of the decision-making posts in future would be occupied by them. The UNESCO's call to all countries, as part of its 'Education for All' campaign, was to achieve a 6 per cent spending of the GNP on education. The agency's 'Learning Without Frontiers (LWF)' programme proposed to educate people across the barriers like age, geography and economic status. It was also developing an educational programme for people above 60, he said.

The education drive would have a snowballing effect resulting in a substantial increase in literacy. About 72 per cent of the illiterates in the world belonged to nine countries including India, Bangladesh, Brazil and Mexico. To a question on the efficacy of these programmes in view of the massive corruption at various levels of implementation, he said there was a definite improvement in achieving literacy except for sub-Saharan Africa. In the last eight years there had been concrete increase in literacy in Latin America and Asia. Earlier, with about 60 per cent of the world under Soviet control, proper statistics were not available. He, however, admitted that the progress had been slow.

On poverty, he said the sharing of global resources had been improper and the gap between 'haves and have nots' on an increase. On the link between the conspicuous consumption by the rich countries and poverty, he said it was not a trans-national issue alone. Even within poor countries, the disparity in consumption was huge. If in some Nordic countries, which had undertaken a redistribution of wealth, the disparity was 1:7, in the rich nations it was 1:25. Another disturbing tendency is that the unmindfully consumerist younger generation took the resources for granted. To reduce poverty, this disparity in consumption had to be brought down.

It was 'indispensable to have high morality', Prof. Mayor said referring to the 'trans-national problem of distribution' and the 'flux of capital'. With the electronic transfer facility, the scale and speed of money flow was out of control facilitating laundering and corruption. Countries should willingly address the problems such as consumption, drug trafficking, money laundering and corruption and reshape their future, he said, adding that it might be construed as an 'utopian' aspiration.

On 'ecojobs,' he said thousands of jobs would be required for the preservation of ecology. He denounced distant and 'emotional ecology'. The 'concrete people' living in 'concrete areas' had to be kept in mind before making general guidelines on issues related to ecology.

The two pillars of the agency were human resource development and eradication of poverty. Empowerment of each citizen was its aim. About poverty eradication programmes, he said the promotion of handicrafts embarked upon in Bangladesh in association with the Gramin Bank had paid off. The same had been planned for Brazil too.

TUESDAY FEBRUARY 6 1996

Importance of preserving bio-diversity stressed

EXPRESS NEWS SERVICE

MADRAS, Feb.5: The need to preserve the bio-diversity that existed on planet Earth, in a scenario where 50 animal and plant species were disappearing every day, was stressed at a public discussion on 'ecotechnology and shaping the future,' organised by the M S Swaminathan Research Foundation and the Indian Institute of Technology, Madras.

British environmentalist Norman Myers said there was a romantic attraction to saving species like the tiger, but other species were also crucially in need of preservation.

''Out of the 50 species, many are plant species, and they could be of immense medicinal value. There is one chance in four, that if you walk into a pharmaceutical shop and ask for a medicine, that it could contain a plant extract. Scientists have tapped only one in a possible 100 plant species for medicinal value.''

He cited a recent case where a plant had been discovered in Silent Valley in Kerala. The valley was preserved after a strong environmental lobby.

''India has 17,000 plant species, more than the US and Canada has put together. And 5000 of those are exclusive to India, they are not found anywhere else in the world. If Britain were to be suddenly wiped out of the earth, the loss of species to the world would be - nil.''

He said though many species were already lost, there was still ''an extraordinary opportunity'' to save millions of species.

Mr Mohamed T. El. Ashry, chief executive officer and chairman of the Global Environment Facility, Washington, a major funding mechanism for conventions like those on bio-diversity and climate change, said that the environment must not be seen as ''something nice to look at,'' but as a precious resource.

India is a beneficiary of an eco-development project covering eight states, with grants from the World Bank and other bodies amounting to 20 million dollars, he noted.

UNESCO director general Federico Mayor outlined various programmes initiated by the UN body, and stressed the need for 'watch towers' to ensure sustainable development.

Dr Wakako Hironaka, former Japanese environment minister, said that after Japan began to rebuild itself after the war, they early on realised the need for environmental preservation in the 70s, and were thus reaping its benefits.

Dr. Ashok Khosla, of Development Alternatives, Delhi, said that the central issue facing the country today was the creation of jobs and livelihoods, and increasing purchasing power.

He said that in today's modernised economy, 100,000 dollars were being spent per work place. Ten times the GNP would be needed in this approach, to create all the jobs needed, he said.

Though the market place was efficient, it was insensitive and blind to many social concerns, he remarked. IITs would not survive if they went on the way they did ''producing students for export.'' He urged students to work for the country, whose people's tax money was spent to educate them.

MSSRF chairman M S Swaminathan welcomed the gathering.

MONDAY. FEBRUARY 26, 1996

Swaminathan calls for emphasis on ecological security

By A Staff Reporter
PUNE, February 25

IN order to protect the basic life-support systems of land, water, bio-diversity, forests and the atmosphere, the present Union ministry of environment and forests should be re-organised as the 'ministry for ecological security' and the basic policy instruments for this purpose should be created, said the eminent scientist, Dr M S Swaminathan, here today.

He was speaking on 'Agenda 21: Sustainable development' at a function organised by 'Vanarai', a Pune-based voluntary organisation for rural development, at the Mahratta Chamber of Commerce and Industry.

Dr Swaminathan informed that 'Agenda 21' was a set of 40 different global-level action programmes designed to integrate the principles of environmental sustainability in all areas of development. The programme was adopted at the United Nations conference on environment and development at Rio de Janeiro in June 1992. While China was among the first to develop a detailed programme, India was yet to initiate action in this regard, he said.

Dr Swaminathan said that while the economic, environmental and social aspects were the "triad of sustainability", the concept was seen to become increasingly holistic.

Maintaining that whatever the political affiliations, our fates were "intertwined" so far as the ecology was concerned, Dr Swaminathan informed that the World Wide Fund of India (WWF-I) and the National Academy of Agricultural Sciences of India (NAAS) had conveyed to political parties suggestions for incorporation in their respective election manifestoes. These comprise a six-point 'Green Charter', a five-point action plan for building a national ecological security system and a three-point programme on achieving food and livelihood security. All these, he said, formed the basic foundation of the country's 'Agenda 21'.

Dr Swaminathan said that only ten per cent of the country's forest-canopy had the required density. The rest was in varying stages of degradation. In view of this, he called for a veritable movement for forest-upgradation in the country.

Earlier, the president of 'Vanarai', Mr Mohan Dharia, introduced the speaker. Mr Annasaheb Beharay and the vice-chancellor of the Mahatma Phule Agricultural University, Mr Sambhajirao Dorge, were also present on the dais.

Common agenda for action

By M. S. Swaminathan

WE have entered an era of political pluralism. National parties are losing ground, while regional parties are gaining in strength. While political diversity and pluralism are vital for the growth of democratic traditions and institutions, there are issues which transcend political frontiers and hence need national consensus for their effective solution. Our political parties are currently drafting their manifestos and hence this is an appropriate time to appeal to them to develop a common agenda for dealing with issues which will determine the quality of life of the present and future inhabitants of the country.

Rapid population growth, widespread poverty and deprivation and increasing damage to the basic life support systems of land, water, forests, biodiversity and the atmosphere are the three major threats to a better common present and future. These are concerns of every Indian and hence provide a basis for a common platform for action among all political parties — both national and regional.

The World Wide Fund for Nature — India and the National Academy of Agricultural Sciences (NAAS), two of our major professional organisations, recently appealed to all political parties to include in their manifestos a commitment to ecological and livelihood security. Since this is probably the first time in our election history such an appeal has been made, I would like to refer briefly to the suggestions of WWF — India and NAAS.

We recognise that the protection of the environment is crucial to human a survival and well-being now and in the future. We acknowledge that it is only through a careful stewardship of the Earth's resources — air, water, land, flora and fauna — that we can advance towards a national ecological security as well as to achieving the goals of food, drinking water and work for all.

We realise that in order to progress towards development with equity, we must use the renewable resources responsibly, protect and safeguard those resources that are not renewable, and, above all, curtail over-consumption of all resources.

We believe that the exponential growth of the human population and spiralling conditions of poverty, along with ever-increasing industrial and commercial pressures on the natural resources, are the major contributory factors to the worsening environmental crisis in the country. We are convinced that this national crisis has to be addressed in all earnestness and with utmost urgency. To this end, we commit and declare that:

Since both unsustainable lifestyles and unacceptable poverty have to be ended, priority attention shall be given to curbing greed and ostentation, on the one side, and to meeting the genuine livelihood needs of the poor, on the other.

With a view to giving the utmost emphasis to the protection of basic life-support systems of land, water, biodiversity, forests and the atmosphere, the Ministry of Environment & Forests at the Centre shall be developed into a Ministry for Ecological Security, and the basic policy instruments for this purpose shall be created.

The twin-threats of environmental and social disintegration can be overcome only through a coalition of the concerned.

In order to promote meaningful people's participation in nature conservation, a multipronged strategy shall be adopted:

a) to involve the elected panchayats, nagarpalikas and zilla Parishads; b) to empower the people through timely access to information especially on all issues relating to the conservation and sustainable use of natural resources; and c) to harness the education system from the nursery school to the university inculcating among the students an attitude of love and care for nature.

Special attention shall be accorded to the promotion of eco-technologies in agriculture, industry and the services sector and to improving the efficiency in the use of energy and all natural resources contributing to the Gross Domestic Product (GDP).

About 50 per cent of the country's population will soon be living in the towns and cities. Therefore, a programme for promoting "sustainable cities", in terms of safe drinking water, sanitation, waste management, health care, transportation and pollution control, shall be implemented through the municipal bodies.

Since a balance between population and supporting eco-systems is crucial for the nation as a whole, the population policy shall be directed to promoting this aim and at making family welfare a people's movement, involving all sections of society, and at creating the conditions in which children are born to be happy and not merely for existence. Based on the above charter for achieving harmony with nature, I suggest the following action plan for building a national ecological security system.

The Common Platform for Action should include the following steps:

A massive programme of awareness generation should be launched leading to the establishment of nature clubs in every village, town and city and to the mobilisation of the printed and electronic media.

Every panchayat/nagarpalika should be made responsible for ensuring clean air, soil and water, for garbage and sewage recycling and for the sustainable management and use of common property resources.

A National Sustainable District Forestry Programme (SDFP) should be introduced in all the districts of the country. SDFP should include the following three groups of Forestry activities.

(a) Conservation Forestry: All government forest land should fall under this category. Priority should go to the rehabilitation of degraded forests and to the conservation and inventorying of biodiversity.

(b) Community Forestry: This will be planned, planted, harvested and controlled by the local community in panchayat or municipal land and will be designed to meet the felt needs of the community.

(c) Commercial Forestry: This will be undertaken by the corporate sector, both large and small, in private waste lands, using the best available technologies. Reclaiming wasted lands and meeting the raw material needs of large and small industries will be the twin aims of commercial forestry.

Environmental monitoring, surveillance and impact analysis: An environmental monitoring and surveillance system should be developed at the local, state and national levels. About 20 per cent of our population remaining below the poverty line are undernourished and often malnourished. Endemic hunger today is the result of poverty and is not due to non-availability of food in the market. The country has now reached a stage of development when given appropriate technologies, services and public policies, the problem of chronic hunger can be overcome. For this purpose, it is suggested that the following action plan may be included in the manifestos.

Definition of food security: "Sustainable food security involves strengthening the livelihood security of all members within a household by ensuring both physical and economic access to a balanced diet, including the needed micronutrients, safe drinking water, environmental sanitation, basic health care and primary education".

To achieve sustainable food security, action will be initiated for providing the necessary legal and administrative framework in the form of a National Sustainable Food and Livelihood Security Act. Such an act will contain provisions for concurrent attention to: (a) the conservation of the natural resource base (i.e., land, water, forests, biodiversity, oceans and the atmosphere), (b) the promotion of eco-friendly technologies for enhancing the productivity, profitability and sustainability of agriculture, and (c) the introduction of public policies for ensuring access to food and nutrition.

Such a National Sustainable Food and Livelihood Security Act could be developed through a process of consultation and consensus among all political parties and between the States and the Centre so that is represents the expression of the collective will of all our people to ensure that every child, woman and man achieves his or her full potential for physical and mental development and leads a productive and healthy life. Such an Act based on an all-party national consensus can come into force on August 15, 1997, which marks the 50th anniversary of our independence. Based on such an Act, a Hunger-Free District Programme can be introduced in all the districts of the country during the Ninth Plan.

The twin-threats of environmental and social disintegration we are witnessing today can be overcome only through a coalition of the concerned. Is it too much to ask the political parties to be concerned with issues which impact the life of every Indian, including the generation yet to be born and to develop a common agenda for action?

What is a biovillage?

Contemporary development is associated with four distressing features:

- *A widening rich-poor divide in per capita income.*
- *Damage to the basic life support systems of land, water, the atmosphere, forests and biodiversity.*
- *Jobless economic growth.*
- *Growing feminisation of poverty.*

Such pathways of development are both environmentally destructive and socially disruptive. There is, hence, a search today for an alternative developmental paradigm which will foster job-led economic growth rooted in the principles of ecology, equity, economic energy efficiency and employment generation.

The Biovillage model of rural development provides one such alternative, as it pays concurrent and integrated attention to natural resource conservation, productivity improvement and poverty eradication. The model is based on the identification and promotion of market-driven small-scale enterprises, which lend themselves to decentralised production supported by a few key centralised services. Economic viability is essential for replicability, while environmental soundness and gender equity are essential for ecological and social sustainability. It requires a process of learning by doing, and a close partnership with stakeholders. Thus, the Biovillage Project is cast on a participatory action mode with resource-poor farm families, scientists and financial institutions working and learning together.

M.S. Swaminathan

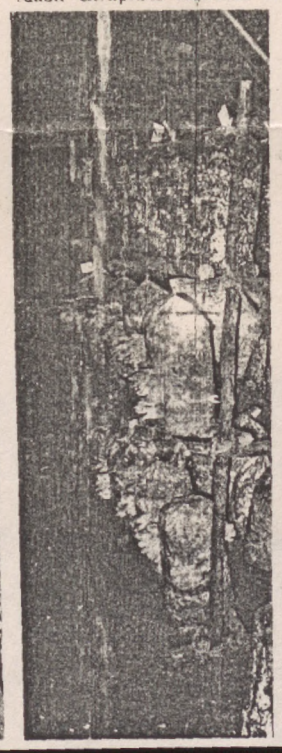
The Green Revolution's Swaminathan is now

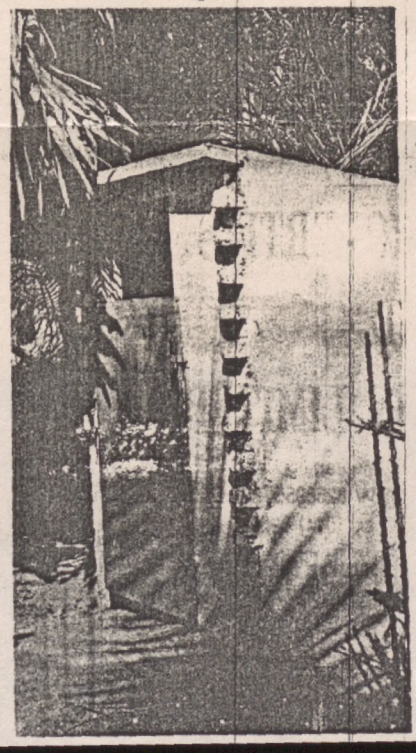
Propagating biovillages

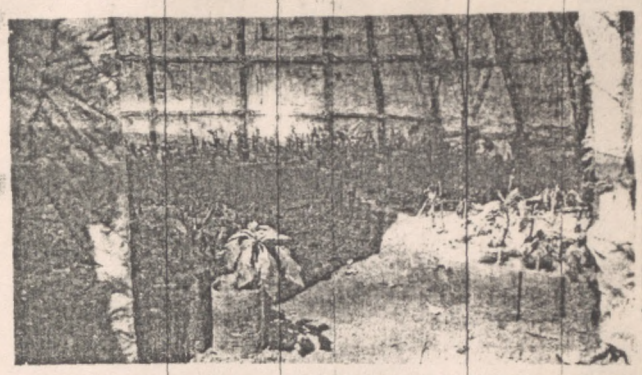
The M S Swaminathan Research Foundation's (MSSRF) Centre for Research on Sustainable Agricultural and Rural Development (CRSARD) initiated a trial biovillage programme in 1991 in the villages of Pillayarkuppam, Kizhur and Sivaranthakam in the Union Territory of Pondicherry. The aim of the experiment was to use Biotechnology to improve productivity, profitability, stability and sustainability in small-scale agricultural and aquaculture operations and, thus, empower resource-poor rural families.

Above, making coir rope in the family's home garden and, below, packing vermicompost for sale.

Seen in the biovillages ... (from left to right): An azolla nursery; Earthworms for the vermicompost heap; Bags packed with straw sprouting mushrooms; and a model toilet







From top: A locally designed mist chamber for the plant nursery. An aquaculture pond that does not prevent the washing of clothes in it; and a fodder plot that feeds a family's cattle. (All photographs by RAJIND N CHRISTY).

The biovillage programme has now spread to 19 villages in Pondicherry, representing three biophysical environments — uplands, lowlands, and low wetlands — and socio-economic situations ranging from landlessness to a significant presence of small and medium farmers. The 19 villages extend over 3680 hectares and have a population of over 24,000 persons in nearly 5000 households.

The project receives support from UNDP, from the participants themselves (who offer their labour), commercial banks offering working capital, the Government of the Union Territory of Ponicherry providing infrastructure and support, and channelised government assistance rendered under the poverty-alleviation and employment-generation programmes.

Income and employment-generation enterprises identified for the resource-poor have been mushroom production, group sericulture, community fodder plantation, hybrid vegetable production, group aquaculture, nutrition gardening and, for landless women, sericulture, commercial vegetable production, integrated aquahorticulture in brick kiln land, broiler production based on local feed resources, *azolla* production as a bio-fertiliser, environmental sanitation, and biogas production. The small farmers involve themselves in jasmine and crossandra *(kanakambaram)* flower production. There are flower nurseries for marginal farmers.

In **Pillayarkuppam,** Rani Nagappan, a landless women who works as an agricultural labourer, had a milch cow which was an additional source of income. She was made aware of composite fodder usage, which has increased milk production and reduced feeding costs by 30 per cent. The project then helped her to procure two crossbred milch animals with financial assistance from the State Bank of India. She has established a homestead fodder plot on 0.1 ha with *agathi*, and *subabul* seed[illegible] along the border.

She feeds the cows the composite fodder and earns about Rs. 1200-1300 per month from the milk production. She pays back Rs. 400 a month towards the loan. She uses the dung and urine of the livestock as organic manure for the fodder plot.

There was no common threshing floor in the village. A 689 sq m community threshing floor was made possible by the District Rural Development Agency in 1994, and a 13-member committee now maintains it.

Ramaswamy, an innovative farmer, who owns a hectare of land, cultivates paddy and sugarcane. He uses *azolla*, a water fern, which is a weed suppresser and soil conditioner, as an environment-friendly technology to reduce the use of chemical fertilisers. Application of this technology has helped him in yield and profit. Many other farmers have also adopted this technology to improve their agricultural performance.

A vermicentre serves as training-cum-demonstration centre for the resource-poor and is run by an unemployed youth. The waste from different sources is decomposed with the help of earthworms as vermicompost. The vermicompost is sold to the village farmers and urban gardeners. The centre also trains landless women to take up

(Continued on P6)

United Nations Educational, Scientific and Cultural Organization

New Delhi - April 1996, Vol. 4 No. 1

New Ecotechnology Chair Created

UNESCO's Director General Mr. Federico Mayor has announced the creation of a UNESCO-Cousteau Ecotechnology Chair and an endowment of US$200,000 to give an initial impetus to a new ecotechnie network.

The announcement was made during Mr. Mayor's inaugural address at the *Asian Regional Workshop on Ecotechnology and Shaping the Future* organized by the M.S. Swaminathan Foundation and UNESCO. Mr. Mayor said that the Chair had been created in recognition of the Foundation's "outstanding work in a number of areas of high relevance to ecotechnie, in particular the biovillage concept and the blending of traditional knowledge with advances in modern biological technologies."

Prof. M.S.Swaminathan, a world renowned scientist, will be the first holder of the Chair.

The workshop was held on 3-7 February 1996 at the Swaminathan Research Foundation in Madras to assess the current status of ecotechnology and to develop an agenda for spreading the message and methods of ecotechnology in Asia. The word ecotechnology which has gained currency recently signifies a new approach to decision-making - one which integrates economics, technology, the natural and social sciences - in an effort to consider management alternatives and the long-term consequences of development.

Mr. Mayor said that the need of the hour was "eco-jobs". This signified both employment and saving the environment. He hoped that the workshop would result in the creation of such ecologically sustainable jobs. Dr. M.S.Swaminathan formally announced the support of the Tata Trust for the establishment of a JRD Tata Ecotechnie Centre at the Swaminathan Foundation. Moreover, a seminar room was formally dedicated to the 1971 Nobel laureate Dr. Norman Borlaugh, popularly known for having fathered the green revolution and for his work on high yielding varieties of wheat.

continued on page 2

volving scientists was dismised as "baseless and untrue", leaving a big blot on the reputation of the IB and Kerala Police. What case?

13. Name the documentary on 'mystic music' which has won the Swarna Kamal award in the non-feature film category of the 43rd National Film Festival.

14. Who recently won the men's world professional snooker crown for a record-equalling sixth time?

15. Which cricket team regained the PalāyampattiShield,the symbol of supremacy in the MAC-TNCA senior division league?

* * *

16. In 1886, Helena Blavatsky and Henry Olcott established the world headquarters of their spiritual movement at *Huddlestone Gardens* in Adyar. What movement?

17. Which locality of Madras owes its name to a sacred lily pond that is believed to have existed there?

18. Down on Elliott's Beach in Besant Nagar is a poorly maintained memorial to a Danish sailor who died while saving an English girl from drowning. The edifice has featured in many films. Name it.

19. The first church built by the British east of Suez is in Madras. Where?

20. Two of the finest buildings in Madras, the University of Madras (especially its *Senate House*) and the Presidency College, are designed in a distinct form of architecture Name it and the architect.

(Answers on p.8)

lege. Like most educated young men in the districts in those days, he made his way to the metropolis and joined Madras Christian College, then functioning in George Town opposite the Madras High Court. Venkata Reddi took his B.A. degree in Mathematics in 1894 and went back to Rajahmundry where he worked as a school-teacher and, later, as a college lecturer. Ambition to move ahead brought him back to Madras to study law. He then went back to Rajahmundry to set up practice.

to resign from Congress and join the Non-Brahmin Movement founded by Dr T M Nair, Dr C Natesan and Sir Pitti Theyagaraya Chetti. Soon, he made a mark in it by moving a resolution at its second annual conference seeking communal representation in government jobs. This Conference brought him into the limelight and when a delegation of Non-Brahmin leaders went to England to appear before the Joint Parliamentary Committee, he was in the team.

While in England he also qualified himself as a Barrister

ish Indian government bestowed on him a knighthood, and Sir Kurma Venkata Reddi Naidu was appointed the Agent-General of the Indian Government in South Africa in 1929. It was a prestigious office in that era and was held by the likes of Rt. Hon'ble V S Srinivasa Sastri and Sir Mohammed Habibullah.

Back home from South Africa, Sir Kurma was appointed the Law Member of the Government of Madras. Under the dyarchy system, this important portfolio was under the control of the British and the office had

wealth to have their own saloons to travel.)

Sir Kurma lived in a palatial bungalow at the south end of Boag (pronounced Bo-ag) Road. This stately building was later acquired and remodelled by the Indian super star Sivaji Ganesan, who still lives in it. South Boag Road is now renamed Chevalier Sivaji Ganesan Road. Sir Kurma is forgotten.

(**Note**: Randor Guy is abroad. He will resume his articles on his return.)

COOKING with Chandra

Stay cool this summer with fresh salads. Make then any way you like — with green vegetables or ripe fruits. It's the healthy way to beat the heat.

RIPE BANANA SALAD

6 ripe bananas, diced
1 tbs honey
½ cup grated coconut
2 tbs raisins
1 tbs lemon juice
2 tbs chopped walnuts

Method

Arrange the diced bananas in a bowl. Sprinkle the lemon juice. Mix well.

Add the honey, grated coconut and raisins. Toss well.

Serve garnished with walnuts. Serves 4.

PEANUT-MUNG SPROUT SALAD

1 cup boiled peanuts
1 cup *mung* sprouts
2 spring onions, chopped fine
¼ cup grated raw mango
1 green chilli, chopped fine
Salt and pepper to taste.

Method

Mix the peanuts, *mung* sprouts, raw mango and chopped spring onions. Add salt and pepper to taste. Toss well and serve.

Serves 4.

CHICK PEAS SALAD

1 cup chick peas
1 tbs lemon juice
1 green chilli, chopped fine
¼ cup finely chopped spring onions
Salt and pepper to taste
1 tbs oil
A small bunch coriander leaves, chopped fine

Method

Soak chick peas in sufficient water for at least eight hours. Pressure cook and drain well.

Add lemon juice, chopped greeen chilli, chopped spring onions, oil, pepper and salt. Mix well.

Serve chilled, and garnished with coriander leaves.

CREAM CHEESE CURD POTATO SALAD

1 litre freshly-set thick curd
1 bunch fresh lettuce leaves
350 g baby potatoes, boiled and peeled
½ tsp chilli powder
¼ tsp asafoetida powder
1 tsp cumin seeds, dry roasted and powdered fine
2 tbs chopped coriander leaves
1 tbs mint leaves
Salt to taste

Method

Pour the fresh curd onto a clean muslin cloth and hang for 1½-2 hours till all the whey is drained.

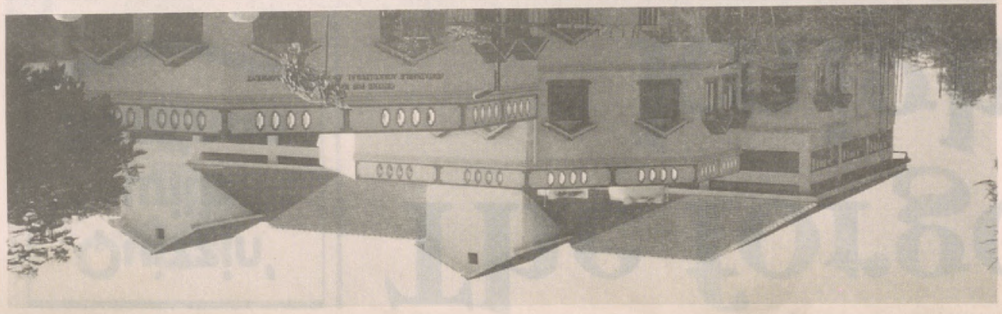
Set aside the cream cheese.

Arrange the boiled potatoes in a bowl. Add the salt, chilli powder, asafoetida powder and cumin seeds powder. Mix well. Add the cream cheese and mix well.

Arrange the potatoes on a bed of lettuce leaves in a salad bowl. Garnish with chopped mint and coriander leaves. Serve chilled.

— Chandra Padmanabhan

A model home for



M. S. Swaminathan Foundation wins Blue Planet Prize

From G. Venkataramani

MADRAS, June 5.

The M. S. Swaminathan Research Foundation (MSSRF), a non-profit organisation in Madras has been chosen for the fifth Blue Planet Prize for 1996. Dr. Wallace S. Broecker, Newberry Professor of Geology at Columbia University in the U.S. is the other winner of the prestigious international award for 1996.

The award instituted by the Asahi Glass Foundation, Japan, annually selects two recipients — individuals group and organisations — for their contributions to the resolution of global environment problems. The award was first given in 1992 at the United Nations Conference on Environment and Development in Rio de Janeiro.

The M. S. Swaminathan Research Foundation supports the promotion of sustainable agriculture and rural development with methods that include the preservation and sustainable utilisation of biodiversity, the improvement of soil and plant health using environmentally friendly methods, and the creation of eco-jobs for rural families. The research foundation, chaired by Prof. M. S. Swaminathan, is the first Blue Planet Prize winner from Asia.

Dr. Broecker has made major contributions to the understanding of climate change and global warming through his research into global ocean currents and ocean chemical cycles, particularly the carbon cycle.

In addition to public recognition, each Blue Planet prize winner will receive 50 million Yen (Rs. 1.60 crores), and it will be presented at a special ceremony in Tokyo on October 31.

The recipients will deliver commemorative lectures at the United Nations University in Tokyo on November 1.

The past winners of the prize are: Dr. Syukuro Manabe of the U.S., International Institute of Environment and Development (IIED), U.K., Dr. Charles D. Keeling of the U.S., IUCN- the World Conservation Union, Switzerland, Prof. Dr. Eugen Seibold of Germany, Lester R. Brown of the U.S., Dr. Bert Bolin of Sweden and Dr. Maurice F. Strong of Canada.

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The Hindu
BUSINESS LINE

MSS Foundation shares Blue Planet Prize

Our Special Correspondent
MADRAS, June 5

THE M. S. Swaminathan Research Foundation shares the 1996 Blue Planet Prize with Dr. Wallace S. Broecker, Newberry Professor of Geology at Columbia University, US. Presented annually to two recipients, the prize commends individuals, groups and organisations whose achievements have contributed to the resolution of global environment problems.

In addition to public recognition, each Blue Planet Prize winner will receive Yen 50 million. An awards ceremony will be held at the Imperial Hotel in Tokyo on October 31, 1996, and the recipients will deliver commemorative lectures at the United Nations University in Tokyo on November 1.

The Blue Planet Prize was established in 1991 by the Asahi Glass Foundation to express appreciation for the achievements of individuals, groups and organisations conducting noteworthy research and activities leading to the solution of environmental problems. The winners receive a certificate of merit, a commemorative trophy and a supplementary prize of Yen 50 million.

The award winners were chosen by the Asahi Glass Foundation, chaired by Mr. Jiro Furumoto. The award was first given in 1992 at the United Nations Conference on Environment and Development in Rio de Janeiro, according to a press release from the foundation.

The M. S. Swaminathan Research Foundation is a non-profit organisation that supports the promotion of sustainable agriculture and rural development with methods that include the preservation and sustainable utilisation of biodiversity, the improvement of soil and plant health using environmentally friendly methods, and the creation of ecojobs for rural families. According to the release, the foundation, chaired by Dr. M. S. Swaminathan, is the first Blue Planet Prize winner from Asia.

According to the release, Dr. William S. Broecker has made major contributions to the understanding of climate change and global warming through his research into global ocean currents and ocean chemical cycles, particularly the carbon cycle.

10 scientists selected for Bhasin awards

From Our Staff Reporter

NEW DELHI, March 31.

Ten eminent scientists, including Dr. M. S. Swaminathan, have been selected for the Shri Om Prakash Bhasin awards for Science and Technology for 1995 for their significant contributions in various fields.

According to a press release, other awardees are Prof. Asis Datta, Dr. Brahm S. Shrivastava, Prof. B. L. Deekshatuhu, Prof. Jyoti K Parish, Dr. S. Sivaram, Dr. V. Ramalingaswami, Prof. V. I. Mathan, Mr. G. Madhavan Nair and Mr. P. S. Goel.

Since the inception of the awards 11 years ago, 87 Indian scientists have already received the prestigious awards. The 10 scientists are likely to be presented awards at a function in May.

Each award consists of Rs. 50,000, a citation and a memento. These awards are given in seven fields every year. The first awards, in 1985, were presented by the late Rajiv Gandhi. The award is named after Mr. Om Prakash Bhasin, a non-resident Indian businessman, who passed away in 1981.

The release said the awards were recommended by an expert committee of eminent scientists and then approved by the Board of Trustees comprising Mrs. Vinod Kumar Bhasin, chairperson, Prof. M. G. K. Menon, scientist trustee and the State Bank of India, bank trustee.

ସମାଜ
The Samaja
ପ୍ରତିଶ୍ରୁତ-ଉତ୍କଳମଣି ଗୋପବନ୍ଧୁଙ୍କଠାରୁ

ଜଟକ ଶନିବାର ତା- ୮-୭-୯୨ ₹ ୧.୨୫ DAILY EDIT
LICENCED TO POST
VIDE P.M.G. ORISSA CIRCLE

ଚଳନ ପାଇଁ
୧ ନିଷ୍ପତ୍ତି

୧୨ ହଜାରରୁ ଊର୍ଦ୍ଧ୍ୱ ପଦବୀ ପକାଶେ ଶିକ୍ଷା ସର୍ଭିସ ସ୍ତରରେ ନିଯୁକ୍ତି ଦିଆଯିବ । ସିଟ ଯୋଗ୍ୟତା ଥିବା ଅଣଆନୁଷ୍ଠାନିକ ଶିକ୍ଷକମାନଙ୍କୁ ଏକ୍ଷେତ୍ରରେ ନିଯୁକ୍ତି ଦିଆଯିବା ସଂଗେ ସଂଗେ ଶିକ୍ଷା ଦୃଷ୍ଟିରୁ ଅନଗ୍ରସର ଥିବା କୋରାପୁଟ, କନ୍ଧମାଳ ଭଳି ଜିଲାରେ ଏହି ଯୋଗ୍ୟତାସମ୍ପନ୍ନ ଶିକ୍ଷକ ନ ମିଳିଲେ ହାଇସ୍କୁଲ ପାଟଫିକେଟ ପରୀକ୍ଷାରେ ଉତ୍ତୀର୍ଣ୍ଣ ଯୋଗ୍ୟତାଧିରେ ନିଯୁକ୍ତି ଦିଆଯିବ ବୋଲି ଶ୍ରୀ ପଟନାୟକ କହିଥିଲେ ।

ନିକଟରେ ପଣ୍ଡିତ କରାଯାଇଥିବା ଓଡ଼ିଶା ରାଜ୍ୟ ବିଦ୍ୟୁତ୍ ଆଇନକୁ ଗତ ଅପେଲ ପହିଲାରୁ କାର୍ଯ୍ୟକାରୀ କରିବା ପାଇଁ ନିଷ୍ପତ୍ତି ନିଆଯାଇଥିବା ଉଲ୍ଲେଖକରି ମୁଖ୍ୟମନ୍ତ୍ରୀ କହିଥିଲେ ସୁଦୂରପସାରୀ ସଂସ୍କାର ପକାଶେ ସରକାର ଗ୍ରହଣ କରିଥିବା ଏହି ପଦକ୍ଷେପକୁ ଭାରତ ତାହାରେ ମଧ୍ୟ ସ୍ୱାଗତ କରାଯାଇଛି । ସମ୍ପତ୍ତି ବିଦ୍ୟୁତ୍ ସରବରାହଜନିତ କ୍ଷତି ୪୦% ହେଉଥିବା ବେଳେ ଆଗାମୀ ୨ ବର୍ଷ ମଧ୍ୟରେ ଏଥିରୁ ଅର୍ଦ୍ଧେକ ହ୍ରାସ କରିବା ସଂଗେ ସଂଗେ ଶିଳ୍ପ ସମେତ ବିଭିନ୍ନ ଶ୍ରେଣୀର ଗ୍ରାହକମାନଙ୍କୁ ବିନା ବ୍ୟାଘାତରେ ବର୍ଷସାରା ବିଦ୍ୟୁତ୍ ଶକ୍ତି ଯୋଗାଇ ଦିଆଯିବ । ଏଯାବତ୍ ବିଦ୍ୟୁତ୍ ଯୋଗାଣ ହୋଇପାରି ନ ଥିବା ରାଜ୍ୟର ୭୨ ହଜାର ଗାଁକୁ ୫ ବର୍ଷ ମଧ୍ୟରେ ବିଦ୍ୟୁତ୍ ଯୋଗାଇ ଦିଆଯିବ

ଇଟର କମିଶନ ଗଠନ ଉଲ୍ଲେ ମନୋନ୍ୟନ କମିଟ ଗଠିତ ହୋଇ ପାରିଛି ବୋଲି ଉଲ୍ଲେଖକରି ଶ୍ରୀ

(୮ମ ପୃଷ୍ଠା ଦେଖନ୍ତୁ)

'ଇଣ୍ଡିଆନ୍ ଏକ୍ସପ୍ରେସ' ଅଟାଳିକାରେ ଅଗ୍ନିକାଣ୍ଡ

ନୂଆଦିଲ୍ଲୀ, ତା ୭।୭- (ସୁ.ଏନ୍.) ଦିଲ୍ଲୀର ବାହାଦୁର ଶାହା ଜାଫର ମାର୍ଗରେ ଥିବା 'ଇଣ୍ଡିଆନ୍ ଏକ୍ସପ୍ରେସ' ଅଟାଳିକାରେ ଗତକାଲି ରାତି ୨ଟା ୩୫ ମିନିଟ୍‌ରେ ଭୟାବହ ଅଗ୍ନିକାଣ୍ଡ ଘଟି ପ୍ରଥମ ତାରି ମହଲାର ବ୍ୟାପକ କ୍ଷତି ଘଟଛି । ଜଣାପିବା ଏହି ଅଟାଳିକାରୁ ଅଗ୍ନିଶମ କର୍ମଚାରୀମାନେ ୭ ଜଣଙ୍କୁ ରକ୍ଷାର କରିଛନ୍ତି ।

ଏହି ଅଗ୍ନିକାଣ୍ଡ ଫଳରେ ପ୍ରଭାତ ପକାଶନଗୁଡିକର ମୁଦ୍ରଣରେ ବାଧା ରପୁଜିଥିଲା । ପୂର୍ବାହ୍ନ ୨ଟା ୪୫ ମିନିଟ୍‌ରେ ପାସ୍ ୪୦ଟି ଦମକଳ ଅଗ୍ନିକୁ ନିୟନ୍ତ୍ରଣ କରିଥିଲେ ।

ସ୍ୱାମୀନାଥନ ପ୍ରତିଷ୍ଠାନକୁ 'ବ୍ଲୁ ପ୍ଲାନେଟ' ପୁରସ୍କାର

ଟୋକିଓ, ତା ୭।୭ (ପି.ଟି)- ମାନ୍ୟବର ଏମ୍.ଏସ ସ୍ୱାମୀନାଥନ ଗବେଷଣା ପତିଷ୍ଠାନକୁ ପରିବେଶ ସୁରକ୍ଷା କ୍ଷେତ୍ରରେ ଉଲ୍ଲେଖନୀୟ ଅବଦାନ ନିମନ୍ତେ ଚଳିତବର୍ଷ ଜାପାନର ପକାନଜନକ 'ବ୍ଲୁ ପ୍ଲାନେଟ' ପୁରସ୍କାର ମିଳିବ । ଜାପାନର ଆସାହି ଗ୍ଲାସ ପତିଷ୍ଠାନ ପକ୍ଷରୁ ଏହି ପୁରସ୍କାର ପତିବର୍ଷ ଦିଆଯାଇଥାଏ । ଚଳିତ ବର୍ଷ ଅକ୍ଟୋବର ମାସରେ ଏହି ପୁରସ୍କାର ଟୋକିଓଠାରେ ପ୍ରଦାନ କରାଯିବ ।

ଜର୍ମାନ ହେଲିକପ୍ଟର ଦୁର୍ଘଟଣାରେ ୧୩ ଜଣ ମୃତ

ବର୍ଲିନ, ତା ୭।୭ (ଏଜେନ୍ସି)- ଜର୍ମାନୀରେ ଏକ ହେଲିକପ୍ଟର ଦୁର୍ଘଟଣା ଘଟି ୧୩ ଜଣଙ୍କର ମୃତ୍ୟୁ ଘଟିଛି । ଏକ ସାମରିକ ହେଲିକପ୍ଟରରେ ୧୩ ଜଣ ଯୁବକ ଏକ ଯୁଦ୍ଧ ଉପକରେ ଯୋଗଦେଇ

କାଶ୍ମୀରରେ ବିଧାନସଭା
ଯଥାସମୟରେ ହେବ : '

ନୂଆଦିଲ୍ଲୀ, ତା ୭।୭ (ସୁ.ଏନ୍.. ପି.ଟି.)-ଜାମ୍ମୁ ଓ କାଶ୍ମୀରରେ ଉପଯୁକ୍ତ ସମୟରେ ବିଧାନସଭା ନିର୍ବାଚନ କରାଇବାକୁ କେନ୍ଦ୍ରସରକାର ପତିଶ୍ରୁତିବଦ୍ଧ ବୋଲି ପ୍ରଧାନମନ୍ତ୍ରୀ ଶ୍ରୀ ଏଚ.ଟି. ଦେବଗୌଡ଼ କହିଛନ୍ତି ।.

ଜାମ୍ମୁ ଓ କାଶ୍ମୀରର ଜନସାଧାରଣଙ୍କୁ ଅଭିନନ୍ଦନ ଜଣାଇ ପ୍ରଧାନମନ୍ତ୍ରୀ ଏକ ବାର୍ତ୍ତାରେ କହିଛନ୍ତି ଯେ ଜନସାଧାରଣଙ୍କ ସହଯୋଗ ଯୋଗୁଁ ପନ୍ତାପବାଦୀ କାର୍ଯ୍ୟକଳାପକୁ ନିୟନ୍ତ୍ରଣ କରାଯିବା ସଙ୍ଗେ ସଙ୍ଗେ ଲୋକସଭା ନିର୍ବାଚନ ପାଇଁ ଅନୁକୂଳ ପରସ୍ଥିତି ସୃଷ୍ଟି କରାଯାଇ ପାରିଛି ।

ଜାମ୍ମୁଓ କାଶ୍ମୀରର ଜନସାଧାରଣ ରାଜ୍ୟରେ ଶାନ୍ତି, ସାଭାବିକ ପରିସ୍ଥିତି ଫେରାଇ ଆଣିବା ସଙ୍ଗେ ସଙ୍ଗେ ଗଣତନ୍ତ୍ରିକ ବ୍ୟବସ୍ଥାର ପୁନଃ ପତିଷ୍ଠା ପାଇଁ ଭୋଟଦାନ କରିଥିବାର ସ୍ପଷ୍ଟ ହୋଇଯାଇଛି ବୋଲି ସେ କହିଛନ୍ତି ।

ଉତ୍ତର ପୌରସି ଅଞ୍ଚଳକୁ ଏକ ଗଣତନ୍ତ୍ରିକ ବ୍ୟବସ୍ଥା ପାଇଁ ଥିବା ଅଧିକାରରୁ କେହି ବଞ୍ଚିତ କରି ପାରିବେ ନାହିଁ ବୋଲି କାଶ୍ମୀର ଲୋକସଭା ନିର୍ବାଚନରୁ ପମାଣିତ ହୋଇଛି ବୋଲି ସେ ମତ ଦେଇଛନ୍ତି ।

ପୂର୍ବତନ ମୁଖ୍ୟମନ୍ତ୍ରୀ ତଥା ଜାତୀୟ ସମ୍ମିଳନୀର ମୁଖ୍ୟ ଡାକ୍ତର ଫାରୁକ ଅବଦୁଲ୍ଲା ଗତ କାଲି ପ୍ରଧାନମନ୍ତ୍ରୀ ଶ୍ରୀ ଏଚ.ଟି. ଦେବଗୌଡ଼ଙ୍କୁ ସାକ୍ଷାତ କରି ପାସ୍ ଏକ ଘଣ୍ଟା ଧରି ଆଲୋଚନା କରିଥିଲେ ।

ଆଲୋଚନାବେଳେ ଡାକ୍ତର ଅବଦୁଲ୍ଲାଙ୍କ ସହିତ ଦଳର ବରିଷ୍ଠ ନେତା ଶ୍ରୀ ସଫି ଉଦିନ ସୋଜ ଉପସ୍ଥିତ ଥିଲେ ।

ଆଲୋଚନାବେଳେ ରାଜ୍ୟରେ ଶୀଘ୍ର ବିଧାନସଭା ନିର୍ବାଚନ କରାଯିବା ବିଷୟ ସ୍ଥାନ ପାଇଥିଲା । ସଂପତି ସମ୍ପନ୍ନ ଲୋକସଭା ନିର୍ବାଚନରେ ଜାତୀୟ ସାମ୍ମୁଖ୍ୟ ଅଂଶଗ୍ରହଣ କରି ନ ଥିଲା ।

କଂଗ୍ରେସ ୨୨ ଦଶମିଳ ୧୭ ଭାଗ ଭୋଟ ପାଇଛି

ରାଜ୍ୟର ଛଅଟି ଯାକ ଲୋକସଭା ଆସନ ପାରମ୍ପରିକ ଜାତୀୟ ରାଜନୈତିକ ଦଳ ହାସଲ କରି ଥିବାରୁ ଏହି ଦଳଗୁଡ଼ିକ ପତି ଭୋଟଦାତାମାନଙ୍କ ସମର୍ଥନ ଅବ୍ୟାହତ

ରାଜୀବହତ୍ୟା ତଦନ୍ତ ଭି.ପି.ସି
ଆଚରଣ ନେଇ ଜଷ୍ଟିସ୍ ଚ

ନୂଆଦିଲ୍ଲୀ, ତା ୭।୭- (ପି.ଟି.) ରାଜୀବ ଗାନ୍ଧିଙ୍କ ହତ୍ୟା ମାମଲା ନେଇ ତିୱାରୀ କମିଶନ୍ ପୂର୍ବତନ ପ୍ରଧାନମନ୍ତ୍ରୀ ଶ୍ରୀ ଭି.ପି. ସିଂହଙ୍କ ଦୋମୁହାଁ ଆଚରଣ ନେଇ ତୀବ୍ର ଅସନ୍ତୋଷ ପକାଶ କରିଛନ୍ତି । କମିଶନର,

ଜାଣେ ନାହିଁ; କିନ୍ତୁ ଶ୍ରୀ ଚୌହାନ ସମନକୁ ସମ୍ମାନ ଦେବା ଉଚିତ ।

ଚୌହାନଙ୍କ ହାଜର ନହେବା ନେଇ ଭିପିଙ୍କ ଆବେଦନର କଡ଼ା ବିରୋଧ କରି ପୂର୍ବତନ କେନ୍ଦ୍ରମନ୍ତ୍ରୀ ପଫେସର ଜେ.କେ. ତିୱାରୀ ଏବଂ ଆଡ୍‌ଭୋକେଟ୍

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"BLUE PLANET" AWARD TO SWAMINATHAN FOUNDATION

Tokyo June 6 (P.T.)

The M.S.Swaminathan Research Foundation situated at Madras will receive the prestigious, 'Blue Planet' award for its significant contribution in the field of protection of environment. The award instituted by the Asahi Glass Foundation of Japan will be presented this year in the month of October at Tokyo.

ஆராய்ச்சி மையத்தின் நோக்கம்: எம்.எஸ்.சுவாமிநாதன் விளக்கம்

மதுரை மாவட்டத்தில் அணைப்பகுதியில் மழையில்லை

மதுரை, ஜூன்.12- மதுரை மாவட்டத்தில் குறிப்பிடும் அளவு எந்தப்பகுதியிலும் மழை பெய்யவில்லை. இதனால் அணைகளில் நீர்மட்டம் அதிகரிக்கவில்லை.

மதுரை மாவட்டத்தில் பல இடங்களில் மேகமூட்டமாகவுள்ளது. சில இடங்களில் சிறு சிறு தூரல் விழுந்து வருகிறது. எனினும் புதன்கிழமை காலை 8.30 மணியுடன் முடிவடைந்த 24 மணிநேரத்தில் மதுரை மாவட்டத்தில் குறிப்பிடும் அளவு எந்தப்பகுதியிலும் மழை பெய்யவில்லை என பொதுப்பணித்துறையினர் தெரிவித்தனர்.

பெரியாறு அணையின் நீர் மட்டம் 108.50 அடியாக இருந்தது. அணைக்கு தண்ணீர் வரத்துமில்லை.

வைகை அணையின் நீர்மட்டம் புதன்கிழமை 23.50 அடியாக இருந்தது. அணைக்கு வினாடிக்கு 13 கனஅடி தண்ணீர் வந்து கொண்டிருந்தது. அணையிலிருந்து வினாடிக்கு 28 கனஅடி தண்ணீர் திறந்து விடப்பட்டது.

தஞ்சாவூர், ஜூன்.12- விவசாயத்தில் அதிக உற்பத்தி, அதிக லாபம், கடலோரக் கிராமப் புற மக்களுக்கு அதிக வேலை வாய்ப்பு ஆகியவற்றை ஏற்படுத்துவதும், இவற்றின் மூலம் நாட்டின் பொருளாதார மேம்பாட்டுக்கு வழிகோலுவதும்தான் தமது ஆராய்ச்சி மையத்தின் நோக்கம் என்று வேளாண் விஞ்ஞானி எம்.எஸ்.சுவாமிநாதன் தெரிவித்தார்.

எம்.எஸ்.சுவாமிநாதன் ஆராய்ச்சி மையம் நாகை காயிதேமில்லத் மாவட்டத்தில் நடத்தி வரும் 'கடலோர நிலங்களில் வருவாயைப் பெருக்கும் சில ஆராய்ச்சிகள்' என்ற திட்ட நிறைவு விழா புதன்கிழமை வேட்டைக்காரன் இருப்புக் கிராமத்தில் நடைபெற்றது. இவ்விழாவில் கலந்து கொண்டு எம்.எஸ்.சுவாமிநாதன் பேசுகையில் மேற்கண்டவாறு குறிப்பிட்டார். மேலும் அவர் பேசியதாவது:

தமிழ்நாட்டில் சுமார் 1000 கி.மீ. அளவுக்கு கடற்கரை அமைந்துள்ளது. கடலோரக் கிராமங்களைச் சேர்ந்த மக்களின் மேம்பாட்டுக்கு வழிவகைகளை ஆராய்ந்து சொல்லவே கடலோர ஆராய்ச்சி மையம் தொடங்கப்பட்டது.

இந்த மையம் சார்பில் நாகை மாவட்டம் வேட்டைக்காரன் இருப்பு என்ற கடற்கரைக் கிராமத்தில் 1992-ம் ஆண்டு ஆராய்ச்சி மையம் ஒன்று அமைக்கப்பட்டது.

இக்கிராமத்தில் வாழும் மக்கள் தொகை 5983. இங்கு இருக்கின்ற மொத்த நிலப்பரப்பு 1168 ஹெக்டேர். அவற்றில் சாகுபடியாகும் நிலப்பரப்பு 812 ஹெக்டேர். எஞ்சியுள்ள பகுதிகள் தரிசாக உள்ளன. இப்பகுதிகளில் சவுக்கு, நெல், நிலக்கடலை, தென்னை, முந்திரி, பனை ஆகிய பயிர்கள் வளர்க்கப்படுகின்றன.

40 சதம் நிலத்தில் சவுக்கும், 15 சதம் நிலத்தில் நிலக் கடலையும், 15 சதத்தில் நெல்லும், 12.2 சதத்தில் தென்னையும், 6.7 சதத்தில் மா மரங்களும், 0.7 சதத்தில் பனையும் விளைவிக்கப்படுகின்றன. மேலும், இப்பகுதியில் 2,865 வெள்ளாடுகளும், 412 செம்மறி ஆடுகளும், 705 மாடுகளும் வளர்க்கப்படுகின்றன. ஆனால், இந்தக் கால்நடைகளுக்குத் தேவையான மேய்ச்சல் நிலங்கள் இப்பகுதியில் இல்லை என்பது குறிப்பிடத்தக்கது.

வேட்டைக்காரன் இருப்புக் கிராமத்தில் இந்த ஆராய்ச்சித் திட்டத்தைத் தொடங்குவதற்கு முன்பு இந்த ஊரிலுள்ள விவசாயிகளிடம் நன்றாகக் கலந்து ஆலோசிக்கப்பட்டது. அவர்களுடையை ஒத்துழைப்பைப் பெற்ற பின்னரே ஆய்வுப் பணிகள் தொடங்கப்பட்டன.

வேளாண்காடுகள் அமைப்பதன் முக்கிய நோக்கம், சாகுபடி முறைகளை மாற்றி அமைப்பதன் முக்கியத்துவம் பற்றி அவர்களுக்கு எடுத்துக் கூறப்பட்டன. இவ்வாறு செய்வதன் மூலம் உணவுத் தேவைகளை பூர்த்தி செய்து கொள்வதுடன், குடும்ப வருமானத்தையும் பெருக்கிக் கொள்ளலாம் என்பதை அவர்கள் ஆய்வு மையத்தின் மூலம் உணர்ந்தனர். இதற்காக சவுக்கு மரங்களுக்கு இடையே ஊடுபயிர் சாகுபடி 5 முதல் 7 ஆண்டுகள் வரை செய்யலாம் என்பது முதலில் கண்டறியப்பட்டது. இதையடுத்து இப்பகுதியில் சவுக்கு மரங்களுக்கு இடையே ஊடு பயிர்கள் சாகுபடி செய்து விவசாயிகள் நல்ல லாபம் ஈட்டி வருகின்றனர்.

இதேபோல் பழத்தோட்டங்களுக்கு இடையே நிலக்கடலையும், ஒட்டு சூரியகாந்தியும் சாகுபடி செய்ததில் நல்ல மகசூல் கிடைத்தது. 7 ஆண்டுகள் வளர்ந்த சவுக்குக் காடுகளின் உட்புறம் நெல் நாற்று விட்டு பட்டது. ஆனால், சவுக்குக்கு வெளியே விட்ட நெல் நாற்றுக்குத் தேவைப்படும் தண்ணீரை விடக் குறைவாகவே இதற்குத் தண்ணீர் தேவைப் பட்டது.

இதுநாள் வரை பழைய உள்ளூர்க் காய்கறிகளையே பயிரிட்டு வந்த விவசாயிகள் பீட்ரூட், காளிபிளவர் உள்ளிட்ட குளிர் பிரதேசங்களில் விளையும் காய்கறிகளையும் விளைவிக்கக் கற்றுக் கொண்டனர். இதற்கு மக்களிடையே நல்ல வரவேற்பும் கிடைத்து. அவர்களுக்கு நல்ல மகசூலும் கிடைத்தது. மேலும், கட்டிப்போட்டு ஆடு வளர்த்து நிறைய லாபம் ஈட்டும் வழிமுறையும் அமல்படுத்தப்பட்டது. இவ்வாறு அவர் விளக்கினார்.

நிகழ்ச்சிக்கு திட்ட அலுவலர் கோ.ஜான்சன் தலைமை வகித்தார். நாகை மாவட்ட வேளாண்மைத்துறை இணை இயக்குநர் மூபாலகிருஷ்ணன் சிறப்புரை ஆற்றினார். மாவட்ட மக்கள் தொடர்பு அதிகாரி கோவிந்த பிரசாத், ஆராய்ச்சி உதவியாளர் கு.கோமணி ஆகியோர் உள்பட பலர் விழாவில் கலந்து கொண்டனர்.

தினமணி - 13.6.96
(மதுரை)

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Agrobiodiversity and farmers' rights

On June 17 an International Conference is starting at Leipzig, Germany. An important subject will be the development of methods for the conservation of agrobiodiversity and for the equitable sharing of benefits particularly with the tribal and rural women and men who have conserved and improved the genetic wealth of economically important plants over the millennia. Dr. M.S. SWAMINATHAN, in this article, argues for the establishment of a global fund for biodiversity.

BIOLOGICAL Diversity in economically important plants and animals is now referred to as "Agrobiodiversity". An International Conference on Plant Genetic Resources sponsored by the Food and Agriculture Organisation of the UN (FAO) is being held at Leipzig in Germany from June 17 to 21 to discuss how to conserve agrobiodiversity and how to ensure that the benefits from the utilisation of genetic wealth are equitably shared with the tribal and rural families who have not only conserved but also improved them over the millennia. The principle of equitable sharing of benefits is enshrined in Article 15 of the legally binding Convention on Biological Diversity (CBD), of which India is a signatory.

The same principle was articulated in the forum of FAO when I was Independent Chairman of the FAO Council during 1981-85. Later, in 1989, this principle of equitable sharing was christened as "Farmers' Rights" and was defined as follows:

"Rights arising from the past, present and future contributions of farmers in conserving, improving and making available plant genetic resources, particularly those in the context of origin and diversity."

Although there is agreement that Farmers' Rights should be implemented, there is as yet no agreement on how to do it and fund it. Where there is a will, there is a way. In this article I wish to show how the invaluable contributions of tribal and farm families to genetic conservation and enhancement can be recognised and rewarded by creating Global and National Funds for Farmers' Rights.

The primary purposes which a Global Fund for Farmers' Rights can serve are:

(i)Help accord social prestige to the work of tribal and rural women and men, in the field of conservation and enhancement of agrobiodiversity and thereby make the younger generation continue the conservation traditions of their parents and grandparents;

(ii)Change the current ironical situation where those who have conserved genetic wealth remain poor and those who utilise this wealth through conventional and modern genetic methods become rich;

(iii)Help to provide resources to tribal and rural communities for the revitalisation and restoration of their in situ and ex situ genetic conservation and enhancement traditions;

(iv) Compensate local communities who continue to practise in situ conservation of agrobiodiversity for the economic loss they incur as a result of not substituting land races with high yielding cultivars, thereby providing an economic stake in conservation; and

(v)Implement the principles of equity in sharing benefits enshrined in CBD.

The use of agricultural land should be made compatible with the protection and improvement of the environment.

Policies of industralised countries in promoting genetic conservation

It may be appropriate in this context to cite the lead given by industrialised countries in providing farm families with financial incentives to safeguard biodiversity. The following extracts would suffice to indicate that economic reward for the contributions of farm families to environment protection and genetic conservation is an accepted procedure in Europe and North America. Therefore, there should not be any difficulty for the public of rich nations to accept that such a reward should also be extended to the farm families of biodiversity-rich developing countries.

European Union

The following decisions have been taken by the European Union for fostering agricultural production methods compatible with the requirements of the protection of the environment and the maintenance of the countryside:

"Whereas the requirements of environmental protection are an integral part of the common agricultural policy."

"Whereas an appropriate aid scheme would encourage farmers to serve society as a whole by introducing or continuing to use farming practices compatible with the increasing demands of protection of the environment and natural resources and upkeep of the landscape and the countryside."

"Whereas the resources available for implementing the measures provided for in this Regulation must be additional to those available for the implementation of measures under the rules governing the Structural Funds, and in particular for measures applicable in regions covered by Objectives 1 and 5 (b) as defined in Article 1 of Regulation (EEC) No. 2052/88 (OJ No L 185, 15.7. 1988, P.9)."

"This Community aid scheme is intended to promote ways of using agricultural land which are compatible with protection and improvement of the environment, the countryside, the landscape, natural resources, the soil and genetic diversity."

"The maximum eligible amount of the premium shall be ECU 250 per hectare for the cultivation and propagation of useful plants adapted to local conditions and threatened by genetic erosion."

In the United States of America Farm Bill of 1996, substantial financial allocation has been made for rewarding the contributions of farm families in the field of environment protection and genetic conservation. President Clinton's statement on the Farm Bill, dated April 4, 1996, said "$ 300 million in additional resources are being provided for rural development and agricultural research through the Fund for Rural America. The Farm Bill provides more than $ one billion over seven years for on-farm conservation measures, including assistance for livestock producers, which will help prevent soil erosion and clear our steams and air."

Of particular significance is the provision of $ 50 millions in total funding from FY 1996 to FY 2002 for providing assistance to land owners to develop and implement approved management practices to improve wildlife habitat.

Thus, methods of rewarding the contributions of farmers for the conservation of habitats rich in biodiversity are commonly adopted in industrialised countries. Third world countries happen to be the major repositories of genetic wealth, since most of the mega-diversity areas occur in developing countries. There is therefore an urgent need for providing a mechanism of funding which can lead to the enhancement of the in situ and ex situ conservation practices of rural and farm families. It is important to compensate them economically for the loss they sustain as a result of continuing to plant land races and folk varieties in preference to improved high yielding varieties of crop plants. Above all, equity demands that their contributions over the millennia of value addition to genetic resources through additional knowledge and information ought to be rewarded economically.

Global fund for biodiversity for sustainable food security

At the U.N. Conference on Environment and Development held at Rio de Janeiro in June 1992, the Government of the Netherlands proposed that all industrialised countries provide an additional ODA of 0.1 per cent of their GDP as an "Earth Increment." The essence of the Dutch proposal is to ensure that this additional 0.1 per cent ODA assistance is entirely reserved for conserving and improving the earth's life support systems of land, water, forests, biodiversity, oceans and the atmosphere. If, on the occasion of the 5th anniversary of the Rio Conference in 1997, all industrialised countries agree to increase their ODA by 0.01 per cent of their GDP for promoting the conservation of agrobiodiversity through implementing the Global Action Plan developed by FAO for the Leipzig Conference and for rewarding the contributions of indigenous and rural communities to genetic conservation and enhancement, there will be new and additional resources for this purpose.

According to UNDP, the GDP of industrialised countries was $ 18,710 billions in 1992. 0.01 per cent contribution would provide annually nearly $ 2.0 billion at current GDP level of G-7 nations. Such an amount will help to implement both the Global Action Plan and Farmers' Rights.

Enlightened self-interest on the part of the rich billions of the human population to whom nearly 84 per cent of the global annual income is flowing today, demands that no further time is lost in recognising and rewarding the contributions of the families of indigenous, tribal and rural communities to sustainable food security through their continued efforts in the area of plant and animal genetic resources' conservation and enhancement.

It should not be a big burden for rich countries to add 0.01 per cent of their GDP to their ODA budget specifically for being credited to a Global Fund for Biodiversity Conservation for Sustainable Food Security. This Fund, estimated at about $ two billions each year, can be administered either through a separate Trust Fund Mechanism or through a well defined and earmarked window in the existing Global Environment Facility. Well defined indicators and transparent mechanisms for the use of this Fund will have to be developed.

Developing countries rich in agrobiodiversity often sacrifice these habitats to the needs of development.

National level community gene fund

Charity begins at home. Therefore, it is both a fundamental responsibility and a privilege for agrobiodiversity-rich developing nations to take immediate steps to allot new and additional resources for recognising and rewarding the contributions of their own tribal and rural families to the conservation of their genetic wealth. It should be emphasised that ex situ preservation of genetic resources is no substitute for in situ conservation. In situ conservation represents both preservation and continuous evolution through mutation, recombination and selection. Hence, investing in a few ex situ gene banks and arboreta is not a substitute for preserving and revitalising the in situ genetic conservation traditions of tribal and rural women and men. Both pathways, if funded adequately, will become mutually reinforcing.

The 1996 Madras Consultation on Farmers' Rights proposed a two per cent levy on all seed sale for being credited to a Community Gene Fund for implementing Farmers' Rights. Taxing seed sale alone may imply farmers funding Farmers' Rights. Therefore, an across the board one per cent levy on the sale of all agricultural commodities (crop, animal, fish and forest products) will be more appropriate. The funds generated by such one per cent Agricultural Cess for Genetic Resources Conservation could be credited to a separate fund and utilised both for implementing Farmers' Rights and the national component of the Global Action Plan after its adoption at the Leipzig Conference in June 1996.

Implementing the equity provisions of CBD

We need commitment on the part of all nations – industrialised and developing – to the cause of conserving and enriching agrobiodiversity. This is vital for sustainable food security. Lester Brown in a recent book has rightly stressed, "the loss of food security promises to become the defining focus of the global environmental threat." Among the various environmental threats, the most serious in relation to sustainable food security is the loss of habitats rich in agrobiodiversity, as well as the extinction of the in situ conservation traditions of local communities.

It will, therefore, be prudent to adopt a resolution containing the following commitment, unanimously at the World Food Summit to be held in Rome in November 1996.

(1)Industrialised nations should contribute 0.01 per cent additional ODA for the purpose of being credited to a Global Fund for Biodiversity for Sustainable Food Security. Such a Fund should be utilised for implementing the Global Plan of Action for the conservation and sustainable use of plant genetic resources for Food and Agriculture and for recognising and rewarding the contributions of indigenous (tribal) and rural women and men to the conservation and enhancement of biodiversity. It should also be used to safeguard all mega-biodiversity areas as well as "hot spot" locations with reference to threats to biodiversity, ranging from landcapes to individual species (i.e., Red Data book species).

(2)Developing nations rich in agrobiodiversity should levy a one per cent cess on all agricultural produce for being credited to a National Community Gene Fund specifically earmarked for the realisation of Farmers' Rights as well as for the implementation of the national component of the Global Action Plan.

Thus, every nation – whether rich in technology or in genes, or whether rich in commercial wealth or plant and animal genetic wealth – can show its commitment to both genetic conservation and equitable sharing of benefits from efforts in breeding and biotechnology. Such a step will help in countries implementing the equity provisions of CBD both in letter and spirit.

The loss of every gene and species limits our options for the future, in terms of breeding for potential changes in climate, sea level and ultraviolet-B radiation. Biodiversity is the feedstock for the biotechnology industry. Also, in the coming millennium, more food and other agricultural commodities will have to be produced from less land and water resources. Advances in higher productivity per units of land and water will however have to be achieved by environment-friendly technologies. Thus we have to produce more but produce it differently as compared to the green-revolution era.

An evergreen revolution will need for its sustenance novel genetic combinations capable of conferring on crop plants resistance or tolerance to a wide spectrum of biotic and abiotic stresses. To ensure sustainable food security, as well as intra and inter-generational equity a two pronged funding mechanism, where both industrialised and developing countries make a firm financial commitment to the cause of both conservation and equity in sharing benefits, should be launched on June 5, 1997.■

காடுகள் பாதுகாப்பு கருத்தரங்கம்

சிதம்பரம், ஜூன். 19–

சிதம்பரம் அருகே உள்ள பிச்சாவரம் காட்டில் தில்லை வனக்காடுகளை பாதுகாப்பது தொடர்பான கருத்தரங்கத்தை சென்னை எம்.எஸ். சாமிநாதன் ஆராய்ச்சி நிலையமும், வன இலாகாவும் இணைந்து நடத்தியது.

இந்த கருத்தரங்கத்தில் விஞ்ஞானி எம்.எஸ். சுவாமி நாதன், டாக்டர் வைரசெல்வம், மாவட்ட வனத்துறை அதிகாரி ராமகிருஷ்ணன், சிதம்பரம் உதவி கலெக்டர் ராதாகிருஷ்ணன், தாசில்தார் பழனியப்பன், வன இலாகா அதிகாரிகள் வினோத்குமார், வசிஸ்ட் வெங்கட்ராமன், ராமச்சந்திரன், ஜான்சன் மற்றும் பலர் கலந்து கொண்டு பிச்சாவரம் காட்டு பகுதியில் உள்ள தில்லை மரங்களை பாதுகாப்பது பற்றிய கருத்துக்களை தெரிவித்தனர்.

தில்லை வனக்காடுகள் பாதுகாபபு குழுவுக்கு மாவட்ட கலெக்டர் தலைவராகவும் வனத்துறை அதிகாரிகள், மீன் வளத்துறை அதிகாரிகள் கிள்ளை, பிச்சாவரம் கிராமங்களை சேர்ந்த முக்கிய பிரமுகர்களும், உறுப்பினர்களாகவும் கொண்ட குழுக்களும் அமைக்கப்பட்டன.

கருத்தரங்கத்தை சென்னை எம்.எஸ். சுவாமிநாதன் ஆராய்ச்சி நிலையத்தினர் முன்னின்று செய்து இருந்தனர்.

அடுக்கு மாடி கட்டடத்தில் பூச் செடிகள் வளர்க்க முடியுமா?

கேள்வி - பதில்

கேள்வி: திருச்சியிலுள்ள தோட்டக்கலை துணை இயக்குநர் முகவரி தெரிவியுங்கள்.

த. அந்தோணிராஜ்,
சேர்வைக்காரன்பட்டி.

பதில்: தோட்டக்கலை துணை இயக்குநர், D/19 விவேகானந்தா நகர், உறையூர், திருச்சி - 620 003.

கேள்வி: நான் காளான் வளர்க்க நினைக்கிறேன். விதை எங்கு கிடைக்கும்? எப்படிப் பயிர் செய்து, விற்பனை செய்ய வேண்டும்?

எஸ். ஜாகிர்குசம்,
புதுப்பட்டி.

பதில்: உங்கள் ஊர் அருகிலுள்ள அருப்புக்

கோட்டை விவசாய ஆராய்ச்சி நிலையத்தில் காளான் சாகுபடி பயிற்சி கொடுக்கிறார்கள். அதில் உடனே கலந்து கொண்டு காளான் வளர்ப்பைப் பற்றி கற்றுக் கொள்ளுங்கள். அங்கேயே உங்களுக்கு விதையும் கிடைக்கும். நீங்களே விரிவாக விளம்பரம் செய்தால் விற்பனைக்குச் சிரமமிருக்காது.

கேள்வி: கிராமங்களில் பணிபுரியும் விரிவாக்கப்பணியாளர்களின் உரிய பணி என்ன? அப்படி அவர்கள் கிராமங்களுக்கு வந்து பணிபுரியாவிட்டால் என்ன செய்வது?

கோ. இராமதாஸ்,
தீட்டாளம்.

பதில்: விரிவாக்கப்பணியாளர்களின் வேலையே விரிவாக்கம்தான். அடிக்கடி கிராமங்களுக்கு வந்து விவசாயிகளைச் சந்தித்து, நிரூபணங்கள் செய்து காட்டி, தொழில் நுட்பங்களைக் கற்றுக் கொடுக்க வேண்டும். விவசாயப் பிரச்சினைகளுக்கு தீர்வு காண வேண்டும். உரிய இடுபொருள்கள் கிடைப்பதற்கு வழி காட்ட வேண்டும். நீங்கள் அவர்களுடன் நேரடியாகத் தொடர்பு கொண்டு தேவையான உதவிகளைப் பெறலாமே. அவர்கள் நடத்தும் பல பயிற்சிகளிலும் ஆர்வத்துடன் கலந்து கொள்ளுங்கள். உங்கள் ஊருக்கு அவசியம் அடிக்கடி வருவார். உதவுவார்.

கேள்வி: முயல் வளர்ப்பில் கழிவுகள் தேங்காமல் கூண்டுகளை வடிவமைப்பது எப்படி? முயல் பருவம் எய்துவதை எவ்வாறு கண்டு கொள்வது? எந்த தீவனம் முயலுக்கு சிறந்தது?

பி. மேகராஜன்,
மதுரை.

பதில்: முயல் வளர்ப்புக்கு கூண்டுகளை "வெல்ட்மெஷ்" கம்பி வலையைக் கொண்டு வடிவமைக்கவேண்டும். கூண்டு, பூமியிலிருந்து சுமார் 2 அடி உயரத்தில் 4 கால்களுடன், தளம், பக்கவாட்டம், கூரை அனைத்துப் பக்கங்களும் கம்பியினால் செய்து ஒருபக்கம் நுழைவுவாயிலும் இருக்கும்படியாக அமைக்க வேண்டும்.

மேலும் இதனை நேரில் காண, கூண்டு வாங்க, கொடைக்கானல் மன்னவனூரில் அமைந்துள்ள மத்திய ஆட்டின ஆராய்ச்சி நிலையத்தை அணுகலாம். முயல் வளர்ப்பினைப் பற்றிய அனைத்து விவரங்களையும் அங்கு அறிந்து கொள்ளலாம். முயல் 8 முதல் 10 வாரங்களில் பருவம் அடைகிறது. பொதுவாக முயல்களுக்கு பசுந்தீவனம், தீவிர ஊறவைத்த முளைகட்டின கொண்டைக்கடலை, கேரட், முட்டைக்கோஸ் முதலியவைகளையும் உணவாகக் கொடுக்கலாம்.

கேள்வி: இயற்கை உரம் மட்டும் போட்டு விளைவிக்கும் காய்கறிகளுக்கு மார்க்கெட்டில் நல்ல விலை கிடைக்கும் என்கிறார்கள். உண்மைதானா? எப்படி அதைத் தயாரிப்பது?

கோ. சரவணமுத்து,
கன்னிமாணத்து.

பதில்: இது உண்மைதான். வெளிநாடுகளில் இயற்கை வேளாண்மையில் விளைவிக்கப்படும் காய்கறிகளை அதிக விலையாக இருந்தாலும் வாங்கி சாப்பிடுகிறார்கள். இங்கேயும் இந்த காய்கறிகளுக்கு கிராக்கி ஏற்பட்டு வருகிறது. டாக்டர் சுவாமிநாதன் ஆராய்ச்சி நிலையம், மேக்ஸ்வொர்த் நிறுவனம் இயற்கைக் காய்கறிகளை ஊக்குவித்து வருகின்றன. "உயிரியல் கிராமத் திட்டத்தில்" இது மிகவும் வலியுறுத்தப்படுகிறது. இயற்கையில் கிடைக்கும் உரம், தாவர பூச்சிக் கொல்லிகளை மட்டும் பயன்படுத்தி இக்காய்கறிகளை சாகுபடி செய்ய வேண்டும். இரசாயன உரங்களையும், விஷப்பூச்சிக் கொல்லி மருந்துகளையும் உபயோகிக்கக் கூடாது. அதனால் காய்கறிகளில் உடலுக்கு ஒவ்வாத விஷத்தன்மையிருக்காது. இது போன்ற காய்கறிகளுக்கு நல்ல விளம்பரம் செய்து விற்பனையை பெருக்க வேண்டும்.

கேள்வி: தென்னை நார்க்கழிவு உரம் தயாரிக்க விரும்புகிறேன். இதற்கான தொழில் நுட்ப ஆலோசனை எங்கே கிடைக்கும்?

கிருஷ்ணமூர்த்தி,
குடியாத்தம்.

பதில்: அருகிலுள்ள விரிஞ்சிபுரம் தமிழ்நாடு வேளாண்மை பல்கலைக் கழக ஆராய்ச்சி நிலையத்தில் இதற்கான தொழில் நுட்பத்தைக் கற்றுக் கொள்ளலாம். மேலும் 1374 A, தடாகம் ரோடு, R.S. புரம், கோயம்புத்தூர் 641002ல் உள்ள M.R. Biocomp Pvt. Ltd. என்ற தனியார் நிறுவனமும் உங்கள் இடத்திற்கே வந்து தென்னை நார்க்கழிவு உரத்தைத் தயாரித்துக் கொடுக்கும்.

கேள்வி: ஒய்வு காலத்தைப் பயனுள்ள அமைதியான வழியில் கழிக்க தேனீ வளர்ப்பில் ஈடுபட விரும்புகிறேன். இதற்கு தேவையான விவரம் எங்கு கிடைக்கும்?

எம். ஜேசுமணி,
கே.புதூர்.

பதில்: இது சம்பந்தமாக முன்னரே தெரிவித்துள்ளேன். மதுரையிலுள்ள மாவட்ட தொழில் மையம், காதி அண்டு வில்லேஜ் அலுவலகம், "கிராமோதயா" ஆகிய இடங்களில் இதற்கு விவரமும், தேவையான உதவியும் கிடைக்கும்.

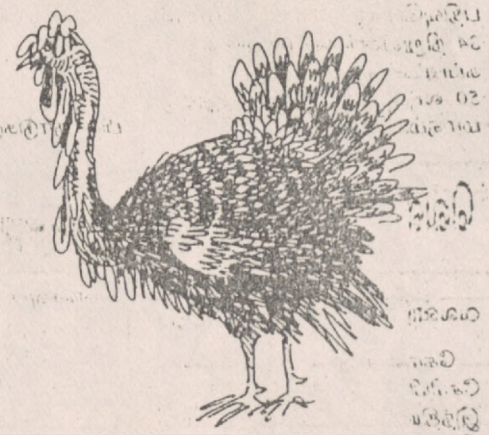
கேள்வி: அடுக்குமாடி கட்டடத்தில் பூச்செடிகள் வளர்க்க முடியுமா? வழி சொல்லுங்கள்.

எஸ்தர்,
கே.கே. நகர்.

பதில்: அடுக்கு மாடி கட்டடங்களில் தொட்டிகளில் வைத்து பூச்செடிகளை வளர்க்கலாம். ரோஜா, மல்லி, முல்லை, சாமந்தி போன்ற மலர்ச் செடிகளை கள்ளிப்பெட்டிகளிலோ, உடைந்த ஓட்டை விழுந்த பக்கெட்களிலோ பயிரிட்டு உங்கள் மாடியிலேயே மலர்தோட்டத்தைக் கொண்டு வந்து விடலாம். அடியில்

பதிலளிப்பவர்:
டாக்டர் கே.எம். இராமானுஜம்

செம்மண் 2 பங்கு, உரம் 1 பங்கு, ஆற்று



மணல் 1 பங்கு என்ற அளவில் கலந்து தொட்டிகளில் நிரப்பி செடிகளை நட்டு நல்ல வெயில் வரும் இடத்தில் செடிகளை வைக்க வேண்டும். கோடை காலத்தில் சிறிது நேரம் வெயிலில் வைத்து விட்டு பின்னர் நிழலில் வைக்கலாம். மல்லி, ராமபாணம் போன்ற செடி வகைகளை தொட்டிகளின் மேலே திறந்த வெளியில் பந்தல் போட்டு வளர்க்கலாம். கட்டட மேல் மாடியில், குடியிருப்போர் அனைவரும் சேர்ந்து பொதுவான ஒரு பூங்காவையே உருவாக்கி மகிழலாமே.

மண்ணின் மைந்தர்கள் கவனத்துக்கு...

நாபன்

'பழையன கழிதலும் புதியன புகுதலும் வழுவில கால வகையினானே' என்ற இலக்கணம் எல்லா இடத்துக்கும் பொருந்தாது. இதற்கொரு நல்ல உதாரணம், விவசாயத் துறை. இயற்கையோடு இணைந்த விவசாயத் தொழில்நுட்ப முறைகளுக்கு மாற்றாக, ரசாயன உரங்கள், நவீனப் பூச்சிகொல்லிகள் ஆகியன வந்தன. துவக்கத்தில் வேளாண் பொருள் உற்பத்திப் பெருக்கத்துக்கு இது வழிவகுத்தாலும்கூட தற்போது அதன் பக்கவிளைவுகள் வேளாண் துறையையே பக்கவாதத்தில் ஆழ்த்தி விட்டன.

நவீன ரசாயன உரங்கள் மற்றும் பூச்சிகொல்லிகளால் மண்ணின் வளம் கெட்டுப்போவதையும், சுற்றுச்சூழல் பாதிக்கப்படுவதையும் கண்கூடாக உணர ஆரம்பித்துள்ளோம். இந் நிலையில், பழைமைக்குத் திரும்புவதற்கு ஆதரவு பெருகிவருகிறது. இருப்பினும், இடைக்காலத்தில் பழக்கம் விட்டுப்போனதால், பழைய விவசாய முறைகளை எப்படிச் செயற்படுத்துவது என்பதும், அவற்றின் பயன்பாடு என்ன என்பதும் பெருவாரியான விவசாயிகளுக்கு மறந்து போயிருக்கும்.

இந்தச் சூழ்நிலையில், விவசாயிகளுக்கு உதவும் வகையில் 'வெர்மிடெக்' என்னும் விடியோ கேசட் வெளிவந்துள்ளது. 'உழவனுக்குத் தோழன் மண்புழு' என்று சொல்வார்கள். மண்புழு எப்படி உழவனுக்குத் தோழனாக- விவசாயத்துக்கு உதவியாகச் செயல்படுகிறது என்பதையும், மண்புழுவை எப்படி வளர்ப்பது என்பதையும் சுமார் 30 நிமிடம் ஓடக்கூடிய இந்தக் கேசட் விளக்குகிறது.

மண்புழுவின் எச்சம் சிறந்த இயற்கை உரம். இந்த உரமானது பயிர்கள், தாவரங்களின் வளர்ச்சிக்கு மிகவும் ஏற்றது. அதே நேரத்தில், செயற்கை ரசாயன உரங்களைப்போல் மண்ணின் வளத்தைக் கெடுத்துவிடாமல், மாறாக மண்ணின் சத்தை அதிகரிக்கச் செய்வதாக இந்த இயற்கை உரம் விளங்குகிறது.

பயிர்களுக்குச் சிறந்த சத்துணவை அளிக்கும் மண்புழுவை வளர்ப்பதற்கு பணம் செலவழிக்க வேண்டிய அவசியமில்லை. வீட்டிலேயே, தோட்டத்திலேயே, வயல்களிலேயே இவற்றை வளர்க்கலாம். இதை விளக்கமாக எடுத்துரைக்கிறது இந்த விடியோ கேசட்.

நிலத்தில் இரண்டுக்கு நாலடி பரப்புள்ள சிறிய குழி தோண்ட வேண்டும். தற்போது இக் குழியில் 4 அங்குல உயரம் வரைக்கும் செங்கல் அல்லது கூழாங்கற்களை இட்டு நிரப்ப வேண்டும். அதற்கு மேல் ஆற்று மணலை 3 அங்குலம் நிரப்ப வேண்டும். பின்னர், களிமண் அல்லது தெருக்களில் சாதாரணமாகக் கிடக்கும் மணலை 6 அங்குலம் நிரப்ப வேண்டும்.

இப்போது இந்த மணலின் மீது கொஞ்சம் சாணி தூவ வேண்டும். மண்புழு வளர்ப்பதற்கேற்ற இடம் இப்போது தயார். எல்லா வித நிலப்பரப்புகளிலும் சிறிது

தோண்டிப் பார்த்ததுமே மண்புழு இருக்கும். அந்தந்த நிலத்துக்குரிய மண்புழுக்களையே வளர்ப்பில் ஈடுபடுத்த வேண்டும். வேறு நிலப்பரப்பில் கிடைக்கும் மண்புழுக்களை வாங்கி வளர்க்கக் கூடாது.

சேகரிக்கப்பட்ட மண்புழுக்களைத் தற்போது சாணி தெளித்த

> "உழவனுக்குத் தோழன் மண்புழு' என்று சொல்வார்கள். மண்புழு எப்படி உழவனுக்குத் தோழனாக- விவசாயத்துக்கு உதவியாகச் செயல்படுகிறது என்பதையும், மண்புழுவை எப்படி வளர்ப்பது என்பதையும் சுமார் 30 நிமிடம் ஓடக்கூடிய இந்தக் கேசட் விளக்குகிறது.

மண்ணைச் சிறிது கிளறி, உள்ளே போட்டு மண்ணை மூட வேண்டும். அதன்மேல் கொஞ்சம் தண்ணீர் தெளிக்க வேண்டும். ஒரு மாதத்தில் இந்தப் புழுக்கள் பல மடங்காகப் பெருகிவிடும்.

இந் நிலையில், இந்த மண்ணின் மீது வீட்டில் மீதமாகும் சாப்பாடு, வீணான காய்கறிகள் மற்றும் இதர குப்பைகளை (கண்ணாடி, பிளாஸ்டிக் போன்றவை தவிர) போட வேண்டும். 6 அங்குல உயரத்துக்கு இந்தக் குப்பையைச் சீராக நிரவ வேண்டும். கோழி, காக்கை போன்ற பிராணிகள் புழுவைக் கொத்தி விடாமல் இருக்க, இதன் மீது தென்னை மட்டை அல்லது காற்று போக வழியுள்ள கோணிப்பை போன்றவற்றில் ஏதேனுமொன்றை மேலே போட்டு மூட வேண்டும்.

அடுத்த ஒன்றரை மாதம் கழித்து இந்த மண்ணைப் பார்த்தால், 6 அங்குல உயர குப்பை அப்படியே இயற்கை உரமாக மாறியிருப்பதைக் காணலாம். இந்த உரம், குப்பையைச் சாப்பிட்டுவிட்டு மண்புழு கழித்த எச்சம்தான். இது எந்தவித தூர் நாற்றமும் எடுக்காது. இதைச் சல்லடைப் போட்டுச் சலித்தால் நுண்ணிய உரம் கிடைக்கும். இதை அப்படியே நிலத்தில் தூவலாம்.

வீடுகளிலே செடி, மரம் வளர்ப்போரும், தோட்டம் மண்புழு வளர்ப்பு பற்றி விடியோ கேசட்டைத் தயாரித்து வெளியிட்டுள்ளோம்" என்கிறார் ஆடியோ விஷுவல் எய்ட்ஸ் நிறுவனத்தின் உரிமையாளர் ஜி.என். சுந்தரம்.

மண்புழு மூலம் கிடைக்கும் உரத்துக்கு 'வெர்மி கம்போஸ்ட்' என்று பெயர். டாக்டர் எம்.எஸ். சுவாமிநாதன் ஆராய்ச்சி அமைப்பு, சென்னை முருகப்பா செட்டியார் ஆராய்ச்சி மையம், சென்னை எக்ஸ்நோரா இன்டர் நேஷனல் அமைப்பு உள்ளிட்ட பல்வேறு அமைப்புகள் இந்த 'வெர்மி கம்போஸ்ட்' என்னும் இயற்கை உரத்தைத் தயாரித்துப் பயன்படுத்தி வருகின்றன.

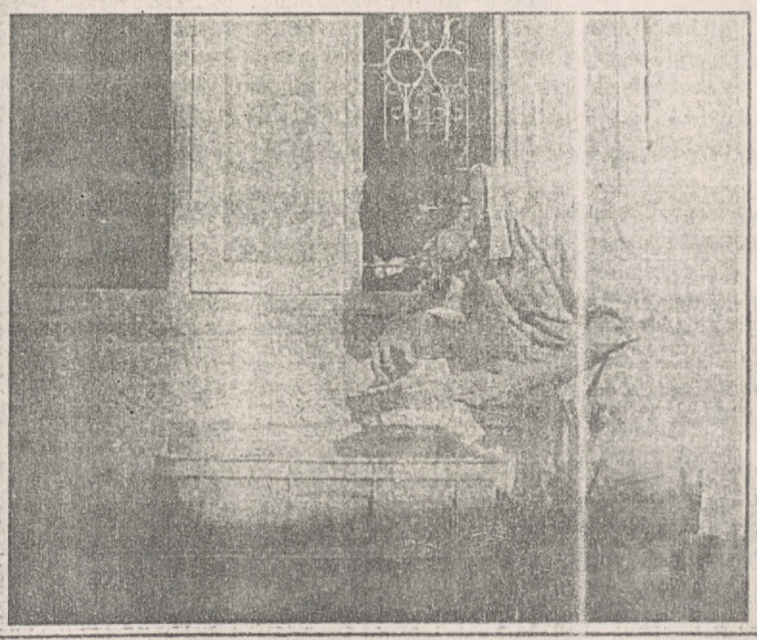
'வெர்மிடெக்' விடியோ கேசட் ஆங்கிலத்தில் தயாரிக்கப்பட்டுள்ளது. ஹிந்தியில் மொழிமாற்றம் செய்தும் தயாரித்துள்ளனர். விரைவில், தமிழ், தெலுங்கு, கன்னடம் உள்ளிட்ட மாநில மொழிகளிலும் மொழிமாற்றம் செய்து விற்பனை செய்யவுள்ளனர்.

உத்தரப் பிரதேச மாநிலம் லக்னௌவில் உள்ள உபி. நில மேம்பாட்டுக் கார்ப்பரேஷன் என்னும் அரசு அமைப்பு, 'வெர்மிடெக்' ஹிந்தி கேசட்டுக்களைப் பெருமளவு வாங்க ஆர்டர் கொடுக்க முன்வந்துள்ளது என்று சுந்தரம் கூறுகிறார். தமிழகத்தில் உள்ள ஊராட்சி அமைப்புகள், தமிழ் கேசட்டுகளை வாங்கினால், அந்தந்த கிராமப்புறங்களில் உள்ள விவசாயிகளுக்குப் பெரும் பயனுள்ளதாக இருக்கும் என்கிறார் அவர்.

இவரது ஆடியோ விஷுவல் எய்ட்ஸ் நிறுவனம், இதற்கு முன்னர் கல்வி மற்றும் தொழில்நுட்பப் பயிற்சி அளிக்கும் பலவிதமான விடியோ கேசட்டுகளைத் தயாரித்துள்ளது. 1989-ம் ஆண்டு முதல் பல்கலைக்கழக மானியக் குழுவுக்காக (யூ.ஜி.சி.) பல்வேறு பாடங்களை விடியோ கேசட்டுகளாக இந்த நிறுவனம் தயாரித்துக் கொடுத்து வருகிறது.

புவியியல் துறையில் 240 பாடத் தலைப்புகளிலும், பொருளியல் துறையில் 160 தலைப்புகளிலும், வரலாற்றில் 90 தலைப்புகளிலும், வர்த்தகம் மற்றும் விலங்கியல் துறைகளில் தலா 40 தலைப்புகளிலும், வேதியியலில் 25 தலைப்புகளிலும் விடியோ கேசட்டுகளைத் தயாரித்துக் கொடுத்துள்ளது. தூர்தர்ஷன் மூலம் நாடு முழுவதிலுமாக யூ.ஜி.சி. மேற்கொண்டுள்ள கல்வி ஒளிபரப்புகளில் இந்தக் கேசட்டுகள் பயன்படுத்தப்படுகின்றன.

பள்ளி, கல்லூரிகளில் உள்ள ஆய்வுக் கூடங்களுக்குத் தேவையான ரசாயனங்களையும், உபகரணங்களையும் வாங்கிக் கொடுக்கும் தொழிலில் 1952-ம் ஆண்டில் முதன்முறையாக இறங்கினார் சுந்தரம். அதற்குப் பின்னர் படிப்படியாக இவரது வியாபாரம் வளர்ந்தது. 1961-ம் ஆண்டில் ஆடியோ விஷுவல் எய்ட்ஸ் நிறுவனத்தைத் துவக்கினார். ஆரம்பத்தில் இந் நிறுவனம், கல்விப் பணிகளுக்குப் பயன்படும் ஃபிலிம் ஸ்டிரிப்புகளை (சிலைடுகள்) தயாரித்தது. 1971-ல் அமெரிக்காவிலிருந்து 16 எம்.எம். திரைப்படங்களை- விலங்குகளின் வாழ்க்கை முறை போன்ற கல்வி சார்ந்த திரைப்படங்களை- இறக்குமதி செய்து விநியோகிக்கத் துவங்கியது. அச் சமயத்தில் இந் நிறுவனத்துக்கு விநியோஸ்தராக ஹிக்கின்பாதம்ஸ் நிறுவனம் பணியாற்றியதாக நினைவுகூர்கிறார்



Evening Madras July 9, 96.

Minister's call to scientists

Evening Madras July 9, 96

MADRAS:

The Tamil Nadu Government seeks the active participation of scientists in its efforts to improve farm practices and increase agricultural productivity, the Agriculture Minister, Veerapandi Arumugam, said here on Monday.

Addressing the inaugural functions of the four-day "World Science Academies Summit on Uncommon Opportunities for a Food Secure World," Arumugam said the State had taken up various programmes to ensure that the farm sector's contribution to the State's and the country's economy was increased substantially, thereby tackling the problem of poverty. In this effort, the suggestions by scientists would be accorded great importance as the Government, he said, was holding out an assurance that "the recommendations to be made by the summit would be implemented in the State."

The State Agriculture Department was also providing link roads to ensure that the products of the farmers reached the markets, in addition to which were also being taken to improve the human resources available to the farm sector, the Minister said.

The four-day summit, being organised by the National Academy of Agricultural Sciences, New Delhi, Accademia Nazionale Delle Science, Rome and the Third World Academy of Sciences, Trieste, as preparatory meeting for the World Food Summit to be held in Rome in November, would address interrelated issues of science and sustainable food security.

Evening Madras July 9, 96.

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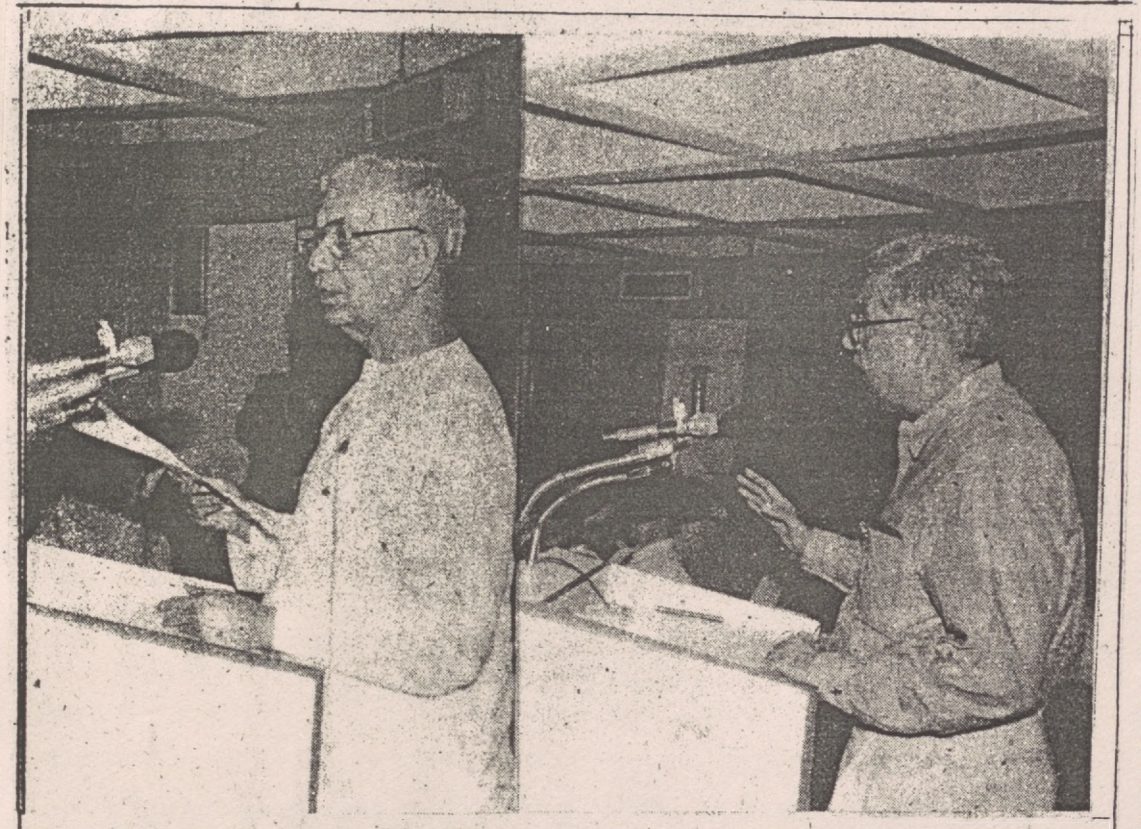

Dr. Y.K.Alagh, Union Minister of State for Planning, (right) and Chaturanan Mishra, Union Minister for Agriculture, addressing the Science Academies Summit on Uncommon Opportunities for a Food Secure World in the City on Monday.

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தினமணி ஜூலை 9, 96.

கங்கை -காவிரி இணைப்புத் திட்டம்: மத்திய அமைச்சர் யோசனை

தினமணி 4·5 ஜூலை 9.

சென்னை, ஜூலை 8— கங்கை -காவிரி இணைப்புத் திட்டத்தின் மூலம் ஏராளமான நிலங்களைச் சாகுபடிக்குக் கொண்டு வர முடியும் என்று மத்திய வேளாண் துறை அமைச்சர் சதுரானன் மிஸ்ரா தெரிவித்தார்.

'உலகில் உணவு உத்தரவாதத்துக்கான அசாதாரண வாய்ப்புகள்' குறித்து, சென்னையில் திங்கள்கிழமை துவங்கிய மாநாட்டை அவர் தொடக்கிவைத்துப் பேசியதாவது:

நமது பாசனத்துக்கு வரையறைக்குட்பட்ட அளவில் தான் நீர் கிடைக்கிறது. இதை அறிவியல் ரீதியாக நிர்வகித்தால் சாகுபடிப் பரப்பை அதிகரிப்பதுடன் உற்பத்தித் திறனையும் பெருக்க முடியும். ரசாயன உரங்களை நம்பாமல் வளங்குன்றா விவசாயத்தில் கவனம் செலுத்த வேண்டும்.

முக்கிய நதிகளை, குறிப்பாக சுங்கை-காவிரியை கிருஷ்ணா, கோதாவரி நதிகள் வழியாக இணைக்கும் போது தெற்கு மற்றும் மத்திய இந்தியாவில் ஏராளமான பகுதிகளைச் சாகுபடிக்குக் கொண்டு வர முடியும். இதற்குத் தேவையான முதலீடுகள் குறித்துச் சர்வதேச அமைப்புகள் சிந்திக்க வேண்டும்.

விவசாய ஆராய்ச்சியின் பலன்கள் விவசாயிகளைச் சென்றடையச் செய்வதன் மூலம் நமது உற்பத்தியை அதிகரிக்க முடியும்.

2-வது பசுமைப் புரட்சி

பசுமைப் புரட்சியின் நன்மைகளைத் தொடர்ந்து தக்க வைத்துக் கொள்வதுடன், சிறு மற்றும் நடுத்தர விவசாயிகளுக்கான இரண்டாவது பசுமைப் புரட்சியை உருவாக்குவதை இலக்காகக் கொள்ள வேண்டும்.

பசுமைப் புரட்சியினால் வசதி படைத்த விவசாயிகள் தாம் பலன் அடைந்தார்கள். அறிவியல் தொழில்நுட்ப வளர்ச்சி 80 மில்லியன் சிறிய விவசாயிகளுக்குப் பலன் அளிப்பதாக இருக்க வேண்டும் என்பதுதான் இப்போதைய தேவை. நவீனத் தொழில் நுட்பங்களைப் பயன்படுத்துவதில் ஏழை மற்றும் குறு விவசாயிகள் அதிக முதலீடுகளைச் செய்ய முடியாது. எனவே இதனைக் கருத்தில் கொண்டு முதலீடு குறைவாவ தொழில்நுட்பங்களுக்கு முக்கியத்துவம் கொடுக்க வேண்டும்.

புதிய வர்த்தக வாய்ப்புகளும் அறிவுசார் சொத்துரிமையும் விவசாய வளர்ச்சிக்குக் குறுக்கே வரக்கூடாது. அரசியல், பொருளாதாரக் குறுக்கீடுகளும், பன்னாட்டு நிறுவனங்களிடமிருந்து வரும் நெருக்கடியும் இல்லாவிட்டால் விவசாய வளர்ச்சி தொடர்ந்து திருப்தி அளிக்கக்கூடியதாகவே இருக்கும்.

ஆராய்ச்சி

விவசாய ஆராய்ச்சிக்காகத் தற்போது 0.3 சதவீதம் ஒதுக்கீடு செய்யப்படுகிறது. மற்ற சில வளரும் நாடுகளுடன் ஒப்பிடும்போது இத்தொகை குறைவு. இந்தத் தொகை 1 சதவீதமாக அதிகரிக்கப்பட வேண்டும்.

நமது உணவு உற்பத்தி வளர்ச்சி விகிதம் 3 சதவீதம். இதனைக் குறையாமல் பார்த்துக் கொண்டாலேயே நமது வளரும் மக்கள் தொகைக்குப் போதுமான உணவைப் பெறலாம். 2020-ம் ஆண்டில் நமது தேவைக்கு அதிகமாக 15 மில்லியன் டன் உணவு உற்பத்தி இருக்கும்.

பின்னர் அவர் நிருபர்களிடம் கூறியதாவது:

விவசாயத்துறை சம்பந்தமாகப் பத்திரிகைகளில் வெளிவரும் செய்திகளை உயர் அதிகாரிகள் கவனித்து நடவடிக்கை எடுக்க வேண்டும் எனக் கேட்டுக் கொண்டுள்ளேன்.

உரங்களுக்கான மானியம் ரூ.3000 கோடி அளவுக்கு அதிகரிக்கப்பட்டுள்ளது. மானியங்கள் அதிகரிப்பதைவிட, குறைந்த விலையில் உரங்கள் விவசாயிகளுக்குக் கிடைக்க வேண்டும். சிறிய நலிந்த விவசாயிகளுக்கு அதைவிட மிகவும் குறைந்த விலையில் உரங்கள் கிடைக்கச் செய்ய வேண்டும். இதற்காகக் குறைந்த விலையில் உரங்கள் உற்பத்தி செய்யப்பட வேண்டும்.

தாராளப் பொருளாதாரக் கொள்கை பற்றிப் பேசும் வளரும் நாடுகளில், வங்கிகளில் 6-7 சதவீதம்தான் வட்டி வாங்கப்படுகிறது. ஆனால், நமது நாட்டில் வட்டி விகிதம் 18 லிருந்து 20 சதவீதம் வரை உள்ளது. எப்படி நம்மால் மற்றவர்களுடன் போட்டியிட முடியும்? வங்கிகளில் குறைந்த வட்டியில் விவசாயிகளுக்குக் கடன் கிடைக்கச் செய்ய வேண்டும்.

உலகில் உணவு உத்தரவாதத்துக்கான அசாதாரண வாய்ப்புகள் என்ற தலைப்பில் சென்னையில் திங்கள்கிழமை துவங்கிய மாநாட்டில் (இடமிருந்து) இந்தியாவுக்கான இத்தாலியத் தூதர் கெடனோ ஜுகோனி, தமிழக வேளாண் அமைச்சர் வீரபாண்டி ஆறுமுகம், சி.சுப்பிரமணியம், மத்திய வேளாண் அமைச்சர் சுதுரனன் மிஸ்ரா, மத்தியத் திட்ட இணையமைச்சர் ஒய்.கே.அலக்.

தினமலர் ஜூலை 9, 96.

கங்கை-காவிரி இணைக்க சதுரானன் மிஸ்ரா விருப்பம்

தினமலர். 11.3. ஜூலை 9.

சென்னை, ஜூலை 9—

இந்தியாவிலுள்ள பெரிய நதிகளை இணைத்தால் மத்திய மற்றும் தென்னிந்தியாவில் உள்ள பெரும் பான்மையான பகுதிகளுக்கு பாசன வசதி கிடைக்கும் என மத்திய விவசாயத்துறை அமைச்சர் சதுரானன் மிஸ்ரா கூறினார்.

சென்னையில் எம்.எஸ்.சுவாமி நாதன் அறிவியல் ஆராய்ச்சி மையத்தில் நேற்று உலக அறிவியல் அகாடமியின் நான்கு நாள் மாநாட்டை மத்திய விவசாயத் துறை அமைச்சர் சதுரானன் மிஸ்ரா துவக்கி வைத்து பேசினார்.

அப்போது அவர் கூறியதாவது:

இந்தியாவில் கங்கை, காவிரி மற்றும் பெரிய நதிகளை இணைத்தால் தென்னிந்தியா மற்றும் மத்திய இந்தியாவில் உள்ள பெரும்பான்மையான பகுதிகளை பாசன வசதி உள்ள பகுதிகளாக மாற்ற முடியும். குறிப்பாக கங்கை மற்றும் காவிரி இணைப்பு மூலமாகவும், கிருஷ்ணா மற்றும் கோதாவரி இணைப்பு மூலமாகவும் அதிக இடங்கள் பாசன வசதிகளை பெற வாய்ப்புள்ளது.

இதனால் நதிகளின் இணைப்பு அவசியமாகிறது. இதனால் இந்தியாவில் ஒரே நேரத்தில் ஒரு பக்கம் வெள்ளப் பாதிப்பும், மறுபக்கம் வறட்சியும் ஏற்படாமல் தவிர்க்க வழியுள்ளது. இந்த மாதிரி ஆக்கப் பூர்வமான பெரிய பணிகளுக்கு உலக சமுதாய மக்கள் முதலீடு செய்ய வேண்டும்.

விவசாயிகளுக்கு வழங்கப்படும் உரமான்யத்தை மத்திய அரசு 3 ஆயிரம் கோடி ரூபாய் அளவிற்கு உயர்த்தி உள்ளது. இது தற்போது நாட்டில் பின்பற்றப்பட்டு வரும் பொருளாதார தாராளமய கொள்கைக்கு ஒத்து வராத முடிவு. ஆனாலும் கூட விவசாயிகளின் நலன்கருதி இந்த 3 ஆயிரம் கோடி ரூபாய் உயர்த்தப்பட்டுள்ளது.

வளரும் நாடுகளில் 6 முதல் 7 சதவீதம் வரைதான் வட்டி என்று இருக்கின்ற போது இந்தியாவில் அது 18 முதல் 20 சதவீதமாக உள்ளது. இந்தியாவில் உற்பத்தி பொருட்களின் விலையை அதிகரிப்பதற்காக விவசாய இடுபொருட்களுக்கு வாங்கும் கடனுக்கு விவசாயிகள் 18 முதல் 20 சதவீத வட்டி கொடுக்க வேண்டியிருக்கிறது.

தற்போதைய அரசு விவசாயிகளுக்கு குறைந்த விலையில் உரங்களை வழங்குகிறது. சிறு மற்றும் நடுத்தர விவசாயிகளுக்கு மலிவு விலை உரம் பயனுள்ளதாக இருக்கும். நாட்டில் பாசன வசதி குறைவாக உள்ள பகுதிகளிலும் மானாவாரி நிலங்களிலும் உணவு பயிர் உற்பத்தி குறைவாகத்தான் உள்ளது. உற்பத்தி அதிகமானால் உணவு உற்பத்தி பயனுள்ளதாக இருக்கும்.

விவசாயிகளுக்கு கிடைக்க கூடிய வகையில் இடுபொருள் சேமிப்பு தொழில் நுட்பத்தை உருவாக்க வேண்டும்.

உணவு உற்பத்தி 2 ஆயிரமாவது ஆண்டில் 220 முதல் 230 மில்லியன் டன் உணவு பொருள் தேவை ஏற்று எதிர்பார்ப்பு உள்ளது. இதேபோல 2010ம் ஆண்டில் 280 முதல் 290 மில்லியன் டன்கள் உணவு பொருள் உற்பத்தி இருக்க வேண்டும் என நாடு எதிர்பார்க்கிறது. இது முடியாத காரியமாக இருக்காது.

இவ்வாறு அமைச்சர் மிஸ்ரா கூறினார்.

மத்திய விவசாயத்துறை அமைச்சர் சதுரானன் மிஸ்ரா நேற்று சென்னையில் உள்ள இந்திய கம்யூனிஸ்ட் கட்சி அலுவலகத்துக்கும் சென்றார்.

மத்திய விவசாயத்துறை அமைச்சர் சதுரானன் மிஸ்ரா, இந்திய கம்யூனிஸ்ட் கட்சி மாநில தலைமை அலுவலகத்திற்கு நேற்று பிற்பகல் வந்தார்.

மத்திய அமைச்சரை மாநில செயலாளர் ஆர்.நல்லக்கண்ணு, பாண்டிச்சேரி மாநில விவசாயத்துறை அமைச்சர் விஸ்வநாதன், தமிழக விவசாயிகள் சங்க செயலாளர் துரைமாணிக்கம், ஏ.ஐ.டி.யு.சி செயலாளர் மணி உட்பட பலர் மாலை அணிவித்து வரவேற்றனர்.

The Hindu July 8, 96

National Academy of Agricultural Sciences: Inauguration of the 'World Science Academies Summit on Uncommon opportunities for a food secure world', Mr. Chaturanan Mishra, Union Minister inaugurates, Prof. Yoginder K. Alagh, Union Minister of State, Mr. C. Subramaniam, and Mr. Veerapandi Arumugam, State Minister, participate, M. S. Swaminathan Research Foundation, III Cross St., Taramani, 11 a.m.

The Hindu July 9, 96.

Scientists urged to help improve farm practices

THE HINDU P.5. JULY 9.

MADRAS, July 8.

The Tamil Nadu Government seeks the active participation of scientists in its efforts to improve farm practices and increase agricultural productivity, the Agriculture Minister, Mr. Veerapandi Arumugam, said here today.

Addressing the inaugural of the four-day "World Science Academies Summit on Uncommon Opportunities for a Food Secure World," Mr. Arumugam said the State had taken up various programmes to ensure that the farm sector's contribution to the State's and the country's economy was increased substantially, thereby tackling the problem of poverty. In this effort, the suggestions by scientists would be accorded great importance as the Government, he said, was holding out an assurance that "the recommendations to be made by the summit would be implemented in the State."

The State Agriculture department was also providing link roads to ensure that the products of the farmers reached the markets, in addition to which were also being taken to improve the human resources available to the farm sector, the Minister said.

The four-day summit, being organised by the National Academy of Agricultural Sciences, New Delhi, Accademia Nazionale Delle Science, Rome and the Third World Academy of Sciences, Trieste, as preparatory meeting for the World Food Summit to be held in Rome in November, would address interrelated issues of science and sustainable food security.

Prof. G. T. Scarascia Mugnozza, President, National Academy of Sciences, Italy, Prof. Johanna Dobereiner from the Third World Academy of Sciences, Mr. Peter A. Rosenegger, Food and Agriculture Organisation (FAO) Representative for India and Bhutan, Dr. Hans-C. von Sponeck, Resident Representative, United Nations Development Programme (UNDP), New Delhi, Dr. R. S. Paroda, Director-General, Indian Council for Agricultural Research (ICAR), Dr. Ismail Serageldin, Chairman, Consultative Group on International Agricultural Research (CGIAR), Dr. Adnan Badran, Deputy Director General, UNESCO, Dr. Amir Muhammed, President, Pakistan Academy of Sciences and Ms. Elizabeth Dowdeswell, Executive Director, United Nations Environment Programme (UNEP), are among those who would be presenting papers during the meeting.

1996

NPC to allow flexibility to States

THE HINDU. P.1 JULY 9.

From Our Staff Reporter

MADRAS, July 8.

The Union Planning Commission would assume the role of a "think-tank" in the new planning scenario. This is a result of the decision taken at the recently-concluded Chief Ministers meeting to decentralise key development schemes, Dr. Yogendra K. Alagh, Union Minister of State for Planning, Programme Implementation and Science and Technology, said here today.

At a press conference, Dr. Alagh said the Planning Commission, to be reconstituted shortly to draft the Ninth Five Year Plan, would not tell the States what to do with the resources allotted to them. The apex planning body would instead take on the role of bringing in clarity on issues of national importance, while providing 'flexibility' at the State and local levels with regard to the prioritisation of the issues and their implementation.

The recent decision of the State Chief Ministers towards decentralised implementation of projects was a major step in ensuring the national goals of meeting the minimum basic requirements of the people, Dr. Alagh said.

An important result of the decentralisation would be the increased transparency and consequently, accountability on the part of the state and local bodies which would be the implementing authorities. In addition there would be a 15 per cent increase in allocation to the States for meeting their needs, the formalities of which were likely to be completed by the first week of August.

Dr. Alagh, who had toured Tamil Nadu and Karnataka last year as member of the Cauvery Waters Disputes Tribunal, when asked to comment on the present stage of the inter-State dispute, said "I do not want to be misquoted on this. Any State is free to seek adjudication." He pointed out that through negotiations, countries such as Thailand and Vietnam had resolved their water disputes with neighbouring countries.

Asked about the resources which would have to be generated to meet the requirements, Dr. Alagh conceded that it was an "acute problem" but could be overcome the details of which would be made known through the budget. On the stand to be taken by India with regard to patents and intellectual property rights (IPR), the Minister affirmed that the country would be "aggressive" in protecting its interests.

Earlier addressing the "World Science Academies Summit on Uncommon Opportunities for a Food Secure World", Dr. Alagh observed that the country could no longer be complacent on the IPR issue. Though "Monopolisation of knowledge is alien to Indian culture and ethos" and the country had "historically never evolved systems by which any form of knowledge becomes the personal property of any individual or company", in view of the changing times, there was the need to "aggressively document and provide legal protection to the fruits of our indigenous genius."

Holding out a caution that short-term measures to solve the problem of food security would have "serious adverse consequences" on the long run sustainability, Dr. Alagh said growing inequalities, land degradation and continued population growth would accentuate the imbalances in the future, unless a comprehensive programme for food security was implemented.

With regard to environmental protection, Dr. Alagh observed that the Union and State Governments "can only have a supportive role to play." Sustainable development at the local level required "an enormous intellectual and material input which can be provided only by institutions which are sensitive to local conditions and socio-cultural attributes", Dr. Alagh said.

Natarajan admitted in Madras GH

MADRAS, July 8.

Mr. M. Natarajan, in judicial custody at Vellore in connection with the journalists assault case, was brought to Madras this afternoon and admitted to the intensive coronary care unit at the Government General Hospital.

As he complained of chest pain, Mr. Natarajan was admitted to Government Pentland Hospital at Vellore on Saturday night. It was stated that his medical condition required more advanced diagnosis and hence shifted to Madras.

Mr. Natarajan was arrested in Madras on June 20 on charges of assaulting press photographers who attempted to take pictures of Ms. Sasikala when she was appearing before the Enforcement Directorate. He was subsequently remanded to judicial custody by the XIV Metropolitan Magistrate, Madras and sent to Vellore prison. His remand period has been extended upto July 19.

Liberalisation, fertiliser subsidies 'can't co-exist'

INDIAN EXPRESS, P.12. JULY 9.

INDIAN EXPRESS July 9, 96.

EXPRESS NEWS SERVICE

MADRAS, July 8 – The ongoing liberalisation programme of the Central government cannot co-exist with fertiliser subsidies, Union Agriculture Minister Chaturanan Mishra said on Monday.

Talking to mediapersons after inaugurating the Science Academies Summit on 'Uncommon opportunities for a food secure world' at the M.S. Swaminathan Research Foundation, he said the alternative to subsidies was providing the small and marginalised farmers with cheaper fertilisers.

While on the one hand the finance ministry was pushing ahead with liberalisation, on the other hand there was a high interest rate of 18 to 20 percent. This compared with six to seven percent in the developed countries, he said.

Earlier inaugurating the summit, he said there was need for a viable system of social audit in the institutes under the Indian Council of Agricultural Research and the department of agriculture. There must be close monitoring of the country's research and development system for ensuring accountability.

The state governments had been asked to set up five-member committees comprising an agriculturist, an economist, the agriculture secretary, an MP and an MLA to go into the working of the institutes.

Noting that the global agricultural scenario was changing fast, particularly after the conclusion of the GATT agreement, he said new trade opportunities and Intellectual Property Rights should not come in the way of agricultural growth and trade of the developing countries. The country had diverse agro-ecologies to produce a variety of agricultural commodities round the year, competitive scientific manpower, large cultivable areas and a strong seed industry. If there was no interference by political and economic barriers and pressures from multinationals, agricultural growth would continue to be impressive.

"The world was friendly to trade, but unfortunately not the trade to the world. For instance, whenever China or India go to international market at times of food shortages, prices shoot up through manipulations of international cartels making it difficult for us to buy what we require. Such unhealthy practices prove serious obstacles in ensuring food security. I expect the Food and Agricultural Organisation to act on this issue also," he said.

The Green Revolution had benefitted the affluent section of the country's farming community. Modern technology had bypassed the ecologically and economically handicapped areas where the poorest of the poor lived. "There is thus need for greater emphasis on equity principles in technology development and dissemination."

Despite India being endowed with several perennial rivers, it experienced drought every year. "If we can link all major rivers, particularly the Ganga and Cauvery through Krishna and Godavari, a very large area could be brought under irrigation in southern and central India," he said.

Former Union Agriculture Minister C. Subramaniam, presiding over the function, called for a comprehensive natural resources survey taking advantage of remote sensing technology. "Only with knowledge, one can plan properly," he said. There was also need for a detailed micro-level planning.

Even wastelands could be made productive through technology, he said.

TN Agriculture Minister Veerapandi Arumugham said the state government would consider and implement the suggestions and conclusions arrived at the summit.

R.S. Paroda, secretary to the department of agricultural research and education of the Union government, called for a global approach to the food security problem as no single nation could tackle it.

M.S. Swaminathan, president of the National Academy of Agricultural Sciences of India, G.T. Scarscia Mugnozza, president of the National Academy of Sciences of Italy, and Johanna Dobereiner of the Third World Academy of Sciences, welcomed the participants on behalf of their organisations. Gaetono Zucconi, Ambassador of Italy to India, welcomed the participants on behalf of the Government of Italy and Peter A. Rosenegger on behalf of the FAO.

Low-cost fund mooted to cut fertiliser prices

FE NEWS SERVICE
MADRAS, JULY 8
FINANCIAL EXP. P.1. July 9.

BANKS should come forward to provide funds to fertiliser manufacturers at low rates of interest to bring down the fertiliser prices and subsidies in the country.

This was suggested by Chaturanan Mishra, Union Minister for Agriculture while addressing a press conference here on Monday.

He said that the growing burden on fertilizer subsidy is mounting every year. Last year, the fertiliser subsidy was Rs 3000 crore and the figure is more this year.

Banks should bring down their lending rates on par with that of the international lending rates which is just six to seven per cent. The interest rate in India is as high as 18 to 20 per cent, as a result of which the cost of production is high.

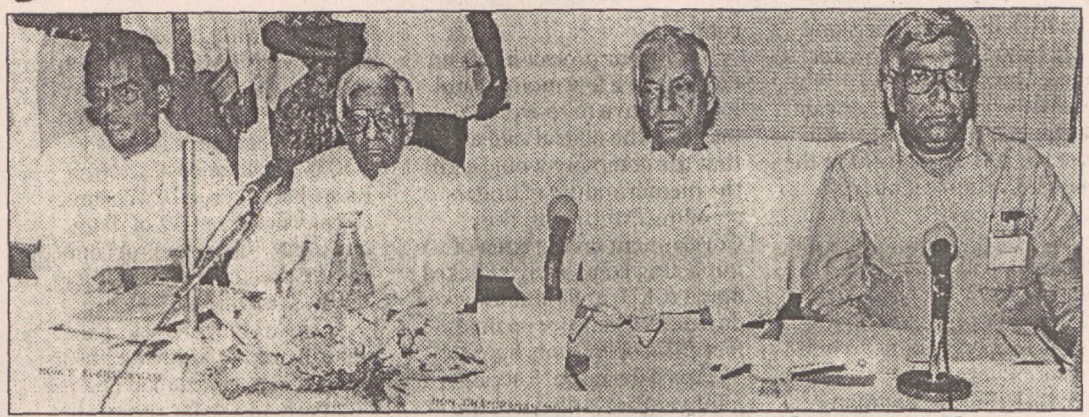
Low cost of production of fertilisers will enable the Centre to provide cheaper fertilisers to the farmers than subsidising it thereby adding burden on the exchequer.

Mishra said that a five-member committee should be set up in every state to monitor the successful findings in the lab and take it to the farmers. The members should comprise of an agriculture minister, an agricultural scientist, a secretary, an local MLA and an economist. The members should visit all the research institutions in the country every month to update and implement these findings in the respective states.

The Minister addressed a four-day seminar on science academies summit in Uncommon Opportunities for a Food Secure World, at M S Swaminathan Research Foundation here on Monday.

He said that the fast changing global agricultural scenario, particularly after the conclusion of the GATT Agreement, new trade opportunities and intellectual property rights should not come in the way of agricultural growth and

■ *Continued on Page 10*



Tamil Nadu Minister for Agriculture Veerapandi Arumugam, C Subramanian, Chaturanan Mishra, Union Minister for Agriculture, Y K Alagh, Minister of State for Planning, Programme Implementation and Science and Technology at the inaugural meet on Science Accademies Summit on UnCommon Opportunities for a Food Secure World. *FE photo by K V Srinivasan*

Financial Express July 9, 96.

The Business Line July 9, 96.

Bijoy Ghosh

The elder statesman, Mr. C. Subramaniam, greeting the Union Agriculture Minister, Mr. Chaturanan Mishra, at a meeting in Madras on Monday. Dr. M. S. Swaminathan (left), Chairman, M. S. Swaminathan Research Foundation, and Dr. Y. K. Alagh, Union Planning Minister, are also seen.

Mishra stress on farm R&D

Our Staff Correspondent
MADRAS, July 8

THE country's agricultural growth would continue to be impressive if political and economical barriers and pressure from multinationals did not pose obstacles, said the Union Agriculture Minister, Mr. Chaturanan Mishra, here on Monday.

He was inaugurating the four-day Science Academies Summit on 'Uncommon opportunities for a food secure world' organised by the National Academy of Agricultural Sciences of India, National Academy of Sciences, Italy and the Third World Academy of Sciences.

He said whenever India or China was in the market for foodgrains and fertilisers, the prices of these commodities increased due to the manipulation of international cartels.

Mr. Mishra called upon the FAO to act on these issues which posed a serious threat to the food security of developing countries.

He emphasised that following the conclusion of the GATT agreement, new trade opportunities and intellectual property rights should not come in the way of agricultural growth and trade of developing countries.

Higher agricultural productivity represented a real opportunity for poverty alleviation. This could be achieved only through the application of technology and innovative approaches which would ensure generation of on-farm and off-farm employment, he said.

At present, farmers had not been exposed to newer technologies and just 30 per cent of the available technology had reached the farmers.

Mr. Mishra said he would endeavour to see that the investment in agricultural research and development would be enhanced from 0.3 per cent of the GDP to one per cent. Technology development could be achieved only through enhanced investment in agricultural research, he said.

Corresponding to increased capital investment and creating a favourable policy environment for advances in agricultural research, a close monitoring of the R&D system was crucial. A system of 'social audit' should be implemented.

Scientific management of existing resources would also help to increase cropping intensity and productivity. Irrigation water resources were limited and water use efficiency had to be improved, he said.

He pointed out that the country was endowed with several perennial rivers. Linking rivers such as the Ganges and Cauvery, and Krishna and Godavari, would help in bringing large areas under irrigation. The world community should think along such scale of investments, he said.

Later speaking to newspersons, Mr. Mishra said the country was talking about liberalisation, and at the same time insisting on increased subsidies. These did not go hand in hand, he said.

While the Finance Ministry had been harping on reforms in the past 4-5 years, the Ministry had not reformed. The interest rates continued to be around 17-20 per cent, whereas in the developed countries, it was just 6-7 per cent. This posed a major obstacle to the competitiveness of the Indian industry, he said.

He said banks should come out with 4-5 per cent interest rates. This would help industries such as fertiliser to produce at a cheaper rate and do away with the need for subsidies.

The Minister of State for Planning and Programme implementation, Dr. Yogendra K. Alagh, in his presidential address, said that in regard to food security, issues of access and ecological sustainability had also been recognised, particularly in view of growing inequalities, land degradation and continued population growth. Indian food security policies had followed a dual strategy. The first was to plan for reasonable comfort in food availability through investible resources for the farmers and providing a policy back-up. The second was through attention to access questions, he said. Work on a more focussed and targeted revised public distribution system was being done, he said.

Illiteracy and health were major cultural technology. The country was in the process of making a major change in regard to food security and provision of basic facilities. A decentralised approach was being adopted and the modalities would be finalised within a month, he said. The approach was to develop a national objective of a focused nature and provide flexibility and operational freedom.

The Director-General of the Indian Council of Agricultural Research, Dr. R. S. Paroda, called for globalisation of agricultural research and development, as no single country could by itself address issues of global food security.

A linkage of policy makers, scientists and administrators was also essential. Strengthening the national agricultural research systems was also needed, he said.

Earlier, outlining the theme of the summit, the Chairman of the M. S. Swaminathan Research Foundation, Dr. M. S. Swaminathan, said the global scenario was conducive for solving the problem of food security. The spread of democratic systems of government, independent media and phenomenal progress in science and technology, provided uncommon opportunities for providing food security. He emphasised that issues of science and food security were inter-related and that a national policy for sustainable food security should ensure that every individual had economic and environmental access to balanced diets.

Economic Times July 9, 96.

Urea price hike cannot balance fertiliser subsidy: Mishra

ECONOMIC TIMES P.8. JULY 9.

Our Madras Bureau

MADRAS 8 JULY

THE Union agriculture minister, Mr Chaturanan Mishra on Monday virtually rejected the argument that a 15 per cent to 20 per cent increase in urea price would help the government keep the fertiliser subsidy under control following the latest concessions handed down for potassic and phospatic fertilisers. "If they increase the urea price, it would be a failure of the government" as the real issue was the requirement of a change in policy, he told a press conference here.

Any hike in the urea price might force another revision by the government, he said.

, in an apparent reference to the diesel price increase being slashed by half after being hiked by 30 per cent just last week.

Mr Mishra, who was in Madras to inaugurate the Science Academies Summit on 'Uncommon opportunities for a food secure world' at the M S Swaminathan Research Foundation, said the basic issue was to provide 'cheaper fertilisers' to farmers rather than increasing subsidies in the context of the economic liberalisation.

Making a specific reference to an editorial about fertiliser subsidies in Monday's issue of *The Economic Times*, Mr Mishra said the agriculture ministry has to actually fork out Rs 3,000 crore this year (after the concessions on potassic and phospatic fertilisers). "Personally, I have agreed this time, but I wish to raise some questions," Mr Mishra said.

The policy of liberalisation and globalisation was inconsistent and even contradictory to 'increasing subsidies', he added. Unless the cost of funds was reduced, which, in turn, would reduce manufacturing costs and enable cheaper fertilisers to the farmers, Mr Mishra said the concessions offered was in effect 'only financing the banks'.

Mr Mishra clarified that he was not against poorer sections among the farmers being provided fertilisers at a much cheaper price under the anti-poverty programmes, but the issue was one of reducing costs and not subsidies. Addressing the summit earlier, Mr Mishra said after the conclusion of the GATT agreement, new trade opportunities and intellectual property rights should not come in the way of growth and trade of developing countries.

Charging that international cartels manipulated fertiliser prices and jacked them up when countries like India and China had to go to the international market at times, Mr Mishra told the scientists from different parts of the world assembled at the conference that it made "difficult for us to buy what we require".

"Such unhealthy practices prove serious obstacles in ensuring food security to mankind and I expect the Food and Agriculture Organisation (FAO) to act on this issue," Mr Mishra said. Mr Mishra expressed confidence that India would be able to sustain its present growth rate of 3 per cent in food production and make available an estimated surplus of 15 million tonnes by the year 2020. Deploring the present level of allocation to agricultural research in the country at just 0.30 per cent of the GDP, Mr Mishra said he will work for raising it to 1 per cent of the GDP.

The agriculture minister also mooted an effective and viable system of 'social audit' for the Institutes under the Indian Council for Agricultural Research (ICAR) and for the Krishi Vigyan Kendras to oversee where proper transfer of technology from lab to land took place.

1996

சிறு மற்றும் நடுத்தர விவசாயிகளுக்கு

"மலிவு விலையில் உரம் வழங்கப்படும்"

மத்தியமந்திரி மிஸ்ரா பேட்டி

தினத்தந்தி, பு.ப. ஜூலை 9.

சென்னை, ஜூலை 9.

"சிறு மற்றும் நடுத்தர விவசாயிகளுக்கு மலிவு விலையில் உரம் வழங்கப்படும்" என்று, மத்திய மந்திரி மிஸ்ரா கூறினார்.

பேட்டி

மத்திய விவசாயத்துறை மந்திரி சதுரனன் மிஸ்ரா, சென்னையில் நேற்று நிருபர்களுக்கு பேட்டி அளித்தார். அப்போது அவர் கூறியதாவது:-

"மத்திய அரசு, சமீபத்தில் விவசாயிகளுக்கு ரூ3 ஆயிரம் கோடிக்கு உரமானியத்தை உயர்த்தி உள்ளது.

விவசாயிகளுக்கு மலிவான உரங்களை வழங்க விவசாய அமைச்சகம் செயல்படுகிறது. அதே சமயம், அது அரசின் கொள்கைக்கு முரண்பட்டதாக அமைந்து விடக்கூடாது. சிறு மற்றும் நடுத்தர விவசாயிகளுக்கு மலிவு விலையில் உரம் வழங்க வழிவகை காணப்படும்.

உரம் இறக்குமதி செய்வதற்கான மானியம் டன் ஒன்றுக்கு ரூ2 ஆயிரத்தில் இருந்து ரூ3 ஆயிரமாக உயர்த்தப்பட்டு இருக்கிறது. அமெரிக்கா, மொராக்கோ போன்ற நாடுகள் கூட்டு அமைத்துக் கொண்டு உரத்திற்கு அதிக விலை போடுவதால் அதே விலையை நாம் தர வேண்டியுள்ளது. அந்த நாடுகளுடன் தனித்தனியாக பேச்சு வார்த்தை நடத்தினால் உரத்தின் விலை குறைய வாய்ப்பு இருக்கிறது.

இவ்வாறு சதுரனன் மிஸ்ரா கூறினார்.

மாநிலங்களுக்கு நிதி

மத்திய திட்ட இலாகா ராஜாங்க மந்திரி, ஒய்.கே.அலகும் சென்னையில் நேற்று நிருபர்களுக்கு பேட்டி அளித்தார். அவர் கூறியதாவது:-

மாநில அரசுகளின் சிறிய திட்டங்களுக்கு ஒதுக்கப்பட வேண்டிய நிதி மத்திய அரசிடம் தயாராக உள்ளது. இந்த நிதி, அடுத்த மாதம் (ஆகஸ்டு) 6-ந் தேதி மாநிலங்களுக்கு வழங்கப்படும். இது, கடந்த ஆண்டு ஒதுக்கப்பட்ட தொகையைக் காட்டிலும் 15 சதவீதம் அதிகமாக இருக்கும். இந்த தொகையை எந்த வகையான திட்டங்களுக்கு பயன்படுத்துவது என்பது மாநில அரசுகளின் முடிவுகளுக்கே விடப்படும்.

பணம் தவறான வழியில் செலவிட்ப்படாமல் கிராமப் பகுதிகளில் சுகாதாரம் பாதுகாக்கப்பட்ட குடிநீர், சாலை மேம்பாடு போன்ற வளர்ச்சிப் பணிகளில் பயன்படுத்தப்படுவதை மாநில அரசுகள் கண்காணிக்க வேண்டும். சமீபத்தில் டெல்லியில் நடந்த முதல்-மந்திரிகள் மாநாட்டில் இந்த ஒதுக்கீடு பற்றிய முடிவு எடுக்கப்பட்டுள்ளது.

கடந்த ஆண்டு, குறைந்தபட்ச பொது திட்டங்களுக்காக மாநில அரசுகளுக்கு 18 ஆயிரம் கோடி ஒதுக்கீடு செய்யப்பட்டது. இந்த ஆண்டு அதைவிட 15 சதவீதம் உயர்த்தி, அதில் பாதி தொகை அடுத்தமாதம் வழங்கப்படும். மீதி தொகை இன்னும் 6 மாத காலத்திற்குள் வழங்கப்படும்.

இவ்வாறு மத்திய மந்திரி அலக் கூறினார்.

கருத்தரங்கு

சென்னை தரமணியில் உள்ள எம்.எஸ்.சாமிநாதன் ஆராய்ச்சி மையத்தில் உணவு பாதுகாப்பு பற்றிய அறிவியல் கருத்தரங்கு நேற்று தொடங்கியது. கருத்தரங்கை மத்திய மந்திரி சதுரனன் மிஸ்ரா, தொடங்கி வைத்துப் பேசினார்.

அப்போது அவர், "நமது விஞ்ஞானிகளின் திறமையினால், உணவுப் பொருள் உற்பத்தி மேலும் உயரும் என நம்புகிறேன். இதன்மூலம் பெருகி வரும் மக்கள் தொகைக்கு ஏற்ப நமது நாட்டின் உணவுப் பொருள் தேவையை சமாளிப்பதுடன், தேவைப்படும் நாடுகளுக்கும் உதவ முடியும்.

நமது நாட்டில் கங்கை-காவிரி போன்ற பெரிய நதிகளை இணைக்க வேண்டியது அவசியமாகும். ஏனெனில் வெள்ளம் - வறட்சி ஆகிய இரண்டும் நம்மை மாறி மாறி பாதிக்கின்றன. நதிகள் இணைக்கப்பட்டால், தென் இந்தியா மற்றும் நாட்டின் மத்திய பகுதிகளில் ஏராளமான நிலங்கள் பாசனவசதி பெறும்" என்றார்.

வீரபாண்டி ஆறுமுகம்

கருத்தரங்கில் கலந்து கொண்டு பேசிய தமிழக வேளாண்மைத் துறை அமைச்சர் வீரபாண்டி ஆறுமுகம், "இந்த கருத்தரங்கின் மூலம் பிறக்கும் சிறிய திட்டங்களை தமிழக அரசு ஏற்று செயல்படுத்தும்" என்று கூறினார். முன்னதாக விஞ்ஞானி எம்.எஸ்.சாமிநாதன் வரவேற்றார்.

மத்திய மந்திரி அலக், மத்திய அரசு விவசாயத்துறை செயலாளர் பரோடா உள்பட பலர் பேசினார்கள். கருத்தரங்கில், உலகின் பல்வேறு நாடுகளைச் சேர்ந்த அறிஞர்களும் கலந்து

Trinity Mirror July 9. 96.

'Large area can be brought under cultivation'

Union Agri Minister favours Ganga-Cauvery link

Madras July 9:

Union Minister for Agriculture, Chaturanan Mishra, has favoured the idea of linking major rivers, including the Ganga and the Cauvery, as part of the country's strategy to develop the agricultural sector.

Inaugurating the four-day world science academies' summit on "Uncommon Opportunities for a Food Secure World", sponsored by the National Academy of Agricultural Sciences of India, here yesterday, he said a very large area could be brought under irrigation in Southern and Central India "if we can link all major rivers, particularly Ganga and Cauvery through Krishna and Godavari".

This became necessary because India had been experiencing drought and floods every year though the country was endowed with several perennial rivers, he said, urging the world community to think of such largescale investments.

He said India had a large but still under-exploited groundwater potential in the eastern states, where high rainfall recharges the acquifers and maintained the potential. "Efforts are therefore needed to exploit all potential surface and groundwater sources", he said.

Mishra said he was asking the agriculture ministry to introduce an effective and viable system of 'social audit' in the institutes under the ICAR and department of agriculture.

While increasing the capital investment and creating favourable policy environment for acheiving the envisaged advances in agricultural research, a close monitoring of the country's research and development system too was essential for ensuring accountability, he said.

A very large proportion of area under food crops in India was still of low productivity both in unirrigated and rainfed areas. "Maximisation of their productivity, and diagnosis and correction of the constraints would help add substantially to the production advance", he added.

On the impact of the green revolution on the farming community,he said it had benefited affluent sections the most. "In a way, the modern technology has bypassed the ecologically and economically handicapped areas, where the poorest of the poor live", he said underscoring the need for greater emphasis on equity principles in technology development and dissemination to suit 80 millions of small holdings.

However,he said the technology affordable by rich farmers should be further strengthened, because it was this section which played the key role in heralding the green revolution. "Hence we must sustain the benefits of the green revolution and aim for the second green revolution based on small and middle farmers from our vast rainfed areas".

Mishra said in the fast changing global agricultural scenario,particularly after the conclusion of the GATT treaty, new trade opportunities and intellectual property rights should not come in the way of agricultural growth and the trade of the developing country.

India had diverse agro-ecologies to produce a variety of agricultural commodities round the year competitive scientific manpower, large cultivable areas and strong seed industry, he said, adding if it was not interfered with by political and economical barriers and pressures from the multinationals, its agricultural growth would continue to be impressive.

"The world is friendly to the trade but unfortunately not the trade to the world" he said,adding prices of food items or fertilisers had shot up through manipulations of international cartels making it difficult for the developing countries to buy what they required.

Mishra expressed hope that with vast opportinities still remaining under exploited and the technological advances our scientists are making, the country would be able to sustain the present growth rate of three per cent in food production, thereby providing enough food for the growing population not only in the country but also in the needy countries of the developing world.

He said very large proportion of the area under food crops was still of low productivity both in unirrigated and rainfed areas.

Maximisation of their yield would help add substantially to the production of advance. This implied that input saving technology should be made available to the farmers.

Meeting the country's estimated food need for 220 to 230 million tonnes by 2000 ad and 280 to 290 million tonnes by 2010 will not not be impossible, he said.

He underscored the need for protecting the natural endowments especially soil, water and plant genetic resources from degradation, strengthening of the lab-to-land programme, generation of "on-farm" and "off-farm" employment opportunities and technology development.

The Union Minister of State for Planning and Programme Implementation, Y K Alagh, in his presidential address at the summit, said application of new farm technologies and food security policies required a high degree of coordination with social infrastructure programmes and encouragement of local initiatives. He described the outcome of the Chief Ministers' meet in Delhi as a "significant leap in this direction".

Stressing the need for developing a "food security information system" and he said he had laid out the tentative contours of the constituents of such a system.

On the question of intellecutal property rights, he said "we recognise the need to aggressively document and provide legal protection to the fruits of our indigenous genius".

Referring to the issue of protecting the enviornment in the process of economic development, he said the Centre or the State governments could only play a supportive role.

Welcoming the delegates from several Afro-Asian nations, Dr. M.S. Swaminathan, said conservation and enhancement of the ecological foundations for sustainable agriculture, emerging opportunities for sustainable food security, realistic assessment of population-food production scenario for the next century and within Asian regior were the topics for discussed.

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விவசாய முன்னேற்றத்திற்கு நதிகள் இணைப்பு அவசியம்

மத்திய அமைச்சர் சதுரானன் மிஸ்ரா பேச்சு

சென்னை, ஜூலை.8- நாட்டில் விவசாயத் துறையை முன்னேற்றுவ தற்கு கங்கை காவிரி நதிகள் உட்பட பெரிய நதிகளை இணைக்க வேண்டும் என்று மத்திய விவசாய அமைச்சர் சதுரானன் மிஸ்ரா கூறினார்.

சென்னை தரமணியில் பிரபல விஞ்ஞானி டாக்டர் எம்.எஸ்.சாமிநாதன் அறக் கட்டளையும், தேசிய விவசாய அறிவியல் கழகமும் ஏற்பாடு செய்திருந்த நான்கு நாள் உலக அறிவியல் கழக மாநாட்டில் அவர் பேசி னார். உலகின் உணவுப் பொருள் பாதுகாப்புக்கான வாய்ப்புகள் என்ற தலைப் பிலான இந்த மாநாட்டில் பேசிய அவர், கங்கை, காவிரி, கோதாவரி, கிருஷ்ணா நதிகள் உட்பட முக்கியமான நதிகளை இணைப்பதன் மூலம் தென்னகம் மற்றும் மத்திய இந்தியாவில் பெரும்பாலான பகுதிகள் பாசன வசதி பெறும் என்றார். ஆண்டுதோறும் இந்தியாவில் பல பகுதிகள் வறட்சியின் பிடியில் சிக்கிக் கொள்வதால் இது மிக மிக முக்கியமானது என்றார். இதற்கு ஏற்றாற்போல் நாட் டில் ஏற்கனவே பல உப நதிகள் உள்ளன என்றும் அவர் குறிப்பிட்டார்.

இந்தியாவில் கிழக்கு மாநிலங்கள் உட்பட பல இடங்களில் நிலத்தடி நீரின் உபயோகத்தை பயன்படுத்தி கொள்கின்றனர். அதிகளவில் இங்கு மழை பெய்வதால் நிலத்தடி நீரின் மூலவளம் சீராக உள்ளது. எனவே நிலத்தடி நீர் உட்பட அனைத்து வளங்களையும் பயன்படுத்திக் கொள்ள முயற்சிகள் எடுக்கப்பட்டு வருகின்றன என்றார் மிஸ்ரா.

1980ம் ஆண்டுகளிலேயே இந்தியா உணவு உறுபத்தி யில் தன்னிறைவு அடைந்து விட்டது. இது இன்னமும் தொடர்கிறது. ஆண்டு தோறும் 6 முதல் 7 மில்லி யன் டன்கள் வரை உணவு பொருள் உற்பத்தியை உறுதி செய்ய வேண்டியுள்ளது. 2000மாவது ஆண்டில் 220 முதல் 230 மில்லியன் டன்கள் உணவு பொருள் தேவை இருக்கும். 2010 மாவது ஆண்டில் 280முதல் 290 மில்லியன் டன்கள் உணவு பொருள் தேவை இருக்கும். நமது முந்தைய சாதனை களை கணக்கில் கொள்ளும் போது இவற்றை உற்பத்தி செய்துவிடுவோம் என்பது முடியாதது அல்ல. முப்பது ஆண்டுகளுக்கு முன்னாள் பேடாக் பிரதர்ஸ் இந்தி யாவைப் பற்றி குறிப்பிடுகை யில் தனது உணவு தேவையை இந்தியாவில் அடைய முடியாது என்று கூறினார்கள். ஆனால் நமது விஞ்ஞானிகளும், விவசாயி களும் கடுமையாக உழைத்து இந்தியா உணவு உற்பத்தி யில் தன்னிறைவு பெறச் செய்தனர். இதனால் அவர் களின் கூற்று பொய்யானது என்பதை நிரூபித்தனர். உயர் விளைச்சல் தரக்கூடிய விதை களையும் தொழில் நுட்பங் களையும் நமது விஞ்ஞானி கள் கண்டுபிடித்ததால் இந்த அசுர வளர்ச்சி ஏற்பட்டது.

விவசாய தொழில் நுட்பங்களில் 30 சதவீதம் மட்டுமே விவசாயிகளுக்கு சென்றடைகிறது. வளர்ந்து வரும் விவசாய தொழில் நுட்ப முனனேற்றங்கள் விவசாயிகள் அனைவருக்கும் கிடைக்கவில்லை. எனவே விவசாய ஆராய்ச்சியையும் விவசாயிகளையும் ஒருங் கிணைக்க வேண்டும். அப்போதுதான் விவசாய தொழில் நுட்பங்கள் உற் பத்தியாக மாறும். இதனை முழுமையாக பின்பற்றினால் இந்தியாவுக்கு பெரும் ஆதாயம் கிடைக்கும்.

மாறிவரும் விவசாய உலகில் தினமும் தொழில் நுட்ப மாற்றங்கள் நிகழ் கின்றன. இவை ஆராய்ச்சிக் கான முதலீட்டை அதிகரிக்க வேண்டிய தேவையை உரு வாக்கியுள்ளது. தற்போது மொத்த உள்நாட்டு உற்பத் தியில் 0,30 சதவிகிதம் மட்டுமே விவசாய ஆராய்ச் சிக்கு ஒதுக்கப்படுகிறது. சீனா, வியட்நாம் உட்பட வளர்ந்து வரும் நாடுகளை விட இது குறைவாகும். எனவே இவற்றை அதிகரிக்க வேண்டும் என்பதை விவசாய அமைச்சரான நான் உணர்ந்துள்ளேன் என்றும் அவர் கூறினார்.

தட்ப வெப்ப நிலை தகவல்களும் விவசாய வளர்ச்சிக்கு முக்கிய காரணி யாகும். எனவே வளர்ந்த நாடுகள் இத்தகைய தகவல் களை வளரும் நாடுகளுடன் பகிர்ந்து கொள்ள வேண்டும் என்று இந்தியா எதிர்பார்க் கிறது என்றும் மிஸ்ரா மேலும் கூறினார்.

வீரபாண்டி ஆறுமுகம்

மாநில வேளாண்மை துறை அமைச்சர் வீர பாண்டி ஆறுமுகம் பேசு கையில் விவசாயத்தில் இந்தியா மேலும் முன்னேறு வதற்கு நல்ல பல ஆலோ சனைகளை இந்த மாநாட் டில் விஞ்ஞானிகள் வழங்கு வார்கள் என்று எதிர்பார்க் கிறேன் என்றார். இந்த ஆலோசனைகளை மாநில அரசு ஏற்றுக் கொள்ளும். மாநிலத்தில் தரிசு நிலங்களை மேம்படுத்தவும் களர்நிலங் களின் மணவளத்தை மாற்றி விவசாயத்திற்கு பயன்படுத் தவும் திட்டமிடப்பட்டுள்ளது.

விவசாய விளைபொருட் கள் கிராமப்புறங்களில் இருந்து நகர்ப்புறங்களுக்கு கொண்டு செல்வதற்கு ஏற்றவாறு ஊரக பகுதிகளில் சாலைகளை மேம்படுத்த முடிவு செய்துள்ளோம் என்ற அமைச்சர் அரிசி உற்பத் தியை அதிகரிக்க சிறப்பு திட்டங்கள் வகுக்கப்பட்டு நிறைவேற்றப்பட்டு வரு கிறது.

இதில் வெற்றியும் கிடைத் துள்ளது. சுதந்திரத்திற்கு பின்பு அரிசி உற்பத்தியிலும் சிறுதானிய உற்பத்தியிலும் நவீன முறையை கையாண்ட தால் இந்தியா நல்ல பலனை கண்டுள்ளது என்றார்.

நெல், பருத்தி, கரும்பு, எண்ணெய் வித்துக்கள் உற்பத்தியில் நல்ல முன் னேற்றம் ஏற்பட்டுள்ளது. இந்த மாநாட்டில் கிடைக்கும் நல்ல கருத்துக்களையும் ஆலோசனைகளையும் எங் கள் மாநிலத்தில் நீர்வளத் திற்கு ஏற்ப மண்வளத்திற்கு ஏற்ப பயன்படுத்துவோம் என்றும் வீரபாண்டி ஆறுமுகம் கூறினார்.

இந்த நான்கு நாள் மாநாட்டில் மத்திய திட்ட மிடல் மற்றும் திட்ட அம லாக்கல் அமைச்சர் ஒய்.கே. அலக் பேசுகையில், புதிய தொழில் நுட்பங்கள் மற்றும் உணவு பாதுகாப்பு கொள் கைகளை அமல்படுத்துவதில் அடிப்படை சமூக வசதிகள் மற்றும் உள்ளூர் மக்களின் முயற்சியும் தேவைப்படுகிறது என்றார். சமீபத்தில் டில்லி யில் நடந்த மாநில முத லமைச்சர்களின் மாநாட்டின் முடிவுகள் இதற்கான முன் முயற்சி என்று அவர் குறிப்பிட்டார்.

அறிவுச் சொத்துரிமை குறித்து அவர் கூறுகையில், இதன் தேவையை நாங்கள் உணர்ந்தே உள்ளோம். மித சத்துள்ள மற்றும் பல மருத்துவ குணங்கள் வாய்ந்த நமது நாட்டின் பழங்களின் தன்மையை இதில் இருந்து பாதுகாப்போம் என்றார்.

பொருளாதார வளர்ச் சியில் சுற்றுச் சூழலின் பாதுகாப்பு குறித்து அவர் பேசுகையில் மத்திய அரசு அல்லது மாநில அரசுகள் இதில் சாதகமான நிலையில் செயல்பட வேண்டும் என் றார்.

இந்த உலக உணவு உச்சி மாநாட்டில் முன்னாள் மத்திய அமைச்சர் சிசுப்ர மணியம் உட்பட பலர் பேசினர். நான்கு நாள் மாநாட்டில் பல்வேறு தலைப்புகளின் கீழ் கருத் தரங்கம் நடைபெறுகிறது. இத்தாலி, பிரேசில், ஜோர்டான், ஆப்பிரிக்கா உட்பட பல நாடுகளில் இருந்து விஞ்ஞானிகள் கலந்து கொண்டுள்ளனர்.

தினகரன் ஜூலை 9, 96.

சிறு விவசாயிகளுக்கு மலிவு விலையில் உரம்!

மத்திய விவசாய மந்திரி சதுரானன்மிஸ்ரா தகவல்!!

தினகரன் பு.ர ஜூலை 9.

சென்னை, ஜூலை. 9-

சிறு விவசாயிகளுக்கு மலிவு விலையில் உரம் வழங்குவதை தான் ஆதரிப்பதாக மத்திய விவசாய அமைச்சர் சதுரானன் மிஸ்ரா கூறினார்.

பேட்டி

சென்னையில் எம்.எஸ்.சுவாமி நாதன் ஆராய்ச்சி நிறுவனத்தில் ஒரு மாநாட்டை மத்திய விவசாய அமைச்சர் சதுரானன் மிஸ்ரா நேற்று தொடங்கி வைத்தார். முன்னதாக நிருபர்களுக்கு அவர் பேட்டி அளித்தார். அப்போது அவர் கூறியதாவது:-

சில நாட்களுக்கு முன்பு மத்திய அரசு விவசாயிகளுக்கான உர மானியத்தை 3000 கோடி ரூபாயாக உயர்த்தி உள்ளது. நாட்டின் தற்போதைய கொள்கையான தாராள பொருளாதார மயத்துக்கு பொருத்தம் இல்லாதது ஆகும். வளர்ந்த நாடுகளில் வட்டி விகிதம் 6 முதல் 7 சதவீதமாக உள்ளது. ஆனால் இந்தியாவில் 18 முதல் 20 சதவீதமாக வட்டி விகிதம் இருக்கிறது. இதை குறைக்க விவசாய அமைச்சகம் எதுவும் செய்ய முடியாது. உரம் போன்றவை வாங்க விவசாயிகள் வாங்கும் கடனுக்கு 18 முதல் 20 சதவீத வட்டியை விவசாயிகள் கொடுக்க வேண்டி உள்ளது. இதனால் உற்பத்தி செலவு அதிகரிக்கும்.

மலிவு விலை உரம்

விவசாயிகளுக்கு மலிவு விலையில் உரம் வழங்க எனது அமைச்சகம் ஆவன செய்யும். சிறு மற்றும் நடுத்தர விவசாயிகளுக்கு மலிவு விலையில் உரம் வழங்குவதை நான் ஆதரிக்கிறேன். ஆனால் அரசின் கொள்கை வகுக்கப்படுவதில் எந்த கருத்து வேறுபாடும் இருக்கக்கூடாது. யூரியா விலைகள் உயர்ந்துவிட்டதாக கூறுவது உண்மையானால் இது அரசின் தோல்வியையே காட்டுகிறது.

இவ்வாறு அவர் கூறினார்.

வரவேற்பு

மத்திய விவசாயத் துறை அமைச்சர் சதுரானன்மிஸ்ரா, இந்திய கம்யூனிஸ்டு கட்சி மாநில தலைமை அலுவலகமான பாலன் இல்லத்திற்கு நேற்று பிற்பகல் 2.30 மணிக்கு வருகை புரிந்தார்.

மத்திய அமைச்சரை மாநில செயலாளர் ஆர்.நல்லக்கண்ணு, ஏ.எம்.கோபு (தேசிய கவுன்சில் உறுப்பினர்), மாநில துணை செயலாளர் எஸ்.எஸ்.தியாகராஜன், புதுவை மாநில விவசாயத் துறை அமைச்சர் ஆர். விசுவநாதன், டாக்டர் வே. துரைமாணிக்கம், கோபாலனி சாமி எம்.எல்.ஏ., வி.அழகிரி சாமி எம்.பி., நாரா கலை நாதன், என்.குருசாமி, டி.எம். மூர்த்தி, டி.ஆர்.எஸ்.மணி, சி.எச்.வெங்கடாசலம், மு.சம்பத், பி.கிருஷ்ணய்யா ஆகியோர் மாலை அணிவித்து வரவேற்றனர். ஏராளமான தொழிலாளர்களும், பெண்களும் நிகழ்ச்சியில் கலந்து கொண்டனர்.

மத்திய அமைச்சர் சதுரானன் மிஸ்ரா இன்றைய அரசியல் நிலை குறித்து விளக்க உரையாற்றினார். பல்வேறு அமைப்புகள் சார்பில் மத்திய அமைச்சருக்கு சிறப்பான வரவேற்பு அளிக்கப்பட்டது.

பொது அறிவிப்பு

நாள்: 1-7-96

விழுப்புரம் இராமசாமி படையாட்சியார் மாவட்டம், கள்ளக்குறிச்சி வட்டம், மேல்நாரியப்பனூர் மெயின் ரோடு, அம்மையகரத்தில் வசிக்கும், அப்துல்லா சாயபுவின் குமாரர்கள் அப்துல் ஜப்பார்-1, ராஜ்முகம்மது-2 ஆகியோர் கொடுக்கும் பொது அறிவிப்பு.

எங்கள் தகப்பனார் பாபுதீன் சாயபு குமாரரான பாக்கம்

கதிரவன் ஜூலை 9, 96.

கதிரவன் 4.5. ஜூலை

சென்னையில்

உலக விஞ்ஞான கழகங்களின் உச்சி மாநாடு

மத்திய மந்திரி துவக்கி வைத்தார்

சென்னை, ஜூலை. 9-

உலக விஞ்ஞான கழகங்களின் உச்சிமாநாடு நேற்று சென்னையில் தொடங்கியது. 3 நாட்கள் நடைபெறும் இந்த மாநாட்டை மத்திய வேளாண்மைத் துறை மந்திரி சதுரணன் மிஸ்ரா தொடங்கி வைத்தார்.

சென்னை தரமணியில் உள்ள எம்.எஸ். சுவாமிநாதன் ஆராய்ச்சி மையத்தில் நடைபெறும் இந்த சிறப்பு மாநாட்டில் சர்வதேச அறிஞர்கள் மற்றும் தொழில்நுட்ப வல்லுனர்கள் கலந்து கொள்கின்றனர்.

நேற்றைய தொடக்க விழாவில் உலகின் பல்வேறு நாடுகளில் இருந்தும் வந்த விஞ்ஞானிகள் மற்றும் அறிவியல் ஆய்வாளர்கள் இந்த உச்சிமாநாட்டில் கலந்து கொண்டு பேசினர்.

1996-ம் ஆண்டு நவம்பர் மாதம் நடைபெறும் உலக உணவு உச்சி மாநாட்டினையொட்டி உணவு உற்பத்தியை அதிகரிப்பதற்கான இடுபொருட்கள் மற்றும் நவீன தொழில்நுட்ப சாதனங்களை அதிகரிப்பதற்கான வழிவகைகளை குறித்து அடுத்த இரண்டு நாள் மாநாட்டில் ஆய்வு செய்யப்படும். உணவுத் துறையில் நாடு தன்னிறைவு அடைந்து விட்டாலும் உணவு உற்பத்தியை நாம் மேலும் பெருக்க வேண்டியதன் அவசியம் குறித்தும், நவீன விஞ்ஞான முறையைப் பயன்படுத்தி வேளாண் தொழிலை அபிவிருத்தி செய்வது குறித்தும் மத்திய வேளாண்மை துறை மந்திரி சதுரணன் மிஸ்ரா தனது துவக்க விழா சிறப்புரையில் குறிப்பிட்டார்.

இன்றைய வேளாண்மையில் விஞ்ஞான உரத்தின் அவசியம் குறித்தும் அவர் வலியுறுத்தினார்.

மாநாட்டை துவக்கி வைத்த பிறகு டெல்லி திரும்பும் போது சென்னை மீனம்பாக்கம் விமான நிலையத்தில் மத்திய மந்திரி சதுரணன் மிஸ்ரா நிருபர்களிடம் கூறியதாவது:-

உரத்திற்கு தேவையான மூலப் பொருட்கள் குறிப்பாக பாஸ்பாரிக் அமிலம், பாஸ்பேட் போன்றவற்றை அமெரிக்கா, மொராக்கோ போன்ற நாடுகளில் இருந்து வாங்க வேண்டி உள்ளது. அந்த நாடுகள் தனியாக ஒரு கூட்டமைப்பை ஏற்படுத்தி உள்ளன. அவை நிர்ணயிக்கும் விலையில் தான் நாம் மூலப் பொருட்களை வாங்க வேண்டி உள்ளது.

அவர்கள் அதிக விலையை நிர்ணயம் செய்து உள்ளார்கள். நாம் தனியாக அணுகி வேண்டுமானால் விலையைக் குறைக்க ஏற்பாடு செய்யலாம். வெளிநாடுகளில் விவசாயத்திற்கான கடன்களுக்கு குறைந்த வட்டியை நிர்ணயம் செய்து உள்ளனர். நம் நாட்டில் 18-ல் இருந்து 20 சதவீதம் வரை வட்டி வசூலிக்கப்படுகிறது. விவசாயி கடன்களுக்கான வட்டி விகிதத்தை குறைத்தால் மானியம் வழங்குவதை தவிர்க்கலாம்.

இவ்வாறு அவர் கூறினார்.

சென்னையில் நேற்று உணவு உற்பத்தி தொடர்பான அறிவியல் கருத்தரங்கு நடைபெற்றது. மத்திய விவசாய மந்திரி சதுரணன் மிஸ்ரா கருத்தரங்கில் உரையாற்றிய காட்சி.

1996

சென்னையில் எம்.எஸ். சாமிநாதன் ஆராய்ச்சி மைய மாநாட்டில் விவாதம்

சர்வதேச அமைப்புகள் இந்திய நதிகள் இணைப்பு திட்டத்தை பரிசீலிக்க கோரிக்கை

சென்னை, ஜூலை. 9:

கங்கை- காவிரி இணைப்புத் திட்டத்தின் மூலம் ஏராளமான நிலங்களை சாகுபடிக்கு கொண்டு வர முடியும் என மத்திய வேளாண் துறை அமைச்சர் சதுரணன் மிஸ்ரா நேற்று சென்னையில் தெரிவித்தார்.

உலகில் உணவு உத்தரவாதத்துக்கான அசாதாரண வாய்ப்புகள் குறித்து சென்னையில் நேற்று துவங்கிய மாநாட்டை அவர் தொடக்கி வைத்து பேசினார்.

நமது நாட்டில் பாசனத்துக்கு ஒரளவுக்குத்தான் நீர் கிடைக்கிறது. இதை அறிவியல் ரீதியாக நிர்வகித்தால் சாகுபடிப் பரப்பை அதிகரிப்பதுடன் உற்பத்தித் திறனையும் பெருக்க முடியும். ரசாயன உரங்களை நம்பாமல் ' வளங்குன்றா விவசாயத்தில் கவனம் செலுத்த வேண்டும்.

முக்கிய நதிகளை, குறிப்பாக கங்கை-காவிரியை கிருஷ்ணா, கோதாவரி நதிகள் வழியாக இணைக்கும் போது தெற்கு மற்றும் மத்திய இந்தியாவில் ஏராளமான பகுதிகளை சாகுபடிக்கு கொண்டு வர முடியும். இதற்குத் தேவையான முதலீடுகள் குறித்து சர்வதேச அமைப்புகள் சிந்திக்க வேண்டும் என்று சதுரணன் மிஸ்ரா கூறினார்.

எம்.எஸ். சாமிநாதன் ஆராய்ச்சி மையம்

சென்னை தரமணியில் உள்ள எம்.எஸ்.சாமிநாதன் ஆராய்ச்சி மையத்தில் உணவு பாதுகாப்பு பற்றிய அறிவியல் கருத்தரங்கு நேற்று தொடங்கியது. கருத்தரங்கை மத்திய அமைச்சர் சதுரணன் மிஸ்ரா தொடங்கி வைத்துப் பேசினார்.

அப்போது அவர் நமது விஞ்ஞானிகளின் திறமையினால் உணவுப் பொருள் உற்பத்தி மேலும் உயரும் என நம்புகிறேன். இதன் மூலம் பெருகிவரும் மக்கள்தொகைக்கு ஏற்ப நமது நாட்டின் உணவுப் பொருள் தேவையை சமாளிப்பதுடன் தேவைப்படும் நாடு களுக்கும் உதவ முடியும்.

நமது நாட்டில் கங்கை-காவிரி போன்ற பெரிய நதிகளை இணைக்க வேண்டியது அவசியமாகும். ஏனெனில் வெள்ளம்-வறட்சி ஆகிய இரண்டும் நம்மை மாறி மாறி பாதிக்கின்றன. நதிகள் இணைக்கப்பட்டால் தென் இந்தியா மற்றும் நாட்டின் மத்திய பகுதிகளில் ஏராளமான நிலங்கள் பாசன வசதி பெறும் என்றார்.

கருத்தரங்கில் கலந்து கொண்டு பேசிய தமிழக வேளாண்மைத்துறை அமைச்சர் வீரபாண்டி ஆறுமுகம், இந்த கருத்தரங்கின் மூலம் பிறக்கும் சீரிய திட்டங்களை தமிழக அரசு ஏற்று செயல்படுத்தும் என்று கூறினார். முன்னதாக விஞ்ஞானி எம்.எஸ்.சாமிநாதன் வரவேற்றார்.

மத்திய அமைச்சர் அலக், மத்திய அரசு விவசாயத்துறை செயலாளர் பரோடா உட்பட பலர் பேசினார்கள். கருத்தரங்கில் உலகின் பல்வேறு நாடுகளைச் சேர்ந்த அறிஞர்களும் கலந்து கொண்டார்கள். இந்த கருத்தரங்கு வருகிற 11-ந்தேதி வரை நடைபெறும்.

சலுகை விலையில் உரம்

''சிறு மற்றும் நடுத்தர விவசாயிகளுக்கு மலிவு விலையில் உரம் வழங்கப்படும்'' என்று மத்திய மந்திரி மிஸ்ரா கூறினார்.

மத்திய விவசாயத்துறை மந்திரி சதுரணன் மிஸ்ரா, சென்னையில் நேற்று நிருபர்களுக்கு

பேட்டி அளித்தார். அப்போது அவர் கூறியதாவது:-

''மத்திய அரசு, சமீபத்தில் விவசாயிகளுக்கு 3 ஆயிரம் கோடி ரூபாய்க்கு உரமானியத்தை உயர்த்தி உள்ளது.

விவசாயிகளுக்கு மலிவான உரங்களை வழங்க விவசாய அமைச்சகம் செயல் படுகிறது. அதே சமயம், அது அரசின் கொள்கைக்கு முரண்பட்டதாக அமைந்து விடக்கூடாது. சிறு மற்றும் நடுத்தர விவசாயிகளுக்கு மலிவு விலையில் உரம் வழங்க வழிவகை காணப்படும்.

உரம் இறக்குமதி செய்வதற்கான மானியம் டன் ஒன்றுக்கு 2 ஆயிரத்தில் இருந்து 3 ஆயிரம் ரூபாயாக உயர்த்தப்பட்டு இருக்கிறது. அமெரிக்கா, மொராக்கோ போன்ற நாடுகள் கூட்டு அமைத்துக் கொண்டு உரத்திற்கு அதிக விலை போடுவதால் அதே விலையை நாம் தர வேண்டியுள்ளது. அந்த நாடுகளுடன் தனித்தனியாக பேச்சு வார்த்தை நடத்தினால் உரத்தின் விலை குறைய வாய்ப்பு இருக்கிறது.

இவ்வாறு சதுரணன் மிஸ்ரா கூறினார்.

மத்திய திட்ட இலாகா இணை அமைச்சர் ஒய்.கே. அலக் சென்னையில் நேற்று நிருபர்களுக்கு பேட்டி அளித்தார். அவர் கூறியதாவது:-

மாநில அரசின் சிறிய திட்டங்களுக்கு மத்திய அரசு உதவி

மாநில அரசுகளின் சிறிய திட்டங்களுக்கு ஒதுக்கப்பட வேண்டிய நிதி மத்திய அரசிடம் தயாராக உள்ளது. இந்த நிதி, அடுத்த மாதம் (ஆகஸ்ட்) 6-ந்தேதி மாநிலங்களுக்கு வழங்கப்படும். இது கடந்த ஆண்டு ஒதுக்கப்பட்ட தொகையைக் காட்டிலும் 15 சதவீதம் அதிகமாக இருக்கும். இந்த தொகையை எந்த வகையான திட்டங்களுக்கு பயன்படுத்துவது என்பது மாநில அரசுகளின் முடிவுகளுக்கே விடப்படும்.

பணம் தவறான வழியில் செலவிடப் படாமல் கிராமப் பகுதிகளில் சுகாதாரம் பாதுகாக்கப்பட்ட குடிநீர், சாலை மேம்பாடு போன்ற வளர்ச்சிப் பணிகளில் பயன்படுத்தப் படுவதை மாநில அரசுகள் கண்காணிக்க வேண்டும். சமீபத்தில் டெல்லியில் நடந்த முதல்வர்கள் மாநாட்டில் இந்த ஒதுக்கீடு பற்றிய முடிவு எடுக்கப்பட்டுள்ளது.

கடந்த ஆண்டு குறைந்தபட்ச பொது திட்டங்களுக்காக மாநில அரசுகளுக்கு 18 ஆயிரம் கோடி ஒதுக்கீடு செய்யப்பட்டது. இந்த ஆண்டு அதைவிட 15 சதவீதம் உயர்த்தி அதில் பாதி தொகை அடுத்த மாதம் வழங்கப்படும். மீதி தொகை இன்னும் 6 மாத காலத்திற்குள் வழங்கப்படும்.

இவ்வாறு மத்திய அமைச்சர் அலக் கூறினார்.

இயற்கை வளங்கள் குறித்து தொலை உணர்வு சர்வே

நாட்டில் உள்ள தேசிய வளங்கள் குறித்து தொலை உணர்வு தொழில்நுட்பங்கள் மூலம் சர்வே செய்ய வேண்டும் என்று மகாராஷ்டிர மாநில முன்னாள் கவர்னர் சி. சுப்பிரமணியம் கேட்டுக் கொண்டார்.

எம்.எஸ். சுவாமிநாதன்

இந்திய விவசாய அறிவியல் தேசிய அகாடமியின் தலைவர் பேராசிரியர், எம்.எஸ். சுவாமிநாதன், இந்த அறிவியல் மாநாட்டின் நோக்கங்களை விளக்கினார். உணவுப் பாதுகாப்பு குறித்த பிரச்சினைகள் இக்கூட்டத்தில் விவாதிக்கப் படும். இதன் தொடர்ச்சியாக ரோமில் வருகிற செப்டம்பர் 30-லிருந்து அக்டோபர் 2 வரை மாநாடு நடைபெற உள்ளது என்று அவர் தெரிவித்தார்.

உலக அளவில் மக்கள் தொகை 1.5 சதவீதம் அதிகரித்து வருகிறது. இந்தியாவில் மக்கள் தொகை 1.8 சதவீதம் அதிகரித்துள்ளது. இன்னும் 35 வருடங்களில் இந்தியாவின் மக்கள் தொகை இருமடங்காகி விடும். மற்ற வளரும் நாடுகளுடன் ஒப்பிடும்போது இந்தியாவின் உணவு இறக்குமதி அளவு குறைந்து வருவது நல்ல அறிகுறியாகும் என்று யு.என்.டி.பி. பிரதிநிதி ஹன்ஸ் நி. வான் ஸ்போனெக் தெரிவித்தார்.

விவசாய ஆராய்ச்சி மற்றும் கல்வித் துறை செயலர் ஆர்.எஸ். பரோதா பேசும்போது நம்மிடம் 3.5 கோடி டன் உணவு தானியக் கையிருப்பு உள்ளது. மக்கள் தொகை வளர்ச்சி 2.1 சதவீதத்திலிருந்து 1.8 சதவீதமாகக் குறைந் துள்ளது என்றார். இந்தியாவுக்கான இத்தாலியத் தூதர் கெடனோ ஜுகோனி, இத்தாலியில் உள்ள அறிவியல் தேசிய அகாடமி தலைவர் ஜி.டி. ஸ்கராசியா முக்னோஸா, மூன்றாம் உலக அறிவியல் அகாடமியைச் சேர்ந்த ஜோனா டொபரீனர் ஆகியோர் பேசினர். எம்.எஸ். சுவாமிநாதன் அமைப்பின் சார்பில் வி. பாலாஜி நன்றி கூறினார். இம்மாநாடு 11-ம் தேதி வரை நடைபெறுகிறது.

The Hindu July 10, 96.

The Hindu July 10, 96.

'Environmental perspectives key to production'

From Our Staff Reporter

MADRAS, July 9.

A 'Super Green Revolution, centered around the needs of the people', is necessary to avert threats to international security which today present themselves in the form of 'relentless ecological degradation, rather than any external enemy'. Ms. Elizabeth Dowdeswell, Executive Director, United Nations Environment Programme (UNEP), observed here today.

Such a paradigm-shift was one of the long-term solutions to sustainable food production in the context of the present threat of 'the prospect of the extinction of one quarter of all the Earth's biodiversity in the next 20-30 years, which will further diminish the prospects of enhanced food security.'

In resolving the issues related to sustainable food production, the UNEP Executive Director suggested that nations follow the 'ethical road', with policies being arrived at with an appropriate blending of the physical, the social and behavioural sciences.

Addressing the Science Academies Summit on Uncommon Opportunities for a Food Secure World, Ms. Dowdeswell expressed her concern over the inequity in the production and distribution of agricultural products as well as the fall in food production, as was being witnessed in sub-Saharan Africa, perpetuating hunger, poverty and malnutrition in many parts of the world.

'We have nearly 13.5 million children under five in developing countries dying every year from malnutrition and 35,000 children dying every day from environmentally-related diseases', Ms. Dowdeswell said, adding that about 25,400 million tonnes of material were removed from top-soils on account of erosion.

In addition, soil degradation and shortage of water, fuelled by increasing population pressures, had created an estimated 15 million environmental refugees the world-over, Ms. Dowdeswell said, holding out a caution that these uprooted people would be soon augmented as a result of the rapidly increasing population growth, topsoil erosion, biodiversity loss, rising sea levels, parched aquifers and toxic contamination.

These factors had resulted in a paradoxical situation whereby 'agriculture is now regarded as both the victim of pollution and also its source.'

To ensure that environmental perspectives became 'a vital element endeavour to increase global food production', the UNEP Executive Director put forth the proposition that 'increasing food production in a sustainable fashion should be the over-riding objective of our new strategy - a strategy to transform agriculture into a powerful vehicle for both poverty alleviation and environmental conservation.'

The Super Green Revolution, she said, should duplicate the successes of the Green Revolution on a global scale, 'but without its environmentally harmful impacts.' The revolution would have to be 'Green' in terms of conserving natural resources and the environment, based on a 'revitalised, systems-wide research agenda that integrates sustainable development, food security and the environmental concerns.'

While the technologies adopted for the Green Revolution of the Seventies had succeeded in changing the sources of food production by concentrating on raising yields, the present day requirements placed a larger importance on cost-effectiveness and environmental sustainability, she said.

While rapid agricultural development had in the past been the principle engine of growth for many developing countries, today nations faced the prospect of 'a massive loss of momentum in the growth of food production.' The growth in grain production had slowed down to approximately one per cent annually from 1983 onwards and 'the per capita output of food fell in 90 of the poorest countries of the world, 44 of which are in Africa', Ms. Dowdeswell noted.

With regard to malnutrition, she pointed out that the latest report of the UN Subcommittee on Nutrition had noted that while the people now hardest hit by hunger were the refugee populations of Africa, South Asia still posted the highest percentages and largest numbers of under-weight school-age children, with half of the 180 million under-weight children living in this part of the world.

Moreover, the World Health Organisation (WHO) had reported that about two billion people were at the risk of deficiency in one or more micro-nutrients. 'Each year Vitamin A deficiency damages the eyes of 14 million preschool-age children and between 2,50,000 and 5,00,000 of them go blind.'

In addition to the consequences of climate change, desertification, deforestation and soil degradation which were the environmental problems to be addressed, international community would also have to resolve the inequitable patterns of economic growth and unsustainable patterns of consumption. Apart from the North-South imbalance of almost 10: 1 in per capita resource use, disparities within the societies of the North and the South would also have to be reduced, Ms. Dowdeswell said.

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M.S. Swaminathan Research Foundation

News Today July 10, 96.

Japan aid for social forestry scheme in TN

News Today 10-07/96.

By Our Staff Reporter

Madras, July 10:

The Government of Japan has agreed to provide a financial assistance of Rs.500 crore to develop the social forestry in Tamilnadu, according to Pongalur Palanichamy, Minister for Forests and Animal Husbandry.

The Minister said while the average forest area in the developed countries was 30, India's percentage was only 20 per cent and Tamilnadu, which was still worse, had only 15 per cent of forest area. As a result, the rain fall came down heavily.

The Minister was delivering special address at the third day's session of Science Academics Summit on the theme 'Uncommon opportunities for good security' in the city this morning.

He said the government had been implementing the wasteland development scheme vigorously.

In animal husbandry sector, the Tamilnadu Veterinary University had been playing a key role which was the best one in the field in Asia, he said and added the government would conduct lab-to-land programmes to spread various information regarding the environment and cattle breeding to the common man.

N.K.K. Periyasamy, Minister for Environment and Handlooms said cultivation in 3.5 lakh acres of land in Periyar district was defected due to the effluent discharged from various industries. In Tirupur, where around 700 industries were situated, though helping to earn considerable foreign exchange, discharge enormous pollutants also. Steps were being taken on war-footing to set up Common Effluent Treatment Plant there, the Minister added.

Groundnut production in Lower Bhavani area was affected very much due to the discharge of effluents, said the Minister.

The Minister appealed to the world science community present at the summit to pay special attention to the environment situation in Tamilnadu and come out with recommendations.

Elizabeth Dowdeswell, Executive Director, United Nations Environment Programme speaking on the occasion called for the broader participation of scientists of academic and other fields in solving the environmental issues.

Advocating a wholistic approach towards solving the environmental issues, Dowdeswell said fraternalisation attitude and the concept of target group should be avoided as world countries were inter-dependent on this issue.

Dowdeswell dedicated the Technical Resource Centre of M.S. Swaminathan Research Foundation, for the implementation of the equity provisions of the convention on biological diversity. Dowdeswell also released a new report on urbanisation titled 'World Resources-1996-97' by the World Resources Institute, UNEP, UNDP and World Bank.

Welcoming the gathering, Dr. M.S. Swaminathan gave a detailed account on safeguarding the farmer's rights through various measures. He said one per cnet levy on all farm products is to be kept as Community Gene Fund at the national level. In international level the per centage was being decreasing to 0.01 per cent the G-7 countries had not implemented even

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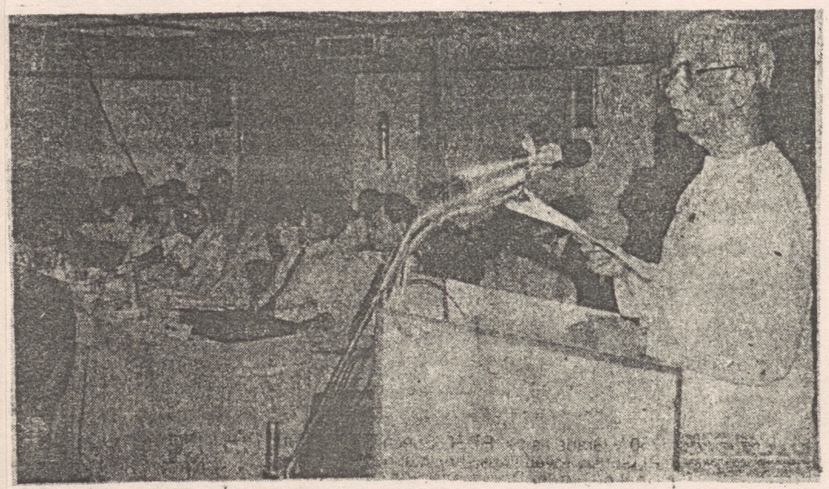
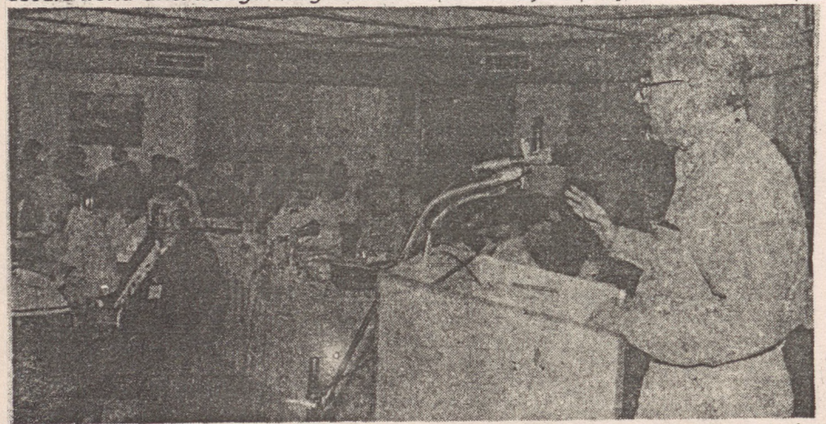
Chaturanan Mishra calls for second Green Revolution



Chaturanan Mishra, Union Minister for Agriculture, addressing the opening session of the Science Academics Summit of 'uncommon opportunities for a food secure world' after inaugurating the summit in the city Monday.



Dr. Y.K. Alagh, Union Minister of State for Planning, Programme Implementation and Science and Technology delivering the keynote address at the Science Academics Summit in the city, Monday.

By Our Staff Reporter

Madras, July 9:

Union Minister for Agriculture, Chaturnan Mishra has called for a 'second Green Revolution in the country, sustaining the benefits of first one, which would provide more benefits to small and middle farmers from our vast rainfed areas.

The Minister said the Green Revolution so far benefitted only the most affluent section of the farming Community. In a way, the modern technology has bypassed the ecologically and economically handicapped areas, where poorest of the poor live.

Mishra urged that great emphasis on the development of science and technology suited to 80 millions of small holdings was the need of the hour.

The Minister was speaking after inaugurating the Science Academics Summit on the theme 'Uncommon opportunities for a food secure world' in the city Monday, organised by the M.S. Swaminathan Research Foundation.

In the fast changing global agricultural scenario, particularly after the conclusion of the GATT agreement, new trade opportunities and intellectual property rights should not come in the way of agricultural growth and trade of the developing countries, the Minister said and added India for instance, if it was not interfered with by political and economical barriers and pressures from multinationals, continue to produce impressive agricultural growth.

Mishra said world is friendly to the trade but unfortunately not the trade to the world. For instance, whenever China or India went to international market at times of food shortages or purchase fertilisers etc., prices shoot up through manipulations of international cartels making it difficult for us to buy what we required. Such unhealthy practices prove serious obstacles in ensuring food security to the mankind, he said and requested the FAO to act on this issue.

Hailing the use of organic manures which sustains productivity of soil, the Minister said the farm sector should aim for sustainable agriculture through organic recycling and less dependence on chemical inputs.

Though the country was endowed with several perennial rivers, it experiences drought and floods every year, Mishra said and suggested that linking of all major rivers particularly the Ganga and Cauvery through Krishna and Godavari a very large area could be brought under irrigation in the Southern and Central India.

A large but still under-exploited ground water potential in the eastern States, where high rainfall recharges the aquifers and maintains the potential. Efforts are, therefore, needed to exploit all potential surface and ground water sources, he urged.

Even 30 per cent the technology we have developed has not reached the farmers. It is largely due to inadequate exposure of the farmers to new developments and advances in agriculture. Only through strengthening of the lab-to-land programme in whatever form possible the technology on the shelf can be translated into production. India has tremendous scope to gain from this approach, he added.

In the coming decades, poverty alleviation is possible only through higher agricultural productivity, which in turn depends on the development and use of innovative technologies in the field agriculture.

The present level of 0.30 per cent of the GDP allocated for agricultural research is far lower that what is being provided in many countries including China and Vietnam among the developing countries, Mishra said and assured that it was his endeavor to see that this limit is raised to one per cent.

Later, talking to newsmen on the subsidy given to the farmers on fertilisers, the Minister suggested to give them cheap fertilisers, not subsidised fertilisers.

He said the 15 to 20 per cent increase in the urea price would not help the government keep the fertiliser subsidy under control, Any hike in urea price might compel the government to revise it again, he added.

The Minsiter said the policy of liberalisation and globalisation was inconsistent and even contradictory in increasing the subsidies.

The Finance Ministry had been advocating reforms in every sector for the last five years but they themselves were not reforming, the Minsiter regretted.

The Minister also suggested that the interest being paid by the banks , 16 to 17 per cent should be reduced. The interest rate in some of the developing countries was 6 to 7 per cent only, he pointed out.

The Minister said close monitoring of our research and development system is equally important for ensuring accountability. The Agricultural Ministry would introduce an effective and viable system of 'social audit' in the institutes under the ICAR and the Department of Agriculture.

'Social audit' at the State levels also would be conducted by a five member team in each State. The team would comprise an agricultural expert the secretary of the Agriculture Department, an MP and MLA, the Minister added.

தினபூமி சென்னை 10.96.

விவசாய வளர்ச்சிக்கு கூடுதல் நிதி மத்திய அமைச்சர் தகவல்

சென்னை, ஜூலை 9-

விவசாய வளர்ச்சிக்கு கூடுதல் நிதி ஒதுக்கீடு செய்துள்ளதாக மத்திய திட்டம் மற்றும் அறிவியல் தொழில்நுட்ப இணை அமைச்சர் அலக் கூறினார்.

நேற்று எம்.எஸ். சுவாமிநாதன் அறிவியல் ஆராய்ச்சி மையத்தில் நடைபெற்ற கருத்தரங்கில் பேசும்போது அவர் விவசாய வளர்ச்சிக்கு மத்திய அரசு ஏற்கன்வே அளித்துள்ள நிதியை விட கூடுதலாக பதினைந்து சதவீத நிதி அளித்துள்ளது என்று குறிப்பிட்டார்.

சமீபத்தில் டெல்லியில் நடைபெற்ற அனைத்து மாநில முதலமைச்சர்கள் மாநாட்டிற்குப்பின், பல்வேறு வளர்ச்சி திட்டங்களில் மத்திய அரசு மாநில அரசோடு இணைந்து செயல்படும் என்று முடிவு செய்யப்பட்டது. அதனடிப்படையில் பதினைந்து சதவீத கூடுதல் நிதியுதவி அளிக்கப்பட்டுள்ளது. இந்த கூடுதல் நிதியுதவியினால் ஆரம்பக் கல்வி, மதிய உணவு, சுற்றுப்புற சுகாதாரத்தில் தன்னிறைவுத் திட்டங்கள் போன்ற திட்டங்கள் ஏற்படுத்தப்படும் என்றும் அவர் குறிப்பிட்டார்.

தமிழக விவசாய துறை அமைச்சர் வீரபாண்டி ஆறுமுகம் கருத்தரங்கில் கலந்து கொண்டு பேசினார்.

அப்போது அவர் கூறியதாவது:

தமிழ்நாட்டில் விவசாய வளர்ச்சியில் அரசு தனிக்கவனம் செலுத்தி வருகிறது. உணவு உற்பத்தியில் அதிக வளர்ச்சி பெற மண்வளத்தை அதிகரிப்பதில் அரசு முயற்சி செய்து வருகிறது. மற்றும் தரிசு நிலம் பயன்படுத்தும் திட்டம், விவசாயிகளுக்கு போக்குவரத்து மற்றும் சாலை வசதி திட்டம், வரட்சிப் பகுதிகளை மேம்படுத்தும் திட்டம் ஆகியவை சிறப்பாக நடைபெற்று வருகிறது. அரிசி உற்பத்தி அதிகரிக்க சிறப்புத் திட்டங்கள் ஏற்படுத்தப்பட்டு வெற்றியும் கண்டுள்ளோம்.

இவ்வாறு அவர் கூறினார்.

கருத்தரங்கில் மத்திய விவசாயத்துறை அமைச்சர் சதுரானன் மிஸ்ரா, முன்னாள் அமைச்சர் சுப்பிரமணியம் மற்றும் பல வெளிநாட்டு பிரதிநிதிகள் கலந்து கொண்டு விவசாய வளர்ச்சி குறித்து பேசினார்கள்.

மக்கள் குரல் ஜூலை 10, 96.

மக்கள் குரல் ஜூலை 10, 1996.

மக்க

கிருஷ்ணா- கோதாவரி வழியாக

கங்கை- காவிரி இணைப்பு: விவசாய அமைச்சர் சதுரணன் மிஸ்ரா யோசனை

The Hindu July 11, 96.

Global meet to discuss 'eco-labelling'

The Hindu July 11, 96.

MADRAS, July 10.

The Executive Director of the United Nations Environment Programme (UNEP), Ms. Elizabeth Dowdeswell, today held out an assurance that steps would be taken to ensure that environmental protection did not result in environmental protectionism in international trade.

At a press conference, Ms. Dowdeswell said the global conference on environment and trade, to be held in Singapore later this year, would be a major effort to ensure that environmental issues did not emerge as non-tariff barriers to global movement of commodities.

The Singapore conference was being convened to deliberate the linkages between global trade and environment within the framework of the World Trade Organisation (WTO). The issue of eco-labelling, which was presently in the form of different standards for different countries would also be discussed in order to ensure that the measure served only the intended purpose.

Asked about the possibilities of formulating common standards on eco-labelling, Ms. Dowdeswell felt that while common guidelines would be extremely beneficial, it was doubtful if there could be a consensus among countries. However, in respect of the chemical sector, the international community was hopeful of arriving at a "legal and binding" set of norms by 1997, she said.

Ms. Dowdeswell also expressed confidence that the world would be free of ozone depleting substances in another 10 years. The production and consumption of such substances was "nearly extinct" in the developed countries and with the developing countries likely to take a stronger position on these substances from this year, the world would be free of ozone depleting substances within the next decade, she added.

With regard to the Climate Change Convention, the UNEP executive director, expressed concern that the "strong interests" on the part of energy producing nations would prove a detriment to the working of the Convention.

On the issue of transfer of technology from the North to the South, Ms. Dowdeswell conceded that though the progress was not upto expectations and "more can and should be done." However, this required international legislations to make them effective, she said. With regard to the costs to be borne for transfer of technology, she said that the incremental costs would be borne by multilateral agencies, as in the past. When her attention was drawn to the apprehensions that developing countries would be affected by transfer of polluting industries, Ms. Dowdeswell said the conventions relating to such activities, such as the one on the movement of hazardous material, were already in place to address such issues.

Moreover, the problem was not confined to the developing world as was evident from the situation in Eastern Europe, she pointed out adding that set of "legal and binding" norms were required if the problem was to be solved.

The role of scientists in environmental issues, especially in the area of climate change would have to be on a continual basis and sharing of information would remain a crucial factor to address the issue, she said.

The Hindu July 11, 96.

Call to achieve better environment standards

From Our Staff Reporter

MADRAS, July 10.

The principles of responsibility, frugality and solidarity should be adopted by people for environment protection, said, Ms. Elizabeth Dowdeswell, United Nations Under-Secretary and Executive Director of the United Nations Environment Programme (UNEP), today.

One should have a responsible attitude towards environment, human beings and other living beings. The frugal way of life should be followed as one's living style should not impoverish others. All sections of society should be committed to achieve better environment standards. She was addressing a meeting organised by the Rotary Club of Madras East here after receiving the "For the Sake of Honour Award" from the former Maharashtra Governor, Mr. C. Subramaniam.

Emphasising that "environment protection is not the luxury of the rich but a matter of survival of the poor", she suggested the formation of a coalition which was not only made of environmentalists but also businessmen, researchers, writers and philosophers for creating greater awareness on environment protection.

The award was given to her in recognition of her contribution to improving the quality of human environment.

The award citation stated that Ms. Dowdeswell's deep understanding of various issues and her negotiating skills had been evident at many international conferences where she had piloted discussions in arriving at a consensus on conflicting view points. An outstanding example was the Framework Convention on Climate Change which was adopted by the United Nations Conference on Environment and Development when she was the Deputy Minister of Environment, Canada.

Mr. Subramaniam said as excess possession and enjoyment of material goods had led to the degradation of human values, a new lifestyle should be developed to arrest the growth of consumerism. Also, "our lifestyle leaves additional liabilities for the future generations, instead of sustaining the available natural resources for them".

The Forest and Animal Husbandry Minister, Mr. N. Palanisamy, underlined the importance of increasing the forest cover. Dr. M. S. Swaminathan, agriculture scientist, praised Ms. Dowdeswell for her commitment to the cause of environment protection.

Among those who spoke were: Mr. K. S. Sripathi, Environment and Forest Secretary, Mr. K. K. Raman, president, and Mr. Vimal Galada, secretary, Rotary Club of Madras East.

Ms. Elizabeth Dowdeswell, Executive Director, United Nations Environment Programme (UNEP) receiving the "For the Sake of Honour" Award of the Rotary Club of Madras East, from the former Maharashtra Governor Mr. C. Subramaniam, in Madras on Wednesday. Others in the picture are: Dr. M. S. Swaminathan, agriculture scientist, (extreme left), Mr. N. Palanisamy, Minister for Forests and Animal Husbandry and Mr. K. K. Raman, president of the Club.

Financial Express July 11,96.

M S Swaminathan, Chairman, MSSRF, N K K Periaswamy, State Minister for Environment and Handlooms, Pongalur Palanichamy, State Minister for Forest and Animal Husbandry, receiving copy of 'World Resource 1996-97' from Elizabeth Dowdeswell, UN Under-Secretary General and Executive Director of UNEP

FE Photo by K V Srinivasan

R & D institutes asked to work on land reclamation

FE NEWS SERVICE
MADRAS, JULY 10

RESEARCH institutions in Tamil Nadu have been asked to focus on redeeming affected lands in the state. NKK Periasamy, state minister for Environment and Handlooms stressed here on Wednesday the need for research on fallow land development to reactivate nearly five lakh acres of land in the state.

The minister was addressing the seminar on 'Uncommon Opportunities for a Food Secure World', which had began on Monday at M S Swaminathan Research Foundation (MSSRF), here. He said that Tamil Nadu is one of the states in the country, greatly affected by industrial pollution.

Citing examples, he said, in spite of common effluent treatment plant (CETPs) commissioned at Tirupur, many areas have been affected by the effluents from dyeing units. Similarly, a distillary unit at Periyar distict has spelled doom to vast stretches of land there.

Lower-Bavani reservoir is totally polluted due to effluents from the distillery unit and that production of groundnuts and cotton crops have come down drastically over the years, he said.

Similarly, leather tanneries have polluted vast tracts of cultivable lands leading to large scale displacment of people and rendering them jobless. In a bid to arrest this pollution and stem further land degradation, Periasamy stressed the need for institutions like MSSRF carrying out research in reactivating the affected lands in the state and else where.

"Thinning of forest cover in the State is a cause of great concern and there is no room for complacency", said Pongalur Palanichamy, State Minister for Forest and Animal Husbandry. An average of 30 per cent forest cover is ideal for good rainfall, but Indian average is just 20 per cent and Tamil Nadu is worst at 15 per cent land under forest cover.

This has resulted in poor monsoons for the past couple of years. He said many social forestry schemes have been planned to increase green cover in the state. An aid of Rs 500 crore from the Japanese government for various social forestry schemes will be utilised for tree plantations all over the state.

To discourage tree felling, an order has been passed by the state government to all the concerned departments to take punitive action against illegal tree cutters. The minister commended the work done by Tamil Nadu Veterinary University in improving the health and population of live stock in the state. Palanichamy said that MSSRF should co-ordinate with the agriculture and animal husbandry departments to reap maximum benefit by transferring the technologies developed. Lab-to-land programme in Tamil Nadu is successful, he said.

M S Swaminathan, Chairman, MSSRF, while welcoming the gathering suggested that one per cent should be levied on all agricultural produces in the India, for community gene funding.

He said that, Overseas Development Agency (ODA) should increase the levy on agricultural produce by at least 0.01 per cent as earth increament. By this, $2.5 billion will be available to fund international projects such as climate change and preserving bio-diversity.

Two different legislation should be brought in for breeders plant varieties protection and farmers conventional biological diversity. MSSRF will have a web site to spread all the information about the plant varieties, biological species etc. A training programme for scientists on using and designing data base similar to agro-diversity, will be conducted by the foundation.

Elizabeth Dowdeswell, United Nations Under-Secretary-General and Executive Director of the United Nations Environment Programme (UNEP) dedicated Technical Resorce Centre at MSSRF to tribal people especially tribal women in the country.

She also released 'World Resources 1996-97 : The Urban Environment' in the city.

தினமலர் நாளை 11,96.

சுற்றுப்புறச்சூழல் பாதுகாப்புக்கு விஞ்ஞானிகள் அறிவுரை தேவை

தினமலர், நாளை 11, 96

தமிழக அமைச்சர்கள் பேச்சு

சென்னை, ஜூலை 11—

நாட்டில் தொழில் வளர்ச்சியுடன், சுற்றுப்புற சூழலும் பாதுகாக்கப்பட வேண்டிய கருத்துக்களை விஞ்ஞானிகள் கூற வேண்டும் என தமிழக சுற்றுச்சூழல் மற்றும் கைத்தறி துறை அமைச்சர் பெரியசாமி கூறினார்.

சென்னை, தரமணியில் உள்ள சுவாமிநாதன் அறிவியல் ஆராய்ச்சி மையத்தில் கடந்த 8ம் தேதி முதல் உலக அறிவியல் வல்லுனர்கள் கருத்தரங்கம் நடைபெற்று வருகிறது.

நேற்று நடைபெற்ற கருத்தரங்கில், வெளிநாட்டு விஞ்ஞானிகள் பலர் கலந்து கொண்டனர். கருத்தரங்கில் கலந்து கொண்டவர்களை, எம்.எஸ்.எஸ்.ஆர்.எப். தலைவர் எம்.எஸ்.சுவாமிநாதன் வரவேற்று பேசினார்.

கருத்தரங்கில் கலந்து கொண்டு தமிழக சுற்றுச்சூழல் பாதுகாப்பு மற்றும் கைத்தறி துறை அமைச்சர் என்.கே.கே. பெரியசாமி பேசியதாவது:

"புதிய தொழிற்சாலைகள் உருவாக வேண்டும். நாட்டில் தொழில் வளர்ச்சி தேவை. அதேநேரம் சுற்றுப்புற தூய்மை கெட்டுவிடாதவாறு இருக்க வேண்டும்.

நிலத்தடி நீர் பெருமளவில் பாதிப்படைந்துள்ளது. இவைகளையெல்லாம் சரி செய்து, தொழில் வளர்ச்சி பெருக விஞ்ஞானிகள் நல்ல வழி கூற வேண்டும்.

சுற்றுச்சூழல் கெட்டு விட்டதால் அதிக அளவில் விவசாய நிலங்கள் தான் பாதிப்படைந்து உள்ளன. தொழிற்சாலையில் இருந்து வெளியேறும் கழிவுநீரை சுத்திகரிப்பு செய்வதற்கான, தேவையான நடவடிக்கைகள் எடுக்கப்பட்டு வருகிறது.

தொழில் வளர்ச்சியுடன் சுற்றுச்சூழல் பாதுகாக்கப்பட வேண்டியது அவசியமாகும். அதற்கு உலக நாடுகளும் எங்களுக்கு உதவ வேண்டும்.

இவ்வாறு அமைச்சர் பெரியசாமி பேசினார்.

தமிழக வனத்துறை மற்றும் கால்நடை பராமரிப்பு துறை அமைச்சர் பொங்கலூர் பழனிசாமி பேசுகையில், "வளர்ந்த நாடுகள், வளரும் நாடுகளுக்கு தேவையான உதவிகள் செய்ய வேண்டும்".

குறிப்பாக ஏழை நாடுகள் வளர உதவ வேண்டும். ஒரு நாடு நல்ல வளம் பெற 30 சதவீத காடுகள் இருக்க வேண்டும். எங்கள் நாட்டில் 20 சதவீத காடுகள் உள்ளன அதிலும் தமிழகத்தில் 15 சதவீத காடுகள் உள்ளன. இதனால் இங்கு மழை அளவு குறைவாக உள்ளது.

எனவே காடுகளை அதிகரிக்க திட்டமிட்டு உள்ளோம். முன்பு எங்கள் ஆட்சியில் சமூக காடுகள் வளர்ப்பு திட்டம் எனும் புதிய திட்டத்தை கொண்டு வந்து மாநிலம் முழுவதும் ஆங்காங்கே மரங்களை நட்டு காடுகளை உருவாக்கப் பாடுபட்டோம்.

"ஏழை எளியவர்கள் பயன் பெறும் வகையில் விஞ்ஞான வளர்ச்சி இருக்க வேண்டும்," என்றார்.

ஐக்கிய நாடுகள் சபையின் இணை செயலாளர் எலிசபெத் நிருபர்களிடம் கூறியதாவது:

உலகம் முழுவதும் சுற்றுச்சூழல் எந்தளவு பாதிப்படைந்து உள்ளது என்பதை கண்டறிய கூட்டு ஒப்பந்தம் ஒன்றை ஏற்படுத்த உள்ளோம். உலக நாடுகளில் எங்கு அதிக அளவில் சுற்றுச்சூழல் பாதிப்படைந்து உள்ளது என்பதை அறிந்து, அதனை நிவர்த்தி செய்ய வேண்டிய விதிமுறைகள் பற்றி ஆராயப்படும்.

உலக நீர் வள அமைப்பு ஒன்றை ஏற்படுத்தி, மாசு கட்டுப்பாட்டு விதிகளை கடைபிடிக்க வேண்டும். வளர்ந்த நாடுகளில் உள்ள தொழில் நுட்பங்கள், வளரும் நாடுகளுக்கு முழுமையாக வரவில்லை.

தொழில்நுட்ப வளர்ச்சிகளை ஒவ்வொரு நாட்டு மக்களின் சூழ்நிலைக்கு ஏற்ப நடைமுறைப்படுத்த வேண்டும். அப்படி சரியான அளவில் நடைமுறைப்படுத்தாததால் தான், பல திட்டங்கள் தோல்வி அடைந்து உள்ளன.

சுற்றுச்சூழல் பாதுகாப்பு திட்டத்தை நடைமுறைப்படுத்துவதில் பெண்களுக்கும், மலைவாழ் மக்களுக்கும் முக்கியத்துவம் கொடுக்க வேண்டும். கல்வி, சமூக சேவை, தேசியவளம் போன்றவைகளை ஊக்கப்படுத்த வேண்டும்.

சுற்றுச்சூழல் பாதுகாப்பின் அவசியத்தை பாமர மக்களும் அறியும் வண்ணம் தொண்டர்கள் மூலம் நிகழ்ச்சிகளை நடத்தி விளக்க வேண்டும்.

இவ்வாறு எலிசபெத் பேசினார்.

தினபூமி ஜூலை 12.96.

விவசாய உரத்திற்கு மானியம் மத்திய அமைச்சர் மிஸ்ரா அறிவிப்பு

சென்னை, ஜூலை 11- விவசாயிகளுக்கு உரம் அளிப்பதில் மானியம் வழங்கப் பட்டிருப்பதாக மத்திய விவ சாய அமைச்சர் சதுரானன் மிஸ்ரா கூறினார்.

நேற்று எம்.எஸ். சுவாமிநா தன் அறிவியல் ஆராய்ச்சி மையத்தில் நடைபெற்ற கருத்த ரங்கில் கலந்து கொண்ட அமைச்சர் பின்னர் நிருபர் களை சந்தித்து பேட்டி தந்தார்.

அப்போது அவர் கூறியதா வது:

சிறு விவசாயிகள் பயன்பெ றும் வகையில் விவ்சாய உரங்க ளுக்கு மானியம் அளிக்கப்பட் டுள்ளது. அதோடு குறைந்த விலையில் உரம் விற்கப்படுவ தாகவும் அவர் கூறினார்.

விவசாயிகளுக்கு வழங்கப் பட்டுள்ள கடன் தொகைக்கு பதினெட்டு முதல் இருபது சத வீதம் வரை வட்டி வீதம் நிர்ண யிக்கப்பட்டிருப்பதால் சிறு விவசாயிகள் அதிக அளவு பாதிக்கப்படுகின்றனர். இத னால் விவசாய பொருட்களின் உற்பத்தி செலவு கூடுகிறது.

இதற்காகவே மூன்றாயிரம் கோடி ரூபாய் மானியமாக மத் திய அரசால் அளிக்கப்பட்டி ருக்கிறது. இந்த மானியத் தொகையினால் சிறு விவசாயி கள் அதிக பயனடைவர்.

மேலும் யூரியா உரத்தின் விலை ஏற்றமடைந்து இருப்பது குறித்து கேள்விக்கு பதிலளிக் கும்போது, யூரியா விலை ஏற் றம் வருத்தத்திற்குரியது. இது மத்திய அரசின் பலமின்மையே என்றும் அவர் குறிப்பிட்டார்.

தினபூமி ஜூலை 11.96

News Today July 11, 96

CLUBS' UPDATE

SHASTRY V MALLADY

Highest Rotary Award for UN official

Forest and Animal Husbandry Minister, Pongalur Palanisamy, Wednesday lamented that the indiscriminate sanctioning of permission for setting up industries in the cities has led to the present state of environmental degradation.

The Minister was speaking at a function organised by the Rotary Club of Madras East to confer the 'For the Sake of Honour Award' to Elizabeth Dowdeswell, United Nations Under-Secretary, in recognition of her significant contribution to improving the quality of the human environment.

The Minister underlined the importance of increasing the forest cover.

Elizabeth Dowdeswell, in her acceptance address, said the principles of responsibility, frugality and solidarity should be adopted by people for environment protection.

She said the frugal way of life should be followed as one's living style should not impoverish others.

All sections of society should be committed to achieve better environment standards.

Dowdeswell emphasised that environment protection was not the luxury of the rich but a matter of survival of the poor. She also suggested the formation of a coalition which was not only made of environmentalists but also businessmen, researchers, writers and philosophers for creating greater awareness on environment protection.

Former Governor of Maharashtra, C. Subramaniam said that in view of the changing world order, the production and consumption of material production and consumption of material products had generated effluents which were polluting the atmosphere. Quoting Gandhiji's warning that the indiscriminate use of technology would lead to insoluble human problems, he called for sustainable development without endangering future generations.

Environment and Forest Department Secretary K.S. Sripathi, offered felicitations to Dowdeswell.

Club president, Rtn. K.K. Raman welcomed the gathering and secretary Vimal Galada proposed a vote of thanks.

Elizabeth Dowdeswell, United Nations Under Secretary receiving the 'For the Sa of Honour Award' of the Rotary Club of Madras East, from former Maharashi Governor, C. Subramaniam in city Wednesday. Pongalur N. Palanisamy, Minis for Forests and Animal Husbandry and Rtn. K.K. Raman, president of the club lo on.

Photos by G. Venkate

Earlier, addressing a press conference at the M.S. Swaminathan Research Foundation in the afternoon Dowdeswell said ecolabelling of industrial products now insisted upon by some importing countries should not be a facade for imposing new trade barriers.

Dowdeswell said the fear of ecolabelling was present not only in developing countries but in some developed countries also. The world community had to respond to this question early, she said.

Asked about conflict between development and environmental concerns and the current controversy in India about the Cogentrix power project in Karnataka and other environmentally sensitive projects, Dowdeswell said development, to be sustainable, should be environment friendly.

On the global climate change Dowdesw said this continuing debate should not st us from taking appropriate action based the body of knowledge already available

On the projected food gap at the glot level in the near future, she said these pr jections had to be revised in the light of ne technology for food production.

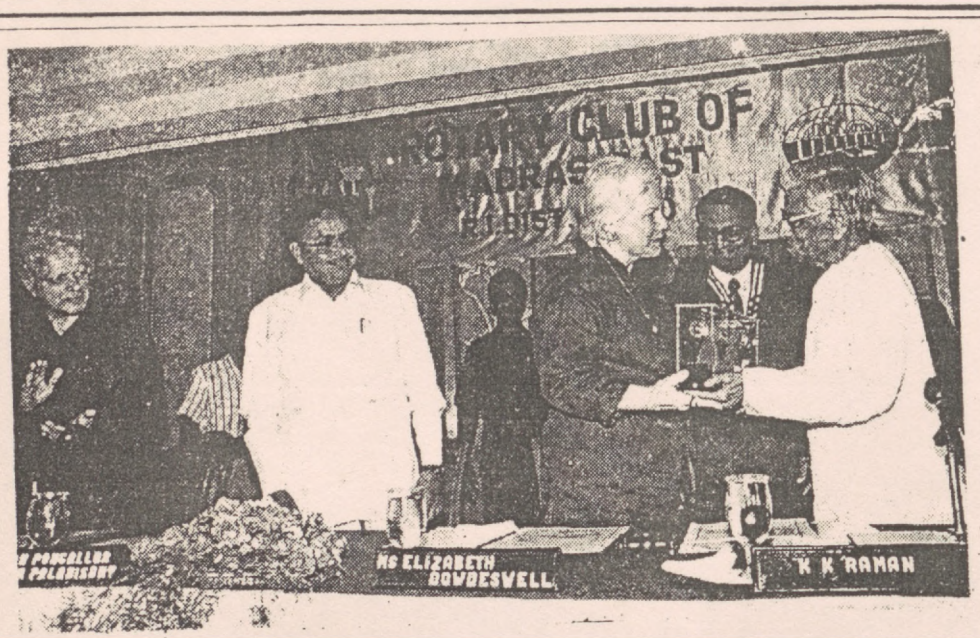
The proposed conference on trade ar environment in Singapore in Decemb next could help provide some balance o these issues unlike conferences on Worl Trade Order which seemed one-sided, she said.

Areas like global water partnership, food security including provision of protected water and sanitation systems, were areas of significance for organisations engaged in environmental protection, she added.

Report by A. Jagadish

Evening Madras July 11 '96

Evening Madras July 11 - '96



Ms. Elizabeth Dowdeswell, Executive Director, U.N.Environment Programme (UNEP) receiving the "For the Sake of Honour" Award of the Rotary Club of Madras East, from the former Maharashtra Governor C.Subramaniam, in the City on Wednesday. Others in the picture are: Dr.M.S. Swaminathan, Agriculture Scientist (extreme left), N.Palanichamy, Minister for Forests and Animal Husbandry and K.K.Raman, President of the Club.

Industrial pollution affects farm production in Tamil Nadu

MADRAS:

Minister for Environment and handlooms, N.K.K.Periasamy has appealed to the scientific and academic community to help Tamil Nadu in solving the problem of industrial effulents affecting agriculture production in the State:

Addressing international and national experts on food and environment at the M.S.Swaminathan Research Foundation here on Wednesday. Periasamy explained how agriculture lands in the State, especially in Periyar district, has been rendered useless to discharge of industrial effulents. Even though the State Government is trying to create common effulent treatment plants on a war-footing wherever possible, the damage to agricultural lands is taking place at a very rapid rate.

Minister for Forests and Animal Husandry, N.Palanichamy said that the State Government is making every effort to increase forest coverage by converting wastelands through programmes. As against the recommended optimum coverage of 30 per cent land under forestry, the State has only 15 per cent coverage he said.

Earlier, Prof.M.S.Swaminathan who welcomed the gathering stressed the need to protect the interests of the farmer and suggested a levy of one per cent on all agriculture commodities for creating Gene Pool Fund at the national level.

Ms.Elizabeth Dowdeswell, U.N. Under Secretary General and Executive Director, United Nations Environment Programme released the World Resources Report.

Ms.Elizabeth Dowdeswell told a Press conference that the world will be virtually free from ozone depleting substances, in ten years time, if the developing countries also followed the guidelines of the Montreal convention, like the developed nations.

தினமணி மாலை 11, 96.

விஞ்ஞானிகளுக்கு சுற்றுச்சூழல் அமைச்சர் வேண்டுகோள்

தினமணி மாலை 11.96.

சென்னை, ஜூலை 10— சுற்றுச்சூழல் மாசு அடைவதைத் தடுக்க உரிய நடவடிக்கைகள் மேற்கொள்வதற்கு விஞ்ஞானிகளும் ஆய்வாளர்களும் தகுந்த யோசனைகளைக் கூறவேண்டும் என்று தமிழக சுற்றுச்சூழல் மற்றும் கைத்தறித் துறை அமைச்சர் என்.கே.கே.பெரியசாமி வேண்டுகோள் விடுத்தார்.

அந்த யோசனைகளைப் பரிசீலனை செய்து நிறைவேற்ற அரசு தயாராக உள்ளது என்றும் அவர் தெரிவித்தார்.

உலகில் உணவு உத்தரவாதத்துக்கான அசாதாரண வாய்ப்புகள் என்பது குறித்து சென்னையில் நடந்து வரும் மாநாட்டில் வியாழக்கிழமை நடைபெற்ற நிகழ்ச்சியில் பெரியசாமி பேசினார். கீழ் பவானிப் பகுதியில் சுற்றுச்சூழல் மாசு காரணமாக ஏராளமான விவசாய நிலங்கள் பாதிக்கப்பட்டுள்ளது. சில பகுதிகளில் தோல் தொழிற்சாலைகளாலும் சுற்றுச்சூழல் மாசு அடைந்துள்ளது. தொழிற்சாலைகளிலிருந்து வெளியேறும் கழிவுநீரைச் சுத்திகரிக்க நிலையங்கள் அமைக்க அரசு முயற்சிகள் மேற்கொண்டு வருகிறது என்றார் அவர்.

வனத்துறை அமைச்சர் பொங்கலூர் பழனிச்சாமி பேசும்போது, இந்தியாவிலும் குறிப்பாக தமிழகத்திலும் வனவளம் குறைந்து வருவது பற்றியும் அதனால் வளம் குறைந்து வருவது பற்றியும் குறிப்பிட்டார்.

வன வளத்தை அதிகரிக்க அரசு பல்வேறு நடவடிக்கைகளை மேற்கொண்டு வருகிறது. தமிழகத்தில் அடுத்த ஐந்து ஆண்டுகளில் சமூக நலக் காடுகளை ஏற்படுத்த ரூ.500 கோடி ஐப்பான் நிதி உதவி அளிக்க முன்வந்துள்ளது. இதேபோல தரிசு நிலங்களில் காடுகளை வளர்க்கவும் நடவடிக்கைகள் மேற்கொள்ளப்பட்டுள்ளன. கால்நடைச் செல்வம் அதிகம் உள்ள நாடுகளில் இந்தியாவும் ஒன்று. எனினும் அதன் தரம் குறைவு. கால்நடை மருத்துவப் பல்கலைக்கழக ஆராய்ச்சியின் பலன்கள் சாமான்ய மக்களுக்கும் கிடைக்கச் செய்ய அனைத்து நடவடிக்கைகளும் மேற்கொள்ளப்படுகின்றன என்றார் அவர்.

பேராசிரியர் எம்.எஸ்.சுவாமிநாதன் பேசும்போது, விதை ரகங்களைப் பாதுகாக்கவும் மேம்படுத்தவும் உதவும் வகையில் தேசிய அளவில் மரபணு நிதியம் ஏற்படுத்த வேண்டியதன் அவசியம் பற்றிக் குறிப்பிட்டார். சர்வதேச அளவில் இதுபோன்ற நிதியத்துக்கு 0.01 சதவீதம் ஒதுக்கினாலேயே 2 லிருந்து 2.5 பில்லியன் டாலர் வரை நிதி கிடைக்கும் என்றார்.

எம்.எஸ்.சுவாமிநாதன் ஆராய்ச்சி நிலையத்தில் தொழில்நுட்ப ஆதார மையத்தை ஐக்கிய நாடுகள் சபை சுற்றுச்சூழல் திட்ட செயல் இயக்குநர் எலிஸபெத் டவுட்ஸ்வெல் துவக்கி வைத்தார். இந்த மையத்தின் செயல்பாடுகள் பற்றி பாலாஜி விளக்கினார். உலக வள நிலையம் சார்பில் தயாரிக்கப்பட்ட அறிக்கையும் நிகழ்ச்சியில் வெளியிடப்பட்டது. சுற்றுச்சூழலுக்கு உகந்த வளங்குன்றா வளர்ச்சியின் முக்கியத்துவம் பற்றி டவுட்ஸ்வெல் குறிப்பிட்டார். வளங்குன்றா வளர்ச்சியில் வர்த்தகத்துறைக்கும் சுற்றுச்சூழலுக்கும் இடையே எழும் பிரச்சினைகள் குறித்து வருகிற டிசம்பர் மாதம் சிங்கப்பூரில் நடைபெறும் மாநாட்டில் விவாதிக்கப்படுகிறது என்றும் அவர் தெரிவித்தார்.

முதல்வருடன்
தலைவர்க

சென்னை, ஜூலை 10— கடந்த அதிமுக ஆட்சி காலத்தில் அரசியல் காரணங்களுக்காக மார்க்சிஸ்ட் கம்யூனிஸ்டு கட்சி ஊழியர்கள் மீது போடப்பட்ட வழக்குகள் அனைத்தையும் அரசு திரும்பப் பெற வேண்டும் என மார்க்சிஸ்ட் கம்யூனிஸ்ட் தலைவர்கள் கேட்டுக்கொண்டனர்.

முதல்வர் நிவாரண நிதியை அவாது இல்லத்தில் மார்க்சிஸ்ட் கம்யூனிஸ்ட் கட்சி நிர்

வியாழக்கிழமை, 13 ஜூன், 1996

ஆராய்ச்சி மையத்தின் நோக்கம்: எம்.எஸ்.சுவாமிநாதன் விளக்கம்

தஞ்சாவூர், ஜூன்.12- விவசாயத்தில் அதிக உற்பத்தி, அதிக லாபம், கடலோரக் கிராமப் புற மக்களுக்கு அதிக வேலை வாய்ப்பு ஆகியவற்றை ஏற்படுத்துவதும், இவற்றின் மூலம் நாட்டின் பொருளாதார மேம்பாட்டுக்கு வழிகோலுவதும்தான் தமது ஆராய்ச்சி மையத்தின் நோக்கம் என்று வேளாண் விஞ்ஞானி எம்.எஸ்.சுவாமிநாதன் தெரிவித்தார்.

எம்.எஸ்.சுவாமிநாதன் ஆராய்ச்சி மையம் நாகை காயிதேமில்லத் மாவட்டத்தில் நடத்தி வரும் 'கடலோர நிலங்களில் வருவாயைப் பெருக்கும் சில ஆராய்ச்சிகள்' என்ற திட்ட நிறைவு விழா புதன்கிழமை வேட்டைக்காரன் இருப்புக் கிராமத்தில் நடைபெற்றது. இவ்விழாவில் கலந்து கொண்டு எம்.எஸ்.சுவாமிநாதன் பேசுகையில் மேற்கண்டவாறு குறிப்பிட்டார். மேலும் அவர் பேசியதாவது:

தமிழ்நாட்டில் சுமார் 1000 கி.மீ. அளவுக்கு கடற்கரை அமைந்துள்ளது. கடலோரக் கிராமங்களைச் சேர்ந்த மக்களின் மேம்பாட்டுக்கு வழிவகைகளை ஆராய்ந்து சொல்லவே கடலோர ஆராய்ச்சி மையம் தொடங்கப்பட்டது. இந்த மையம் சார்பில் நாகை மாவட்டம் வேட்டைக்காரன் இருப்பு என்ற கடற்கரைக் கிராமத்தில் 1992-ம் ஆண்டு ஆராய்ச்சி மையம் ஒன்று அமைக்கப்பட்டது.

இக்கிராமத்தில் வாழும் மக்கள் தொகை 5983. இங்கு இருக்கின்ற மொத்த நிலப்பரப்பு 1168 ஹெக்டேர். அவற்றில் சாகுபடியாகும் நிலப்பரப்பு 812 ஹெக்டேர். எஞ்சியுள்ள பகுதிகள் தரிசாக உள்ளன. இப்பகுதிகளில் சவுக்கு, நெல், நிலக்கடலை, தென்னை, முந்திரி, பனை ஆகிய பயிர்கள் வளர்க்கப்படுகின்றன.

40 சதம் நிலத்தில் சவுக்கும், 15 சதம் நிலத்தில் நிலக் கடலையும், 15 சதத்தில் நெல்லும், 12.2 சதத்தில் தென்னையும், 6.7 சதத்தில் மா மரங்களும், 0.7 சதத்தில் பனையும் விளைவிக்கப்படுகின்றன. மேலும், இப்பகுதியில் 2,865 வெள்ளாடுகளும், 412 செம்மறி ஆடுகளும், 705 மாடுகளும் வளர்க்கப்படுகின்றன. ஆனால், இந்தக் கால்நடைகளுக்குத் தேவையான மேய்ச்சல் நிலங்கள் இப்பகுதியில் இல்லை என்பது குறிப்பிடத்தக்கது.

வேட்டைக்காரன் இருப்புக் கிராமத்தில் இந்த ஆராய்ச்சித் திட்டத்தைத் தொடங்குவதற்கு முன்பு இந்த ஊரிலுள்ள விவசாயிகளிடம் நன்றாகக் கலந்து ஆலோசிக்கப்பட்டது. அவர்களுடையை ஒத்துழைப்பைப் பெற்ற பின்னரே ஆய்வுப் பணிகள் தொடங்கப்பட்டன.

வேளாண்காடுகள் அமைப்பதன் முக்கிய நோக்கம், சாகுபடி முறைகளை மாற்றி அமைப்பதன் முக்கியத்துவம் பற்றி அவர்களுக்கு எடுத்துக் கூறப்பட்டன. இவ்வாறு செய்வதன் மூலம் உணவுத் தேவைகளை பூர்த்தி செய்து கொள்வதுடன், குடும்ப வருமானத்தையும் பெருக்கிக் கொள்ளலாம் என்பதை அவர்கள் ஆய்வு மையத்தின் மூலம் உணர்ந்தனர். இதற்காக சவுக்கு மரங்களுக்கு இடையே ஊடுபயிர் சாகுபடி 5 முதல் 7 ஆண்டுகள் வரை செய்யலாம் என்பது முதலில் கண்டறியப்பட்டது. இதையடுத்து இப்பகுதியில் சவுக்கு மரங்களுக்கு இடையே ஊடு பயிர்கள் சாகுபடி செய்து விவசாயிகள் நல்ல லாபம் ஈட்டி வருகின்றனர்.

இதேபோல் பழத்தோட்டங்களுக்கு இடையே நிலக்கடலையும், ஒட்டு சூரியகாந்தியும் சாகுபடி செய்ததில் நல்ல மகசூல் கிடைத்தது. 7 ஆண்டுகள் வளர்ந்த சவுக்குக் காடுகளின் உட்புறம் நெல் நாற்று விடப்பட்டது. ஆனால், சவுக்குக்கு வெளியே விட்ட நெல் நாற்றுக்குத் தேவைப்படும் தண்ணீரை விடக் குறைவாகவே இதற்குத் தண்ணீர் தேவைப்பட்டது.

இதுநாள் வரை பழைய உள்ளூர்க் காய்கறிகளையே பயிரிட்டு வந்த விவசாயிகள் பீட்ரூட், காளிபிளவர் உள்ளிட்ட குளிர் பிரதேசங்களில் விளையும் காய்கறிகளையும் விளைவிக்கக் கற்றுக் கொண்டனர். இதற்கு மக்களிடையே நல்ல வரவேற்பும் கிடைத்து. அவர்களுக்கு நல்ல மகசூலும் கிடைத்தது. மேலும், கட்டிப்போட்டு ஆடு வளர்த்து நிறைய லாபம் ஈட்டும் வழிமுறையும் அமல்படுத்தப்பட்டது. இவ்வாறு அவர் விளக்கினார்.

நிகழ்ச்சிக்கு திட்ட அலுவலர் கோ.ஜான்சன் தலைமை வகித்தார். நாகை மாவட்ட வேளாண்மைத்துறை இணை இயக்குநர் மூ.பாலகிருஷ்ணன் சிறப்புரை ஆற்றினார். மாவட்ட மக்கள் தொடர்பு அதிகாரி கோவிந்த பிரசாத், ஆராய்ச்சி உதவியாளர் கு.கோ.மணி ஆகியோர் உள்பட பலர் விழாவில் கலந்து கொண்டனர்.

Scientist concerned at parties' apathy towards environment

EXPRESS NEWS SERVICE

NEW DELHI, July 28: Eminent agricultural scientist, Dr M S Swaminathan has expressed concern over the failure of the country's main political parties to include environmental issues in their agenda.

Delivering the fourth Rosalind Wilson Memorial Lecture, entitled "Environment and the Citizen," here this evening, Dr Swaminathan observed that, while the concern over environmental degradation has been growing all over the world, it hadn't been so in India. "This is manifested in the continued indifference to issues relating to environment, health and education on the part of political parties," he said.

According to him, public awareness on the need for subjecting all developmental activities to well-defined ecological ground rules has been growing in the recent decades, particularly after the Stockholm Conference on the Human Environment in 1972.

"The UN Conference on Environment and Development held at the Brazilian city of Rio-de-Janeiro in 1992 helped to deepen and widen the environmental consciousness of the citizen. This is reflected both in the growth of non-governmental organisations dealing with environmental issues in all parts of the world and in the number of petitions seeking legal redress from courts," he pointed out, adding "Tragedies like Bhopal and Chernobyl brought to light sharply the potential adverse environmental and human consequences of careless technologies.

Lamenting at the lack of effective follow-up on the decisions taken in these conventions, he stated that steps to prevent irreversible environment harm are largely at the level of individuals and collective action is still rare.

There was, nevertheless, still a ray of hope, Dr Swaminathan felt. All it needed to convert environmental concern into a mass movement was the promotion of two sets of institutional structures.

M.S. Swaminathan delivering the fourth Rosalind Wilson Memorial Lecture on environmental awareness in the country in the Capital on Sunday. *Express photo by Ravi Batra*

In the Indian context, he mentioned the need to reinvigorate grass-roots democratic institutions. "Every village must have a planning tool at the local level," he observed, adding, "Fortunately, in most parts of our country, elected panchayats and nagarpalikas will be functioning by the end of the year. Information empowerment will be vital for enabling them to prepare the socio-demographic charters for their respective villages and towns."

Dr Swaminathan also stressed the need to foster the establishment of an "Amnesty Environment Organisation" which can facilitate the monitoring of gross human heritage violations at the global level and to initiate proactive action to prevent them. "It would be effective if it is backed a consortium of the world's leading mass media."

Noted Supreme Court lawyer Soli Sorabjee, while delivering the vote of thanks, said there was a need to instill among the people consciousness regarding environment.

THE HINDU, Monday, July 29, 1996 ****3

'Amnesty Environment' suggested

From Our Staff Reporter

NEW DELHI, July 28.

Dr. M. S. Swaminathan, eminent environmentalist, has suggested the establishment of an "Amnesty Environmental Organisation" to monitor gross human heritage violations and to initiate action to prevent them.

Delivering the Fourth Rosalind Wilson Memorial lecture on "Environment and the Citizen", here today, Dr. Swaminathan said that Amnesty International protected the present inhabitants of the earth from the abuse of power while Amnesty Environment would help prevent harm to the generations yet to be born. "Such an organisation will be effective only if its activities are rooted solely on a quest for re-establishing and strengthening harmony between humankind and nature. It should desist from politically motivated statements and interventions, if it is to maintain credibility it would be effective if backed by a Consortium of the world's mass media — both electronic and print."

Such a global coalition of media for a healthy human environment and a professionally run Amnesty Environment would help mobilise citizens voices for appropriate political and public action for the conservation and improvement of our life support system, Dr. Swaminathan said.

At the national level, Dr. Swaminathan said, citizens action for a better environment is best articulated and activated through grassroot democratic institutions. Fortunately, in most parts of our country elected Panchayats and Nagarpalikas will be functioning by the end of this year. Information empowerment will be vital for enabling them to prepare socio-demographic charters for their respective villages or towns. "Such charters are planning tools for achieving a harmonious balance between the human population and the population supporting capacity of the respective eco-system."

The Government bodies should, however, take into consideration the solid and liquid waste disposal, bio-environmental management of mosquitoes and lay more stress on literacy and awareness. "Through such institutional services at the global and local levels the power of common citizens to safeguard the quality of the environment can be enhanced," Dr. Swaminathan said.

Public awareness on the need for subjecting all developmental activities to well defined ecological rules has been growing in recent decades, particularly after the Stockholm Conference on Human Environment in 1972. The UN Conference on Environment and Development held at Rio de Janeiro in 1992 helped deepen and widen the environmental consciousness of the citizen.

Dr. Swaminathan said this was reflected both in the growth of non-governmental organisations dealing with environmental issues in all parts of the world and in the number of petitions before courts seeking legal redress when gross violations take place. "Tragedies like Bhopal and Chernobyl brought to light sharply the potentially adverse environmental and human consequences of careless technologies."

Dr. Swaminathan pointed out that at Rio and subsequently, several legal and binding international conventions came into force. However, action on the implementation of these conventions has been slow and halting and they are discussed more in legal than in human terms. Steps to prevent irreversible environmental harm are largely at the level of individuals; and collective action is still rare, he said.

Rosalind Wilson is best known for her work as editor of Target, a children's magazine but more importantly a lover of nature. She died of cancer four years ago.

THE STATESMAN DELHI, MONDAY, JULY 29, 1996 3

'Conserving natural resources is vital'

STATESMAN NEWS SERVICE

NEW DELHI, July 28. — "Action on the implementation of international conventions which came into force at Rio and subsequently, has been slow and halting and they are discussed more in legal than human terms," said Dr M.S. Swaminathan.

He was speaking on "Environment and the citizen" at the Rosalind Wilson Memorial Lecture, held in the Capital on Sunday.

Dr Swaminathan referred to the fact that "a love of biological diversity automatically creates a love of diversity in other forms".

Speaking to the children of different schools who had turned up in large numbers to attend the lecture, Dr Swaminathan said that to sustain the population which will exist 50 years from now, given the present rate of growth of population, conservation is necessary on very serious scales.

Dr Swaminathan pointed out "regretfully there is no existing policy on land abuse, in our country where land is one of our largest and most productive resources. Additionally ground water is being so shamefully exploited, at unsustainable levels especially in coastal belts".

He also elaborated that unlike in the past when it was believed that climate was the one condition on which man had no control, awareness has set in that climatic changes occur due to the changes wrought by human beings on the environment.

Dr Swaminathan also stated that while in the past organic recycling was a way of life, modern civilization with its plastic culture is associated with non-biodegradable products.

Concluding his speech, the renowned scientist stated that unless a combined effort was made by the community as a whole, there would be little use of talking about conservation.

'It's a challenge for humans to be good ancestors'

By A Staff Reporter

NEW DELHI, July 28: The greatest challenge to human being today is becoming a good ancestor. And the challenge can be met through a mass movement which can promise a healthy environment to the generations yet to be born.

These views were expressed by eminent agriculturist and environmentalist M S Swaminathan at the fourth Rosalind Wilson memorial lecture on "Environment and the Citizen" on Sunday evening.

Emphasising the need for a mass movement, Mr Swaminathan suggested promoting two sets of institutional structures which can help building it. First, the creation of an Amnesty Environment Organisation, on the lines of Amnesty International, which can help to monitor gross human heritage violations and to initiate proactive action to prevent them. Second, A Global coalition of Media for a healthy human environment.

"The Atlanta Oiympics is a clear evidence of the power and reach of the mass media. This movement, too, would be effective if it is backed by a consortium of world's leading mass media organisations, both electronic and printed," he said.

At the national level, he suggested, citizen's action for a better environment is best articulated and activated through grassroot democratic institutions. "Citizens who understand nature are those closest to it. Every village must have a planning tool," Mr Swaminathan said. These tools will help achieve a harmonius balance between the human population and the population supporting capacity of the respective ecosystem, he added.

Stressing the role of Panchayats and Nagarpalikas in formulating such plans and implementing them, Mr Swaminathan suggested the socio-demographic charter of the two institutions should take into account environment, health security, education, food security, livelihood security and the gender code.

Self-help through a participatory approach

From S. Nadarajan

PONDICHERRY:

The bio-village scheme was started under the aegis of the Dr. M. S. Swaminathan Research Foundation, a non-governmental organisation, five years ago in three villages of Kizhoor, Sivaranthakam and Pillayarkuppam in Pondicherry to promote human development on a sustained basis integrating the farm and non-farm sector. It saw the setting up of credit management groups which took up eco-friendly projects to achieve economic efficiency and social equity.

The groups were trained in the latest methods of scientific farming by the experts of the Foundation. They underwent a transformation in the wake of a workshop on 'self-help groups', organised by the National Bank for Agricultural and Rural Development (NABARD).

Mr. K. Sukumar, Assistant General Manager of NABARD (District Development), says the concept of self-help groups caught the imaginataion of people in the rural areas. Group savings for financial self-reliance has been encouraged. Each group comprises 20 members. They are sponsored by the NGOs in order to link them with the bank for availing credit which is four times the value of the sum saved by each group.

To promote self-help groups NABARD is extending 100 per cent refinance support to the lending institutions. NABARD had been able to promote five such groups during 1995-96 with the active support and enthusiasm evinced by the Indian Bank and the Swaminathan Foundation. Two of the five groups which are called "actively specific" are enaged in mushroom cultivatioon and jasmine cultivation, says Mr. Sukumar.

The 11-member Sivaranthakam Magalir Munnetra Sangam (Women's Welfare Association), was given an overview about the technology used in mushroom cultivation. The members incidentally, all belong to Scheduled Caste communities. They wee taken on a study tour to the Tamil Nadu Agricultural University in Coimbatore. The technical wing of the Foundation provided the technical training to the women. Mushroom is now grown in huts which are 2.5 metres long, 1.5 metres wide and 2 cm high. The structures are put up using locally available materials.

Each participant of the training programme is able to produces nearly 5 kg of mushrooms in a month and is able to earn Rs. 150 to supplement the family income. The NGO also conducts programmes to train unemployed youth in spawn production. The youth distribute the bottles of spawn and collect fresh mushrooms which are in great demand in Pondicherry itself. A kg of mushrooms costs as much as Rs. 40. Mr. Sukumar says that the self-help group which opened its saving account in Indian Bank at Ariyur in 1994, had saved Rs. 8,250 till March.

The other group in Sivaranthakam village concentrates on jasmine cultivation. It has nine members. The cultivation of jasmine was introduced by the Swaminathan Foundation is as income-generating activity for landless and marginal women. The services of the Krishi Vigyan Kendra are also utilised to provide training to the women. The trainees are taken on a tour of other jasmine farms. With a view to earning extra income, inter-cropping with crossandra flowers is done. There is a good market for the flowers in Pondicherry. The group started the venture with a savings of Rs. 50 per member at the Indian Bank in Ariyur in 1994. It had saved Rs. 4,982 till March, this year.

While the financial aspect is taken care of by the banks, the Swaminathan Foundation promots sustainable agriculture and rural development by transferring technology from lab to land through a participatory approach. The notable features of such activities are the ideal blend of production technology, protection of ecology and the reduction of drudgery.

Financial Express, Aug/8/96.

Plan to intensify farm development in metros

FE NEWS SERVICE
MADRAS, AUG 7

THE Government is planning to intensify development of agriculture around the metros and large towns in the peripheral areas, said U Venkateswarlu, Minister of State for Urban Affairs and Employment and Parliament Affairs, Government of India. "Agriculture should be integrated into urban areas as part of urban development and not remain apart from it, relegated to the rural sector."

The Minister, himself a well-known agriculturist made his speech on the occasion of releasing the sixth annual report of M S Swaminathan Research Foundation. He said he could utilise his portfolio of Urban Development for this purpose and combine it with the expertise the institute offered.

The idea would be that fresh vegetables, milk, eggs, cereals are available close by - without having to come from long distances and sustain the city's population. The Prime Minister has agreed to the idea, and the Food and Agriculture Organisation is willing to fund the scheme, Venkateswarlu said. There would be cold storage centres every four to five km and all harvest would be brought, packed and transported in three hours time, he said.

The Minister also highlighted the work done by the institute in the poverty alleviation programme of rural women and children. He requested the help of the institute for a similar poverty alleviation programme for urban women also.

The achievements of the year 1995-96 were highlighted. On coastal systems research, studies on the coastal wetland - mangrove ecosystems in Tamil Nadu, Andhra Pradesh, Orissa, and Bengal had already been initiated. With the help of experience gained during the last six years on the conservation of genetic diversity in mangrove wetlands, the new project's aim will be to standardise the technologies and management practices necessary for promoting integrated conservation and development projects in the coastal wetland areas.

A technical resource centre for the implementation of the equity provisions of the convention on biological diversity (TRC for CBD) was dedicated to tribal and rural families on July 10 this year. This was set up because the primary conservers of agro-biodiversity remained poor, while those who utilised the genetic material became rich.

The centre was set up to ensure that benefits also went to those who deserved it first - like tribal practitioners. Programme area 300 involves eco-technology and sustainable agriculture. Eco-technologies comprising the blending of traditional and frontier technologies so as to combine both economic viability and environmental sustainability, provide the foundation for all projects involving integrated intensive farming system, integrated pest management system and bio-villages.

Programme area 400 targeted rural poor women and children and programme area 500 gave thrust to education, communication training and capacity building, ranging from farmer to farmer learning to advanced post graduation courses.

நகர்ப்புற மகளிர் மேம்பாட்டுத் திட்டம்: மத்திய அமைச்சர் தகவல்

சென்னை, ஆக. 7— கிராமப்புறங்களில் மகளிருக்காகவும் குழந்தைகளுக்காகவும் செயல்படுத்தப்படும் திட்டத்தைப் போல ரூ.35 கோடி செலவில் நகர்ப்புற மகளிர் மற்றும் குழந்தைகள் மேம்பாட்டுத் திட்டத்தை மத்திய அரசு செயல்படுத்த உள்ளது.

சுதந்திர தினத்தன்று பிரதமர் இப்புதிய திட்டத்தைத் துவக்கி வைக்க உள்ளார் என்று மத்திய நகர்ப்புற, வேலைவாய்ப்பு மற்றும் நாடாளுமன்ற விவகார அமைச்சர் யு. வெங்கடேஸ்வரலு தெரிவித்தார்.

சென்னை எம்.எஸ். சுவாமி நாதன் பவுண்டேஷனில் புதன்கிழமை நடைபெற்ற நிகழ்ச்சியிலும் பின்னர் நிருபர்களிடமும் அவர் கூறியதாவது:

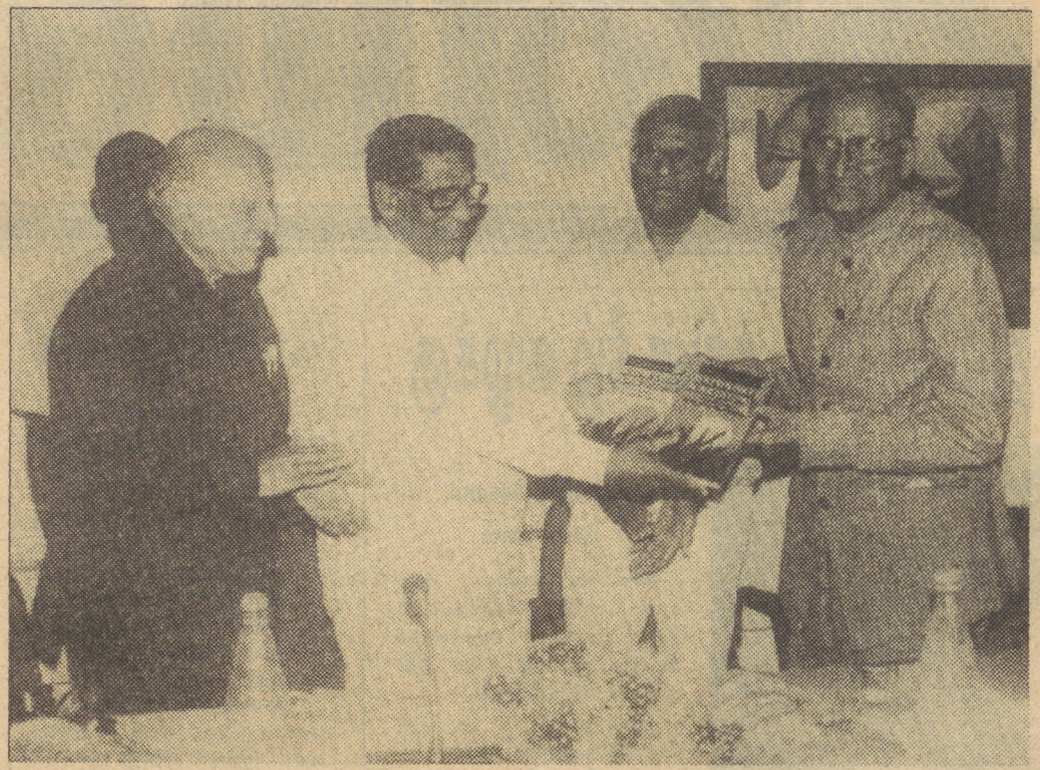
நமது நாட்டில் 28 சதவீதம் பேர் நகர்ப்புறங்களில் வசிக்கிறார்கள். இந்த எண்ணிக்கை அதிகரித்து வருகிறது. நகர்ப்புறங்களில் வறுமையில் வாடும் மக்கள் மேம்பாட்டுக்கென திட்டங்களின் அவசியம் குறித்துக் கருத்தில் கொண்டுதான் இப்புதிய திட்டத்தைச் செயல்படுத்த உத்தேசிக்கப்பட்டுள்ளது. இத்திட்டத்தின் கீழ் பயன்பெறுபவர்களின் முதலீட்டுத் தொகைக்கு இணையான தொகையை மத்திய அரசு வழங்கும். இந்தத் தொகையைக் கொண்டு வருவாயைப் பெருக்கும் திட்டங்கள் செயல்படுத்தப்படும்.

ரூ.600 கோடித் திட்டம்

நகரங்களைச் சுற்றியுள்ள பகுதிகளில் நகர்ப்புறத் தேவைகளுக்காக வேளாண் பொருள்களை உற்பத்தி செய்யும் திட்டத்தைச் செயல்படுத்தவும் உத்தேசிக்கப்பட்டுள்ளது. நகருக்குத் தேவையான காய்கறிகள், பழங்கள், முட்டைகள், பூக்கள் போன்றவை புறநகர் பகுதிகளில் உற்பத்தி செய்யப்படும். இவற்றைப் பாதுகாக்க அந்தந்தப் பகுதிகளில் குளிர்பதன வசதியும் செய்யப்படும். விவசாயிகளுக்குக் குறைந்தபட்ச விலை கிடைக்கவும் உத்தரவாதம் செய்யப்படும். நகர்ப்புற மக்களுக்கும் புத்தம் புதிய காய்கறிகள், பழங்கள் கிடைக்கவும் வழி ஏற்படும்.

ரூ.500 கோடி முதல் -ரூ.600 கோடி வரையிலான இத்திட்டத்துக்கு சர்வதேச உணவு மற்றும் விவசாய அமைப்பிடமிருந்து நிதியுதவி பெறத் திட்டமிடப்பட்டுள்ளது. அத்துடன் இத்திட்டத்தை வடிவமைக்கப் பதற்கான ஆலோசனைகள் விவசாய நிபுணர் எம்.எஸ்.சுவாமிநாதனிடம் கேட்கப்பட்டுள்ளது. இத்திட்டத்தைச் செயல்படுத்தவும் பிரதமர் சம்மதித்துள்ளார்.

நாட்டில் வீடில்லாதவர்களின் எண்ணிக்கை 35 மில்லியன்கள். நலிவடைந்தப் பிரிவினருக்கு 6 மில்லியன் வீடுகள் வரை கட்டிக் கொடுத்துள்ள போதிலும்கூட இன்னும் வீடில்லாதவர்களின் எண்ணிக்கைப் பெருமளவுக்கு உள்ளது. மக்களின் அடிப்படைத் தேவைகளில் ஒன்றான குடியிருப்பு வசதி செய்வது குறித்து வருகிற அக்டோபர் மாதம் தில்லியில் கருத்தரங்கு நடைபெற உள்ளது. எதிர்[illegible] வசதித் தேவை[illegible]



சென்னை எம்.எஸ்.சுவாமிநாதன் ஆராய்ச்சி பவுண்டேஷனில் புதன்கிழமை நடைபெற்ற 'வளங்குன்றா விவசாயம்' குறித்த நூல்கள் வெளியீட்டு விழாவில் எம்.எஸ்.சுவாமிநாதன், மத்திய அமைச்சர் வெங்கடேஸ்வரலு, சென்னைப் பல்கலைக்கழகத் துணைவேந்தர் ப.க.பொன்னுசாமி, பேராசிரியர் டி.எஸ்.சதாசிவன்.

னத் தொழில்நுட்பம், நிதி ஆதாரங்களைத் தேடுதல், நகர்ப்புற நிலஉச்சவரம்புச் சட்டங்களைத் திருத்தி அமைத்தல் போன்ற பல்வேறு விஷயங்கள் குறித்து விவாதிக்கப்படும்.

விவசாய உற்பத்தித்திறன் அளவு குறைந்து வருகிறது. பெரும்பாலான பொதுமக்களுக்குப் போதிய ஊட்டச்சத்து உணவு கிடைப்பதில்லை. எனவே நமது உற்பத்தித் திறனைப் பெருக்குவதற்கு இரண்டாவது பசுமைப் புரட்சி தேவைப்படுகிறது என்றார் வெங்கடேஸ்வரலு.

முன்னதாக எம்.எஸ். சுவாமிநாதன் ஆராய்ச்சி பவுண்டேஷன் நிலையத்தில் அந்த அமைப்பின் ஆண்டறிக்கையை அவர் வெளியிட்டார். அதன் முதல் பிரதியை சென்னைப் பல்கலைக்கழகத் துணைவேந்தர் பி.கே. பொன்னுசாமி பெற்றுக் கொண்டார். வளங்குன்றா விவசாயம் குறித்து எம்.எஸ். சுவாமிநாதன் எழுதியுள்ள இரண்டு ஆங்கில நூல்களை அமைச்சர் வெளியிட அதன் முதல் பிரதிகளை பேராசிரியர் டி.எஸ். சதாசிவன் பெற்றுக் கொண்டார்.

ஆராய்ச்சி நிலைய ஆட்சி மன்றக் குழுவைச் சேர்ந்த பேராசிரியர் ஏ.சங்கரன் வரவேற்றார். ஆராய்ச்சி நிலையத்தின் செயல்பாடுகள் குறித்து வி. செல்வம், டி. ரவிசங்கர், சி.எஸ். அனுராதா, கே. பாலசுப்பிரமணியன், வினிதா, மீனா சுவாமிநாதன் ஆகியோர் விளக்கினர். எதிர்காலத் திட்டங்கள் குறித்து எம்.எஸ். சுவாமிநாதன் விளக்கினார். ஷானாஸ் பதம்ஸி நன்றி கூறினார்.

Minister's stress on second green revolution

From Our Staff Reporter Hindu Aug/8

MADRAS, Aug. 7.

Though the annual rate of growth of population was going down, so was the food availability. There was no time to be lost and a second green revolution is needed to bring the vast tracts of arid lands to augment food production, the Union Minister of State for Urban Affairs, Dr. U. Venkateswarlu, said today.

The attention of Indian scientists has to be turned to this area as food production has hit a plateau, he said. The Minister was speaking after releasing the sixth annual report of the M. S. Swaminathan Research Foundation (MSSRF), at Taramani here today.

"It is no secret that in the past decade the results of the green revolution has reached a plateau," he said and added that the qualitative increase in production was due to some "other" factors. The country needed another such revolution to turn two-thirds of its arable "grey" areas into "green," he said.

The Agenda for the coming year for the MSSRF, 1996-97, include conservation and enhancement of natural resources, promotion of sustainable livelihoods, gender equality and voicing the voiceless and information and skill empowerment, said Dr. M. S. Swaminathan, agricultural scientist.

Consolidation of progress made in various areas of activity, in the past year, creating a coalition of concerned people and continuation through a built-in withdrawal strategy will constitute the guiding principles of the Foundation. The areas of concentration include: coastal wetlands, especially identified mangrove ecosystems in Tamil Nadu, Andhra Pradesh, Orissa and West Bengal; a resource centre for farmers rights and for the implementation of the equity provisions of the convention on biological diversity; saving endangered species and habitats; genetic enhancement and resource centre for bio-monitoring, Dr. Swaminathan said.

Commenting on the closing of some tanneries in the State, he said the "most important thing was how to do it" without harming the environment.

Eco-jobs — jobs which depended on natural resources and were eco-friendly — was relevant in the present context as in the next decade at least 300 million new livelihoods had to be produced. The 1997 "dialogue" will be on "building partnerships for sustainable food and livelihood security," he said.

The Union Minister of State for Urban Affairs and Employment, Dr. U. Venkateswarlu, launching the 'Urban Green Belt Movement' under the auspices of the M. S. Swaminathan Research Foundation in Madras on Wednesday.

The Foundation also had a "new" responsibility: to fulfil the hunger free area programme drawn up by the State Government. The aim of the programme, which has the support of the MSSRF, was to eradicate poverty induced hunger, Dr. Swaminathan said.

The Madras University Vice-Chancellor, Prof. P. K. Ponnusamy, commended the Foundation for its original research and for providing the right environment for research.

The highlights of the work done in 1995-96 on coastal ecosystems by the Foundation was presented by Dr. V. Selvam while that on reaching the unreached was presented by Dr. Vineeta Hoon. The highlighting of biodiversity by Dr. T. Ravishankar and Dr. C. S. Anuratha touched upon the strides made by the Foundation in biotechnology. Ms. Mina Swaminathan dwelt on the work of the Foundation in training, communication and capacity building.

The Minister presented the first copy of the Annual Report to Prof. P. K. Ponnusamy on the occasion. He also handed over the first copies of two publications on sustainable agriculture to Prof. T. S. Sadasivan, scientist. The Minister announced a personal donation of Rs.71,000 to the foundation.

Among those who addressed specific issues on the occasion of launching of the Urban Green Belt Movement at the Foundation by the Minister today were Mr. Mahmood Husain, former Chief Conservator of Forests, who spoke on liquid wastes and tree farming; Prof. S. Srinivasan, of the Centre for Environmental Studies, Anna University, spoke on 'environment and sustainable Madras'.

Dr. A. Sankaram, secretary, MSSRF, welcomed the gathering. Ms. Shanaz Padamsee of the Foundation, proposed a vote of thanks.

Need for a second green revolution stressed

Exports 8/8/96

EXPRESS NEWS SERVICE

MADRAS, Aug.7 - Union Urban Affairs and Employment Minister U.Venkateswarlu has stressed the need for ushering in a second green revolution so that the increasing gap in the falling percentage of annual grain production and the rising population is bridged.

Releasing the 1995-96 annual report of the M.S.Swaminathan Research Foundation (MSSRF) on Wednesday, Venkateswarlu, himself an agriculture scientist, said the annual food production was falling by about two per cent. To undo this, the country needed another M.S.Swaminathan, who had pioneered the first green revolution.

One way of reducing the increasing gap, he said, was to bring more land under the plough. This would also enable people to have more nutritious food. As of now, while the required minimum daily intake of calories per individual was 2,600, a vast majority was getting less than 1,000 calories.

The government would launch on August 15 a Rs 35-crore scheme for the uplift of urban women and children on the lines of the Development of Women and Children in Rural Areas. Also, farming would be encouraged, from January 26, in peripheral urban areas for growing vegetables, greens and fruits. This would ensure greater nutrition to people and a more friendly environment. He wanted the MSSRF to prepare its project report. The scheme would be financed by the Food and Agriculture Organisation (FAO). The scheme, expected to cost Rs 600 crore annually, was approved by the Prime Minister, said Venkateswarlu.

Talking to mediapersons later, the Minister said that the government would hold a seminar on Oct 7 – the World Habitat Day – to evolve methods to bridge the annual shortage of 29 million houses for pavement-dwellers. He also launched the urban green belt movement, and said that the scheme would be implemented in 23 metro cities and 75 metro towns. This was mainly meant to provide livelihood in these areas, and thus prevent increasing urbanisation and the attendant mushrooming of slums.

Speaking on the activities of the foundation, Swaminathan said its agenda for 1996-97 was conservation and enhancement of natural resources, promotion of a sustainable livelihood, ensuring gender equality, voicing the demands of the voiceless and information and skill empowerment.

He suggested a hunger-free area programme to eradicate hunger induced by poverty. The remedy lay in providing jobs to people. He pointed out that people in general would like to live on their earnings, and resent to be on dole.

சென்னையில் உள்ள டாக்டர் எம்.எஸ். சுவாமிநாதன் ஆய்வு மையத்தின் 6-வது ஆண்டு அறிக்கையை மத்திய நகர்ப்புற விவகாரங்கள் துறை அமைச்சர் டாக்டர் வெங்கடேஸ்வரலு வெளியிட்டார். சென்னை பல்கலைக்கழகத்தின் துணை வேந்தர் பேராசிரியர் பி.கே. பொன்னுசாமி, முதல் பிரதியை பெற்றுக் கொண்டார். பேராசிரியர் டி.எஸ்.சதாசிவன், டாக்டர் எம்.எஸ். சுவாமிநாதன் உடனிருக்கிறார்கள்.

நகர்ப்புற பசுமை இயக்கம்

* காய்கறி-பழம்-பூ, பால், முட்டை உற்பத்தியை அதிகரிக்க திட்டம்
* கிடங்கு வசதி-போக்குவரத்து வசதி-மார்க்கெட் வசதிக்கு ஏற்பாடு

ரூ. 600 கோடி திட்டத்துக்கு பிரதமர் ஒப்புதல்

நகர ஏழைப்பெண்கள், குழந்தைகளுக்காக தனியாக நலத்திட்டம்

மத்திய நகர்ப்புற வேலைவாய்ப்பு துறை அமைச்சர் அறிவிப்பு

பசியும், ஏழ்மையும் இல்லாத சமுதாயத்தை உருவாக்க செயல் திட்டம்

கருணாநிதியின் கோரிக்கையை ஏற்று எம்.எஸ். சுவாமிநாதன் தயாரிக்கிறார்

சென்னை, ஆக. 8:

நகர்ப்புற பசுமை இயக்கம் ஒன்றினை மத்திய நகர்ப்புற விவகார, வேலைவாய்ப்பு மற்றும் நாடாளுமன்ற விவகார அமைச்சர் டாக்டர்.பி.வெங்கடேசுவரலு இங்கு துவக்கி வைத்தார். சென்னை தரமணியில் உள்ள எம்.எஸ்.சுவாமிநாதன் ஆராய்ச்சி மையம் இந்நிகழ்ச்சிக்கு ஏற்பாடு செய்திருந்தது. நகர்ப்புற பசுமை இன்றைய தேவையாக உள்ளது என்று கூறிய அமைச்சர், விவசாயம், தோட்டப்பயிர், மலர்ச்செடிகள் வளர்ப்பு, காடு வளர்ப்பு ஆகியவற்றை இந்த இயக்கம் மேம்படுத்துவதோடு சுற்றுச்சூழல் சுகாதாரத்தையும் பேணுகிறது என்றார்.

நகர-கிராம மக்களிடையே இணைப்பை ஏற்படுத்துவதோடு கிராம மக்கள் நகரங்களில் குடியேறுவதையும் இது தடுக்கிறது. கழிவுகளை பதம் செய்து உரமாக மாற்றுவதற்கும் மண்ணின் தன்மை கெடாமல் பாதுகாப்பதற்கும் இத்திட்டம் உதவுகிறது என்று அமைச்சர் கூறினார்.

எம்.எஸ்.சுவாமிநாதன் ஆராய்ச்சி மையத்தில் 6-வது ஆண்டறிக்கையை வெளியிட்டுப் பேசிய டாக்டர் யு.வெங்கடேசுவரலு நம் நாட்டிற்கு மீண்டும் ஒரு பசுமைப்புரட்சி தேவைப்படுகிறது என்றார்.

உணவு உற்பத்தி 192 மில்லியன் டன் அளவை எட்டியபோதும், மக்கள் தொகை பெருக்கத் தினால் இது போதவில்லை. நாட்டில் தரிசாக கிடக்கும் 3-ல் இரண்டு பங்கு நிலத்தை விவசாயத்திற்கு பயன்படுத்துவதற்கும் மக்களின் உணவு மற்றும் சத்துணவுத் தேவைகளை பூர்த்தி செய்வதற்கும் நமக்கு இன்னொரு பசுமைப்புரட்சி தேவைப்படுகிறது என்று அமைச்சர் கூறினார்.

நகரப்பகுதி சுற்றுப்புறங்களில் காய்கறிகள், பழங்கள், பூக்கள், பால், முட்டை, முதலான விவசாயப் பொருட்களை அபிவிருத்தி செய்யும் திட்டமொன்றை அறிமுகப்படுத்த அரசு திட்டமிட்டு வருகிறது என்று டாக்டர் வெங்கடேசுவரலு கூறினார். கிடங்கு வசதி, போக்குவரத்து, சந்தை வசதி முதலியவையும் இத்திட்ட நிறைவேற்றத்தின்போது அமல்படுத்தப்படும்.

ரூ. 600 கோடி திட்டம்

பிரதமர் ஒப்புதல் கொடுத்துள்ள இத்திட்டத்திற்கு திட்ட நகல் அறிக்கை ஒன்றினை வகுத்து கொடுக்கும்படி எம்.எஸ்.சுவாமிநாதன் ஆராய்ச்சி மையம் கேட்டுக்கொள்ளப்பட்டுள்ளது. சுமார் 600 கோடி ரூபாய் செலவு பிடிக்கும் இத்திட்டத்திற்கான நிதியுதவியை ஐ.நா.வின் உணவு மற்றும் விவசாயக்கழகம் அளிக்கிறது. அடுத்த ஆண்டு ஜனவரி 26-ந்தேதிவாக்கில் இத்திட்டம் அறிவிக்கப்படலாம் என்று அமைச்சர் கூறினார்.

நகரப்புற ஏழை பெண்களுக்கான திட்டம்

பின்னர் பத்திரிகையாளர்களிடம் பேசிய அமைச்சர் கிராம ஏழை பெண்கள், குழந்தைகள் நலனுக்கான திட்டத்தைப் போன்ற திட்டம் ஒன்று நகர்ப்புற ஏழைப் பெண்கள் மற்றும் குழந்தைகள் நலனுக்காக அறிமுகப்படுத்தப்பட இருப்பதாக கூறினார். வரும் சுதந்திரத்தினத்தன்று அறிவிக்கப்பட இருக்கும் இத்திட்டத்திற்கு ரூ.35 கோடி ஒதுக்கப்படும்.

மற்றொரு முக்கியத் தேவை வீட்டுவசதி. இப்பிரச்சினையை சமாளிப்பதற்காக தேசிய வீட்டு வசதி கருத்தரங்கள் ஒன்று வரும் அக்டோபர் 7-ந்தேதி உலக குடியிருப்பு தினத்தன்று டெல்லியில் நடத்தப்படும். அப்போது வீட்டுவசதி பற்றிய அம்சங்கள் குறித்து இந்த 3 நாள் கருத்தரங்கு விவாதிக்கும் என்று அமைச்சர் கூறினார்.

கருணாநிதி கோரிக்கை

நிகழ்ச்சியில் பேசிய பேராசிரியர் எம்.எஸ்.சுவாமிநாதன் வரும் ஆண்டில் உணவு மற்றும் வேலைவாய்ப்பு பற்றி நிலை யானத் தன்மை ஏற்பட தமது மையம் முயற்சி மேற்கொள்ளும் என்றார். தமிழ்நாடு முதல்வர் கருணாநிதி கேட்டுக் கொண்டதற்கேற்ப பசியும், ஏழ்மையும் இல்லாத சமுதாயத்தை உருவாக்குவதை குறிக்கோளாகக் கொண்ட செயல் திட்டம் ஒன்றையும் இந்த மையம் வகுக்க உள்ளது என்று அவர் கூறினார்.

சென்னை பல்கலைக்கழக துணைவேந்தர் பேராசிரியர் பி.கே.பொன்னுசாமி, பேராசிரியர் டி.எஸ்.சதாசிவன் மற்றும் பலர் நிகழ்ச்சியில் பங்கேற்றனர்.

நகர்ப்புற ஏழை பெண்களுக்கு புது திட்டம்
மத்திய அமைச்சர் வெங்கடேஸ்வரலு தகவல்

சென்னை, ஆக. 8—
நகர்ப்புற ஏழைப் பெண்கள் மற்றும் ஏழைக் குழந்தைகளுக்கான நலவாழ்வு திட்டம் பற்றி விரைவில் அறிவிக்கப்படும் என்று மத்திய அமைச்சர் வெங்கடேஸ்வரலு கூறினார்.

சென்னை தரமணியில் உள்ள எம்.எஸ்.சுவாமிநாதன் ஆராய்ச்சி மையத்தின் ஆறாம் ஆண்டு ஆண்டறிக்கை வெளியீட்டு விழா நேற்று நடந்தது. 95-96ம் ஆண்டில் எம்.எல். சுவாமிநாதன் ஆராய்ச்சிமையத்தின் பணிகள் குறித்து டாக்டர் செல்வம், டாக்டர் ரவிசங்கர், டாக்டர் அனுராதா, டாக்டர் பாலசுப்ரமணியம், வினிதா , மீனாசுவாமிநாதன் ஆகியோர் விளக்கிப் பேசினர்.

95-96ம் ஆண்டின் முக்கிய பணி மற்றும் ஆராய்ச்சிகளின் புதிய கண்டுபிடிப்பின் மகத்துவம் பற்றிய முன்னோட்டத்தினையும் அவற்றின் பயன்கள் குறித்தும் ஒளி விளக்கப்படத்துடன் விளக்கிக் கூறினர்.

மத்திய நகர்ப்புற விவகாரம் வேலைவாய்ப்பு மற்றும் நாடாளுமன்ற விவகார அமைச்சர் வெங்கடேஸ்வரலு ஆண்டறிக்கையை வெளியிட்டு பேசினார். அவர் பேசும்போது கூறியதாவது:

தற்போது நமது நாட்டில் 192 மில்லியன் டன் உணவு உற்பத்தி செய்யப்படுகிறது. ஆனால் பெருகிவரும் மக்கள் தொகைக்கு இது போதாது. ஆகையால் இந்த நாட்டிற்கு இன்னொரு பசுமை புரட்சி தேவைப்படுகிறது. அதற்கு எம்.எஸ்.சுவாமிநாதன் போன்றவர்கள் உதவ முன்வர வேண்டும்.

இந்த நாட்டில் மூன்றில் இரண்டு பங்கு நிலம் தரிசாக கிடக்கின்றன. பசுமை புரட்சியின் மூலம் அதனை பசுமையான விளைநிலமாக ஆக்க வேண்டும். அப்போதுதான் ஆண்டுதோறும் குறைந்து கொண்டிருக்கும் உணவு உற்பத்தியை அதிகரிக்க முடியும்.

நகர் புறங்களில் நாளுக்கு நாள் கட்டடங்களும் மக்கள் தொகையும் தான் அதிகரிக்கின்றன. எனவே அவர்களுக்கு தேவையான காய்கறி, அரிசி, பழங்கள், முட்டைகள் ஆகியவற்றை கிராமப் புறங்களில் இருந்து கொண்டுவர உற்பத்தி செலவைவிட போக்குவரத்து செலவு அதிகமாவதால் அதிக விலைக்கு விற்க வேண்டிய நிலை ஏற்படுகிறது. எனவே நகர்புறத்தை சுற்றியுள்ள காலி நிலம் தரிசு நிலம் ஆகியவற்றில் தோட்டம் போட்டு பயிர் செய்ய உதவினால் காய்கறி, பழங்கள், கீரைகள் முதலிய உணவுப் பொருட்கள் நகர மக்களுக்கு குறைந்த விலையில் புத்தம் புதிய நிலையில் உடனுக்குடன் கிடைக்கும். இத்திட்டத்திற்கு அரசு முக்கியத்துவம் அளிக்கப் போகிறது. அதற்கான திட்டப்பணிகள் குறித்து ஆலோசனை நடந்து வருகிறது.

கிராமப் புறங்களில் ஏழைப் பெண்களுக்கும், ஏழைக் குழந்தைகளுக்கும் அரசு பல நலத்திட்டங்களை செயல்படுத்தி வருகின்றது. நகர் புறங்களிலும், குடிசைப் பகுதிகளில் பல ஆயிரக்கணக்கான ஏழை பெண்கள், குழந்தைகள் வசித்து வருகின்றனர்.

எனவே அவர்களும் சொந்தக் காலில் நிற்க அவர்களுக்கும் அனைத்து பொருளாதார வசதிகள் கிடைக்க 35 கோடி ரூபாய் வரை ஒதுக்கீடு செய்யப்பட்டுள்ளது. இத்திட்டம் குறித்து முழு விபரமும் ஆகஸ்ட் 15ம் தேதி சுதந்திர தினத்தன்று அறிவிக்கப்படும். உலக குடியிருப்போர் தினம் அன்று தேசிய அளவில் 3 நாள் கருத்தரங்கு நடக்கிறது. ஐந்து குழுவினரின் கீழ் பல்வேறு பிரச்னைகள் குறித்து அப்போது ஆராயப்படும்.

இவ்வாறு அமைச்சர் வெங்கடேஸ்வரலு கூறினார்.

மற்றும் சென்னைப் பல்கலைக்கழக துணை வேந்தர் பொன்னுசாமி, பேராசிரியர் சதாசிவம் ஆகியோர் பேசினர். சனாஷ்பதம்ஜி நன்றி கூறினார்.

இன்றைய மின்தடை

மின்சார வாரிய பராமரிப்பு பணி காரணமாக இன்று மின் சப்ளை நிறுத்தப்படும் இடங்கள்:

தாம்பரம்: தாம்பரம் மேற்கு, தாம்பரம் கிழக்கு, சேலையூர், புதிய பெருங்களத்தூர், பழைய பெருங்களத்தூர், பார்வதி நகர், சீனிவாச நகர், ராதா நகர், கன்டை பாளையம், புளி கொரடு, நடு வீரம்பட்டு, தர்கா, குன்றத்தூர், முடிச்சூர், கூடுவாஞ்சேரி, கிருஷ்ணா நகர், வண்டலூர், தேவனேசா நகர், இரும்புலியூர், கணபதிபுரம், பம்பல், அனகாபுத்தூர், பல்லாவரம் மற்றும் கீழ்கட்டளை.

வில்லிவாக்கம்: ராஜா தெரு, சோலை தெரு, குஞ்சி நாயக்கன் தெருவில் ஒரு பகுதி மற்றும் அயன்புரம் சாலை ஆகிய இடங்களில் இன்று காலை 9 மணி முதல் மாலை 5 மணி வரை மின் சப்ளை இருக்காது என்று அறிவிக்கப்பட்டுள்ளது.

THURSDAY AUGUST 8 1996

Need for a second green revolution stressed

EXPRESS NEWS SERVICE

MADRAS, Aug.7 - Union Urban Affairs and Employment Minister U.Venkateswarlu has stressed the need for ushering in a second green revolution so that the increasing gap in the falling percentage of annual grain production and the rising population is bridged.

Releasing the 1995-96 annual report of the M.S.Swaminathan Research Foundation (MSSRF) on Wednesday, Venkateswarlu, himself an agriculture scientist, said the annual food production was falling by about two per cent. To undo this, the country needed another M.S.Swaminathan, who had pioneered the first green revolution.

One way of reducing the increasing gap, he said, was to bring more land under the plough. This would also enable people to have more nutritious food. As of now, while the required minimum daily intake of calories per individual was 2,600, a vast majority was getting less than 1,000 calories.

The government would launch on August 15 a Rs 35-crore scheme for the uplift of urban women and children on the lines of the Development of Women and Children in Rural Areas. Also, farming would be encouraged, from January 26, in peripheral urban areas for growing vegetables, greens and fruits. This would ensure greater nutrition to people and a more friendly environment. He wanted the MSSRF to prepare its project report. The scheme would be financed by the Food and Agriculture Organisation (FAO). The scheme, expected to cost Rs 600 crore annually, was approved by the Prime Minister, said Venkateswarlu.

Talking to mediapersons later, the Minister said that the government would hold a seminar on Oct 7 – the World Habitat Day – to evolve methods to bridge the annual shortage of 29 million houses for pavement-dwellers. He also launched the urban green belt movement, and said that the scheme would be implemented in 23 metro cities and 75 metro towns. This was mainly meant to provide livelihood in these areas, and thus prevent increasing urbanisation and the attendant mushrooming of slums.

Speaking on the activities of the foundation, Swaminathan said its agenda for 1996-97 was conservation and enhancement of natural resources, promotion of a sustainable livelihood, ensuring gender equality, voicing the demands of the voiceless and information and skill empowerment.

He suggested a hunger-free area programme to eradicate hunger induced by poverty. The remedy lay in providing jobs to people. He pointed out that people in general would like to live on their earnings, and resent to be on dole.

சிறந்த சுற்றுப்புற சூழலை கடைபிடித்த 'நிக்கோ' கார்ப்பரேஷனுக்கு 'விஞ்ஞானி எம்.எஸ்.சுவாமி நாதன் விருதை' சென்னை கிழக்கு ரோட்டரி கிளப், எர்த்கேர் நிறுவனம் சார்பில் எம்.எஸ். சுவாமி நாதன் வழங்கினார். பென்டாபோர் சாப்ட்வேர் நிர்வாக இயக்குனர் வி. சந்திர சேகர், ரோடட்ரி கிளப் தலைவர் கே. கே. ரமணி, எர்த்கேர் சேர்மன் பி.வி. ஆர். கிருஷ்ணாராவ் உடன் உள்ளனர்.

சென்னையில் உள்ள டாக்டர் எம்.எஸ். சுவாமிநாதன் ஆய்வு மையத்தின் 6-வது ஆண்டு அறிக்கையை மத்திய நகர்ப்புற விவகாரங்கள் துறை அமைச்சர் டாக்டர் வெங்கடேஸ்வரலு வெளியிட்டார். சென்னை பல்கலைக்கழகத்தின் துணை வேந்தர் பேராசிரியர் பி.கே. பொன்னுசாமி, முதல் பிரதியை பெற்றுக் கொண்டார். பேராசிரியர் டி.எஸ். சதாசிவன், டாக்டர் எம்.எஸ். சுவாமிநாதன் உடனிருக்கிறார்கள்.

நகர்ப்புற பசுமை இயக்கம்

★ காய்கறி-பழம்-பூ, பால், முட்டை உற்பத்தியை அதிகரிக்க திட்டம்

★ கிடங்கு வசதி-போக்குவரத்து வசதி-மார்க்கெட் வசதிக்கு ஏற்பாடு

ரூ. 600 கோடி திட்டத்துக்கு பிரதமர் ஒப்புதல்

நகர ஏழைப்பெண்கள், குழந்தைகளுக்காக தனியாக நலத்திட்டம்

மத்திய நகர்ப்புற வேலைவாய்ப்பு துறை அமைச்சர் அறிவிப்பு

பசியும், ஏழ்மையும் இல்லாத சமுதாயத்தை உருவாக்க செயல் திட்டம்

கருணாநிதியின் கோரிக்கையை ஏற்று எம்.எஸ். சுவாமிநாதன் தயாரிக்கிறார்

சென்னை, ஆக. 8:

நகர்ப்புற பசுமை இயக்கம் ஒன்றினை மத்திய நகர்ப்புற விவகார, வேலைவாய்ப்பு மற்றும் நாடாளுமன்ற விவகார அமைச்சர் டாக்டர் யூ.வெங்கடேசுவரலு இங்கு துவக்கி வைத்தார். சென்னை தரமணியில் உள்ள எம்.எஸ்.சுவாமிநாதன் ஆராய்ச்சி மையம் இந்நிகழ்ச்சிக்கு ஏற்பாடு செய்திருந்தது. நகர்ப்புற பசுமை இன்றைய தேவையாக உள்ளது என்று கூறிய அமைச்சர், விவசாயம், தோட்டப்பயிர், மலர்ச்செடிகள் வளர்ப்பு, காடு வளர்ப்பு ஆகியவற்றை இந்த இயக்கம் மேம்படுத்துவதோடு சுற்றுச்சூழல் சுகாதாரத்தையும் பேணுகிறது என்றார்.

நகர-கிராம மக்களிடையே இணைப்பை ஏற்படுத்துவதோடு கிராம மக்கள் நகரங்களில் குடியேறுவதையும் இது தடுக்கிறது. கழிவுகளை பதம் செய்து உரமாக மாற்றுவதற்கும் மண்ணின் தன்மை கெடாமல் பாதுகாப்பதற்கும் இத்திட்டம் உதவுகிறது என்று அமைச்சர் கூறினார்.

எம்.எஸ்.சுவாமிநாதன் ஆராய்ச்சி மையத்தில் 6-வது ஆண்டறிக்கையை வெளியிட்டுப் பேசிய டாக்டர் யு.வெங்கடேசுவரலு நம் நாட்டிற்கு மீண்டும் ஒரு பசுமைப்புரட்சி தேவைப்படுகிறது என்றார்.

உணவு உற்பத்தி 192 மில்லியன் டன் அளவை எட்டியபோதும், மக்கள் தொகை பெருக்கத் தினால் இது போதவில்லை. நாட்டில் தரிசாக கிடக்கும் 3-ல் இரண்டு பங்கு நிலத்தை விவசாயத்திற்கு பயன்படுத்துவதற்கும் மக்களின் உணவு மற்றும் சத்துணவுத் தேவைகளை பூர்த்தி செய்வதற்கும் நமக்கு இன்னொரு பசுமைப்புரட்சி தேவைப்படுகிறது என்று அமைச்சர் கூறினார்.

நகரப்பகுதி சுற்றுப்புறங்களில் காய்கறிகள், பழங்கள், பூக்கள், பால், முட்டை, முதலான விவசாயப் பொருட்களை அபிவிருத்தி செய்யும் திட்டமொன்றை அறிமுகப்படுத்த அரசு திட்டமிட்டு வருகிறது என்று டாக்டர் வெங்கடேசுவரலு கூறினார். கிடங்கு வசதி, போக்குவரத்து, சந்தை வசதி முதலியவையும் இத்திட்ட நிறைவேற்றத்தின்போது அமல்படுத்தப்படும்.

ரூ. 600 கோடி திட்டம்

பிரதமர் ஒப்புதல் கொடுத்துள்ள இத்திட்டத்திற்கு திட்ட நகல் அறிக்கை ஒன்றினை வகுத்து கொடுக்கும்படி எம்.எஸ்.சுவாமிநாதன் ஆராய்ச்சி மையம் கேட்டுக்கொள்ளப்பட்டுள்ளது. சுமார் 600 கோடி ரூபாய் செலவு பிடிக்கும் இத்திட்டத்திற்கான நிதியுதவியை ஐ.நா.வின் உணவு மற்றும் விவசாயக்கழகம் அளிக்கிறது. அடுத்த ஆண்டு ஜனவரி 26-ந்தேதிவாக்கில் இத்திட்டம் அறிவிக்கப்படலாம் என்று அமைச்சர் கூறினார்.

நகரப்புற ஏழை பெண்களுக்கான திட்டம்

பின்னர் பத்திரிகையாளர்களிடம் பேசிய அமைச்சர் கிராம ஏழை பெண்கள், குழந்தைகள் நலனுக்கான திட்டத்தைப் போன்ற திட்டம் ஒன்று நகர்ப்புற ஏழைப் பெண்கள் மற்றும் குழந்தைகள் நலனுக்காக அறிமுகப்படுத்தப்பட இருப்பதாக கூறினார். வரும் சுதந்திரத்தினத்தன்று அறிவிக்கப்பட இருக்கும் இத்திட்டத்திற்கு ரூ.35 கோடி ஒதுக்கப்படும்.

மற்றொரு முக்கியத் தேவை வீட்டுவசதி. இப்பிரச்சினையை சமாளிப்பதற்காக தேசிய வீட்டு வசதி கருத்தரங்கள் ஒன்று வரும் அக்டோபர் 7-ந்தேதி உலக குடியிருப்பு தினத்தன்று டெல்லியில் நடத்தப்படும். அப்போது வீட்டுவசதி பற்றிய அம்சங்கள் குறித்து இந்த 3 நாள் கருத்தரங்கு விவாதிக்கும் என்று அமைச்சர் கூறினார்.

கருணாநிதி கோரிக்கை

நிகழ்ச்சியில் பேசிய பேராசிரியர் எம்.எஸ்.சுவாமிநாதன் வரும் ஆண்டில் உணவு மற்றும் வேலைவாய்ப்பு பற்றி நிலையான தன்மை ஏற்பட தமது மையம் முயற்சி மேற்கொள்ளும் என்றார். தமிழ்நாடு முதல்வர் கருணாநிதி கேட்டுக்கொண்டதற்கேற்ப பசியும், ஏழ்மையும் இல்லாத சமுதாயத்தை உருவாக்குவதை குறிக்கோளாகக் கொண்ட செயல் திட்டம் ஒன்றையும் இந்த மையம் வகுக்க உள்ளது என்று அவர் கூறினார்.

சென்னை பல்கலைக்கழக துணைவேந்தர் பேராசிரியர் பி.கே.பொன்னுசாமி, பேராசிரியர் டி.எஸ்.சதாசிவன் மற்றும் பலர் நிகழ்ச்சியில் பங்கேற்றனர்.

திருவொற்றியூரில் தீ விபத்து

சென்னை, ஆக. 8:

சென்னை திருவொற்றியூரில் உள்ள ஆட்டு மந்தையில் தீப்பிடித்துக் கொண்டது.

தகவல் கிடைத்ததும் தீயணைப்பு அதிகாரிகள் பாலசுந்தரம், மோகாம்பரம், வசந்தராஜ் ஆகியோர் 5 * தீயணைப்பு வண்டிகளில் தீயணைப்பு வீரர்களுடன் விரைந்து சென்றனர்.

ஆட்டு மந்தையில் பிடித்த தீயை 45 நிமிடத்தில் தீயணைப்பு படையினர் கட்டுப்படுத்தினார்கள்.

இந்த விபத்தில் ஒரு குடிசையில் அடைத்து வைக்கப்பட்டிருந்த 40 ஆடுகள் கருகி இறந்தன. மேலும் 20 குடிசைகளும் தீக்கிரையாகின.

THE HINDU, Thursday, August 8, 1996 13

Scheme drawn up for urban women,children

From Our Staff Reporter

MADRAS, Aug. 7.

The Union Government has drawn up a new scheme exclusively for the benefit of women and children in urban areas. It would "be an extension" of the Development of Women and Child in Rural Areas scheme to the urban set-up.

Many schemes and poverty alleviation programmes are in operation for unemployed youth both in the rural and urban areas, but none addressed the problems faced by urban women in a holistic manner, the Union Minister of State for Urban Affairs, Employment and Parliamentary affairs, Dr. U. Venkateswarlu, said here today.

The scheme would initially start with an amount of around Rs. 30 crores to Rs. 35 crores "adjusted" from other schemes. The accent would be on the formation of women's groups, raising resources through thrift or "some kind of a collection." The Union Government would provide a matching grant. Though it was a "small programme" it would be implemented throughout the country.

The scheme is likely to be announced by the Prime Minister on August 15, Dr. Venkateswarlu said. The scheme would also act as a catalyst in bringing about gender equality in urban areas, he said.

The Minister launched the "Urban green belt movement" at a function organised at the M.S. Swaminathan Research Foundation (MSSRF) at Taramani in Madras today.

Explaining the concept of the green belt, he said the idea was to encourage horticulture, floriculture, growing vegetables, agriculture and social forestry in the areas abutting the city so that the needs of the city could be met. Both the consumers, who get fresh produce and the farmers, who get reasonable price for their products would benefit by this "peripheral agriculture," he said.

The FAO had agreed to support the programme and the modalities would be drawn up with help from the MSSRF, he said. "It was a massive programme with an outlay of around Rs. 500 crores to Rs. 600 crores," Dr. Venkateswarlu added. Asked about the date of implementation, the Minister said there was "still the process of finalisation" to be gone through. "I will be happy if it is ready by January 26 next."

The programme also involved setting up of cold storage facilities at the rate of one for about 4.5 km radius, so that during a lean season or if the price was unfavorable, the farmer could retain the option of not selling his produce. The wholesale markets could also function in the vicinity of the cold storages and transportation would not be a problem as the areas would be close to the city.

Minister's stress on second green revolution

From Our Staff Reporter

MADRAS, Aug. 7.

Though the annual rate of growth of population was going down, so was the food availability. There was no time to be lost and a second green revolution is needed to bring the vast tracts of arid lands to augment food production, the Union Minister of State for Urban Affairs, Dr. U. Venkateswarlu, said today.

The attention of Indian scientists has to be turned to this area as food production has hit a plateau, he said. The Minister was speaking after releasing the sixth annual report of the M. S. Swaminathan Research Foundation (MSSRF), at Taramani here today.

"It is no secret that in the past decade the results of the green revolution has reached a plateau," he said and added that the qualitative increase in production was due to some "other" factors. The country needed another such revolution to turn two-thirds of its arable "grey" areas into "green," he said.

The Agenda for the coming year for the MSSRF, 1996-97, include conservation and enhancement of natural resources, promotion of sustainable livelihoods, gender equality and voicing the voiceless and information and skill empowerment, said Dr. M. S. Swaminathan, agricultural scientist.

Consolidation of progress made in various areas of activity, in the past year, creating a coalition of concerned people and continuation through a built-in withdrawal strategy will constitute the guiding principles of the Foundation. The areas of concentration include: coastal wetlands, especially identified mangrove ecosystems in Tamil Nadu, Andhra Pradesh, Orissa and West Bengal; a resource centre for farmers rights and for the implementation of the equity provisions of the convention on biological diversity; saving endangered species and habitats; genetic enhancement and resource centre for bio-monitoring, Dr. Swaminathan said.

Commenting on the closing of some tanneries in the State, he said the "most important thing was how to do it" without harming the environment.

Eco-jobs — jobs which depended on natural resources and were eco-friendly — was relevant in the present context as in the next decade at least 300 million new livelihoods had to be produced. The 1997 "dialogue" will be on "building partnerships for sustainable food and livelihood security," he said.

The Union Minister of State for Urban Affairs and Employment, Dr. U. Venkateswarlu, launching the 'Urban Green Belt Movement' under the auspices of the M. S. Swaminathan Research Foundation in Madras on Wednesday.

The Foundation also had a "new" responsibility: to fulfil the hunger free area programme drawn up by the State Government. The aim of the programme, which has the support of the MSSRF, was to eradicate poverty induced hunger, Dr. Swaminathan said.

The Madras University Vice-Chancellor, Prof. P. K. Ponnusamy, commended the Foundation for its original research and for providing the right environment for research.

The highlights of the work done in 1995-96 on coastal ecosystems by the Foundation was presented by Dr. V. Selvam while that on reaching the unreached was presented by Dr. Vineeta Hoon. The highlighting of biodiversity by Dr. T. Ravishankar and Dr. C. S. Anuratha touched upon the strides made by the Foundation in biotechnology. Ms. Mina Swaminathan dwelt on the work of the Foundation in training, communication and capacity building.

The Minister presented the first copy of the Annual Report to Prof. P. K. Ponnusamy on the occasion. He also handed over the first copies of two publications on sustainable agriculture to Prof. T. S. Sadasivan, scientist. The Minister announced a personal donation of Rs.71,000 to the foundation.

Among those who addressed specific issues on the occasion of launching of the Urban Green Belt Movement at the Foundation by the Minister today were Mr. Mahmood Husain, former Chief Conservator of Forests, who spoke on liquid wastes and tree farming; Prof. S. Srinivasan, of the Centre for Environmental Studies, Anna University, spoke on 'environment and sustainable Madras'.

Dr. A. Sankaram, secretary, MSSRF, welcomed the gathering. Ms. Shanaz Padamsee of the Foundation, proposed a vote of thanks.

THE INDIAN EXPRESS MADURAI THURSDAY AUGUST 15 1996

Food for thought

All roads led to the Marina as people thronged to listen to Rajaji's freedom speech on the evening of August 14, 1947. M S Swaminathan, son of freedom fighter and veteran Congressman M K Sambasivam, was 22 years of age when he assembled there with lakhs of others. The mood was upbeat, it had been so for a few weeks then, but had escalated beyond all bounds that evening.

''The exaltation, the fire in the people, cannot be quite described in words,'' says the now world-renowned agricultural scientist, Dr M S Swaminathan. Nearly 50 years after that jubilant day, he is nostalgic, while bemoaning the lack of role models for the present generation, like the ones his generation enjoyed — Gandhiji, Rajaji, Nehru and Netaji.

At the same time he recollects the problems the country faced then. The bloody communal riots and the great Bengal famine (''the backdrop of Indian Independence''). However, the people were still fired up, led by a charismatic leader Nehru —— his vision of India —— Panchayati Raj, community participation, hope...

The total population of the country was just 34 crores then. Now as many people are below the poverty line, he points out. Comparing the then food situation (his pet subject of discussion and research) to the present, he says it

was a very bad phase. World War II had compounded the problem, with the sudden population boom, thanks to rapid development, discovery of vaccines and antibiotics. The growth rate of basic cereals was low.

''Everything else can wait but not agriculture,'' said Nehru, and top priority was given to food and agriculture. Inputs for agriculture received a lot of attention, and rural infrastructure was developed.

Commenting on the current political system and the coalition government at the Centre, Dr Swaminathan feels it is a favourable change. ''It is true federalism, as small political differences have been subordinated to the larger interests of the country. In a pluralistic society like ours, state level parties must be respected. Democracy has to be extended to the grassroots level and bureaucracy should be dismantled.''

VANI SARASWATHI
Madras

August 20, 1996. Vol 3, No.4

Asian Ecotechnology Network Launched

Prof. M. S. Swaminathan

Madras - As part of the new UNESCO-Cousteau EcoTechnie Program (UCEP), UNESCO and the M. S. Swaminathan Research Foundation (MSSRF) of Madras, India, earlier this year formed the Asian Ecotechnology Network (AEN). MSSRF will serve as the coordinator of this network, which has received a $200,000 endowment from UNESCO.

The creation of AEN resulted from the Asian Regional Technology Workshop on Ecotechnology and Shaping the Future, which was organized last February in Madras by UNESCO, the Cousteau Society and MSSFR. The workshop was supported by the International Fund for Agricultural Development; the Honda Foundation; the EOLSS Project, United Arab Emirates; and The Third World Academy of Sciences.

The workshop in Madras also inaugurated the UNESCO-Cousteau EcoTechnie Chair in Ecotechnology, held by Prof. Swaminathan, and the research foundation's Ecotechnology Center. The UNESCO-Cousteau EcoTechnie Chairs and UCEP are the result of ongoing cooperation between the Organization and the Cousteau Society, headed by Commandant Jacques Cousteau, for the promotion of education about ecotechnology and its application to decision-making.

AEN will provide a communication forum both globally and in Asia among the private and public sector groups working in the fields of sustainable development, the eradication of poverty and marginalization and the protection of the environment. The network will emphasize targeting development to benefit the most excluded sectors of society.

"The goal is to strengthen innovative models already in place while catalyzing their adaptations and dissemination regionally," Prof. Swaminathan said at the workshop.

The term "ecotechnology" describes environmentally, socially and economically sustainable technologies, which combine the best of modern technology with the traditional technologies arising from ecological ethics and the wisdom of tribal and rural communities.

"The scientific and academic community must join with all those who realize the need to change the present situation in which 20 % of the inhabitants of the planet enjoy 80 % of its resources. This disparity is at the root of conflict and violence," Federico Mayor, Director-General of UNESCO said in Madras. In stressing the need for joining forces to "include the excluded," Mr. Mayor added: "Exclusion is one of the fundamental reasons for the disagreement and frustration that leads people to aggression and prevents dialogue."

MSSRF, founded in 1988, is a non-profit organization with the goals of preserving rural ecosystems, developing innovative technology to help realize sustainable agriculture and promoting the application of ecotechnology in agricultural communities. In 1990 it established the Center for Research on Sustainable Agricultural and Rural Development.

More Resources Needed for Winning the War Against Drugs, Director-General Tells ECOSOC

New York - Saying that education is the most effective weapon in the war on drugs, the Director-General of UNESCO, Federico Mayor, has called for strengthening the United Nations system's efforts to combat this global scourge.

"We are engaged in an undeclared war with a faceless enemy," Mr. Mayor told the high-level segment of the UN Economic and Social Council (ECOSOC) on June 25. "We have reacted with preventive measures, with more strict control of traffic and supply, but, nevertheless, drug abuse among the young is escalating worldwide."

The Director-General called for strengthening the international community's commitment to combating drugs, especially providing the necessary financial resources.

"We have the resources to seed 100 million anti-personnel mines, to sell and buy billions of dollars in armaments and guns," Mr. Mayor said, "and we have no funds to give a roof to our sisters and brothers captured by drugs, to give a correct and timely treatment to our sisters and brothers who are victims of drug addiction. We have no funds to give a hand and a smile to our children abandoned in the streets."

"We must reshape the priorities of our budgets," he continued. "Natural and, progressively, artificial drugs are undermining our future - because our children are our future - and we have reduced the funds allocated to UNDCP (United Nations Drug Control Programme) instead of providing this program with all the necessary resources."

Mr. Mayor also called for stronger efforts to combat money laundering, which he said is essential for winning the war against drugs. "There are still too many countries - one would already be too many - which allow money laundering. Those who traffic in drugs kill. Those who allow, or even promote, money laundering kill. How many young lives have been the toll of this intolerable trade of our times?"

The "best way to reduce demand" for drugs is "empowerment, through education, of all human beings," the Director-General stated. "UNESCO believes that fostering positive values and warning of the dangers of drug abuse must be an integral part of every child's education. Teachers, deci-

Continued on page 11

THE PIONEER BOOKS

Sustainability and food security

Swaminathan's books provide a rare insight which comes only with authority, excellence and scholarship, says Devinder Sharma

The loss of momentum in food production growth, specifically the 10 per cent decline in grain output per person between 1984 and 1994 is perhaps the most disturbing economic trend in the world today. Added to this depressing scenario is the underlying objective of the free trade regime to remove the safeguards that developing countries like India have had for providing food to the poor and needy.

Ignoring the critical connection between agricultural production and the access to food — the basic human right — the focus in India has shifted to agro-processing linked to foreign investments and exports. Food security no longer means an equitable distribution of food among people regardless of the economic status. The resulting decline in the growth rate in foodgrain production and the continuing acceleration in poverty and malnutrition is a grim reminder that something somewhere has drastically gone wrong.

Coming at a time when policy makers in India are literally groping in the dark, Dr M S Swaminathan's two books on Sustainable Agriculture, essentially a compilation of some of his important lectures, talks and addresses during the past decade couldn't have been more timely. As the author says in Sustainable Agriculture: Towards An Evergreen Revolution, " Twenty seven years after the term green revolution was coined, we are in a position to draw a balance sheet and chalk out a strategy for the future."

For all those engaged in food and agriculture and more importantly scientist-administrators and policy makers, Swaminathan's recent works provide a ready-reckoner. And therein lies a hope for a nation which is desperately searching for a way out. Tracing the famines for money and jobs to be a major cause for hunger in many developing countries, Swaminathan categorically states that "...new farming technologies may spring solely from considerations of commerce rather than concern for lasting human happiness." And very rightly he concludes that global agriculture and for that matter Indian agriculture too is at the cross-roads.

The growing rich-poor divide jobless and futureless economic growth and the increasing faminisation of poverty all documented very well in successive UNDP's Human Development Reports have highlighted the fact that development which is not equitable will also not be sustainable in the long run.

Swaminathan perhaps is the only scientist-statesman to recognise that green revolution technology per se is not sustainable any more. The productivity improvement associated with the green revolution is best described as forest or land saving agriculture. "Thus what we need now is

Sustainable Agriculture: Towards Food Security
Sustainable Agriculture: Towards An Evergreen Revolution

By M S Swaminathan

Konark Publishers, Rs 250 each

an environmentally sustainable and socially equitable green revolution or what may be termed an evergreen revolution."

As an architect of India's green revolution and an internationally reputed scientist-statesman, Swaminathan still continues to devote his life to prove Malthus wrong. The two books under review provide a great insight into the mind of the great thinker and visionary. Towards An Evergreen Agriculture looks at not only the future of our agriculture, green revolution, impact of dwarfing genes on wheat production but also dwells deeply into such controversial issues like seeds and property rights, genetic conservation and the forgotten gender link in farming and agriculture.

Swaminathan believes that food security systems should be evolved as an integral part of the development strategy bringing about a striking technological change in food crops providing effective price and market support to farmers and deploying a wide range of measures to generate employment and income for the rural poor with a view to improve their level or well being including better physical (production) and economic access (availability) to foodgrains. India certainly needs a food security system that looks much beyond management of scarce supplies and critical situations.

EXTRACT

What we need now is an environmentally sustainable and socially equitable green revolution or what may be termed as evergreen revolution

To achieve this daunting goal. Swaminathan has even presented an action plan for achieving sustainable nutrition security in the second publication Sustainable Agriculture: Towards Food Security for the policy makers thus serves an excellent base to work out the national priorities on food and agriculture. What we need he suggests are separate strategies for large and small farms to increase productivity on a sustainable basis.

What we need is evergreen agriculture

And at the same time the steep escalation in the prices of fossil fuel-based agricultural inputs, which occurred from 1972 onwards, necessitates a re-examination of the farming techniques.

Such is the wide array of subjects covered and the contemporary issues evaluated that students of agricultural sciences will find these books to be an excellent companions.

From climatic change to land usages, from pre-historic agriculture to farming in the next hundred years from food security to nutrition and livelihood security and from microbes to human genome and intellectual property issues , Swaminathan provides a rare insight which comes only with authority, excellence and scholarship. After all as Socrates once said: "Nobody is qualified to become a statesman who is ignorant of the problems of wheat."

Talking about free trade as envisaged through GATT/WTO, Swaminathan rightly says that if such a system can devise a pattern of trade that will increase the flow of resources to the agricultural and rural sectors of developing countries, it would have done a great service to the cause of building national food security systems. "Prospects for success in this field are unfortunately not yet in sight."

The series on Sustainable Agriculture, with a couple of more volumes soon to be brought out, is an important contribution to the ongoing debate on sustainability and food security.

Both the books are a must not only for students of agriculture and sciences but for all policy makers including mainline economists who determine the agricultural policy for the country without understanding the complexities of farming and are beginning to believe that food comes from the supermarkets.

Act fast to check biopiracy: experts

From Our Special Correspondent

NEW DELHI, Sept. 2.

There is an urgent need for developing countries to put together a legally binding international protocol flowing out of the Convention on Biodiversity before it is too late, before multinational companies based in the developed world walk away with patents based on the use of precious genetic resources of the Third World.

Dr. M. S. Swaminathan, agricultural scientist, who was one of the participants in a three-day workshop organised here recently by the Centre for Science and Environment, has emphasised three important issues — need to protect farmers' rights along with protection for plant varieties, a larger umbrella legislation to give teeth to the rights of communities in the conservation of biodiversity recognised by the Biodiversity Convention, and recording the available traditional knowledge on medicinal herbs.

Mr. Anil Agarwal, Director of the Centre for Science and Environment, was critical of the low priority being given by Government to these crucial areas of legislation. He pointed out that in 1994 the Ministry of Environment had made some moves towards introducing an umbrella legislation in consultation with NGOs and experts, but somewhere in the bureaucratic corridors the legislation floundered and it never saw the light of day. Both he and Dr. Swaminathan feel that the present Government was not serious enough although this was a subject which needed to be addressed urgently in view of the fact that India was one of the countries richest in biodiversity.

The Phillipines is one of the few countries which has been able to put together a national legislation spelling out profit-sharing on commercial products based on local genetic material. However, experts feel that an international protocol, even if it covers only the biodiversity-rich developing countries, is very important if poaching on the precious genetic resources is to be prevented. Unless laws cover an entire group of developing countries rich in biodiversity, stringent national laws in any one country will simply mean that companies will simply go to another country to seek out what they want.

Dr. Swaminathan lamented that India has not taken the lead in mobilising opinion in the developing countries on this very important issue. There was the possibility, for the first time, of enacting laws that would recognise the role of communities in conserving biodiversity and also rewarding them with any profits that may be made by commercialising traditional knowledge of medicinal use of plants — the use of 'neem' leaves as an insecticide and pesticide in India is a case in point. The Biodiversity Convention, unlike the World Trade Organisation, does recognise the right of communities, and developing countries should take advantage of this as soon as possible by enacting suitable legislation protecting the rights of communities.

The CSE workshop suggested that a national biodiversity council be set up to bring together different sectoral views on issues related to biodiversity to help develop a sound national policy. It was felt that any legislation on this sensitive issue which concerns not only the poor farmers and impoverished communities but also industrialists and multinational corporations should be enacted in a transparent manner after wide discussions at the national level with NGOs, experts and all who matter.

Some experts have come forward with their own draft legislation for the consideration of the Government — Dr. Swaminathan has drafted a Plant Varieties Protection Act while Dr. Madhav Gadgil of the Indian Institute of Science at Bangalore has drafted a model Biodiversity Convention followup law.

In his keynote address, Mr. Agarwal emphasised that the challenge was not only to conserve biodiversity but also to prevent biopiracy. The Government must put into place laws which protect the rights of communities to rewards for helping preserve and conserve biodiversity and for developing knowledge of these plants over centuries.

He has warned that the controversies over the patenting in the United States over products based on the processing of turmeric and neem, phyllanthus and basmati, was not the end of the story, but the beginning of largescale biopiracy and the theft of traditional knowledge of communities. In the very near future products based on the processing of the bitter gourd ('karela') and the Bengal gram could be patented, for their medicinal properties are well known among certain communities. In fact, the 'neem' and turmeric cases signalled the start of a long line of product patents based on plants and their traditional uses.

The workshop has suggested that India should not only take urgent steps to protect its own traditional knowledge from corporate piracy, but should move quickly to try and capture the global market with its own products based on the processing of the rich biodiversity that is our inheritance.

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Thursday, September 19, 1996

The Hindu
BUSINESS LINE

Tributes paid to Dr. C.V. Seshadri

Our Bureau
MADRAS, Sept. 18

THE first Dr. C. V. Seshadri Memorial Lecture was delivered by Dr. V. Balaji of the M. S. Swaminathan Research Foundation (MSSRF) at the Murugappa Chettiar Research Centre (MCRC), Madras.

In his lecture on 'Inventing the future', Dr. Balaji recalled Dr. Seshadri's special qualities as an inventor, visionary and innovator, and his ability to visualise concepts and ideas that were ahead of their time. Particularly memorable was Dr. Seshadri's ability to encourage inventiveness and bring out the best creative instincts in his students and staff, he said.

Dr. Seshadri was MCRC's founder director from 1977 till he retired in 1992. After his retirement, he continued as Scientist Emeritus, advising and guiding research at the Centre, known for its pioneering work in the areas of biotechnology and alternative energy, until September last year.

Dr. Seshadri pioneered the large-scale cultivation of the highly nutritious blue-green algae *Spirulina fusiformis*, and orchestrated its arrival as a much-in-demand product on supermarket shelves. He initiated successful projects in such areas as low-cost, eco-friendly buildings using indigenous materials and technologies; the use of alternative, wood-saving materials such as high-density polyethylene in boat-building; harnessing wind energy for water pumping; bio-gas technology; herbal/vegetable dyes; and paper-making, among several others.

Mr. M. V. Murugappan, Member, Governing Body of MCRC, recalled Dr. Seshadri's unique leadership qualities and his ability to inspire successive generations of students to keep questioning accepted scientific paradigms and use them as a springboard for new ideas.

Dr. M. S. Swaminathan, Chairman, MSSRF, spoke of Dr. Seshadri's emphasis on excellence in science and technology, and his expectation of deep social commitment from those whom he had trained.

The farmers' scientist

(By A Special Correspondent)

Madras owes much to Dr M S Swaminathan for settling in the city after retirement and, more importantly, for deciding to establish the M S Swaminathan Research Foundation (MSSRF) here, using his earnings, the very considerable award monies he has received, and resources which he has personally mobilised from international and national institutions and the corporate sector.

MSSRF focuses on issues of global wellbeing, ranging from ecology and environment, sustainable development, farmers' rights and intellectual property rights, global warming, ecotechnie (a new approach to decision-making that integrates economics, technology, and natural and social sciences to consider management alternatives and long-term consequences of development) and a multimedia information bank, networked with major global institutions. MSSRF is also becoming a meeting point for leading scientists, administrators, academicians as well as leaders and decision-makers from all over the world.

The efforts of this one scientist have catalysed investment of over Rs.20 crore for research on sustainable agricultural and rural development in Madras!

Mankombu Sambasivan Swaminathan (MSS), acknowledged by the United Nations Environment Programme (UNEP) as "the father of the economic ecology movement", was born in Kumbakonam in Thanjavur District, on August 7, 1925. He went to Travancore University, where he got his bachelor's degree in 1944.

MSS's father, Dr M S Sambasivan, was a leading medical practitioner in Kumbakonam and he and his wife Thangam had three sons and a daughter. Dr Sambasivan was from an agricultural family in Mankombu in Kuttanad, the rice bowl of Kerala. He moved to Kumbakonam in the early years of this century and established a good practice. He was a compassionate doctor and cared much for the poor. He was elected Chairman of the Kumbakonam Muncipality.

MSS recalls that "Kumbakonam, in the early Thirties, was well-known for its mosquitoes. Two out of three of the town's population suffered from elephantiasis or filaria. It was manmade and not God-given. My father, Dr Sambasivan, stood for election to the Muncipal Council with the sole purpose of eradicating mosquitoes. He organised extensive spraying of crude oil emulsion (DDT was not known then). He succeeded in eradicating mosquitoes, but mosquitoes took their revenge and killed him. He died young."

Dr. M.S. Swamnathan

As a student, Swaminathan spent a lot of time in the lagoons and rice fields of Kuttanad and on the small rubber plantation the family owned in Wayanad. He was fascinated by nature and noted the problems posed by it. He observed, with every rain, the Kuttanad waterways turning red, due to soil erosion.

His passion for agriculture led him to the famous Madras Agricultural College in Coimbatore. After graduation from the College, he appeared for the IPS examination and was selected. Around the same time, he got an offer to work as an Associate of the Indian Agricultural Research Institute (IARI), New Delhi. He chose the latter. His specialisation was in cytogenetics and plant breeding.

After a successful stint at IARI, MSS went in 1949 to the Agricultural University at Wageninger, in The Netherlands, as a UNESCO Fellow in Genetics. He then went on to the School of Agriculture at the University of Cambridge in UK to do his Ph.D. After his doctoral degree, he joined the University of Wisconsin in the United States in 1952 as a Research Associate in Genetics.

It was during his stay at Cambridge that he met Mina Boothalingam, an outstanding economics student and a forceful speaker with nationalistic ideals and dreams. He married her in April 1955, after he returned to the Indian Agricultural Research Institute, New Delhi, as a scientist in its genetics department. "Mina has been a great strength to me. She took all the responsibility of raising our three children — Sowmya, Nithya and Madura — leaving me to concentrate on my academic and administrative work," says MSS.

The farmers' scientist

(By A Special Correspondent)

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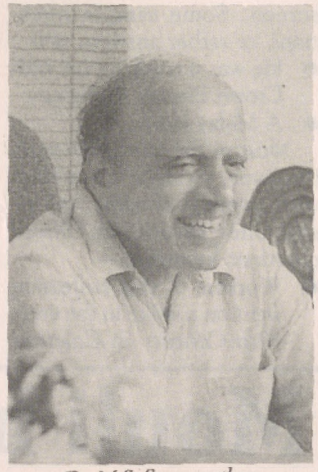

Dr. M.S. Swammathan

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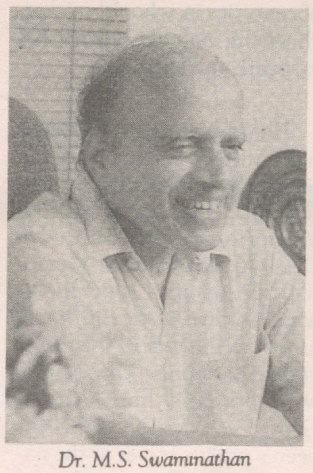
• Dr. M.S. Swaminathan will receive the 1996 Blue Planet Prize of the Asahi Glass Foundation of Japan from the Emperor of Japan on October 28th. The prize is stated to be 'the Nobel Prize for environmental science and technology.' It is the latest international recognition of the work being done by the M.S. Swaminathan Research Foundation. The Foundation will soon be home of the JRD Tata Ecotechnology Centre and the Asian Ecotechnology Network. On this occasion, *Madras Musings* pays tribute to Dr. Swaminatha n with this two-part profile.

MSS soon became the head of the genetics division and then the Director of IARI. It was during his term as the Director of IARI that he was involved in the Green Revolution. Working closely with Minister C Subramaniam, Agriculture Secretary B Sivaraman and Dr Norman Borlaug, he helped achieve quantum growth in wheat production, which led to the country's self-sufficiency in foodgrains production. MSS always passed on the credit to the farmers. "But for their relentless support and absolute trust in our new seeds and technology, this would not have been possible," he insists. (Courtesy: *Industrial Economist*, Madras).

● *The Farmers' Scientist — Part II*

Save the soil, his plea

As a keen conservationist and a visionary M S Swaminathan was the first to recognise the problems of technology. In January 1968, he said, "Intensive cultivation of land without conservation of soil fertility and soil structure would lead ultimately to the springing up of deserts. Irrigation without arrangments for drainage would result in soils getting alkaline or saline. Indiscriminate use of pesticides, fungicides and herbicides could cause adverse changes in biological balance as well as lead to an increase in the incidence of cancer and other diseases, through the toxic residues being present in the grains or other edible parts. Unscientific tapping of underground water would lead to the rapid exhaustion of this wonderful capital resource left to us through ages of natural farming. The rapid replacement of numerous locally adapted varieties with one or two high-yielding strains in large continguous areas would result in the spread of serious diseases capable of wiping out entire crops. Therefore, the initiation of exploitative agriculture without a proper understanding of the various consequences of every one of the changes introduced into traditional agriculture and without first building up a proper scientific and training base to sustain it, may only lead us into an era of agricultural disaster in the long run, rather than to an era of agricultural prosperity."



Dr. M.S. Swaminathan

By A Special Correspondent

MSS's rise in the hierarchy of Indian agriculture's officialdom was meteoric. In 1979 he became the Secretary for Agriculture and Irrigation, and for a short while, in 1980, he acted as Deputy Chairman of the Planning Commission. He was a member of the Planning Commission for agriculture, rural development, science and education. Then followed six years abroad, till April 1988, as the Director-General of the International Rice Research Institute in The Philippines. At the IRRI, MSS brought in new ideas to include women in agriculture and stressed sustainable agriculture. He reoriented IRRI's research programmes and, through a novel programme on 'Prosperity through rice', he ushered in several farmer-oriented and value-added concepts.

After his return from The Philippines in 1988, MSS decided to set up a research foundation with all the prize money he had got and started the M S Swaminathan Research Foundation in Madras. He set up the Centre for Research on Sustainable Agricultural and Rural Development (CRSARD) in 1989 in rented premises in Kotturpuram.

MSS has been a great lover of nature and, as a geneticist, he has been instrumental in starting several genetic resources conservation units in India as well as in other developing countries. He was the President of the International Union for the Conservation of Nature and Natural Resources (IUCN) from 1984 to 1990, and Vice President of the World Wide Fund for Nature International in Switzerland during the same period.

As a conservationist, his role in saving the pristine forests of Silent Valley in the early Eighties is well-known. As President of the World Wide Fund for Nature-India, his signal contribution in protecting the protected areas came to be recognised. MSS served as a Founder-Trustee and, later, Chairman of the Board of the International Council for Research on Agroforestry during 1977-1982. His efforts to save the Amazon forests in Guyana stand testimony to his concern for conservation. His commitment to save the mangroves and other tropical forests has come to be recognised the world over. Recently, MSS helped in developing a transparent and implementable method of recognising and rewarding the intellectual property contributions of tribals and rural families in the conservation of plant genetic resources.

Among his distinguished awards are the Ramon Magsaysay Award for Community Leadership in 1971 and the first award for serving the cause of women in development in 1985. He became the first laureate of the World Food Prize, regarded widely as the equivalent of a Nobel Prize in Agriculture. He has been awarded honorary doctorates by more than 30 universities across the globe and has been honoured by several international scientific academies.

As the Secretary General of the United Nations, Javier Perez de Cuellar, wrote in 1987, "By any standard, Dr Swaminathan will go into the annals of history as a world scientist of rare distinction". (**Courtesy:** *Industrial Economist*, Madras).

(Concluded)

The 'Nobel' for conserving the environment

The M.S. Swaminathan Research Foundation has been awarded the Blue Planet Prize for 1996.

This prize, instituted by the Asahi Glass Foundation of Japan on the occassion of the UN Conference of Environment and Development held at Rio de Janeiro in June 1992, recognises the work of individuals, groups and organisations whose achievements have contributed to the resolution of global environment problems. MSSRF is the first Blue Planet prize-winner from Asia.

One of the Research Foundation's major achievements has been the study and conservation of coastal ecosystems, particularly mangrove wetlands. Based on its research into vegetation, soil salinity, and other aspects of mangrove habitats, the Research Foundation has taken steps to restore degraded wetlands.

The Research Foundation conducts a community biodiversity programme to rescue endangered plant species from extinction, identifies micro-organisms to serve as bioindicators of ecosystem health, and conserves genetic diversity of plant species used as food or in medicinal and other applications.

In addition, the Research Foundation promotes the Biovillage model of sustainable rural development. By helping to conserve the natural environment of developing countries while supporting the economic viability of rural communities, the M.S. Swaminathan Research Foundation is playing an important role in the search for solutions to global environmental problems.

Khush bags World Food Prize

Observer Economic Bureau

NEW DELHI

FAMOUS rice breeder and creator of super rice, Dr G S Khush, has bagged the 1996 World Food Prize, which was announced on the occasion of the World Food Day on Wednesday.

Dr Khush became the third Indian to bag the $200,000 prize, regarded equivalent of a Nobel Prize in agriculture. Before him, Dr M S Swaminathan, known as the father of Green Revolution in India, and Dr V Kurien, the father of the White Revolution, received the international prize sponsored by the UN Food and Agriculture Organisation.

A series of functions were held in the Capital to mark the World Food Day, this year dedicated to 'fighting hunger and malnutrition.'

The day started with the presentation of a FAO-sponsored World Food Day award to Dr M S Swaminathan for his contribution to ensuring food security for the poor in the developing world. This award is presented every year by the FAO office in India to outstanding scientists and workers in the field of food security.

In his acceptance speech, Dr Swaminathan said these occasions should be used for "assessing where we are and where we are heading."

He said there are 2.8 billion people in the world who are malnourished. "This trend" of increasing malnutrition can be reversed if there is a political will." He expressed happiness at the political will displayed by agriculture minister Chaturanan Mishra and minister for rural areas and employment Yeerran Naidu, who "were present on the occasion.

Speaking at the function, Mr Naidu admitted that millions of people were malnourished when there were millions of tonnes of foodgrains lying in the godowns. He said his ministry was trying to tackle the problem by giving employment and purchasing power to the poor.

Mr Chaturanan Mishra regretted that the developing countries were not addressing the issue of patents and profits in food trade which is the main hinderance to reaching the food to the poor.

Mr Mishra warned that the food security may get further eroded if the multinationals start controlling over half the world production, as has been predicted.

He said that there is so much of food production technology available today that even if half of it reaches the farmers, no body will remain poor. But what is stopping the fruits of research from reaching the small farmers is patents and profits.

He ridiculed the developed countries for pressing the concept that the free market is the panacea for food security. He said that if the populous countries like India or China enter the world market for purchase of fertilisers or foodgrains, the prices shoot up immediately.

"Mankind is friendly to the market, but is the market friendly to the mankind," he questioned.

At another function held at Krishi Bhawan, the food and civil supplies minister said that by floating the concept of free international food trade, the developed countries are trying to profit from the hunger and misery of the mankind.

A message sent on the occasion by FAO director general Jacques Diouf said "despite unprecedented population growth, the world can produce enough food for everyone. But the food that the world produces is not reaching everyone.

He said that the World Food Summit being held next month will discuss some of these issues in detail and formulate plan of action to tackle the problem.

"Together we will have to institute policies that provide better access to food and meet emergency food needs in ways that encourage long-term development," Mr Diouf said. □

Agriculture minister Chaturanan Mishra presenting World Food Day Award for 1996 to agricultural scientist M S Swaminathan (centre) in New Delhi on Wednesday, as FAO representative in India, Peter Rosenegger (extreme left) looks on. ■ L M Joshi

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Indian among two awarded World Food Prize

WASHINGTON, Oct. 16. — An India-born researcher is among the two rice breeders who received this year's World Food Prize yesterday for their work dramatically increasing crop yields in Asia, reports AP.

Mr Gurdev Singh Khush, 61, and Mr Henry M. Beachell, 90, will share the $200,000 prize for research done under their direction at the International Rice Research Institute in Los Banos, the Philippines.

Their new varieties and genetic lines have enabled rice production to double since 1966, when Mr Beachell introduced the new rice IR-8 to Asian farmers, prize sponsors said. The plant was shorter, thicker-stemmed and sturdier than most rice.

Mr Khush, the head of breeding at the research institute, developed IR-36 10 years later, using IR8 as the base. The newer rice has the high yields of IR-8 but matures earlier and has better resistance to insects, diseases and environmental stresses.

Both prize winners stressed the need for even more higher-yield crops because of a rising world population and dwindling farmland.

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M. S. Swaminathan awarded FAO award

■Father of the Green Revolution, Dr M.S. Swaminathan was today conferred World Food Day Award, of the Food and Agriculture Organisation for his achievement in agricultural research. Dr Swaminathan has directed Global Agricultural Research and development to enhance availability of food for all. Promoting cereal production especially wheat and rice is one of his major contribution in ensuring food security for the poor. Dr Swaminathan, who received Ph.d in genetics from Cambridge University in 1952 has since received 34 honorary doctorates from the institutions spanning three continents. He has also ben awarded with Magsaysay Award in 1971, Padmashri in 1967, Padmabhushan in 1972, Padmavibhushan in 1989.*(UNI)*

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Other : .....

Call to banish hunger, poverty

NEW DELHI, Oct 16: Agriculture Minister Chaturanan Mishra today called upon the scientists and technocrats to focus attention on the "poor man's farm" to banish hunger and malnutrition from the planet, reports UNI.

Addressing a function to celebrate the World Food Day and presentation of the World Food Day Award '96 to eminent scientist Dr M S Swaminathan here, Mishra said that the only way to fight the poverty was to increase productivity of each marginal farmer by taking science and technology to their farms.

He said there was sufficient food in the country despite only 30 per cent of total land area under green revolution. If rest of the 70 per cent land is brought under cultivation in India, which is self-sufficient in every field, no one would die of hunger and malnutrition, he observed.

The Union Minister said the right for food was as important as the democratic and human rights.

Arguing that science and technology is adequate to take care of the needs, he, however, alleged that "science was in the hands of profiteers and racketeers".

He said "technically" India was self-sufficient in the food production.

But the developed nations were considering her as market for dumping low quality goods at higher price.

Mishra announced the constitution of an expert committee under Swaminathan to carry out laboratory tests to enhance the health of soil of every poor farmer.

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Swaminathan gets FAO award

Father of the green revolution, Dr M S Swaminathan was today conferred World Food Day award, of the Food and Agriculture Organisation (FAO) for his achievement in agricultural research.

Dr Swaminathan has directed global agricultural research and development to enhance availability of food for all.

Promoting cereal production, especially wheat and rice is one of his major contribution in ensuring food security for the poor in the developing world.

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Swaminathan presented FAO award

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Dr Swminathan who received Ph D in genetics from Cambridge University in 1952, has since then received 34 honorary doctorates from the institutions spanning three contenents.

He was conferred with Ramon Magsaysay award for community leadership in 1971, first award for serving the cause of women in development (1989) by the Indian Government.

In October 1987, he became the first laureate of the "World Food Prize," widely regarded as the equivalent of a Nobel prize in agriculture field.

In another development, Agriculture Minister Chaturanan Mishra today called upon the scientists and technocrats to focus attention on the "poor-man's farm" to Bannish hunger and malnutrition from the planet.

Herald photo by Madan Malhotra

Mr Chaturanan Mishra, Minister of Agriculture, presenting the World Food Day Award '96 to Dr M.S. Swaminathan on Tuesday in New Delhi.

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Greater efforts sought to ensure food security

From Our Staff Reporter

NEW DELHI, Oct. 16.

The Union Minister for Food and Civil Supplies, Mr. D. P. Yadav, has called for international cooperation to ensure food security.

Speaking at a function to mark the 'World Food Day' here today, the Minister said though food security was the responsibility of governments, international cooperation was needed for enhancing production and developing storage facility. There was need for greater cooperation between developed and developing countries to raise investment in the agriculture sector, he added.

Mr. Yadav said the issue of food security was inextricably linked with the eradication of proverty. "Sustained employment generation for vulnerable groups is crucial for ensuring food security and enhancing their purchasing power", he suggested.

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THE HINDU, Sunday, October 20, 1996

Blueprint for a sustainable future

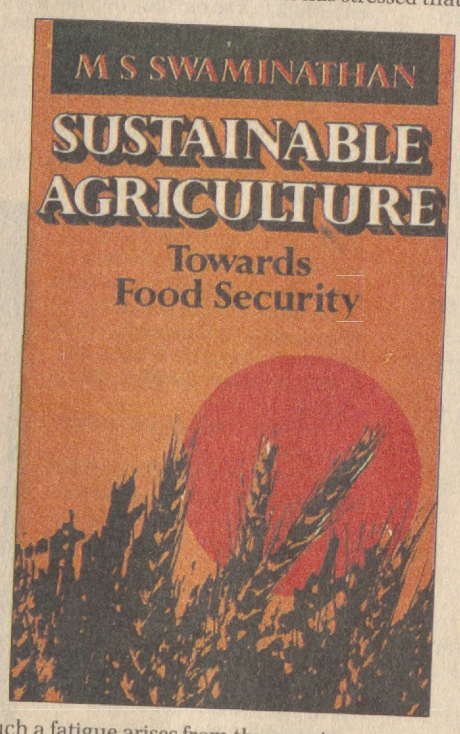
THE two volumes are compilations of lectures delivered by Prof. M. S. Swaminathan during the last two decades, mostly the recent ones. They address five of the major contemporary problems relating to sustainable agriculture and food security issues.

The first set of issues relates to the ecological foundations of sustainable agriculture such as soil, water, forests, biodiversity (flora and fauna) and the atmosphere.

These problems are addressed with a view to promoting sustainable management of these invaluable natural assets. For instance, in the case of soils, a systems approach to soil health including the physical and chemical properties and the microbiological population of the soil is advocated.

Dr. Swaminathan was the first to coin the term "integrated Nutrients Supply" (INS). He had dealt with it at length in his address to the Fertiliser Association of India in 1974. Under the INS system, mineral fertilisers are judiciously blended with green organic manures and biofertilisers and it also includes the incorporation of legume (pulse crops) leaves in crop rotation. The paper in the volume repeatedly emphasises that without ecological security sustainable food security will be an impossibility.

The second set of issues addressed in the books relates to the fatigue of the green revolution. Dr. Swaminathan has stressed that



such a fatigue arises from three major reasons. First, the excessive use of chemical pesticides and mineral fertilisers causes soil health problems and increases the pest incidence. Dr. Swaminathan refers to such excessive and indiscriminate use as "Greed Revolution".

In order to make the green revolution "Evergreen" or sustainable over a period of time, he advocated in his Science Congress address in 1968 – the year when the term "Green Revolution" was coined – the adoption of integrated pest management and ecologically sound agricultural practices now referred to as "eco-technologies."

Eco-technologies provide the foundation for an "Evergreen Revolution", which can result in continuous advances in crop, livestock and fish productivity without detriment to the long term production potential of soil and water.

The third set of issues relates to improving the economic prosperity of farm families. Dr. Swaminathan has advocated a three-pronged strategy consisting of crop intensification, diversification and value-addition. He has described a programme on rice which involves an efficient use of every part of rice such as straw, bran and husk. This involves an establishment of a "bio-refinery" at the village level.

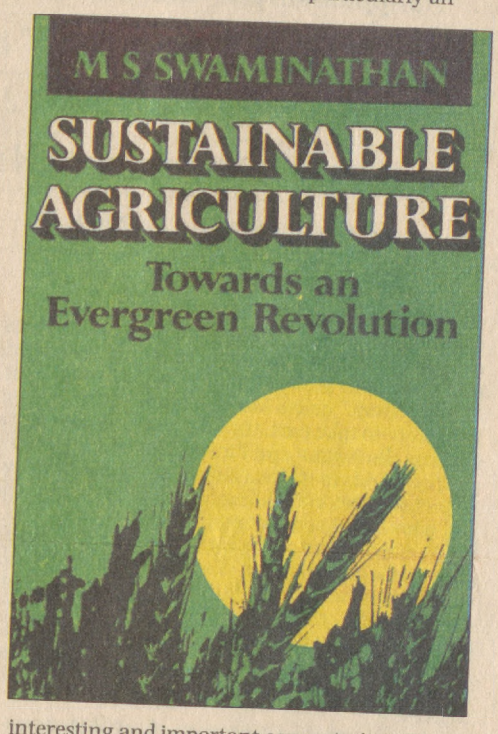
The smaller the farm, the greater the need to generate more marketable surplus. This will be possible only through ecologically sound agronomic techniques. Unless a certain proportion of people in the village earn their livelihoods in non-farm enterprises, small farm families will continue to remain poor. By integrating crops, livestock and fish in a farming system, multiple avenues of income can be created.

Dr. Swaminathan emphasises that the prevailing mismatch between production and post-harvest techniques is causing harm both to producers and consumers. He, therefore, pleads for greater investment in all aspects of post-harvest technologies including agro-processing to agri-business.

Poverty will persist so long as small and marginal farm families have to depend entirely on the harvested produce for income. Diversification of land-use involving high-value crops such as vegetables and flowers helps to augment small farm incomes. He advocates that agronomists should provide data on net income per unit of land and water. Yield figures alone will not be sufficient to convince policy makers on the need to pay attention to investments in rural infrastructure and rational input and output pricing policies.

The fourth set of major issues addressed in the books relates to the stability of farm production and sustainable food and nutrition security. For this purpose he has advocated several codes, such as a good weather code in drought-prone areas; a flood code to re-orient agricultural practices in flood-prone plains of the Brahmaputra and the Ganga; and the drought code, which involves compensatory production programmes in areas with adequate soil moisture because of assured irrigation.

The good weather code is particularly an



interesting and important concept, since Dr. Swaminathan, for the first time, has pointed out that in desert and semi-desert areas funds are available only if rains fail. However, it is only when the rainfall is good tree planting and other eco-restoration programmes can be adopted.

Dr. Swaminathan bemoans the fact that funds are available during periods of drought, there is no support when there is rainfall. During the severe Sahelian drought in the Eighties, a considerable amount of money poured in for relief and rehabilitation. However, no funds were available when the rains came. In the subsequent years, withstanding the rigours of drought more opportunities for building the ecological infrastructure became essential.

The fifth area of concern is the increasing feminisation of poverty. Dr. Swaminathan stresses that without men's enlightenment women's empowerment will be a slow process. Literacy and "techniracy" (a term coined by Dr. Swaminathan in his Princess Leelavathi Memorial Lecture in 1972 to describe the process of learning new technical skills by doing rather than from classrooms) are essential for the economic and social empowerment of women.

Population can be stabilised only when gender equality becomes a reality. Dr. Swaminathan has also advocated the enlargement of the concept of food security to include nutritional aspects. Today it is widely recognised that hidden hunger caused by deficiency of micronutrients is prevalent in our country. He, therefore, pleaded in his lecture dedicated to the memory of Lory Boyd Orr that we should work for nutritional security which would ensure every individual has physical, economic and environmental access to balanced diets and safe drinking water.

He has underscored the need for attending to non-food factors which affect food security at household levels such as environmental hygiene and primary health care. Such a holistic approach to food and nutrition enables every individual lead a productive and healthy life. One of the lectures in the book is titled "Our Agricultural Future." It will be more appropriate to say that these two books provide blueprints for our sustainable future. ■

G. VENKATARAMANI

Sustainable Agriculture – Towards an Evergreen Revolution *and* ***Sustainable Agriculture – Towards Food Security****, Dr. M. S. Swaminathan, Konark Publishers Pvt. Ltd, Rs. 250 each.*

Development for poor farmers requires above all time and dedication.

Swaminathan Institute in India brings biotechnology to the poor.

How can small-scale farmers and the landless in Third World countries benefit from modern biotechnology? A visit to the Swaminathan Institute in South India suggests that the best way is by organizing this group so that it is capable of generating income. Ways of doing this include jasmine, mushroom and lamb's lettuce cultivation, keeping a cow, building latrines, aquaculture and silkworm production. The goal of the institute is an 'eco-technological movement' that helps decrease the gap between rich and poor, and conserves nature.

Inside her dark hut the Indian woman proudly shows us a brown sack in which snow white mushrooms are growing. There are seven more sacks hanging from the sturdy casuarina branches, which, together with sugar cane and palm leaves, form the roof of the hut. In these, however, there are only dirty stumps to be seen. "I only started the culture in these sacks last week," she explains. She grows mushrooms by alternating layers of boiled, shredded rice straw with mushroom culture. This takes her about two hours a day. The mushrooms are ready to pick in two weeks. She earns 120 Rupees (US$ 4) a month from this, and she has been doing it for five months how. Rats are a problem she tells, and there is not always enough rice straw.

I accompany Dr. S. Hopper to the next enterprise in this 'bio-village'. In a businesslike manner he explains how landless women have converted the village pond that nobody used into a source of income. With the help of initial capital provided by the government the pond was cleaned, cleared of predators and fertilized with cow dung. Once a year nine women from the huts around the pond harvest grass carp, common carp, silver carp, Mrigal, Rohu and Catla. In May last year they caught 430 kg of fish, worth 10,000 Rupees (US$ 330). Each day the women swim to the middle of the pond to fill the feeding net with rice, wheat and nutcake. Once a month they clean the pond and manure it. To prevent erosion they have planted the sides with grasses and fruit trees.

As we arrive at the poultry farm the farmer is feeding his cackling flock of four hundred grey hens. Due to a handicap he is unable to work the land, but poultry rearing is no problem. Marketing expert Mr. S. Soundararadjane first carried out a survey for him to see if there was sufficient demand, and animal husbandry expert Dr. K. Danassegaran assisted him in trying out two different breeds of chicken. Both are suited to his clay hut, but the 'Ross' needs less feed than the 'Starbro'. That is important as feed is expensive.

Income

How can we ensure that the large group of poor farmers and landless in the third world also benefit from the developments in modern biotechnology? This was the central question behind the establishment of the M.S.Swaminathan Research Foundation in Madras (Southern India) in 1990. The members of the panel – biologists, sociologists, economists, politicians and entrepreneurs from all over the world – came to the conclusion that 'income generation' was of primary importance. In order to achieve this, they concluded that the Swaminathan Institute should on the one hand offer technical and organisational help to the poor, and on the other hand provide starting capital.

The Institute – which belongs to the influential Indian breeder Swaminathan – formulated an model. He envisaged rural areas full of 'bio-villages'. A 'bio-village' is a village with a wide variety of small-scale enterprises, all employing biological techniques: mushroom, jasmine, lamb's lettuce cultivators, cattle, goat, poultry and silkworm breeders, fish farmers, beekeepers, latrine builders, rope makers etc.

These 'one-man' enterprises are organised into savings groups. Each month the producers – mainly women – deposit a certain amount of money. Out of these funds they pay for certain basic facilities such as marketing advice or transport, and they can withdraw money in case of illness or food shortages in order to be able to avoid becoming indebted to money lenders.

Ideally the bio-villages are supported by so-called 'bio-centres', test stations where agronomists test and produce biological material. Working from the premise that challenging work must be available to the youth in rural areas these bio-centres employ young people from the villages as assistants. The 'scientific establishment' is also closely involved: in order to ensure that the bio-villages have access to the best breeds and the latest information the 'Science and Technology Consortium' meets regularly. This is a network of university researchers, businesses and government institutes. They supply not only materials but also provide specialist training. In order to safeguard product sales and fund raising there is a 'Financial and Management Back-up Consortium', consisting of representatives from banks, donor agencies, insurance companies and industry.

Hybrid varieties

While visiting the 'animator', together with twelve colleagues from the bio-village project, plant breeder S. Banumathy explains that she trains farmers and landless women in the cultivation of high yield hybrid rice varieties. Crossing male and female rice strains requires special skills, and Banumathy has rented a piece of land for the women in order to teach them the technique. For the first year the Swaminathan Institute pays all costs, including salary costs. The second year it pays 75% of the costs, and each subsequent year proportionately less. The idea is that finally the savings group will finance the activity itself. The women plan to start using hybrid vegetable seeds soon.

Banumathy also helps the farmers with Azolla cultivation. By spreading this fast growing plant over the soil they can reduce the amount of fertilizer needed by half. "This technique had already been known for years at the Agricultural University in Madras," she explains, "but the farmers hadn't heard of it. When I came here a year and a half ago with Azolla, the farmers were initially not interested in participating. They thought it was too much work. So I set up a couple of demonstration plots, and now they can see that it saves substantial amounts of money."

Ecologist A.Savithiri cajoles me into accompanying her to a white painted concrete booth situated in a deserted spot at the edge of a bio-village. Next to the latrine she opens a cover in the ground to show how the cement pot under the latrine must be replaced every five years by the second pot under the cover. The contents of the full pot are left to decompose for the next five years. She tells that it was the women themselves who came with the demand for latrines, and together they tested this model from Unicef. "People often think that human manure is worthless, but that is not true." She has closely supervised the apparently simple matter of introducing latrines into the village. She began cautiously with two latrines and gave regular instruction to the women on how they should use them, and on the importance of hygiene. When this had been successfully accomplished she built 10 more latrines with the villagers, for which the latter had to provide half of the financing. The next ten latrines were built and paid for entirely by the women themselves. "In the neighbouring village the government have installed twenty latrines," she remarks by way of comparison as she closes the cover, "but they gave no instruction on the use of latrines. The women now use them to store animal feed."

Trickle down

The 'trickle down' philosophy of development, based on the idea that technology will diffuse of its own accord if it is good technology, does not hold for India. Even the cheapest forms of biotechnology which have been developed in universities and research institutes have not reached the poorest. According to the Swaminathan Institute's analysis this is because there is no follow up work carried out. The techniques remain on the shelf in urban centres because there are too few agronomists in India who are willing to apply them to the diverse conditions found in the villages, and to the

The Hindu 2/11/96

Swaminathan calls for 'evergreen' revolution

From F. J. Khergamvala

TOKYO, Nov. 1.

India's best-known agricultural scientist and science philosopher, Dr. M. S. Swaminathan, presented a four-point agenda in Tokyo on Friday to confront an impending food and ecological crisis. On the occasion of accepting a prestigious international award on behalf of the M. S. Swaminathan Research Foundation, in Chennai (MSSRF), he said "everybody can use but not abuse resources."

The first of four concrete areas that need attention is was to lay the foundation for improvement in biological productivity with measures such as conservation of prime farm land. For all talk of marine resources "90 per cent of food comes from mother earth", said Dr. Swaminathan expressing disappointment that very little action had been taken to follow up on the desertification convention. Conservation of biological diversity, increased use of biodegradable substances and more studies on climate and radiation therapy were the other subjects he mentioned "This green revolution came and went but we have now reached a point where it is essential to have an evergreen revolution," he said adding "quite simply we need to change the way we live."

Dr. Swaminathan was addressing a press conference before the presentation of the Blue Planet Prize 1996. Established as late as in 1988 partly with the prize money given to Dr. Swaminathan in 1987, when he won the first World Food Prize, the MSSRF is the first ever Asian recipient of the award.

The Blue Planet prize is recognised as the world's foremost privately-sponsored effort at recognition of work by individuals or organisations at solving global environmental problems through scientific research and application. It is instituted by the Asahi Glass Foundation and appropriately, one of the prizes is a crystal ball trophy, mounted on a stem and base of glass, all made of Asahi glass. In addition a certificate and prize money of yen 50 millions (approximately $4,50,000) each was given to two winners. Dr. Wallace S. Broecker, a Geology professor at the Columbia University, U.S., was the other recipient.

As Mr. Takashi Mukaibo told the audience at the awards ceremony, presided over by Prince Akishino, second in line of imperial succession in Japan, the two recipients, one an individual and the other an institution established and run by a highly dedicated individual, were selected from among 113 candidates from 24 countries scrutinised over six months by a panel. Its top advisor is the Nobel prize winner, Prof Kenichi Fukui of the Kyoto University.

Awarded only to two recipients annually, the Blue Planet Prize has a distinguished list of awardees since its inception in 1992. One of them was Dr. Lester Brown, founder of the Wordwatch Institute, recently in the news for projecting a dismal picture ahead, and many of whose views are similar to Dr. Swaminathan's. Indeed, the fact that the co-recipient this year is Dr. Broecker is also adequate testimony to the global standing of the MSSRF. Even in the U.S., acknowledgedly the world's principal sanctum of the most constructive and most destructive studies and application of science, only eight persons have ever got the National Medal of Science, the country's highest award. Dr. Broecker, famous for his works on climate change and the 700-page co-authored opus "Tracers in the Sea" is the latest American scientist to win the medal.

In his acceptance speech, before which were shown slides of the 71-year-old scientist's life and his latest work in the MSSRF, Dr. Swaminathan called the institution "an adventure in integrating modern science with traditional ecological wisdom and ethical norms in the search for solutions to the adverse consequences of developmental pathways." "We are with a pro-nature, pro-poor and pro-women orientation," he said, referring to the Foundation.

Dr. Swaminathan's theme at various speeches including the commemorative lecture at the United Nations University in Tokyo, was food security. On one occasion, he recalled that in a couple of years it would be Malthus' bicentenary and "in 1790 the world's population was what is India's population today". Dr. Broecker preferred to put the same point in another way. "We are adding a billion mouths every 11 years."

Call for public awareness

Like Dr. Lester Brown, Dr. Swaminathan too believes that the future cannot be mortgaged. He was referring to the fact that every expert seemed to agree that countries such as China which by geographical location, size, trade pattens in food and pace of development, could have a major global impact, aspects of which can be harmful. But "who is to make these governments listen," he was asked. He replied that with more countries becoming democratic, public pressures would eventually force governments to act. As he stated at the prize giving function, the purpose of awards such as the Blue Planet Prize and institutions such as Asahi Glass Foundation, was to create a greater awareness among the people of environmental concerns. "If public awareness is not raised, political leaders will not act."

Dr. Swaminathan said governments must get more regulatory in safeguarding the environment but "we as experts and institutions like ours must work on providing the governments with options." Hence, "the public, politicians and researchers must work in concert."

It was perhaps due to the fact that often wisdom accompanies age, that the eldest person in the event, the Chairman of the Asahi Glass Foundation, Mr. Jiro Furumoto, concluded "humankind has only one home."

Ecotechnology and sustainable livelihoods

Top: A hybrid rice demonstration plot at the Biovillage programme in Pondichery. Above: A progressive farmer in Kerala examines a beehive.

As we stand poised to enter the 21st Century, we face a number of challenges such as environmental degradation and increasing gender and economic inequality. If these problems are not tackled on a priority basis, social and ecological disintegration will result.

M.S. SWAMINATHAN, whose Foundation was awarded the 1996 Blue Planet Prize, outlines some responses to the problems the world faces today in a commemorative lecture in Tokyo on November 1.

AS we approach a new century we can look back and draw a balance sheet of our achievements and failures. Spectacular progress in science and technology ranks first among our major accomplishments. Recent advances in biotechnology and genetic engineering, space technology, information technology and new materials have opened up uncommon opportunities for a world where every individual can lead a healthy and productive life. The spread of democracy, the breakdown of apartheid and the advent of the information age have created the socio-political substrate essential for integrating the principles of intra-and inter-generational equity in public policy. The power of a right blend of technology and public policy is strikingly evident from the progress made to keep the growth rate in food production above the rate of population growth thereby ensuring that the Malthusian prediction of population overtaking food production does not come true. But despite all these achievements, we will face, in the new millenium, some great social and scientific challenges.

Environmental degradation and increasing economic and gender inequality are among the most serious problems we face today. The rich-poor divide is increasing at an alarming rate. The pattern of development adopted by rich societies is leading to jobless economic growth, pollution and potential changes in climate. Unsustainable lifestyles of the rich and unacceptable poverty co-exist. The absence of an educational and healthy environment – conducive to every child achieving his/her innate genetic potential for physical and mental development – leads to the spread of poverty in capability. UNDP has proposed indicators for measuring both human development and human capability?

The U.S. National Academy of Sciences, the Royal Society of London, the Indian National Science Academy and 55 other scientific bodies in a statement made in 1993 pointed out that "stress on the environment is the product of four interacting factors: population growth, consumption habits, technology and social organisation." Concurrent attention is needed on all these four factors to promote sustainable development and sustainable societies. The report "Sustainable America" indicates what an affluent society should do. In poor nations, the social sustainability of the development process is as important as ecological and economic sustainability. If the current pace of damage to the ecological foundations essential for sustainable advances in biological productivity – namely land, water, flora, fauna, forests, oceans and the atmosphere – continues, sustainable food and nutrition security cannot be achieved.

Among social factors, gross economic and gender inequity needs priority attention. If such a paradigm shift in developmental thinking and pathways does not occur, the successes achieved in the 20th Century in abolishing apartheid, conquering space and splicing genes will be overshadowed by the spread of technological and economic apartheid. If these forms of apartheid are allowed to grow and spread, social disintegration and ecological genocide will be the result.

Technologies rooted in the principles of ecology, economics and equity are now referred to as ecotechnologies. UNESCO and the Cousteau Foundation established by Commandant Jacques Cousteau are promoting ecotechnology networks in different parts of the world. The M.S. Swaminathan Research Foundation (MSSRF) at Chennai is the coordinating centre for the Asian Ecotechnology Network. A major purpose of this Network is the creation of ecojobs, which are economically viable, environmentally benign and socially equitable. A multimedia database on opportunities for ecojobs is being developed, since the dissemination of information on ecojobs is essential for creating opportunities for sustainable livelihoods in rural and urban areas.

The most serious manifestation of poverty is hunger. It is now recognised that endemic hunger is largely the result of inadequate livelihood opportunities which in turn leads to inadequate purchasing power. Hidden hunger results from both micro-nutrient deficiencies and poor environmental hygiene which impair the biological absorption and retention of food. A Science Academies Summit on uncommon opportunities for a food secure world held at MSSRF in July 1996 stressed that national policies for sustainable food and nutrition security should ensure that every individual has the physical, economic, social and environmental access to a balanced diet that includes the necessary macro-and micro-nutrients, safe drinking water, sanitation, environmental hygiene, primary health care and education so as to lead a healthy and productive life and that food originates from efficient and environmentally benign production technologies that conserve and enhance the natural resource base of crops, animal husbandry, forestry, inland and marine fisheries.

During the next three decades, population is expected to increase by another 2.5 billion. Food requirements will grow both due to increases in population and per capita purchasing power. World grain production has grown from 631 million tonnes in 1950 to nearly 1900 million tonnes in 1995. Such a phenomenal growth has cost the environment dear in terms of soil degradation, aquifer depletion, genetic erosion and pesticide pollution. This is why we have to produce more in the coming decades but differently. To achieve such a shift, the following basic ground rules must be followed in technology development and dissemination and in public policy.

First, advances in production must be based on linking the ecological security of an area with the security of livelihood in a symbiotic manner.

Second, steps must be taken to create widespread awareness of the population supporting capacity of different ecosystems. Sustainable systems of management of soil, water, biodiversity and forests should be internalised in rural societies.

Third, because the poor have no productive assets and there is no value to their time, asset creation and value addition to time should receive high priority in poverty alleviation programmes. Women belonging to the economically underprivileged sections of the society, in particular, are often overworked and underpaid. Reducing the number of hours of work and increasing the economic value of each hour of work will require massive efforts in information and skill empowerment of the poor, particularly women. The emerging technologies are largely knowledge intensive and hence the transfer of knowledge and market-driven skills can become the most powerful instrument for fighting poverty and deprivation.

Four, equal attention should be focussed on the problems of the rural and urban poor. Lack of livelihood opportunities in rural areas leads to the proliferation of urban slums. Damage to common property resources in villages results in the growth of environmental refugees. Since in many developing countries agriculture, including crop and animal husbandry, forestry, fisheries and agro-processing, provides most of the jobs and income in rural areas, the triple challenge of producing more food, income and jobs from diminishing per capita land, water and non-renewable energy sources can be met only through agricultural intensification, diversification and value addition. Integrated, intensive farming systems, which are ecologically sustainable, are needed for this purpose.

Finally, an evergreen revolution of the kind described above can be imparted a self-propelling and self-replicating momentum only if it is based on the self-mobilisation of the people. In all externally funded and introduced development projects, there should be a built-in withdrawal strategy, so that the programme does not collapse when the external inputs are withdrawn.

The MSSRF is developing and testing certain responses to meet those challenges. First, linking the ecological security of an area with the security of livelihood of the local community thus creating an economic stake in conservation. The community biodiversity programme of MSSRF illustrates how such mutually beneficial linkages can be fostered in biodiversity rich areas. The tribal and rural families who have conserved and enhanced biodiversity remain poor, while those who are utilising the products of their efforts become rich. When the conservers have no social or economic stake in conservation, denudation of natural ecosystems becomes more rapid.

MSSRF has adopted a three-pronged strategy for creating an economic stake in biodiversity conservation. A transparent and implementable methodology has been developed for incorporating *sui generis* systems of plant variety protection procedures for recognising and rewarding informal innovations in genetic resources conservation and enhancement.

A symbiotic social contract between commercial companies and tribal and rural families is fostered to promote cultivation by local communities of genetic material of interest to the companies on the basis of buy-back arrangements. And local women and men are trained in the compilation of biodiversity inventories and in bio-monitoring, so that they themselves become custodians of their intellectual property. Such trained women and men constitute an Agrobiodiversity Conservation Corps and will be able to help their respective communities to deal with issues such as "prior informed consent" in the use of genetic resources.

For assisting the community biodiversity movement, MSSRF has established a Technical Resource Centre for the implementation of the equity provisions of the Convention on Biological Diversity. This is the first Technical Resource Centre of its kind in the world and has the six major components: Chronicling the contributions of tribal and rural families; Organisation of an Agrobiodiversity Conservation Corps; Development of multi-media databases; Maintenance of a Community Gene Bank and Herbarium; Revitalisation of genetic conservation traditions and Legal Advice Cell.

Second, the population supporting capacity of ecosystems and local level socio-demographic charter. In order to help internalise an understanding of the vital need to restrict population growth within the supporting capacity of land, water, forests and the other components of the ecosystem, training modules have been developed to enable the villagers to prepare socio-demographic charters for their respective villages. A gender code is an important component of the charter. Such socio-demographic charters will help local communities to view population issues in the context of social development and to ensure that children are born for happiness and not just for existence.

Third, for the purpose of information and skill empowerment, the concept of Information villages has been developed. Trained rural women and men will operate information shops where generic information on the meteorological, management and marketing factors relevant to rural livelihoods will be converted into location specific information. The computerised extension system adopted in the Information shops also helps to sensitise local families on their entitlements from government and other programmes. Information technologies provide considerable opportunities for value-added jobs in rural areas. While new technologies are important, folk media are often even more effective in reaching the unreached. Hence, folk plays and folk arts and theatre are fully mobilised for achieving information empowerment. For ensuring the success of information empowerment programmes, the information disseminated should be demand driven and should be locale-specific.

Four, agricultural intensification, diversification and value-addition is achieved through participatory research with farm families. Ecotechnologies like integrated pest management and integrated nutrient supply are used. Eco-technology development involves the blending of the best in frontier technologies with traditional wisdom and practices. Modern science and the ecological prudence of the past can thus be combined.

Eco-technologies are also practised in aquaculture. Integrated agriculture and aquaculture techniques enhance both farm income and the nutrition security of the household. Whole villages are being enabled to adopt such integrated, intensive farming systems (IIFS). The seven basic principles guiding the IIFS movement are soil health care; water harvesting and management; crop and pest management; energy management; post harvest management; choice of the crop and animal components of farming systems and information, skill, organisation and management empowerment.

IIFS is best developed through participatory research between scientists and farm families. This will help to ensure economic viability, environmental sustainability and social and gender equity in IIFS villages. The starting point is to learn from families who have already developed successful IIFS procedures.

It should be emphasised that IIFS will succeed only if it is a human-centered rather than a mere technology-driven programme. The essence of IIFS is the symbiotic partnership between farming families and their natural resource endowments of land, water, forests, flora, fauna and sunlight.

Fifth: increasing farm and non-farm employment. The biovillage programme addresses three key areas – preventing resource degradation, improvement of crop and animal productivity and alleviation of poverty. The biovillage programme in progress in villages in Pondicherry places equal emphasis on off-farm livelihood opportunities and on-farm jobs. This programme avoids a patronage approach to poverty alleviation. It regards the poor as producers and innovators and helps to build their assets through value addition to time and labour. The basic approach is on asset building and sustainable human development leading to the growth of entrepreneurship. The programmes are designed on a pro-nature, pro-poor and pro-women foundation. By placing emphasis on the strengthening of the livelihood security of the poor, the biovillage model of sustainable development revolves around the welfare of the economically and socially underprivileged.

It is thus a human-centred pattern of development. The enterprises chosen are based on marketing opportunities. The technological and skill empowerment of the poor is the major approach. Because of the market-driven nature of the enterprises, the economic viability of the biovillage approach is assured. Production and post-harvest technologies and farm and non-farm occupations are brought together in a matter that both producers and consumers benefit.

Biovillages around biosphere reserves would help in providing alternative sources of meeting the day to day needs for food, fuel, fodder and other commodities of the families living near such biodiversity rich areas. Also, biovillages near urban areas help to link the rural producer and the urban consumer in a mutually beneficial partnership. By producing the processed and semi-processed food products needed in urban areas in the villages around towns and cities, the need for the rural poor to migrate to urban centres for livelihood opportunities is minimised. Also, food processing can be used as a method of providing the needed micronutrients by including millets and grain legumes in the food.

Lastly, the final milestone: A hunger-free world. Studies at MSSRF have shown that by adding a horizontal dimension to numerous vertically structured programmes and by promoting a coalition of all concerned with ending hunger and deprivation, it is now possible to provide opportunities for a healthy and productive life for all. The problem of food and nutrition security at the level of the individual has to be viewed in three dimensions. First, inadequate purchasing power leads to calorie-protein under-nutrition. Second, the lack of the needed quantity and variety of micronutrients and vitamins in the diet leads to several nutritional disorders including blindness caused by Vitamin A deficiency. This kind of problem is referred to as "hidden hunger," a problem which affects today more than two billion people in the world. Third, lack of environmental hygiene and sanitation leads to a low biological absorption and retention of food, due to intestinal infection and diaorrhea. Thus, both food and non-food factors assume importance in determining the nutrition security of an individual.

Development which is not equitable will not be sustainable in the long term. A hunger-free and more equitable world is essential for our planet remaining ever blue. Given appropriate eco-technologies and public policies, there are now great opportunities for a better common present and future for all members of the human family.■

Keeping the planet blue

We face serious challenges today in keeping our planet blue. The major challenges relate to ecology, equity, economics and employment. According to the U.N. Development Programme, economic inequity is assuming inhuman dimensions. Gender inequality has resulted in nearly 70 per cent of the poorest of the poor being women. The growth rate in human population is still high in many developing countries, necessitating accelerated progress in food production and in opportunities for gainful employment. The present pattern of economic growth in contrast is associated with both increasing joblessness and environmental harm. The goals of "Health, food, literacy and jobs for all by the year 2000" set by United Nations Agencies two decades ago still remain distant dreams.

In spite of the political will and public understanding generated at Rio de Janeiro in 1992, the world is witnessing continued damage to basic life support systems of land, water, forests, biodiversity, oceans and the atmosphere.

The research, educational and networking programmes of the M. S. Swaminathan Research Foundation are designed to search for implementable solutions to these challenges at the micro and policy levels. The basic approach revolves around imparting a pro-nature, pro-poor and pro-woman orientation to a job-led economic growth strategy. The problems of ecology are being addressed through linking the livelihood security of local communities with the ecological security of the area in which they live in a mutually reinforcing manner.

The challenges of gender and economic inequity are being addressed through technological and information empowerment of women and the economically underprivileged. The biovillage model of rural regeneration designed by our Centre concentrates on alleviating poverty through asset building and sustainable human development.

Research results on gender roles and their impact are disseminated among both policy makers and the public to bring about awareness and attitudinal change.

The challenge of poverty-induced food insecurity is being met by the creationof livelihood opportunities based on ecotechnologies. The Integrated Intensive Farming System programme of our Centre pays concurrent attention to the creation of more jobs, income and food. It is designed to show the path to producing more from the available land and water resources inan environmentally benign manner. To convert the concept of equity in benefit sharing enshrined in the global convention on biological diversity into field level realty, a Technical Resources Centre has been set up for getting tribal and rural women and men recognition and reward for their invaluable contributions to genetic resources conservation and enhancement. Anticipatory research to meet the challenge of climate change and sea level rise is another prority and a genetic resource centre has been established to assemble donors of genes for tolerance to sea water intrusion.

Multi-media data bases on mangrove ecosystems, ecological farmers, eco-jobs and the intellectual property rights of tribal and rural women and men in relation to plant genetic resources are being maintained and continuously updated. Both traditional and contemporary forms of performing arts as well as mass media, are mobilised to give voice to the voiceless and to communicate the values and attitudes that lie behind the goal of sustainable development. We function as a Centre without walls, working in partnership with individuals and institutions with similar goals and ideals.■

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The Hindu
BUSINESS LINE

'Agriculture more effective in battling poverty'

Our Staff Correspondent
CHENNAI, Nov. 6

AGRICULTURE, rather than industrialisation, appeared to be more effective in eradicating poverty, said Dr. S. R. Hashim, member of the Planning Commission, in his keynote address at the Dr. B. V. Rao Memorial Workshop during the national seminar on 'Sustainable food security' organised by the M. S. Swaminathan Research Foundation (MSSRF), here on Wednesday.

Referring to a report compiled by an expert committee, he said the most industrialised States were also those with high levels of poverty. The poverty level in industrialised States such as Maharashtra and Gujarat was above the all India average.

In States such as Punjab, Haryana and Himachal Pradesh, the poverty level was much below the national average. Significantly, these were the States in which agriculture development had been rapid.

Since the Fourth Plan, there had been increased stress on agricultural production. The Green Revolution had focussed on areas where basic infrastructure and the potential for high production existed.

In the Ninth Plan, an interesting feature was that for the first time, the projected foodgrain supply was higher than the projected demand. Taking into account the observed growth rate in agriculture, the supply was expected to be around 224 million tonnes, and the demand at around 215 million tonnes.

He said the focus should now be on increasing income through increased employment. While the country had reached self-sufficiency in foodgrain production, the per capita availability of food had continued to remain around 500 gm since 1955. In the coming years, for sustained production, the need would be to exploit the potential in the less developed areas, he said.

The Minister of State for Urban Affairs and Employment, Dr. U. Venkateswarlu, said development of urban agriculture was on the anvil. The Centre was thinking along lines of establishing a green belt around major urban agglomerations. These would cater to the urban centres' requirements of agricultural produce and also serve as locations for establishment of processing centres for the produce.

These would thus serve as buffer zones which could provide livelihood to the rural masses who were increasingly migrating to the cities. The project was being examined by experts, he said.

Mr. Peter Rosenegger, FAO representative in India and Bhutan, said providing people with purchasing power and people's participation were the keys to ensuring food security.

M S Swaminathan

A symbol of humility and compassion

It was a bright sunny morning. And as usual I was early in my office trying to catch up with the electronic mail, I had only a few weeks earlier arrived for a short term assignment as a Visiting Editor at the International Rice Research Institute (IRRI) at Los Banos in the Philippines. No sooner had I settled in front of the computer terminal, when the then Director General, Dr M S Swaminathan, walked in. "Devinder, I need your help...."

Before I could nod in affirmation, he handed me a neatly typed set of papers, "This is my acceptance speech that I have to read at the time of receiving the World Food Prize at the Smithsonian Institute in Washington. Can you go through it and make some suggestions? See, if you think certain things are out of context and need to be deleted." And before I could reply, he was almost out of the office telling me that he would collect the papers in the evening.

I was certainly flabbergasted. To edit and improve the speech of one of the greatest scientist-administrator the world has ever known is a rare privilege. I finally did make

Inequitable development will lead to increased violence and social disintegration

two suggestions for inclusion in the speech and was equally surprised when he accepted them.

Those of us who have known him for long will find this to be nothing unusual. Dr. Swaminathan's greatest strength, more than his scientific achievements, lies in his unique brand of modesty and compassion..

A few months later, I was a witness to the tumultuous and tearful farewell that Swaminathan received at IRRI. For nearly a week before his departure from IRRI, after-completing an eventful tenure, farewell ceremonies had begun. I accompanied him to one such farewell party organised by the well-known Filipino legal luminary, Senator Angara, whose wife was an advisor to the then President Cory Aquino. The party, held at the Angaras' residence in a posh locality in Manila, was attended by a few of the who's who in the Philippines.

But it was IRRI farewell that remains embedded in my memor. IRRI was closed for this final ceremony, a day remembered as the MSS Day. All of us wore white T-shirts with a picture of smiling Swaminathan and 'MSS Day' inscribed on it. After dedicating the training hall in the name of the outgoing Director General, the farewell ceremony began with a traditional Filipino dance. The atmosphere was so emotionally surcharged that I found both Dr Swaminathan and his wife, Mina Swaminathan, wiping tears from their eyes several times.

It was after the formal ceremony was over, that I got a glimpse of the love and respect the local Filipino staff had developed over the years for Dr Swaminathan. Hundred of young boys and girls, working in various capacities at the sprawling IRRI campus, had lined up before Dr Swaminathan to get his autograph on the T-shirt they were wearing. For an agricultural scientists, to be treated like a film star or a popular political leader must have been a moving experience. And more importantly, to get accolades and an adulation of this magnitude and that too abroad, should be lesson for all those who are beginning to don scientific leadership.

Back home, Dr Swaminathan is once again deep into what he has always drawn inspiration from. This time he is not talking of the Green Revolution. He has gone a step ahead and now advocate an Evergreen Revolution. He feels that the growing rich-poor divide, jobless economic growth and the increasing feminisation of poverty, have highlighted the fact that development which is not equitable will also not be sustainable in the long run. Such inequitable development will lead to increased violence and promote social disintegration.

Such a paradigm shift in policy formulation in areas of concern both of science and society, Dr Swaminathan says, calls for a change in mindset among all professionals leading to viewing problems in a holistic or systems manner. Such a change in mindset is essential for ending the prevailing mismatch between the capabilities of uni-directional minds and the needs of multi-dimensional problems. A fragmented approach is not only widely prevalent with reference to ecological issues but also in other area of great social concerns. He illustrates this, with the question of women's empowerment which is often considered in isolation, without relating it to men's enlightenment and involvement.

Primarily to demonstrate the effectiveness of a holistic approach, Dr Swaminathan has embarked upon a "Hunger-free" programme for India's multitude of villages. The Tamil Nadu government has decided to launch Dr Swaminathan's initiative in some of parts of the State. He had already demonstrated the success of bio-villages in certain parts of Pondicherry Union Territory and is now focusing his attention on the traditional rights of the farming community in the wake of the increasing worldwide onslaught on monopolising the intellectual property rights in the hands of a few private companies.

Such is his inherent capacity to fight for the rights of the poor that he continues to wage almost a lone battle. Considering that the India polity and the scientific leadership is far behind in catching up with the futuristic vision for an equitable society, it must be a hard struggle for Dr Swaminathan. But then he goes on relentlessly, from one international forum to another; from advising one State government to chairing several National committees; and from one honour to yet another. Only Dr Swaminathan can do what he is doing. Perhaps, as an Indian agricultural scientist, Dr Darshan Singh Brar at the IRRI, once remarked: "He is neither a god nor a human being. He is somewhere above all of us and somewhere below the gods."

-Devinder Sharma

(Devinder Sharma alongwith GVenkataramani is presently working on a biography of *Dr M S Swaminathan*)

For sustainable agriculture

Blue Planet Prize for M. S. Swaminathan Research Foundation

F. J. KHERGAMVALA
in Tokyo

Your ancestors left the world in good shape, please do the same for us.
— Melanie Boyd, 11 years.

THE Chennai-based M. S. Swaminathan Research Foundation was awarded the Blue Planet Prize, instituted in 1992 by Japan's Asahi Glass Foundation. The Blue Planet Prize, which is recognised as the world's foremost privately-sponsored effort in recognising the work by individuals or organisations in solving global environmental problems through scientific research and application, was awarded to the M. S. Swaminathan Research Foundation (MSSRF) for "its contribution to solving global environmental problems." The prize, awarded to two recipients annually, comprises a certificate, Yen 50 millions (approximately $450,000) each, and a crystal ball trophy (denoting the earth as a clean planet), mounted on a stem and base of glass (denoting the need for clean water).

By special arrangement

Dr. M.S. Swaminathan (right), Chairperson of the M.S. Swaminathan Research Foundation, and Dr. Wallace Broecker at a press conference.

At a ceremony in Tokyo on October 31, Dr. M. S. Swaminathan accepted the prize on behalf of the institution he founded in 1988, partly from the prize money he won when he received the first World Food Prize in 1987. The M. S. Swaminathan Research Foundation became the first-ever Asian recipient of the Blue Planet Prize.

The MSSRF was selected for its "major achievements in realising sustainable agriculture and rural development through scientific research on ecosystems." Takashi Mukaibo, head of the prize presentation committee, described how tough the selection process had been: "The two annual Blue Planet prizes are given from a long list. This year there were 113 candidates (individuals and institutions) from 24 countries, which we scrutinised over six months."

The other recipient of the prize this year was Dr. Wallace Broecker, a Geology professor from Columbia University, U.S, better known for his work on ocean currents, climate change and the Broecker's Belt.

The acceptance speeches of both the recipients were marked by humility. Accepting the prize on behalf of the Foundation, Swaminathan said: "Our selection for the prize encourages and enables us to pursue this adventure with redoubled vigour and commitment." In fact, not once did Swaminathan speak of the honour bestowed in terms other than "us" or "we". Likewise, Broecker told the gathering: "I feel really odd, shy, being a man who everyday puts on his blue jeans and tee-shirt and gets to work, suddenly being treated like royalty."

Addressing a press conference before the presentation of the prize, Swaminathan lauded the sponsors for their efforts to promote environmental concerns by creating such awards. Broecker too echoed similar sentiments when he said: "In a world where economic achievements and defence and security grab the daily events, it is really good to see people turn their attention to long-term concerns."

Swaminathan's theme at various speeches was food security. Dwelling on the issue, he said that it was the responsibility of institutions like the MSSRF to heighten awareness among the public, which in turn would influence governments to implement the necessary measures. He said that governments need to initiate regulations to safeguard the environment, but "we as experts and institutions like ours must work on providing the government with options." Hence "the public, politicians and researchers must work in concert." Presenting a four-point agenda to confront an impending food and ecological crisis, he said that the first of the four areas was to lay the foundation for improving biological productivity with measures such as conservation of prime land. Conservation of biological diversity, increased use of biodegradable substances, and more studies on climate and radiation therapy were the other points of the agenda he presented.

This apart, both Swaminathan and Broecker expressed disappointment over the fact that very little had actually been achieved after the Earth Summit at Rio in 1992. Even Asahi Glass can be considered as something of an oddball in a country that despite having suffered from the ravages of atomic bombs and the Minamata disease, continues to support the perpetuation of nuclear weapons in the hands of a few. In fact, on the day the prizes were presented, the *Yomiuri Shimbun*, Japan's largest daily, reported that the carbon dioxide emission level in Japan totalled 343 million tonnes in 1994, second only to the U.S. "The emissions were equivalent to the total volume released in the African continent or South America," said a front-page news item. ■

Another laurel

ASHA KRISHNAKUMAR
in Chennai

FOR the eminent agricultural scientist Dr. M. S. Swaminathan, Chairperson of the Chennai-based M. S. Swaminathan Research Foundation, the announcement in June 1996 of the award of the Blue Planet Prize to the Foundation was truly a major honour. It was the first institute in Asia to win the prestigious award, which honours contributions to the resolution of environmental problems through scientific research and application.

Established as a non-profit and non-political trust in July 1988, the aim of the M. S. Swaminathan Research Foundation (MSSRF) is to harness science and technology for environmentally sustainable and socially equitable development. The Foundation's striking-looking building and compound is home to a diverse team of agricultural and social scientists involved in research on aspects of sustainable development.

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The M.S. Swaminathan Research Foundation's premises are home to a diverse team of experts involved in research on aspects of sustainable development.

What has nurtured the Foundation, apart from Swaminathan's passion for agricultural research, is the prize money from different awards he has received since 1987. The initial core funding for the MSSRF was from the World Food Prize (1987), the Tyler Prize (1991), the Honda prize (1992) and the UNEP-Sasakawa Environment Prize (1994), which together amounted to over Rs. 1 crore – a rare Indian case of personal generosity that benefits agricultural research on a significant scale, especially when funds for research in general are drying up in India.

Significantly, even the prize money that Swaminathan received from international awards he received prior to 1987 has been donated to various research institutions. For instance, he gave the $20,000 prize money from the Albert Einstein World Science Award to the University of Philippines to set up an Environment Chair in 1986.

A guiding principle of research methodology at the Foundation is the combination of frontier technology with traditional knowledge and expertise. Swaminathan describes the Foundation's strategy as three-fold. First, it aims at creating a centre without walls, one that works in close collaboration with other research institutions in the country without duplicating their work. Secondly, it attempts to identify and work in areas that do not receive the attention they deserve. Thirdly, it attempts to do work in the field of employment-creation, in this case the creation of jobs that do not affect natural resources adversely. Given this basic strategy, the Foundation focuses on five major programme areas.

The first is research on coastal systems. Coastal areas of the world have the highest density of population: 60 per cent of the world's population lives within 60 km from the sea. Despite this, integrated scientific attention has not been paid to research on coastal systems. The MSSRF has begun the Coastal Systems Research Project, which focuses research on 15-20 km of the sea surface and an equal stretch of the land along the shoreline. The basic objective of the Foundation's methodology in this regard is to recognise and strengthen the linkage between the livelihood security of the coastal communities and the ecological security of coastal wetlands, particularly the mangrove forests. The MSSRF is the only institution in the world to have a programme on Mangrove Genetic Resources.

The second programme deals with conservation and sustainable use of biodiversity. The MSSRF is the only Vavilov Research and Training Centre for Sustainable Management of Biological Diversity outside St. Petersburg in the U.S, the birthplace of N. I. Vavilov. To ensure equitable benefits from the utilisation of biodiversity among the local conservers, breeders and biotechnologists, the MSSRF has established a Technical Resource Centre. The Centre includes a living gene bank and a tissue culture facility to preserve rare and endangered species. The centre also promotes the conservation of endangered plant species and habitats, including the revitalisation of the *in situ* and *ex situ* genetic conservation traditions of local communities. The MSSRF has established a greenhouse for growing and multiplying endangered plant species of the Western and Eastern Ghats, listed in the *Red Data Books of Indian Plants*, published by the Botanical Survey of India. Also, realising that the intellectual property rights of the tribals living in remote areas, who are still cultivating traditional cultivars and serving as custodians of valuable genetic wealth, need to be recognised and rewarded, the MSSRF has started documenting the rare and endangered species and medicinal plants in the Eastern and Western Ghats. It has also set up a community gene bank to conserve and multiply these rare plant species.

The third area of research is ecotechnology, which involves the blending of frontier technologies (such as information technology and space technology) with the ecological prudence and practices of local communities. This blending is done by means of participation; it involves entire villages, called biovillages. In recognition of the role played by the MSSRF in developing and disseminating technology that is environment friendly, UNESCO and the Cousteau Society have designated it as the coordinating centre for the Asian ecotechnology network. The Foundation has recently started the J. R. D. Tata Ecotechnology Centre.

The fourth programme, called "reaching the unreached", attempts to take the benefits of scientific research to the economically and socially disadvantaged sections that are often bypassed by technological innovations. The fifth major programme area is informatics. The Foundation organises workshops, seminars and interdisciplinary dialogues in this area. The Foundation's Honda Informatics Centre provides researchers in agriculture and environmental sciences access to CD-ROMs and multimedia databases on the intellectual property rights of tribal and rural families, mangrove ecosystems, the ecological farmers of India and "eco-jobs".

The impressive infrastructural facilities of the MSSRF include laboratories, greenhouses, mist chambers, a genetic garden, a community gene bank and an endangered species enclave along with an excellent library with CD-ROM facility capable of accessing the minutest information on agricultural science and related technology. ■

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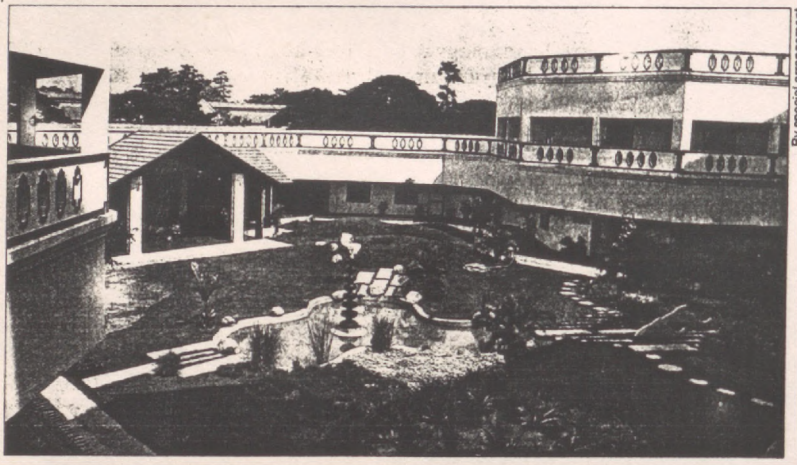

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Population and food security

By M. S. Swaminathan

WE now know that demographic transition leading to low birth and death rates takes place when an enabling environment where children are born by choice, prevails. The major components of such an enabling environment are also now widely recognised as female literacy and the status of women, infant and maternal mortality rates and health, nutrition, livelihood and ecological security for all and shared decision-making by couples. According to several estimates, the world population could increase to 10 billion by 2050. About 97 per cent of that increase will occur in the developing countries and two thirds of this growth is expected to take place in the cities. Hence, the urban poor will need special attention.

Food and drinking water are first among the hierarchical needs of human beings. This is why Thomas Robert Malthus in his Essay on Population published in 1798, wrote "the period when the number of men surpass their means of subsistence has long since arrived". Now, the global population is nearly six billion and yet famines of the kind that Malthus predicted have been averted in recent decades except in regions affected by ethnic or civic strife and/or prolonged drought or other natural calamities.

My colleagues and I at the Centre for Research on Sustainable Agricultural and Rural Development in Madras are currently engaged in designing a hunger-free district programme, starting with hunger-free villages and towns. This programme aims at freedom from hunger at the level of the individual, since intra-household variability in food intake exists, often to the disadvantage of women and girl children.

To eliminate endemic hunger at the level of the individual, it will be necessary to pay integrated and concurrent attention to the following:

Sensitise and mobilise public opinion through the mass media leading to appropriate political action. Achieve agricultural intensification and diversification, so that the income and employment potential of small farm agriculture is enhanced through economically and ecologically sustainable farm and off-farm enterprises. Ensure access to food at affordable prices both by maintaining food security reserves and by operating an efficient public distribution system. Ensure universal and compulsory school education. Develop an integrated health security system, involving attention to sanitation, hygiene, preventive and curative health measures, reproductive health and access to safe and acceptable contraceptive services. Initiate public action for providing (a) protective social security for the assetless and vulnerable sections of the population, such as employment guarantee and food for nutrition programmes; (b) promotional social security involving access to information, technological empowerment through training in new skills, credit and remunerative self-employment and marketing opportunities. Mobilise the voluntary sector and private sector industry for promoting literacy, ensuring health security and fostering a job-led economic growth strategy.

Even if food is available, the poor will have no access to it unless they have opportunities for remunerative employment.

Such a programme will succeed only where there is public commitment to political, social and technological empowerment of all citizens, and more particularly of the economically and socially disadvantaged people.

Recent predictions of the growing imbalance between our ability to produce food from diminishing land and water resources and expanding biotic and abiotic stresses point towards the incidence of serious famines if efforts in the area of population stabilisation do not bear fruit. Such predictions have been made from time to time during recent decades.

The famine prevention strategy of independent India has been very effective in avoiding calamities. Endemic hunger however persists largely due to inadequate purchasing power among those living below the poverty line. The hunger problem is thus better described in terms of million person years of jobs than in tonnes of foodgrains.

On the eve of the Cairo Conference, several dire predictions have again been made on the impending food crisis in developing countries and the consequent potential for widespread famines and starvation deaths. Such forecasts are based on the fear that the human carrying capacity of supporting ecosystems is being exceeded particularly in developing countries where most of the population increase is taking place. There is of course scientific basis for such apprehensions. In per capita terms, land, water and forest availability is shrinking. The green revolution technologies based on chemical inputs gave us a breathing spell for arriving at a balance between human population and the food production potential of the available arable land and water resources. But they have also led to adverse environmental repercussions. This is why Agenda 21 of the U.N. Conference on Environment and Development has placed much stress on the adoption of ecologically desirable technologies.

There can be enough food for feeding a global population of about 10 billion if a six pronged strategy is widely adopted. However, I must add that even if food is available on the market, the poor will have no access to it unless they have opportunities for remunerative employment. Hence sustainable food production and consumption need integrated attention in national and international food policies.

The six-pronged strategy is as follows:

1. The gap between potential and actual yields must be bridged with the technologies currently available on the shelf. In India, the average yield of rice from about 40 million hectares is only a little over two tonnes per hectare. This can at least be doubled. Therefore, through a combination of location-specific technologies, timely delivery of appropriate inputs and public policies in land reform, input-output pricing and marketing, it will be possible to tap the untapped yield reservoir currently existing in most farming systems.

2. Globally, over 15 per cent of good farm land is now degraded due to a variety of human induced causes. The highest priority will have to go for upgrading the biological potential of such wasted lands. The Desertification Convention can provide an opportunity for launching a mass movement for protecting and improving soil health.

3. Ecologically sound practices will have to be introduced both in agriculture and capture and culture fisheries. Here, Mahatma Gandhi's dictum "Nature provides for everybody's need but not for everybody's greed" will have to be kept in view while exploiting the resources of land, inland rivers and reservoirs and oceans. Programmes which are environmentally destructive and socially disruptive should be avoided.

4. Group cooperation among families with small holdings must be promoted so as to empower them with the economic and ecological advantages of scale in farm operations. This will be particularly important in water harvesting and efficient onfarm management of water, inland and coastal aquaculture, integrated pest management and improved harvest technology. This will also enable them to benefit from producer oriented marketing arrangements.

5. A new trade ethic is needed which leads to the industrialised nations buying agricultural commodities from the developing world at a fair price on a long term basis. Otherwise, several features of the World Trade Agreement particularly those relating to Trade Related Intellectual Property Rights, will work against the interests of the poor. Developing countries, which are predominantly agricultural both in economic and livelihood terms, should improve their agriculture and not depend on imports. Only then will rural employment and prosperity improve.

6. A new deal for the self-employed is needed through credit, technology, training, techno-infrastructure and trade. This will call for appropriate public and private action resulting in harmony between public good and private profit. Non-governmental organisations and private sector industry can play a pivotal role in this area.

At present, the number of people living on one tonne of foodgrains per year varies from one to six. If efficiently used and if health foods are encouraged, about four individuals can live on one tonne of foodgrains per year. This number will be three per tonne per year, where the plant animal-man food chain is widely prevalent. Therefore, to feed a population of about 10 billion, we will need about 3000 million tonnes of food grains. Producing this should be possible if we step up research and development efforts on sustainable intensification and diversification of farming systems. Diversification of food habits will further improve the nutritional status of children and adults.

(Excerpts from lecture at the International Conference on Population and Development in Cairo on September 9, 1994).

Sarvodaya or sarvanasha

The best tribute one can pay to the memory of K. Swaminathan is to promote an all-party commitment to our twin basic needs: a commitment to end all forms of social exclusion before the end of this century and to adopt a national convention on diversity and pluralism designed to promote understanding and tolerance of diversity in terms of religion, caste, gender, language and political belief, says noted agricultural scientist M.S. SWAMINATHAN.

TRIBUTE

ALL those who had the privilege of knowing Prof. K. Swaminathan are familiar wit h his brief but most thought-provoking letters and postcards. In a note to me written on September 6, 1990, K.S., remarked:

"Right from ancient times, our poets used growing biological models to explain and encourage social evolution (see Chapter X of Ramana Gita). Biological models depend on synergy and symbiosis for their success. These are also the attributes of a sarvodaya society. The choice before us now is between Sarvodaya and Sarvanasha"

This particular note was prompted by my asking him the previous evening when exactly Gandhiji propounded the concepts of sarvodaya and antyodaya. He immediately mentioned the Volume number of "Gandhiji's Collected Works" and almost the page number where I could find the required information. As a biologist, I know that the first casualty of old age is memory. Here was an extraordinary person to whom this normal biological rule did not apply.

The decision of UNESCO to declare 1995 as the "International Year for Tolerance" pleased him. Nothing in recent years had upset him more and practically destroyed his will to live than the politically engineered conflict between "Ram and Rahim."

May be because I am a biologist, his conversations with me always used to end with quotations relating to plants and trees. During one of my last meetings with him just a few months prior to his demise, he quoted the following verse of Joyce Kilmore.

"I think that I shall never see
A poem as lovely as a tree
A tree whose hungry mouth is prest
Against the earth's sweet flowing breast
A tree that looks at God all day
And lifts her leafy arms to pray
Poems are made by fools like me
But only God can make a tree"

I was amazed both at his memory and the appropriateness of the poem to the context in which he quoted it.

One date which was fixed in his memory was October 12, 1936, when my father, Dr. M. K. Sambasivan, died in Madras and his body was brought to Dharmalayam, the home of K.S. My two brothers, one sister and I were all very young at that time. It was K.S.'s intellectual stimulation and spiritual inspiration and my father's younger brother's (M. K. Narayanaswami) care and affection in addition to the enormous love of our mother which helped us to become whatever we are today. K.S. was very attached to my father (they had married sisters) and frequently referred to the eradication of the filarial mosquito in Kumbakonam during 1934-36, achieved when my father served as its Municipal Chairman, as an example of what can be accomplished if people cooperate. He often regretted that the "people power" mobilised by Gandhiji during the freedom struggle was being utilised after independence mostly for socially disruptive purposes.

Speaking at a Sunday meeting in 1972 at Ramana Kendra founded by him in New Delhi, K.S. posed the following question:

"The world had a right to look to independent India to provide the requisite educational, political, economic and administrative apparatus for shifting the foundations of human society from power to enlightenment. India seems to have failed the world, for the first great opportunity which freedom brought us has been thrown away. But has it failed? Must it be allowed to fail? Have we not another opportunity today?"

Answering this question, he said, "The death-dealing hand of power and the blindness of orthodoxy bring corruption into every *sangha*, into every institution, into every *dharma*. It is only the *Muktas*, the *Mumukshus* and the common people with their unspoilt goodness that can keep fresh and clear and strong the current of Indian Dharma." His faith in the capacity of the common people, particularly the poor and women, to rescue the country from moral corruption and social disruption were immense.

Twenty five years later, we can ask ourselves the same questions which K.S. asked in 1972. Is the all-pervasive corruption and hypocrisy which unfortunately now permeates every sphere of society, still reversible or are we heading towards moral, social and political disintegration? In my view, we stil have an opportunity to promote a sarvodaya society, since the greed revolution characteristic of the affluent sections of the society, is still somewhat localised. The poor and the youth are the two genuine majorities in the country. The emerging grassroot level democratic structures like panchayats and nagarpalikas, and our independent media and judiciary can help to resolve conflicts and promote love and understanding of diversity and pluralism in terms of gender, religion, caste, colour, culture, language and political belief. Democratic decentralisation provides opportunities for the generation of social synergy. Ruth Bendict in an article on Synergy (*American Anthropologist*, 1970, page 72) gave the following description of this phenomenon:

"Societies where non-aggression is conspicuous have social orders in which the individual by the same act and at the same time serves his own advantage and that of the group. Non-aggression occurs in these societies, not because people are unselfish and put social obligations above personal desires, but because social arrangements make these two identical."

High Synergy society is another name for Gandhiji's sarvodaya society. If in a sarvodaya society, individual goals have to be made to coincide with social goals,the question arises: "who is the individual whose interests have to be identified with the social interest? "In a conversation, K.S. explained that the individual has to be the poorest person in the society. In other words, antyodaya has to be the pathway to sarvodaya. If every elected panchayat and nagarpalika, whose composition is based on equal opportunities for men and women and for the socially under-privileged and the privileged classes, adopts the achievement of Sarvodaya through antyodaya as its principal goal, progress in poverty eradication can be fast.

Past experience shows that while the power of social capital generated through social synergy can help to accomplish seemingly impossible tasks, human ego serves as the major obstacle to realising this possibility. This is why K.S. considered Ramana Maharishi's message that ego is the greatest impediment to the spiritual and mental growth of the individual very important. I have not so far met anyone who was so self-effacing and egoless as K.S. He was one of those rare individuals whose thought, word and deed were the same. I also do not know of anyone who fitted more closely with the following attribute desired by Swami Vivekananda in a good human being.

"In this world, take always the position of the giver; give help, give service, give any little thing you can; but keep out barter."

K.S.'s optimism for a happy and great India was limitless. He had faith in the inherent goodness of the common people. This faith and this optimism were shaken by the events in Ayodhya. This is why he felt that our society is now at the cross-roads and we will have to choose between sarvodaya and sarvanasha. If there is one lesson to be learnt from the life and work of K.S., it is that true happiness comes from giving and not aquiring, from caring and not from exploitation and from self-transcendence and not self-gratification or self-glorification.

The best tribute one can pay to the memory of K.S., is to promote an all-party commitment to our twin basic needs: first, a commitment to end all forms of social exclusion before the end of this century, second to adopt a national convention on diversity and pluralism designed to promote understanding and tolerance of diversity in terms of religion, caste, gender, language and political belief. Such an all-party commitment and convention should help to ensure that the concept of unity in diversity, an essential requisite for a strong and united India is not lost for ever and that the new millennium begins with a more egalitarian and tolerant society.■

The Hindu BUSINESS LINE

Talking, and acting too

Rasheeda Bhagat

WAY back in the 1980s, when he was Director-General of the International Rice Research Institute in Manila, one day, he got a call from the Association of Women in Development saying it had selected him for its annual award. Despite his protests that it should go to a "top woman leader", the Association insisted on giving it to him in recognition of his "outstanding contribution to the integration of women in development".

By being the moving spirit behind the

♀GENDER JUSTICE

organisation of a three-day workshop in Chennai last week to deliberate on the need to increase the presence of women in science and technology, the agricultural scientist, Dr. M. S. Swaminathan, proved that he richly deserves labels such as "gender sensitive" and "gender friendly".

Not too many men, or women for that matter, know that while in the Planning Commission, Dr. Swaminathan was solely responsible for introducing an entire chapter on Women and Development for the first time in the Sixth Plan (1980-85).

And while delivering the first Zakir Hussain Memorial lecture, he had made a passionate plea for getting women away from the knitting and sewing syndrome. "Let us not put our women in stereotyped pigeon holes, " he had said.

"One working in the field of agriculture cannot but become more sensitive to questions of gender equality, because women account for much more difficult and backbreaking jobs in the fields. In Filipino, there is a song which goes... "Planting rice is no fun".

Studies by the M. S. Swaminathan Research Foundation have shown that "most poor women work 18 hours a day. Of this, seven-eight hours go to economic activity, which fetches them a meager Rs. 15-20. The remaining time is taken up in household chores and other activities such as collecting fodder, fetching water, and so on.

We decided that the major thrust of our research should be to reduce their hours of work on the one hand, and add economic value to their work on the other. When they have no assets to talk of in terms of land or livestock, some value asset has to be given to their time and labour. The challenge is to find out how to do this and leave them time for recreation".

Gender disparity in minimum wages

That naturally brings us to the most shameful aspect of the value our government *officially* attaches to the hours of work put in by women. How gender unjust our official administration can be is seen from the fact that the minimum wages law gives Rs. 20-25 to women, compared to Rs. 30-35 to men. And this under the presumption that men *supposedly* do more strenuous work than women!

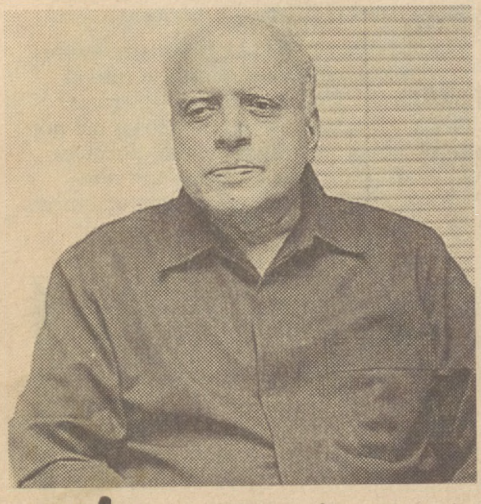
But to give the lie to this presumption, one just has to spend some time in the villages watching the men and women working in the fields. And a man none less than Dr. Swaminathan says spontaneously that it is the women who do "back-breaking jobs in agriculture".

What does he feel about this gender disparity in the minimum wages?

"I do not think it is fair at all and justice demands that the wages be equal. The presumption behind this policy is that men supposedly do more hard work, but I do not think there is basis for this.

Most countries have equal wages for equal work. Only in Kerala, the minimum wages for men and women are almost the same. It is no secret that even in the most advanced countries women do much more work because of childcare and responsibilities of the home.

"Looking at the gender difference in terms of home responsibilities, it is important that



Dr. M. S. Swaminathan... for a separate S & T agenda for women.

we make no difference between the minimum wages of men and women. If the Government ensures adequate wages for women, it will mean the entire household will benefit from this equality, because it is no secret that a woman's *entire* wage goes to the family. Whereas for the man this is not always true".

The women of this country, who are livid with the Deve Gowda Government for putting the Women's Reservation Bill on the backburner, will be happy to know that the soft-spoken charming agricultural scientist is on their side.

" Look at what happened to the Women's Reservation Bill for legislative bodies. The whole mindset has to change when we look at gender issues. When the whole idea came up, I was so happy, and even when it was referred to a select committee of Parliament, I thought it would come through.

But, unfortunately, the Deve Gowda Government wriggled out of it at the last moment. Had we passed that legislation, we would have been a great nation.

"There is no point in stalling the issue by saying that women in panchayats are controlled by their husbands. That may be true today, but unless you set the process for change in motion, how will social change come about?"

Science related to economic empowerment

About women in science and technology, Dr. Swaminathan underlines the need for more and more women taking to science, "especially science related to technology and science related to economic empowerment of women. Even if it means that their keeping flexible hours because of family responsibilities".

Dr. Swaminathan stresses that it is crucial to help women enter newer areas of science and technology. "We have to tackle this issue at two levels. First, the mindset of the parents has to change. They should not think that the ultimate objective for the daughter should be to do a B. Com. and then train as a secretary.

And, second, our personnel policies have to change too, beginning with the Government itself. When women scientists enter bodies such as the ICMR and the ICAR, the younger women who want to have one or two children should be given five years' sabbatical. A child does need greater attention from the mother during the first few years. And, after all, home-making is also a service".

There are many women who feel that thanks to the biological role women play in child delivery, and the mother's natural instinct to give the best to her child in terms of time and care, women will lose out in the race for equality if they keep seeking 'concessions' or exemptions in the form of special working schedules.

In an era when working women feel guilty even to harbour any ambition to get to the top of their professions, because professional growth is invariably linked to hard work and long working hours, it is heartening to have a votary of women's rights in a man like Dr. Swaminathan.

"I would argue for not only flexi-timings for women in any profession but also for flexi-place and flexi-duration of the jobs given to them. And this is even more pertinent when we talk about rural women and women in agriculture.

We have Krishi Vigyan Kendras for women, and other training institutions can also be set up exclusively for women. Co-educational institutions are good, but there is also the need for women's institutions because there are certain regions where it is difficult for women to go and train or work along with men, " he says.

The best thing about the man is that his talk goes beyond the word to the action level. His institute is going to take up a separate agenda on science and technology for women.

The bottomline of this agenda will be designing simple gadgets which take the drudgery out of the work traditionally done by women. "We want to optimise energy conservation when it comes to the labour put in by women, " he adds.

More power to his science for doing this!

THE FINANCIAL EXPRESS

CHENNAI

TUESDAY, DECEMBER 17, 1996

Asian women scientists' meet on sustainable growth at MSSRF

FE NEWS SERVICE
CHENNAI, DEC 16

LEADING women scientists and technologists in the Asia Pacific region are meeting at the M S Swaminathan Research Foundation (MSSRF) for three days from Tuesday to mobilise S&T for sustainable and equitable economic growth and adopt a plan of action.

According to a press release from MSSRF, this workshop on 'Women scientists and technologists in the Asia Pacific region' is organised by the United Nations Development Programme (UNDP) and UNIFEM with the agenda:

I National experiences in promoting women's access to scientific and technological knowledge and practice. The issues for discussion are:-

- ❖ expanding girls access to basic education in science and technology
- ❖ improving access to higher scientific and technical education
- ❖ measures to improve and increase knowledge and experience-exchange among women scientists.

II National experiences in promoting gender equality and standards of living. The topics for discussion are:

- ❖ improving food and nutrition security
- ❖ reaching the vulnerable and excluded groups
- ❖ improving health security and overcoming occupational health hazards

III National experiences in using science and technology to promote women's participation in economic growth. The issues for discussion are:

- ❖ reducing drudgery in work (household agricultural, and economic sectors)
- ❖ increasing women's access to: economic opportunities
- ❖ access to economic and financial resources
- ❖ entrepreneurship
- ❖ linkages with research institutions.

IV National experiences in specific scientific disciplines for improving standards of living and quality of life, particularly of poor women. Issues for discussion are:

- ❖ bio-technology
- ❖ health science
- ❖ material science
- ❖ info-technology
- ❖ computerisation.

V Setting priority objectives and formulating policies and strategies. Issues for discussion are:

- ❖ S & T in national economic development policies
- ❖ science policy that responds to the people's needs and that closes gender gaps
- ❖ setting targets and goals
- ❖ resource mobilisation
- ❖ replicating cataytic pilot programmes specifying benchmark indicators.

VI Adoption of an Asia Pacific plan of action. Issues for discussion are:

- ❖ identification of pilot programmes
- ❖ advocating the replication and mainstreaming of successful programmes
- ❖ country level plans of action
- ❖ sub-regional and regional plans of action
- ❖ networking and exchange of information
- ❖ next steps.

Scientists and technologists from China, Fiji, Indonesia, Malaysia, Mongolia, Nepal, Pakistan The Philippines, Sri Lanka, and Vietnam, besides those from India, and the Assistant secretary General of the UN and Assistant Administrator of UNDP, Nay Htun, will be participating in the meeting.

A public discussion on 'Women and Science and Technology' is being organised on December 19 at the Central Leather Research Institute.

Swaminathan Foundation to impart training on agro-biodiversity conservation

EXPRESS NEWS SERVICE

KALPETTA, Dec 27: The first advisory committee meeting of M S Swaminathan Research Foundation Community Agro-biodiversity Centre was held at the Hotel Harithagiri here today.

Eminent scholars from various fields participated in the meeting which discussed various aspects of its programmes during 1997-98.

It was decided to prepare training modules and extensive literature in Malayalam for use in schools and colleges as well as panchayats and organisations representing society.

Steps will be taken to identify suitable persons to impart training to serve as members of the agro-biodiversity conservation corps with the help of local community leaders.

A survey of endangered species and measures to protect them through appropriate conservation and multiplication techniques will be adopted by the centre.

Dr Swaminathan delivered the introductory speech at the agro-biodiversity programme.

The foundation will also organise training courses for interested non-governmental organisations and for university students in bio-systematics as applied to genetic resources conservation, besides serving as a resource centre for the implementation of farmers' rights and all the equity provisions of CBD.

An important programme area of the foundation relates to the conservation, valuation, sustainable and equitable utilisation of biodiversity within the broad area of biodiversity with emphasis on plans of current and potential economic values.

This segment of bio-diversity is now known as agro-biodiversity, since its ultimate goal is domestication and cultivation of economical useful genetic material.

The foundation undertakes to promote the conservation of genetic resources and to end inequity in the sharing of benefits of the Food and Agricultural Organisation and International Commission on Plant Genetic Resources.

This commission developed the concept of ''farmers' rights'' for according recognition to the contributions of farmers and tribals to genetic resources conservation.

The committee members, N Madhavankutty, deputy resident editor, *The Indian Express*, Finance Secretary S Varadachari, District Collector Devendra Kumar Singh, RDO Puneethkumar, Dr K N N S Nair, Planning Board member, Dr Pushpangathan, director of TBGRI, Dr K S S Nair, Dr R D Iyer, Prof M K Prasad, P Krishnan and others spoke.

Centre director S John Joseph welcomed the gathering.