

It is important for the development of young women physicists to see successful women active in research, teaching and leadership. Scientific and professional societies can and should play a major role in increasing the number and success of women in physics. Each society should have a committee or working group that is responsible for such issues and that makes recommendations to the society as a whole. At a minimum, societies should do the following things: work with other organizations to collect and make available statistical data on the participation of women in physics at all levels; identify women physicists and publicize them as role models; include women on programme committees and as invited speakers for society-sponsored meetings and conferences; and include women on editorial boards of society journals. Additionally, national planning and review committees should include women, and awards of government funds should only be made to organizations and institutions that make gender equity a part of their policies.

The follow-up

Finally, it has been recommended to the organizers of the conference, viz. IUPAP as an international organization of physicists which exerts considerable influence on the physics community through its

statements and activities, to communicate the results of this conference to international scientific organizations in other fields, and also to continue its working group on women in physics and empower it to establish an international advisory committee with a member from every participating country. It is hoped that this group will form the basis of a network that can continue the work of increasing the number and success of women in physics.

It is expected that these recommendations will be discussed at the IUPAP general body meeting scheduled to take place at Berlin in October this year. Meanwhile, it is heartening to note that a few of the measures suggested at the meeting are already in place in India. Administrative initiatives have led to increased age limits for women post-doctoral CSIR fellowships as well as for the DST Young Scientist programme. DST (Department of Science and Technology) has also formed a thematic subgroup on technology transfer and capacity-building for local level planning, which is discussing steps to be taken to provide support for women to have physics and technology as a career. Some measures have already been taken up to deal with the issue of sexual harassment, not for women scientists alone, but for all women at their workplaces. The government of India has strong guidelines about harassment and the Supreme

Court has legislated that women's cells which deal with such cases should exist in all state and centrally-funded institutions. However, further efforts are needed before such cells become operational and effective in academic institutions. Other issues also need to be tackled at the administrative and institutional levels. These include measures to help women overcome the crucial barrier between the post-doctoral and faculty positions, and also to increase their representation in decision-making bodies to levels which more truly reflect the high degree of achievement reached by many women. Institutional infrastructure needs to be improved to make it women and family-friendly. Further action needs to be taken before women can participate in advancing the frontiers of science and technology on an equal footing with men. We hope the coming years will bring further initiatives in this direction.

Rohini Godbole*, CERN, Theory Division, CH-1211, Geneva, Switzerland and Centre for Theoretical Studies, Indian Institute of Science, Bangalore 560 012, India; **Neelima Gupte**, Department of Physics, Indian Institute of Technology, Chennai 600 036, India; **Sumathi Rao**, Harish-Chandra Research Institute, Allahabad 211 019, India

*For correspondence.
e-mail: rohini@cts.iisc.ernet.in

Dichotomy between grain surplus and widespread endemic hunger*

A consultation to suggest methods of ending the prevailing 'dichotomy between grain surplus and widespread endemic hunger' was recently organized by the National Academy of Agricultural Sciences (NAAS). The consultation was chaired by V. L. Chopra (President NAAS). Since this issue is of great national concern and significance, a brief resume of the major points made at the consultation is given here.

Both in terms of incidence and absolute numbers, India has the largest number of children, women and men going to

bed undernourished in the world. Although the Food Corporation of India has currently over 65 million tonnes of food grain stocks, and there are numerous safety net measurers of the Government of India for the economically and socially underprivileged sections of the society, the FAO has listed India as one of the countries which has not been able to achieve the target of the World Food Summit of 1996, in terms of reducing the number of undernourished. This calls for serious introspection of both our strategies for fighting hunger as well as of our ethical commitment to the cause of hunger-free India.

The prevalence of endemic hunger should no longer be accepted as unavoid-

able. The social security systems for the able-bodied poor should include a food component in the form of an open-ended *National Food Guarantee Scheme* on the model of Maharashtra's employment guarantee scheme. The public distribution system should be strengthened and should be designed to reach the unreachable. On the basis of ICMR norms, about 158 million persons, belonging to about 32 million households, fall under the category of ultra-poor and need immediate assistance to help them to lead a healthy and productive life. They are best identified by *Gram Sabhas* and local bodies. They can be issued with *Food Entitlement Coupons*, which should entitle them to be provided with work

*A report on the meeting organized by the National Academy of Agricultural Sciences at New Delhi on 11 July 2002.

under the Food Guarantee Scheme. The total requirement for such an open-ended employment-cum-food security project may need at the maximum about 10 million tonnes of food grains per year. Meeting this need is well within our national capacity.

Consumption inequality decreases as income increases. Diversification of diets also happens with increased purchasing power. Unfortunately, inequality of income distribution is growing, resulting in increasing marginalization of the poor, with children and women suffering more. A *job-led* economic growth strategy will help to reduce protein-energy malnutrition, and at the same time stimulate farming systems' diversification. Public investment in rural infrastructure should be greatly increased.

A *whole life-cycle approach* should be introduced by providing a horizontal dimension to the numerous on-going vertically structured programmes supported by the central and state governments, as well as by bilateral and multilateral agencies. At the local level, the management of a life cycle-based nutrition security system, beginning with pregnant women and extending up to old and infirm persons, is best left to the *one million elected women members of the Panchayats*.

Decentralized procurement and decentralized storage will help to minimize transport and transaction costs. Uttar Pradesh, Madhya Pradesh, West Bengal and Tamil Nadu have accepted the principle of a decentralized procurement system. The storage can be done through a national grid of *Community Food Banks* (CFBs) managed by self-help groups. The construction of CFBs can be done at the local level under the 'food for work' programme. CFBs can help implement the social safety net programmes in an effective, economical and transparent manner. We must end the prevailing mismatch between production and consumption as soon as possible.

Short-term problems should not blind us to long-term realities. Population is growing and per capita land and water availability is decreasing. We have to produce more, but produce it differently – in a manner that high yields can be obtained in perpetuity without associated ecological or social harm. Farming systems' intensification, diversification and value addition are extremely impor-

tant to generate the needed on-farm and non-farm employment. There is also an urgent need for greater attention to the nearly 100 million hectares of rainfed land. Better dry-farm techniques are available. They offer great opportunities for increasing the production of pulses and oilseeds. Taking the easy option of importing large quantities of pulses and oilseeds will only increase poverty and unemployment in dry-farming areas. Productivity improvement in both irrigated and rainfed areas will help increase marketable surplus at the household level, and thereby the cash income. The gap between potential and actual yields even with the technologies currently available is high in most farming systems. Livestock husbandry and livelihood security tend to be closely correlated in the case of poorer households. There is greater equity in livestock ownership compared to land. Hence, support services should be organized for small-scale livestock farming families in the form of Fodder and Feed Banks and health care and insurance facilities. With increasing urbanization, the demand for animal products will grow. Accelerated agricultural progress is the best safety net against hunger and unemployment.

There is an *urgent* need for spreading *quality literacy* throughout the country, which will help sensitize both producers and consumers on issues relating to food safety, *Codex alimentarius* standards and sanitary and phytosanitary measures. In addition, there is need for greater research in the field of breeding crop varieties having the quality characteristics needed for food processing and export. If productivity and quality are improved, farm income will go up substantially.

Sustainability of food security measures should be ensured. PDS at the local level should provide reasonable income to those operating the ration shops. CFBs may receive their initial food supply from the government, but subsequent replenishment should come from local communities. A wide range of grains and wild foods can be stored in CFBs. This will help widen the food security basket. Also, the silos can be locally manufactured, thus providing another source of rural employment in the non-farm sector. Further, the silos will help reduce post-harvest losses considerably. Both private and public sector institutions and compa-

nies have the necessary technical capability to launch the CFB movement.

The organization of a National Consortium for Sustainable Food Security will be useful to mobilize the necessary technical, financial and managerial resources to eliminate endemic and transient hunger. Indian farmers have shown that they will produce more if there are opportunities for assured and remunerative marketing. Agriculture is the backbone of India's food, livelihood and ecological security systems. Therefore, India's agricultural image within and outside the country needs to be refurbished. At the same time, chronic, hidden and transient hunger should be eliminated as soon as possible. It will be appropriate if NAAS promotes the organization of a National Consortium for Sustainable Food Security consisting of representatives from the FCI, CII, FICCI, ASSOCHAM, NHDB, NDDDB, APEDA, TISCO, Hindustan Lever and appropriate agricultural universities and ICAR institutes for fostering sustainable food security, both in the hunger hot spots of India as well as in other countries in Asia and Africa.

There is no time to relax, both on the production and consumption fronts. The stock of 65 million tonnes should not lull us into complacency. Concurrent attention to production and consumption is important. Enhancing production through an evergreen revolution is a priority task. However, eliminating widespread endemic hunger is both a national responsibility and an ethical obligation. A universal and user-sensitive public distribution system, food guarantee scheme, CFBs and various other food entitlement projects like *Annapoorna*, *Antyodaya Anna Yojana*, Integrated Child Development Service, Gramin Rozgar Yojana, etc. need to be implemented in an integrated manner, so that the goal of hunger-free India can be achieved. Nutrition status will, however, continue to fall, unless the purchasing power of the poor is increased. Hence, *livelihoods for all* should be the bottom line of all national development and import and export policies.

M. S. Swaminathan, M. S. Swaminathan Research Foundation, 3rd Cross Street, Taramani Institutional Area, Chennai 600 113, India
e-mail: msswami@mssrf.res.in