

TASK FORCE 2 “GLOBAL ISSUES RELATED TO FOOD PRODUCTION SECURITY AND TRADE”

EXECUTIVE SUMMARY

In the present paper, which has been developed on the basis of the report presented at the Beijing meeting of the Task Force 2, some contentious issues are posed as questions, rather than reflecting only one point of view.

1. The World, as a whole, has been making steady progress albeit slowly towards improved food security and nutritional status during the past half a century. The progress has been uneven with many countries and population groups remaining unable to access the food produced. Humanity is thus still faced with the stark reality of a chronic under-nutrition affecting some 840 million people, 20 percent of the population of the developing countries, as many as 37 percent in sub-Saharan Africa and still more in several individual countries.

Agricultural products like cereals besides vegetables, pulses, legumes, fruit, nuts, roots, tubers, oil-seeds, spices are directly consumed as food. Alternatively, cereals and some of these crops are fed to animals to get food products like milk, meat and others. Fish from both fresh and marine waters and sea weeds; poultry, pigs, goats, sheep and land based animals make up other components of the food basket. Humans require from these different foods, a balanced nutritious diet comprising carbohydrates, proteins, fats, vitamins and minerals. Sufficiency in quantity and quality both make the food basket complete.

Water produces food grains and animal foods. It takes 1 to 3m³ of water to produce 1 kg of vegetarian food, but 10-to 20m³ of water to produce 1 kg non-vegetarian food. Embedded water in producing the food or other products can be termed as **Virtual Water**. Therefore, the concept is that when a country trades such food, it really trades water.

2. The technical background document No 12 of World Food Summit (WFS, 1996) defined **household food security** as ‘a situation in which all households have both physical and economic access to adequate food for all members, and where households are not at a risk of losing such access’. There are three dimensions implicit in this definition: **availability**, **stability** and **access**.

Adequate food availability means that, on an average, sufficient food supplies should be available to meet consumption needs. The stability refers to minimising the probability that in difficult years or seasons, food production might fall below consumption requirements. Access draws attention to the fact that, even with bountiful supplies, many people may still go hungry because they do not have the resources to purchase the food they need. Default in access is closely related with poverty, which is often defined as a function of the inability to consume and invest.

Further, **Food self-sufficiency** means the satisfaction of food needs as far as possible from domestic supplies with minimal or nil dependence on trade. The concept of **food self-reliance** takes into account the possibilities of international trade.

All in all, food sufficiency or reliance supported by requisite governance i.e. conduct of national affairs on various fronts, leads to **food security**.

3. It took about 50 centuries for the world, from the dawn of civilisation, to reach the population of 1 billion around 1830. It took another century to reach 2 billion marks in 1930. Three billion people occupied the world in 1960, 4 billions in 1975, 5 billions in 1986 and 6 billions in 1999. The world population is 6.5 billion already (2005). Though there is an expectation that the global population growth rate would decline from present 1.3 per cent to below 1 per cent by 2020, the median variant of world population projection by United Nations suggests a figure of 8.5 billion people for 2025. Most of the addition will be in developing countries. In 1985, 75 percent of the world’s population lived in developing countries. It will rise to 83 percent by 2025. Regionally, the population in Asia will nearly double to over 4 billion, while that in the sub-Saharan Africa will more than triple from 420 million in 1985 to nearly 1.3 billion in 2025.

In the second half of last century food production consistently outstripped population, so that in average people are eating better today than they did few decades ago. Notwithstanding this, as we have already said, presently 840 million people, mostly rural poor in both developed and developing countries, still suffer hunger. The new challenges therefore, will be to look critically and focus on the aspect of not only increasing the production for the teeming billions but also addressing the issues of the rural poor in the developing world by measures that are sensitive to their situations.

Doubling global food production in the next two decades, which means an average increase of 50% every generation, may be required in view of the following arguments:

- (i) world population is likely to increase from current 6.5 billion to 8.5 billion in 2025;
- (ii) presently world food production is on decline with the exception of a peak in 2003-04
- (iii) world food stocks declined down to 411 million tones (estimate) of food grains in 2004 (June 2005);
- (iv) annual growth rate of agricultural production is also declining from 3% in 1960s to 2% during 1980-1992 and further declined 1.8% is expected by 2010;
- (v) urban population is likely to increase from present 31% to 57% by 2025 resulting in a changed pattern of demand due to changes in life style; incase under nutrition there will be an increase in food demand with better income;
- (vi) as communities develop they tend to consume and waste more food;
- (vii) communities where there is presently a sizeable vegetarian groups, a tendency to become non-vegetarian is likely as their socio-economic status goes up; this will also require an increased demand of grains as feed stuff for producing more non-vegetarian food (beef, chicken, fish and pork).

Considering all the above, an estimated 70% increase in food production may be required to cater to the increase in population and a 30% increase may be required to satisfy other arguments stated under (v) (vi) and (vii) above.

So, as one point agenda, the world food supplies must nearly double during the next two decades to banish hunger and undernourishment from the world.

4. Until the middle of the 20th century, expansion of cultivated area roughly kept pace with population growth. But in the last 40 years, the doubling of cereal output came from the three sources: expansion of cropped and irrigated area, increased intensity of land use mainly through expanded irrigation, and the consequent yield increases with the help of improved management and high yielding varieties.

To gather the objective of doubling the food production, though an efficient ecosystem management would enhance the yield basket, the role of agriculture (especially irrigated land) will be crucial. Thus, doubling of food production no doubt has still to come more from increased productivity and expansion of irrigation where water and land potential is still available (as in several populous developing countries). The challenge is to realise it, while sustaining the natural resource base.

The notion that the world would by now be eliminating the scourge of hunger and under-nutrition has so far proven overly optimistic. This seems to be largely because emphasis was shifted for the last decade by some, away from development and improvement of infrastructures to only management improvement and non-structural measures, which take longer to show results and in many cases are insufficient interventions. Both ways have to continue to be followed.

World Cereal Production has been declining since 1998 (with exception of 2000-01 and 2003-04), whereas utilization has continued to increase, which means that the World Cereal Stocks are on decline. In fact, the Global Cereal Food Stocks in 2003/2004 point to a significant draw down for the fourth consecutive year, reaching by the end of 2004 the value (forecast) of 411 million tones, corresponding to 18% of the world yearly production forecast for that year (2258 million tones). This percentage is considered the minimum necessary to take care of lows in

yearly production due to climate changes / natural disasters / wars etc., so all efforts are to be made to avoid further reduction of the stocks in the next decades. Due to the uncertainties regarding in particular the effects of climate change, **the question arises whether it is advisable to increase the stock of foodgrains globally of say another 5%, bringing it to 23%, in the perspective of achieving a reasonable food security by 2025.**

5. Basically there are three sources of growth for food production.

Since food yield response to irrigation is almost double as compared to rain-fed agriculture and consequently human societies will continue to rely on areas under irrigation for food security, the first source of increased food production would be the continued development and expansion of irrigation and drainage facilities. Presently 277 Mha of land worldwide is irrigated and 190 Mha is drained, accounting respectively for 18 per cent and 12 per cent of total arable and cropped area (1534 Mha). This means that crops are grown on 1087 Mha without a water management system. Therefore, there is tremendous scope to increase area under irrigation and drainage, which requires **building the dams** necessary to develop the presently un-harnessed resources, especially in arid-semiarid regions like South Asia and Sub-Saharan Africa where water potential is yet to be fully tapped: if we don't do this, by 2025 one-third of the population of the developing world may still have to face water shortage.

The second source is the reduction of the gap between potential yields and the average yields of food crops. This can be accomplished through better and optimum management of nutrients, improved agronomic practices, better management of soil and water resources and by reducing losses caused by diseases, insects, weeds and abiotic stresses.

The third source of increase would be through the development of crop varieties with higher yields and yield stability. Plant breeders must use the conventional breeding methods as well as modern tools of biotechnology to develop crop varieties with higher yields and more durable resistance to diseases and insects to reduce crop losses. Thus good crop and water management with new crop varieties and fertilizers in addition to good governance would lead to maximisation of food production, sufficiency and security.

The country case studies suggest the following issues / approaches / policies that could be considered responsible for achieving food security: (1) restructuring of the public finances; (2) conducive institutional framework; (3) research and dissemination of new technologies; (4) emphasis on antipoverty policies; (5) holistic approach to agriculture; (6) provision of irrigation and high yielding varieties, fertilizers and pesticides; and (7) extensive social safety net's.

Research and development (R&D) plays a crucial role in agricultural development by increasing agricultural production. If productivity increases are to become instruments of food security, it is necessary to: adopt IWRDM approach, ensure access to water, devote attention to labour-intensive practices, and bridge the gap between laboratory/research and field/farmers. The funding support for agricultural development has been declining. Therefore developed nations will have to be encouraged to increase funding under ODA and the governments in developing countries will have to provide more funds for R&D in order to continue efforts in providing new technology.

6. **Could agricultural biotechnology be used to develop new crop varieties to alleviate food insecurity and to prevent poor yields of farms of the world that keep poor farmers poor ?**

For sure biotechnology is one of the tools to solve problems in agriculture, health and in environment protection. It is a powerful tool for designing crops suited for specific requirements. This revolution in agricultural biotechnology can be harnessed to serve the food and nutrition needs of the world's poor. However this topic is still somewhat controversial, since it is feared by some that the agricultural biotechnology is unstable and poses hazards to health and biodiversity: thus ways of utilising agricultural biotechnology in a safe and beneficial manner will have to be determined, and this requires enhanced research and care before releasing new biotech varieties. A healthy and nutritionally fed population is indispensable for economic growth and development. Health and nutritional status affect the capacity to learn, which in turn determines productivity and economic growth.

Trade and WTO in view of the implication on agriculture vis-à-vis food security will play a major role in future. The outcome of Uruguay negotiations was the Agreement on Agriculture that aimed to discipline trade in agricultural commodities. Commitments under the Agreement on Agriculture relate to market access, domestic support and export subsidies. Other commitments that may have important implications for agricultural sector relate to sanitary and phyto sanitary (SPS) measures, trade related intellectual property rights (TRIPS), and anti-dumping. In view of commitments under Agreements on Agriculture, the developing countries may take the following course: resist introduction of hidden subsidies; take a proactive – not a passive role; ask for internationally determined norms on sanitary and phytosanitary safeguards; insist on closer scrutiny of the non-product specific subsidies in developed countries; ask for better market access for products; insist on giving priority to food sufficiency, as long as 50% or more of workers depend on food production for their livelihood.

7. In conclusion, ICID Strategy for Food Security may comprise the following.

Those countries (Sub-Saharan Africa) having food deficiency, low GNP, low water resources development, high population and with poor governance will have to depend on **aid** for sometime to come. **Investments in infrastructure and water resources development** are required together with steps to **improve water use efficiency**, transport infrastructure, flood management and erosion control. Strategies to control population, especially in least developed countries have to be evolved and implemented; otherwise all efforts towards development will get neutralised. Countries like India and China, though food self sufficient, are still food insecure due to low-middle GNP, high population and evolving governance. They also need more investments and **better governance**. Countries with high GNP can import food (**Virtual Water Import**) and countries with surplus food can export food (**Virtual Water Export**). Most developing countries and all least developed countries however, may not be able to practice virtual trade due to low GNP.

ICID Strategies For Global Food Security

Category of Countries ¹	Food Self Sufficiency	Economic Status (GNI)	Population	Status of WRD	Governance	Strategies
<i>Least Developed Countries</i>	Deficient ²	Low	High	Low	Deficient	Aid, Investment, Develop Water Resources, Improve Efficiency, Population Control Virtual water-Import
Emerging Developing Countries	Sufficient	Low and Upper Middle	High	Medium	Evolving	Investment, Develop Water Resource, Improve Efficiency, Population Control
Developed Countries	Surplus	High	Low	Adequate	Adequate	Trade ,Virtual water- Export

1 Categories of countries arranged from Deficiency to surplus food self sufficiency.

2 Some countries, like oil exporting West Asian countries and Japan may not be food self sufficient but they can practice virtual water – food import, due to their high GNI and still be food secure.

By the year 2025 per caput food supplies will have increased and the incidence of under-nutrition may have been almost removed from the world. However, parts of South Asia and Latin America and the Caribbean could still remain in a difficult position. Also, a part of the sub-Saharan Africa would probably not be food secure unless concerted action is taken by all concerned on IWRDM.