Welcome Address of Mr. D H Pai Panandiker, Chairman, ILSI-India at The International Conference on "Biotechnology Based Sustainable Agriculture"

(Dec. 19, 2009)

It is a pleasure for me to welcome you to this Conference on "Biotechnology Based Sustainable Agriculture".

This Conference is sponsored jointly by International Life Sciences Institute-India, a branch of ILSI global, and ILSI International Food Biotechnology Committee. The Conference is co-sponsored by Department of Biotechnology of Ministry of Science and Technology and Indian Council of Agricultural Research.

ILSI is a non-profit, worldwide foundation to advance understanding of scientific issues relating to nutrition, food and water safety, toxicology, risk assessment and environment. ILSI has special consultancy status with FAO and is affiliated to WHO as a non-governmental organization. ILSI's Food Biotechnology Committee has made significant contributions to the development and harmonization of food safety assessment principles for crops derived through biotechnology and has provided access to up-to-date scientific information to interested groups around the world. ILSI-India carries forward ILSI agenda in the context of Indian conditions.

This Conference is the third in the agricultural biotechnology series that ILSI-India has organized. The focus in this Conference is on sustainability of agricultural growth without any irreversible damage to the eco-system and to human and animal health.

Indian agriculture is at crossroads. The Green Revolution reached a plateau at the beginning of this decade. Food grains production has since been increasing at about 1.2% per year, nearly the same as the growth of population. This increase has been brought about essentially by additional irrigation and fertilizer use. Irrigated area has increased at about 1.2% and fertilizer consumption at 5% per year. Further expansion of irrigation is not easy and more intensive use of fertilizers is not desirable.

Agricultural production also remains vulnerable to fluctuations in monsoon. This year the monsoon was inadequate and irregular and the summer crop, as a result, is likely to be down 20%. It is, therefore, important to also identify ways to make agriculture less vulnerable to seasonal fluctuations in monsoons.

With the low growth in production India may become a net importer of food grains from net exporter it was a few years back. To ensure food security therefore it is important to look at new options, principally new technologies which are beneficial to farmers and acceptable to consumers.

There are not many effective and sustainable technology options available to enhance agricultural growth. One option obviously is biotechnology application to agriculture particularly transgenics. The application, so far, has been primarily in respect of herbicide tolerance and insect resistance. What is even more important for India is to develop varieties that are stress tolerant considering the limitations of land and water use. There are also non-transgenic biotech approaches for enhancing conventional farming like marker assisted selection as also other genomic technologies.

It is more than 12 years now that GM crops came to be commercialized. Since then the cultivation of GM crops has progressed rapidly with increase in production and income and reduction in the use of pesticides and CO_2 emissions. The main crops have been cotton, maize, corn and soyabean. A study made by Dr. Graham Brooks brought out that in the first 11 years of GM crops worldwide:-

- The number of farmers cultivating GM crops increased to 120 million and the area under cultivation to 114 million hectares.
- The increase in agricultural production met physical energy requirements of 310 million people for a year.
- The additional global income from GM crops was \$ 33.8 billion.
- 53% of the gain from GM crops accrued to developing countries.
- 43% of the gain was due to higher yield and 57% to cost saving.
- The reduction in pesticides used was 286 million KG, and
- The reduction in CO₂ release was 14.8 billion KGs.

GM crops are not new to India. India has the fourth largest area under GM crops. However, the whole of this area, is under cotton. There are also other crops like brinjal and mustard which are likely to receive approval for commercialization.

What is important for sustainable agriculture is GM technology to improve productivity and nutrition content of staple foods. Equally, there is need for better understanding and use of biomic technologies for enhancing conventional farming which is bound to be the mainstay of agriculture for a long time.

This Conference will look at all these issues to identify the best approach to make Indian agriculture sustainable and ensure food and nutrition security. We have excellent speakers from India and abroad and I am sure we will have fruitful discussions and constructive recommendations.

The Union Minister of Agriculture Mr. Sharad Pawar could not be present here today due to other important work he had to attend to. He has however asked me to send him the recommendations of this Conference to help design a constructive agricultural policy for the future.