INAUGURAL ADDRESS

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It is a matter of great pleasure for me to extend, on behalf of the ICAR and on my personal behalf, a warm welcome to all, especially to our very distinguished delegates who have traveled from various parts of the world to participate in the Conference. I am glad to share with you that the Conference is being held at a time when our Central Institute on Buffalo Research has completed 25 years of its fruitful existence. It is a pleasant coincidence that International Buffalo Conference on ‘Optimizing Buffalo Productivity Through Conventional and Novel Technologies’ is being held in India in the Silver Jubilee year of CIRB.

The livestock sector in India has registered a consistent rate of growth rate of 4%. The rapid growth in livestock sub-sector is desirable for several reasons. This sub-sector employs 11.4 million people in principal status and 11 million in subsidiary status. The smallholders and landless labourers together control about 71 per cent of cattle, 63 per cent of buffaloes, 66 per cent of small ruminants (goat and sheep), 70 per cent of pigs, and 74 per cent of poultry. Livestock is, thus, an important source of livelihood for smallholders and landless labourers. Therefore, the rapid growth of this sub-sector benefits the poorest households the most because livestock contributes nearly half of the total income of the smallholders. This sub-sector also has

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1 International Buffalo Conference on “Optimizing Buffalo Productivity Through Conventional and Novel Techniques” NASC Complex, New Delhi on 01 February 2010
a special role in promoting gender and social equity. About 60 per cent of the total workers engaged in this are women.

The FAO reports mention that about 1.3 billion people currently have to survive on less than US$1 a day. As about 50 to 75 percent of these extreme poor depend on agriculture as part of their livelihood, agricultural development can make a major contribution to poverty reduction. Livestock rearing has remained the most effective employment generation and livelihood security enterprise. As an agricultural product with relatively high income elasticity, livestock are particularly attractive as a means for rural households to participate in urban-based economic growth. Milk provides relatively quick returns for small-scale livestock keepers. Smallholders produce the vast majority of milk in developing countries where demand is expected to increase by 25% by 2025.

Milk is the primary source of animal protein for the vast vegetarian population of the country. Thus the demand of milk is ever increasing and that buffaloes are considered as the preferred milch animal throughout the country. Today over half of the total milk produced in the country, 56-57% is being contributed by buffaloes. With such high contribution of buffalo, today India is the largest milk producer in the world producing about about 105 million metric tones p.a and the estimates are that by 2020 India would require about 140 million tonnes of milk and milk products. The per capita consumption of milk in India has improved from 124 g/person/day in 1950 to 241 g/person/day at present.

In spite of being the preferred animal for milk, meat and draft, the productivity per buffalo remains low in the country. This needs to be improved considerably to make buffalo keeping more viable and economic enterprise and to meet the ever increasing demand for quality milk, meat and products. Scientists and experts attending this conclave must develop and employ systems to forecast diseases to ensure taking timely preventive measures; to check reproductive and productive losses due to seasonality, infertility and abortions; to evolve and apply techniques for increasing nutritive value of available grasses, feeds and fodders. However, some of the major issues being faced in buffaloes is with regard to reproduction (silent heat,
repeat breeding and anestrus condition), feed requirement (high dry matter intake) and mortality in young calves.

India is blessed with rich and diverse buffalo germplasm, that we consider as a treasure trove to support our breed improvement programmes. Domesticated animals comprise 7.8 per cent of total world cattle breeds, 26.4 per cent of buffalo breeds and 8.3 per cent of goat breeds. Well descript and diverse buffalo breeds of India, include Murrah, Nili Ravi, Bhadawari, Pandharpuri, Jaffarabadi, Surti and semi-wild Toda in Tamil Nadu.

Haryana state is the home tract of Murrah buffaloes – a world famous buffalo breed. This breed needs conservation as well as propagation for the benefit of farmers throughout the country as well as in rest of the buffalo world. There is pressing demand for Murrah germplasm from several countries including China, Brazil, Egypt, Bulgaria etc. Several countries have already used Murrah germplasm for upgrading their native buffaloes. However, with scant availability of frozen semen from highly pedigreed and progeny tested buffalo bulls, meeting the demand for elite buffalo germplasm within the country is a challenge in itself. This needs urgent attention of the planners. The Murrah tract in Haryana is contributing a great deal in meeting this national demand through dissemination of superior germplasm to other states, yet there is lot to be desired and we remain much short of the total requirement of elite breeding buffalo bulls and semen. Govt. of India has initiated a National Project on Cattle and Buffalo Breeding towards achieving this goal. I, therefore, call upon the scientists, field functionaries and policy makers to keep this responsibility uppermost in their minds while formulating schemes and projects for buffalo development. I am happy to note the trend of farmers also contributing in this national cause by rearing good male calves to maturity for use as breeding bulls.

The country has rich source of progeny-tested buffalo semen. Exotic bull stations are maintained by some central and state government farms. A national policy for animal breeding and semen collection, storage and exchange is needed. Policy-setting and effective plan of action for potential indigenous breed improvement in livestock viz. cattle, buffalo, goat etc are essential for which quality semen production, storage, transportation and effective insemination system are required for different areas particularly in remote areas. In this endeavour, sampling of existing genetic variability and utilizing the potential livestock in both conventional and artificial ways requiring an effective system.
Realizing the importance of buffaloes, the ICAR has launched a buffalo genomics programme as well as buffalo semen sexing. Under the Network Project on Buffalo Improvement we have increased the number of participating centres so as to cover all the major buffalo breeds of the country. Research programmes is also in place for developing molecular diagnostics and vaccines and also strengthened the disease surveillance and monitoring system. The use and development of livestock breeds and the conservation of valuable breeds that are of little current interest to livestock producers need to be upgraded. A range of rapidly developing molecular and reproductive biotechnologies has important implications for AnGR management, as has a range of policy, legal and institutional issues. In spite of all this, it is being increasingly felt that the pace of developmental work being undertaken for preservation, development and propagation of elite germplasm in buffaloes needs a fillip.

Climate change, in particular rising temperatures, can have both direct and indirect effects on animal production. Heat stress (caused by the inability of animals to dissipate environmental heat) can have a direct and detrimental effect on health, growth and reproduction. Changes in the nutritional environment (e.g. the availability of livestock feeds, and the quantity and quality of livestock pastures and forage crops) can have an indirect effect. These effects are expected to be most dramatic in temperate regions. Climate change may affect zoonoses (diseases and infections which are naturally transmitted between vertebrate animals and man) in a number of ways. It may increase i) the transmission cycle of many vectors and ii) the range and prevalence of vectors and animal reservoirs. In some regions it may result in the establishment of new diseases. Changes in feeding practices, changes in the ecological situation in which animals are reared and increased irrigation (all consequences of climate change) may exasperate these effects. A National Network Project entitled 'Impacts, Adaptation and Vulnerability of Indian Agriculture to Climate Change' was launched by the Indian Council of Agricultural Research with focus on a comprehensive understanding of the impacts of global changes on different sectors of agricultural production such as crops, fish, and livestock. The programme is being implemented by the ICAR in a network mode involving 21 research institutes and SAUs. Basic and Strategic Research projects have been launched to understand and mitigate biotic and abiotic stresses in crops, increase feed and energy efficiency of dairy animals, reproductive efficiency of buffalo and small ruminants, and to save seeds and agri-produce.
A major constraint in improving the buffalo productivity is the diminishing feed and fodder resources. Our animals face a shortage of at least 44 mt of dry fodder and about 157 mt of green fodder. With only 4% of the total cultivable land under fodder production there is a need to strengthen this area by developing strategies for conservation fodder blocks and fodder banks and establishment fodder warehouse. Resource based region specific feeding strategy has to be developed in order to address the critical area of feed input.

The economic losses on account of disease are mainly in form of loss in milk production, reduction in working ability of draught animals, and reduction in body weight, leading to reduced meat yield. In addition, the hide are not accepted by the countries, which are free from the disease, and thus cause impediment to export. Biotechnology has been recognized as one of the tools in development of new generation drugs and vaccines/diagnostics, vaccinology and drug delivery system. Recent advances in molecular biology have improved existing technology to the extent that it can be used to produce purified immunogenic protein essential for protection. Monoclonal antibodies have been developed against variety of agents responsible for disease and also for hormones, which are being used for diagnosis of various reproductive disorders. ELISA based techniques have been developed for precise and rapid diagnosis. Nucleic acid probes are specific and can search for complementary sequence from the standard DNA/RNA. Incentives and support need to be provided to enhance public-private partnerships for development of veterinary pharmaceuticals and herbal drugs sector in the country. Use of molecular tools and techniques for diagnostics and therapeutical purposes for effective animal health management needs to be promoted.

Growing population and incomes, along with changing food preferences are increasing the demand for livestock products. While meat consumption has been relatively static in the developed world, annual per capita consumption of meat has doubled since 1980 in developing countries. Nevertheless, increasing livestock production and the safe processing and marketing of hygienic meat and meat products represents a big challenge. Future increases in per capita income and changing consumption patterns would lead to still higher demand for livestock products, which would give further boost to this sector. Over the last decades, the food chain approach has been recognized as an important step forward to ensure food safety from production up to consumption. This approach requires the commitment of all players in the food
chain, involving producers, traders, processors, distributors, competent authorities as well as consumers.

It is reported that given alternative options, 40 per cent of the farmers would leave farming (NSSO, 2005). This indicates eroding confidence of farming community in agriculture. This must be restored by increasing agricultural productivity and income, especially of the marginal and small farmers whose economic viability is increasingly threatened. This situation can be reversed through developing, transferring and providing appropriate technologies, inputs and services to farmers and improving input-use efficiency, particularly in vast rainfed and other risk-prone agro-ecological regimes.

We expect that the International Conference, will be discuss and come out with solutions will emerge for some of the problems plaguing buffalo farmers and their profitability. The organizers deserve all praise for taking the imitative to organize this International Conference on Buffalo with an appropriate and relevant theme, during the Silver Jubilee Year of the Institute. I wish all success to the deliberation.

Thank you!