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Hybrid Rice in the Philippines:

Progress and New Horizons

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FOREWORD

Leocadio S. Sebastian, PhD

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In the Philippines, comprehensive hybrid rice RD & E (HRP) by the Department of Agriculture and DA-PhilRice was initiated in 1998 to strengthen national capacity for hybrid rice development and use. Ultimately, the Hybrid Rice Program expects to contribute significantly to the national objective of attaining self-sufficiency and food security. Hybrid rice offers higher income opportunities for farmers either through commercial rice (F_1 cultivation) or seed production. The first generation crosses of rice varieties with different genetic make-up yield at least 15% higher than modern inbred or conventional varieties under the same input levels. In large-scale hybrid rice technology demonstration trials conducted from 1998-1999 across the country, for example, the rice hybrids PSB Rc26H or *Magat* and PSB Rc72H or *Mestizo* outyielded the best inbred varieties by an average of 15 to 25% or by 0.78 to 1.27 metric tons (mt) per hectare.

This increase in rice production can eliminate most importation that the country resorts to annually. A one-ton increase in rice production per hectare in even only 50% of the country's 2.7M ha of harvested irrigated rice area, for example, would result in an additional harvest of 1.35M mt of palay that is equivalent to 0.88M mt milled rice at 65% milling recovery. This extra rice production would be worth US$264M and would offset most of the rice importation that the Philippines procured in the past. Farm income would also increase by P2.43 to P11.84 billion, with farmers planting hybrid rice earning an average additional income of P6,800 to P8,800 per hectare. Hybrid rice growers who produce at least one ton F_1 seeds per hectare, on the other hand, will earn P44,000 more per hectare than inbred rice seed growers. Since the technology consumes more labor than inbred rice production, more employment opportunities shall be generated in rural areas leading to poverty alleviation while decongesting urban areas.

In 1998 also, the Food and Agriculture Organization of the United Nations (FAO) awarded a Technical Cooperation Project entitled "Strengthening National Capacity for Hybrid Rice Development and Use" to strengthen the country's capacity to develop and use hybrid rice technology for increasing rice production.

OPENING REMARKS

Sang Mu Lee, PhD

Representative to the Philippines
Food and Agriculture Organization of the United Nations
106 Amorsolo St., Legaspi Village, Makati City
(delivered by Dr. Nguyen Van Nguu)

On behalf of the Food and Agriculture Organization of the United Nations, I would like to express my sincere thanks and appreciation to the Philippine government through the Philippine Rice Research Institute (PhilRice) for co-sponsoring this Workshop on Hybrid Rice Research and Development. This Workshop is the second gathering of national experts in hybrid rice research and development, seed production, and technology promotion under the joint auspices of FAO-TCP/PHI/8821 "Strengthening National Capacity for Hybrid Rice Development and Use", and PhilRice.

I was informed that this workshop is aimed at (1) determining the progress attained in hybrid rice technology generation, (2) looking on developments on hybrid rice seed production and promotion, and (3) planning new activities and initiatives to address present and future challenges. The main emphasis will be in the preparation of a national strategy for the successful utilization of hybrid rice technology in the Philippines.

We are pleased to note here the substantial presence not only of our partners from the government but also from the private sector. The enthusiasm that you have brought to this workshop reflects the high level of commitment on the part of the government, particularly the Department of Agriculture, to attain self-sufficiency in rice production within the next three years.

Ladies and gentlemen, the implementation of this workshop is very timely considering that the Philippine government is in the midst of its major program of alleviating poverty and attaining food security for the population. It gains added significance as it comes just before the implementation of the World Food Summit plus Five Conference, scheduled to be held at the FAO Headquarters in Rome in November 2001, where heads

of state and government will be invited to review and give new impetus to the implementation and attainment of the World Food Summit Plan of Action of 1996.

I am sure you will agree with me that the first responsibility of any nation to its people is to ensure adequate food supply and to sustain food security. Yet many countries are finding it difficult, even impossible to do so. Where production has not kept pace with demand, nations are compelled to commit scarce foreign exchange to importing food. This reinforces the vicious cycle of debt and dependency. Although food production in the Philippines this year is generally good, in too many countries particularly in Africa, it has remained inadequate. The prospects for the years ahead remain grim unless food comes first on the list of national priorities and world leaders commit themselves to implement the World Food Summit Plan of Action through national plans of action.

Despite the fact that the world food supplies have grown faster than population, persisting problems of poverty and malnutrition result in nearly 20% of the inhabitants of developing countries, including the Philippines, being undernourished. Lack of access to food persists even when food is available in the market. In order to supply food and reduce poverty in a global population that is expected to reach 8.3 billion by the year 2025, and with ever higher pressures on the resource base, the world will need substantial technologies to be developed to increase agricultural productivity.

Science-based agricultural technologies, developed through agricultural research, are essential to increasing productivity while maintaining or, better, improving the sustainability of natural resources and the environment. Research scientists must provide stronger support to policy developments that can ensure better quality and access to food.

I wish you could agree with me that there is a growing global recognition that the food scarcity problem that is now confronting many Third World countries is not so much due to technological factors, but rather to the existence of a fundamental imbalance in the agricultural

and rural development policy-making processes. The policies give too much political weight to priorities and needs set by more organized and vocal sections of civil society, and not enough to the priorities and needs set by rural food producers, especially small-scale farmers who produce the bulk of domestically-consumed food. As it is now becoming abundantly clear, if the latter be given the right policy and price incentives, adequate food will be produced and the problems of food insecurity will be solved.

One of the major outputs expected of this workshop is a national strategy for hybrid rice research and development. With regard to this, you should consider that the research agenda must be clearly defined and articulated in order to capitalize on new developments and to increase the impact of agricultural science. A combination of market reforms, trade liberalization, greater concern for resource and environmental sustainability and a more active private sector are placing new demands on research priorities in both developed and developing countries. The scientific community is being called upon to broaden its research agenda to give greater attention to the alleviation of poverty, environmental and resource management, preservation of biological diversity, and policy analysis.

The challenges that confront agricultural research, that determine the global research agenda which have implications on national research, can be summarized in three questions: (1) *can agricultural research provide the technology to maintain or increase productivity growth to meet the rising demand for food at declining prices?* (2) *can technological change in agriculture induce an evolution of rural economies to provide employment and incomes to the poor?* and (3) *can these goals be achieved in a manner that protects and enhances the natural resource base upon which agriculture depends, in a climate of growing competition from non-agricultural sources for those resources?*

The ability of agricultural research to respond to these questions would depend on the choices of research investments and strategies made by concerned institutions.

The views expressed in this message are by no means exhaustive. The Philippines' most promising assets are its abundant natural resources, not to forget that the richest of these is its people with their wonderful blend of ancestral wisdom and youthful vitality; trained professionals who are determined to modernize the country; the countless small-scale farmers, foresters, fisher folk, the women who are so often neglected, but whose courage and silent determination to support their families is a powerful reason for hope. The Philippine Government should make full use of these assets but the first prerequisite for success is political commitment. The government must understand that agriculture is the only possible springboard for progress. It must act immediately, which means implementing the options that give the agricultural sector priority in policy and budgetary matters.

The sustainable growth of agriculture and food production is a long and exacting task. It is an undertaking that involves what the FAO has called the Four I's (*incentives, inputs, institutions,* and *infrastructures*) of agricultural development.

The lessons and experience to be derived in the next two days will be very important for the future of food and technological evolution in the country. Hybrid rice is one of the advanced technologies available in the country at present, and all over the world, for obtaining higher yield potentials than those of the present modern high-yielding varieties, although there are some other developments like Super Rice that IRRI has also been developing. Also with biotechnology's transgenic rice, the new potential they claim is 40-50% higher but this is not yet ready for farmer use. Meanwhile, experience in China, and recently in India and Vietnam, shows that hybrid rice could be used by farmers to increase rice production and yields by about 15-20%. Therefore, I congratulate PhilRice for organizing this significant initiative. I wish you fruitful and productive deliberations.

Thank you very much!