memo

Double Spacing

Genetic Conservation and Rice Improvement

I was distressed to read the ~~your~~ article ~~the~~ entitled " The Great Gene Robbery " which appeared in your issue of March 23-29, 86, not ~~so much~~ so much because of the ~~wild~~ wild allegations and distortions of facts contained in it including an attempt to defame me and question my patriotism, but more because of its potential for scuttling the good progress being made by our farmers, extension workers and scientists in improving rice production in the country. ~~particularly in recent~~

The progress in improving rice production largely through yield improvement has been particularly impressive during the VI Plan period and I

feel legitimately proud and happy, since as Member in charge of Agriculture during the ~~preparation of~~ formulation and finalisation of the VI Plan, I ~~took particular often~~ spent considerable time in with the experts of the State and central Agricultural Governments in developing strategies for increasing rice production. Let the facts speak for themselves

Rice Area, Production and Yield

(From Annexure I of Vol II of the Seventh Five Year Plan - 1985-90).

	First Plan (1951-56)	~~Fifth~~ Plan (1974-79)	Sixth Plan (1983-84)
Area	30.6	39.3	41.00
Production	25.0	47.3	59.80
Yield	817	1,203	1,458

Area : million hectares
Production : million tonnes
Yield : Kg per hectare.

According to the Annual Report for 1985-86 of the Department of Agriculture and Co-operation of the Government of India, rice production during 1985-86 is likely to be of the order of 61.5 to 62.0 million tonnes. The realisation of the planned growth rate of 3.9 percent in foodgrains in the VI Plan represents a significant departure from the observed long term growth rate of less than 3 percent per annum. In this progress advance in rice production has been a major contributory factor. The rice stocks with the Food ~~Crop~~ Corporation of India alone exceed 10 million tonnes. Considering the facts that the entire world trade in rice during 1985 was about 11 million tonnes and that just 20

years ago, we had to import over
~~to~~ 10 million tonnes of wheat
from the United States under the
in order to be able
PL. 480 programme to feed a much
smaller population, we can be
proud of what our farmers have
done with appropriate scientific
and public policy support.

The reward for such achievements
is the insult showered by your
article on our farmers and scientists.
high yielding
Had there been a "selection"
Taichung Native 1 "resistant to diseases
and pests", it is rather surprising
that no attempt was made to test
it in farmers' fields. Rice is
a self-pollinated plant and seed
multiplication is very easy. In fact
in 1964-65, when we put up a
few National Demonstrations in farmers'

fields in North India, farmers multiplied the seeds so fast that the area under high yielding wheat varieties increased from 4 to 4 million hectares between 1965 and 1970. Farmers know which variety is good and which is not. We have seen a cotton variety like Bikaneri Nerma spreading fast without any assistance from Government agencies, because farmers liked it for its earliness and the consequent ability to escape pink boll worm attack. I do not know the facts about the various claims contained in the article on the alternative pathway of increasing rice production but the Central Rice Research Institute, Cuttack and

the Indian Council of Agricultural Research should be able to confirm or deny. What I wish to stress is the fact that my 40 years of experience of working with the Indian farmer has taught me that farmers will seldom let go an opportunity to derive benefit from improved strains, provided they are convinced that the new strain represents an improvement over what he has been cultivating. However, for farmers "seeing is believing" and this is why in 1964 I proposed the National Demonstration Programme designed to provide an opportunity to scientists to directly test and prove the validity of their experimental findings in poor farmers' fields.

Farmers everywhere know what is good for them. Hence, contrary to the assertions made in the article under the title "Decline and Fall", the scientists of ~~breeders of~~ the strains developed by the International Rice Research Institute (IRRI) and approved for cultivation ~~by the~~ after extensive testing by the Philippine Seed Board occupy today about 80 percent of the rice land in that country. IRRI itself does not release varieties. Every country has its own procedures for varietal release and ~~For~~ the State and Central Variety Release Committees in India do an excellent job in evaluating new material and deciding which ones should be recommended for cultivation by farmers

All material, whether from within the country or outside, are tested in the same ~~manner~~ manner in numerous trials both in experiment stations and farmers' fields. I am informed that ~~The recommendation that IR-8 should be released was came came from~~ over 300 high yielding strains ~~have been~~ developed and/or ~~and~~ tested by the scientists of the All India Coordinated Rice Improvement Project of the ICAR have been released by the Central and State Variety Release Committees for cultivation in different parts of the country during the last 20 years: A few IRRI-bred strains like IR-8 and IR-36 are among them.

It is an insult to Indian agricultural scientists to say that they ~~do~~ abdicate their thinking and analytical capacity ~~in favour of~~ because of pressures from ~~out~~ out-side. Indian scientists

like their counterparts around the world use all methods of crop improvement. One of important methods of crop breeding is the introduction ~~of~~ and testing material developed elsewhere ~~Pla~~ Successful plant introduction sometimes helps to purchase time. Let me illustrate this in the case of wheat and rice.

The International Rice Commission of FAO set up soon after World War II came to the conclusion on the basis of an analysis made by Dr. K. Ramiah the doyen of Indian rice science, that unless the native indica rice varieties (i.e., those with non-sticky grains) are able to develop the same ability as japonica (sticky rices) strains to respond to good soil fertility and water management, ~~it was~~ the

average yields will continue to stagnate in indica rice growing countries like India, Bangladesh, Burma, Thailand, Indonesia and the Philippines at ~~out~~ about 1 ton per hectare. This is why the indica - japonica hybridization programme referred to in your article was started at Cuttack in 1950 under the sponsorship of FAO. In 1961, when the IADP or Package programme was initiated to optimise the returns from water in areas with irrigation facilities, it was found that the ~~variety~~ then available varieties which were tall and leafy would fall down or "lodge" when given even 20 to 30 kg of Nitrogen per hectare. On an average the rice plant needs about 20 kg N to make 1 ton of rice. Hence, for a 5 ton crop, we need to provide the plant with about 100 kg Nitrigen.

Under the integrated nutrient supply system recommended by the ICAR, part of this nutrient requirement can be given through bio-fertilisers, ~~and~~ green manures, organic matter and part by mineral fertilizers.

Thus, experience during 1961-65 showed that the Package Programme had one important missing ingredient, namely a variety which can respond well to the rest of the package. It is this missing ingredient that was ~~supplied~~ provided through the High yielding Varieties Programme initiated in 1966. Both in wheat ~~All our production plans, whether~~ and rice, it is our scientists who identified the 'winners'. For example, Kalyan Sona and Sonalika wheats were selected by Indian wheat breeders from material received

from Dr. N. E. Borlaug in Mexico, much before they were released in Mexico.

IRRI or any other international institute can provide material and offer suggestions but the final decisions on ~~and~~ variabal choice, production strategies, resource allocations and input and output pricing policies are ~~dis~~ all made ~~by~~ by the concerned State and Central government agencies. IRRI is strictly non-~~pol~~ commercial, non-political, ~~scie~~ autonomous scientific institution, governed by an International Board of Trustees, presently headed by Prof. Kenzo Hemmi, ~~and~~ Japanese An eminent Agricultural Economist. India has been represented on the IRRI Board right from 1960 when the Institute was founded in the Campus of the University of the Philippines at Los Banos. The Indian Trustees

Shri K. R. Damle – 1960 - 63

" P. N. Thapar – 1964 - 66

Dr. B. P. Pal 1967 - 70

~~Dr. S. V. S. Sha~~

Dr. N. Parthasarathy 1967 - 69

Dr. S. V. S. Shastry 1970 - 73

Shri C. Subramanian 1971 - 74

Dr Sukhdev Singh 1975 - 78

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~~IRRI~~ Originally ~~to~~ established by the Rockefeller and Ford Foundations in cooperation with the Government of the Philippines, IRRI became in 1971 one of the international centers supported by the Consultative Group on International Agricultural Research (CGIAR). CGIAR is a consortium of Governments, Development Banks and Foundations cosponsored by FAO, UNDP and World Bank for harnessing science for improving

the productivity, stability, profitability and sustainability of major food crop production systems.

IRRI works with all rice growing countries, irrespective of the political system under which they operate. Thus, there is excellent cooperation with Cuba, Soviet Union, Vietnam, China, North Korea and Kampuchea, in addition to all other rice growing countries in Asia, Africa, Europe, Latin America, North America and Australia. Since the article says that "overnight" became an employee of a private foundation so closely allied to American capitalism and US foreign policy interests" I should reproduce in full two recent statements by the Prime Ministers of the People's Republic of China (which is the largest grower and consumer of rice), and

of Vietnam (Box).

Mention has rightly been made in the article to new problems of pests and diseases which constantly arise all over the world, when agriculture starts moving towards the goal of higher productivity. When the ecology of the rice field changes, some of the pests which were important before vanish and some new ones appear. It is unfortunate that the article asserts that ~~contains errors about the possible source of~~ the new pest and disease problems are because of seed introductions from IRRI. I am not an entomologist or a plant pathology and hence is not competent either to affirm or deny the allegations. Therefore, I will like to quote the views of the Central Rice Research Institute, Cuttack, in on this question

Pages 4-b (Pl. type here A & B from the attached pages

In my Presidential Address to the Agricultural Sciences Section of the Indian Science Congress at Varanasi in January, 1967, I warned that ~~the initiation of exploita~~ a dynamic agricultural production system cannot be sustained without a dynamic research and extension support. This is because when we provoke change in a stagnant production system [we should remember that the annual growth rate in food grain production during 1900 – 1950 was 0.3%.), we will face both positive and negative consequences. (see: Science and Agriculture ~~in India~~ published in 1980 by the Indian Society of Genetics and Plant Breeding on behalf of 21 professional societies) This is why we need much more support for agricultural research in regions ~~of~~ like eastern India, where progress ~~has~~ so far has been very limited