

Rice-Wheat Information Sheet

No. 10

Hello and Good-bye

This issue of the RWIS is the last one I shall prepare as Interim Facilitator. I will be returning to Canada on 5 May after completing my assignment to get the R-W Consortium under way, and to help arrange for the appointment of a Facilitator. I wish the Consortium well as it moves forward.

Facilitator

Dr Abrol is well established in the FU Office. The furniture has arrived, direct communication links are working, and the Interim Facilitator has departed. Dr Abrol is finding the new position gives him more freedom to decide what needs to be done, rather than continuously responding to the demands to attend meetings and appointments set for him by others. I am convinced that he will make an excellent Facilitator after watching him interact with Consortium members and others over the past month.

Communication

Please note that the FU now has a direct phone line 91(11)464-4971. The FU can still be reached through the ICRISAT Delhi Office number 91(11)461-5931 in an emergency. Presently an e-mail link direct to the FU is being established. In the meantime the FU can be reached through ICRISATND-T@CGNET.COM.

Logo

The new logo suggestions from Centro Internacional de Mejoramiento de maiz y Trigo (CIMMYT) were circulated among RSC members. The responses favor the logo originally circulated and one of the new logos- but with modifications to both. The suggested modifications are being undertaken by CIMMYT and the result will be cleared by the RSC members and Information Management and Exchange Program (IMEP) at ICRISAT. It was a disappointment to me that this seemingly simple task could not be completed before I left. I look forward to seeing the result.

Research Proposals

Progress continues on preparing these proposals. It should be emphasized that, although the proposals deal with different aspects of research to ensure the sustainability of R-W based cropping systems, they are very much inter-linked. For example, examining pest implications will be a very important link between the Integrated Pest Management (IPM) Project and zero-tillage in the Crop Establishment Project and the effect of soil nutrition will be linked with the IPM Project.

Water Management

Dr R Bhatia of International Irrigation Management Institute (IIMI) met with the Facilitator and drew up a plan to immediately appoint separate Consultant in each of the four Consortium countries to develop an issues paper for R-W Water Management Research. This issues paper will be discussed at a National Workshop in each country in mid-June and the results will be

brought to a Project Proposal Preparation Workshop at Bhabha Atomic Research Centre (BARC) in Dhaka, Bangladesh about 17-18 Jul 95. The Consultants and Workshops will be funded (where necessary) by the Facilitation Unit. It now seems probable that the above dates will be delayed by about a month to permit participation by all Consortium members.

Integrated Pest Management (IPM)

A draft Rice-Wheat IPM Project Proposal was prepared by a Workshop at ICRISAT Asia Center 26-29 Apr 95. The main proposal was written by Dr Marian Fuchs-Carsch of IIMI based on the input from 12 participants. These included representatives from all countries, CIMMYT, IRRI, ICRISAT, and IPM specialists.

Purpose of proposal

The purpose of this IPM proposal is to provide, ecologically based pest management in R-W based that promotes the health of crops, animals, and humans, and makes full use of natural and cultural control processes and methods available with farmers and developed at research institutions, including host resistance and biological control. It will use chemical pesticides only where and when the above measures clearly fail to keep pests below damaging levels. All interventions will be need-based and applied in ways that minimize undesirable side-effects. Pests include insects, diseases, weeds, vertebrates, and soil organisms such as nematodes.

The proposal seeks funds of US\$400,000 over 4 years to facilitate national IPM research in R-W cropping systems, and to enhance the capability of the national programs to implement a successful regional IPM program. The proposal identifies the following activities:

Project Development Assistance : to be done at a National Workshop in each of the four Consortium countries. The Workshop will consider an issues paper developed by a Consultant and the overall objectives identified at the R-W IPM Project Preparation Workshop held at ICRISAT.

Workshops: to include a regional project initiation workshop, special topic workshops, annual review workshops, and an end-of-project workshop. These will be used to plan collaborative research, exchange information, bring together results, and plan exchange of technology.

Human Resources Development/monitoring tours/collaborative research: to facilitate exposure of NARS scientists to new technologies and methods such as GIS and participatory design, internships within the region, and group tours of various sites under the project.

Publications and public awareness: to pass along the results of the IPM research to the farmer, and scientist users and gain support for policies that promote appropriate practices.

Supplementary funds: to help break bottlenecks and facilitate the successful implementation of planned research. The funds could be used to provide essential piece of unavailable equipment, or to assist in travel to gather needed data.

Outputs and impact

This Project will provide: a set of work plans for the national components of IPM, enhanced capacity of national scientists to prepare proposals for project funding, a smoothly operating

regional IPM project, a set of standardized methodologies, a mechanism for regional exchange of information, identification of IPM policy reform issues, and linkages between this IPM project and related activities in NARS, IARCs, and other centers of excellence.

Sub-Projects

Considerable efforts were made by the participants to develop the following technically oriented Sub-Projects that can be used by the NARS to develop IPM research proposals and unified methodologies where needed.

Characterization and on-farm experimentation

- to characterize R-W pest problems in relation to locality and farmers' management practices, using previously collected or new data, in IPM domains;
- to quantify for each domain, the relative importance of pests in causing gaps between attainable and actual yield; and to identify groups of pests associated with each IPM domain that require IPM at a systems level.

Interactive anticipatory IPM research

- to determine the impact of new, anticipated production technologies (such as zero till, innovative crop rotations, new crops such as durum, and adjustments in water use) on shifts in pests and bio-control complexes in R-W systems.

Alternative on-farm IPM technology

- to hypothesize and test alternative IPM strategies at the farm/community level so as to reduce production losses in specific cropping situations while minimizing adverse environmental impact.

This Sub-Project will identify farmers' knowledge, attitude and practices, hypothesize and test possible changes, operationalize and evaluate alternative strategies on farmers' fields; and mobilize farmer, public, and administrative support for wider adoption of appropriate new IPM technology.

This project will increase the effectiveness of the existing R-W Consortium, NARS, and IARC structures by strengthening the linkages between and coordinating the IPM activities within, these constituents. There will be a basic emphasis on identifying specific site problems by working with farmers; coupled with a regional sharing of information and knowledge. The draft proposal will be sent to Consortium Committee Members and potential donors in the near future to Consortium Committee Members and potential donors for their comments.

Nutrient Management

It is probable that when Kevin Bronson arrives in June the preparation of this Project Proposal will follow a similar pattern to that for Water Management.

Crop Establishment

Peter Hobbs presented a draft project proposal to the group at the IPM Project Proposal Preparation Workshop. The draft proposal provides a strong technical background for the work to be done. It may require further input by Consortium members and a redraft before presentation to potential donors.

Facilitator's Visits

IPM Proposal Background

In order to gather information about IPM activities in the Consortium countries and sensitize the participants to the input required for the IPM Proposal, I travelled to all four Consortium countries between 12 Mar and 20 Apr. During this period I developed the background notes for the R-W IPM Proposal Preparation Workshop. I found strong multi-disciplinary group of scientists oriented to R-W Cropping Systems at Pantnagar, Faizabad, Kaul, Pusa (Bihar), and IARI Delhi in India, Naldung and Bhairahawa in Nepal, Nashipur in Bangladesh and groups ready to be reformed in Pakistan. In general, there was strong support for R-W IPM research activities.

The proposed project should help focus these activities.

East India and Nepal 12-24 Mar 95

In Pusa (Bihar) Dr A K Srivastava has assembled a strong multi-disciplinary team to work on R-W cropping systems. I was impressed by how well they interacted with each other and their familiarity with all trials. In Nepal there is a very strong IPM component at the Naldung site. This has the potential to contribute sustainability to the IPM Project.

Pakistan 25-30 Mar 95

I travelled with P Hobbs to see the R-W activities in the Punjab and North West Frontier Provinces. The most serious problems in wheat were heavy infestations by Phalaris minor, and generally non uniform crop growth even though yields should be good. There was heavy aphid infestation in Punjab, and widespread but (until then) not heavy infestations of yellow rust. This situation is serious because none of the major varieties (covering over 80% of the area) has resistance to the new rust race that has appeared, and seed supplies of high yielding resistant varieties have yet to be built up. We met with a World Bank Agricultural Representative in Pakistan. He is hopeful of financial support for R-W research in Pakistan in the near future.

Bangladesh 11-14 Apr 95

The "hartal" in Bangladesh during the start of the visit made by I P Abrol and myself made travel by road very easy even though we felt a bit exposed. We had a good meeting with Dr M S U Chowdhury who is the present chair of the RSC. He continues to provide strong support for the activities of the Consortium. There is an enthusiastic inter-disciplinary group of scientists in the Wheat Research Center in Nashipur. We were impressed by their on-farm R-W research activities. We felt that the rice scientists want to reform their multi-disciplinary group to work on R-W problems, should adequate funding become available. We met with the World Bank team led by J McIntire that was visiting Bangladesh. We gained the impression that they were in favor of supporting R-W research in Bangladesh when conditions are right, and they receive appropriate proposal.

Mail

Comments on R-W IPM Proposal

Dr Paul Ferrar, the Research Program Coordinator of Crop Services at Australian Centre for International Agricultural Research (ACIAR) in Canberra, indicated in a letter dated 1 May that the proposal as outlined in the background notes for the meeting is sound and comprehensive. He noted that there must already be a lot of relevant data, and that the assembling of the overall picture into a coherent whole will to be a very useful exercise. He felt the proposal to develop rational pesticide policies to be particularly valuable. He was especially glad to see mention of

parasitic nematodes, but pointed out that in the background notes little mention was made of diseases. He correctly noted that crops must face the whole complex of pests and disregard of any one even with complete control of the targeted pest, can lead to a crop failure. He further pointed out that even if the IPM factors are all looked after, crops can still fail because consideration was not given to other factors that affect sustainability such as nutrient mining by crops and slowly increasing salination. Finally, he urged that any proposal that is developed be fully relevant to the farmers who will have to put it into practice. It should consider all constraints faced by farmers, including cultural contexts and availability of labor.

We will certainly take these remarks into consideration when finalizing the proposal.

Zero-till Seeding

The following is a letter from P Hobbs of CIMMYT Nepal.

The timely establishment of wheat after rice is critical for high yields and efficient use of inputs. One way to do this is to reduce the number of plowings used by farmers to prepare wheat seed-beds, and reduce the turnaround time between harvest of rice and planting of wheat. The use of zero-tillage and reduced tillage techniques is gaining popularity in the R-W Consortium command areas. At Pantnagar, in Uttar Pradesh India, engineers and agronomists have converted the old rabi wheat drill for zero-tillage by replacing the standard seed shoes with ones of a new improved design and at the same time have a relatively inexpensive drill available for purchase. This drill has been successfully tested in larger (around 4 acre) farmer fields this year and farmers are anxious to expand this practice next year. The Farm Machinery Institute at Islamabad in collaboration with National Agricultural Research Centre's (NARC) Wheat Program has also been developing a drill for Pakistan's Punjab farmers. They have also demonstrated this technology in farmers' fields. The farmers are excited about this technology because it enables earlier planting and, therefore, high yields, it reduces cost of production and, therefore, increases profits. In addition, it results in less wear and tear on farmers' tractors and reduces expensive diesel costs.

In a similar way, researchers in Pakistan, Nepal, India, and Bangladesh are also studying the possibility of establishing wheat after rice or other summer crops (cotton, sugarcane, maize, etc.) by either relay sowing or surface seeding. In this system wheat seeds are broadcast onto saturated soil without any tillage at all. The results are remarkably good and farmers who were apprehensive at first are now eager to try this method over a larger area next year. The researchers feel that the key to this method is maintaining the correct soil moisture after seeding so the roots can penetrate the soil. The soil moisture substitutes for tillage by keeping the soil strength low enough for root penetration. The added advantage of this technique over those listed above is that the need for a seed drill is eliminated. A quick economic analysis shows that at least US\$40 per acre can be saved by not tilling, and yields higher than those achieved tillage are obtained. The greatest benefits are expected to be seen in cotton and rice tracts of the region where late sowing is a common factor limiting yields. It is anticipated that both these technologies will become an important ways to establish wheat and other non-rice crops in the future. Research is needed now to determine any adverse long-term problems that may arise from adoption of these techniques by farmers.

Editor's comments

I have been very impressed by the zero-till and surface seeded wheat plots that I have seen in farmers' fields. They are clearly superior to adjacent farmers' fields sown by conventional methods. More remarkable has been the reactions of the farmers who scoffed when they observed seeding being done into stubble, but are full of praise by the time the crops are harvested. Those

who have seen them are clamoring for zero-till drills. Clearly, however, these zero-till fields must be carefully monitored to ensure that problems from weeds and other potential pest build-ups do not develop to serious proportions, and invalidate the early gains.
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