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Rice-Wheat Information Sheet

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Visit us at <http://www.rwc.cgiar.org/new>

News

Consortium honored

It is PARTY TIME!!! The Chairman of the Consultative Group on International Agricultural Research (CGIAR) has honored the Consortium with the Excellence for Science Award. The selection was made out of all the Ecoregional Programs of the CGIAR being executed by different CGIAR Centers in various parts of the globe. Tim Reeves, Director General of CIMMYT, received the Award, on behalf of the Consortium partners from the CGIAR Chairman at the International Centers' Week held in Washington D.C., USA during 23-27 October, 2000.

We are grateful to all the collaborating institutions, the scientists, researchers, and farmers in the participating NARS and CG Centers as well as the Donor community who are generous to help us garner this achievement. We repose our faith in our partners for continuing the excellent example set by all in this multidisciplinary participatory research approach, which probably set us apart from other contenders for the Award.

ADB supports the Consortium

Now the story... the Asian Development Bank (ADB) and the CIMMYT (in its capacity as the Convening Center of the Consortium) signed a 3-year Contract for supporting the Consortium activities in the next years. The Bank will provide US\$1,100,000 over the next three years in a phased manner. These funds will be essentially "flow-through" i.e. for in-country activities, as announced in the recently concluded International Centers' Week held in Washington D.C., USA.

A work plan meeting is scheduled in Katmandu during 24-25 November for finalizing the activities (immediate and short term) under the ADB supported Project.

Dutch continues the funding support to the Consortium

And to conclude... the Government of Netherlands (Directorate General for International Cooperation) pledged their support for the Fifth consecutive year to the Consortium. The DGIS will provide 250,000 Dutch Guilders for the core activities during the year 2001. They are also actively considering enhancement of this support for the current year and next year.

We are grateful for all the support and hope to help reduce the poverty in South Asian region with help from all of you people out there.

Regional Steering Committee (RSC) Meeting

The sixth meeting of the RSC is scheduled in Dhaka during 18-19 February 2000 and the final dates will be announced shortly, after confirmation from all the Members.

Website revamped

The "look and feel" of the Consortium website have been modified and we hope to get your comments and feedbacks soon. Following are the new features, which are being added:

- A news-scroller [click on the news item for details] on the Home page provides the latest happenings in Consortium and in the South Asian region vis-à-vis rice-wheat production related research and extension activities.
- Navigation on the site is less cumbersome (comments solicited) and the home page "load-time" is reduced to 14 seconds over a 56.6 Kpbs Modem!
- Graphics are drastically "cut-to-size" for faster downloading.
- Search on "Rice-Wheat Bibliography" is made easier with additional software.
- Henceforth, HTML and PDF versions of the RWIS will be available on the Website.

The site is still under development but can be viewed at <http://www.rwc.cgiar.org/NEW> and please send your suggestions soon!

APPARI General Assembly held

The sixth General Assembly of the Asia-Pacific Association of Agricultural Research Institutions (APAARI) was held in Chiang Rai, Thailand during 8-10 November 2000. The Consortium was represented by Raj Gupta, Facilitator at the Assembly and he was invited to present a Paper on "Integrated Natural Resource Management for Sustainable Production: Regional Efforts and Concerns". Over 100 researchers and senior research managers from the Asia Pacific region attended the Assembly. Technical sessions were held on the following areas:

- Natural Resource Management: Opportunities and Challenges
- Integrated Natural Resource Management for Sustainable Production: Regional Efforts and Concerns
- Strengthening Information and Communication Technology
- APAARI Vision 2025

International Workshop on "Conservation Agriculture for Food Security and Environment Protection in Rice-Wheat Cropping Systems" 6-9 February, 2001 Lahore, Pakistan

The workshop is being organized jointly by the Ministry of Food, Agriculture and Livestock, Government of Pakistan, Pakistan Agricultural Research Council (PARC), Pakistan Council for Research in Water Resources (PCRWR), Ministry of Science and Technology, Pakistan, and the Directorate General Agriculture (Water Management), Punjab, Pakistan in collaboration with the Food and Agriculture Organization (FAO), International Maize and Wheat Improvement Center (CIMMYT), International Water Management Institute (IWMI).

The major objectives of the Workshop are to:

- Review and examine recent research efforts and accomplishments in developing and implementing innovative strategies and practices for increasing land and water productivity besides conserving the environment in rice-wheat production systems.

- Identify critical issues and problems that must be solved in order to implement new technologies through integrated research, extension and information dissemination within the South Asia region or outside. Develop an action plan for technology transfer to the farmers through collaborative projects among the stakeholders.
- Formulate policy recommendations for creating an environment for effective implementation of suitable conservation agriculture models for food security and environment protection for the governments.

The workshop secretariat has invited key papers and will entertain Posters on resource conservation technologies in relation with food security, environment protection and its economical as well as social implications. The closing dates for Submission of abstracts of posters and submission of key papers are December 1, 2000 and December 21, 2000 respectively. For more information, please contact:

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Regional Information System being developed

Taking cue from the advise of the Regional Steering Committee (RSC) of the Consortium, a regional information system titled "Project Research and Information System Module (PRISM)" is being developed by the Facilitation Unit. This Database Management System, once completed, will be available on the Consortium website for use in the public domain (expected in mid December, 2000).

The following features are being incorporated:

- Rice-wheat related research projects in the Consortium countries – implemented by the NARS, CGIAR, or Advanced Institutions in partnership.
- Institutions working in rice-wheat research in South Asia.
- Researchers, Extension Officials, and Consultants active in the field of rice-wheat related programs.
- Consortium researchers can feed information on their works for wider dissemination.
- The database will be searchable on many parameters and the database update will be done "on-line".

We expect the end-users to help us update the databases and to use the information freely!

Happenings

Zero Tillage Trials in Pakistan

The Department for International Development (DFID) is supporting a 3-year Project on "Harnessing Tillage by Nutrient Management Interactions using Participatory Approaches to Improve Rice-Wheat Systems Productivity and Sustainability", which started in April, 1999. This Project is carried out in several sites in Bangladesh, India, Nepal, and Pakistan. The experiments show that zero tillage is here to stay and it has vast potential to conserve natural resources.

In Pakistan two institutions are involved with the Project, the Punjab On-Farm Water Management (OFWM), Lahore and the scientists from the National Agricultural Research Centre (NARC), Islamabad. The latter provide the technical input and the former the field and farmer activities. An excellent annual progress report for one of the villages for 1999-2000 entitled "Pilot testing of Resource Conserving technologies under the DFID project" has been printed by OFWM and is available if required. NARC has also provided a technical report on soils and biotic factors. OFWM has also contracted a local consultant to produce a video of the various resource conserving technologies being promoted. This will be available during December 2000.

Wheat yields were not significantly different in the farmer fields between the zero-till or conventional tillage paired plots and averaged over all fields 5.20 and 5.08 tons/ha, respectively, for zero till and conventional in the Muridke village. The main reason for this was that the two treated paired fields were planted on the same day, except at one site. In that site zero till did significantly better due to timelier planting. Next year all fields will get this advantage. However, there were savings in water for the first irrigation, less weeds and savings in cost (US\$25-40/ha). Farmers are excited about these benefits and acreage will increase next year from the 153 acres planted this year by farmers in the village.

In the Mona project villages/sites wheat yields were 4.62 tons/ha for zero-till versus 4.31 tons/ha for conventional for the 6 monitored fields. They also did a survey of other fields and yields were 4.33 tons/ha for zero till and 3.70 tons/ha for normal. Water use efficiency increased from 1.10 to 1.43 kg/m³ in favor of zero till. Fertilizer efficiency also increased from 21.6 to 27.6 kg grain/kg fertilizer. Economically, costs were reduced by US\$38/ha through zero till. The report prepared made the statement "with the use of less irrigation water and less fertilizer application we can get more crop production by adopting resource conserving technologies".

Zero-till Drills catches on like wild-fire

In order to propagate the use of zero till drills to plant wheat, the Facilitation Unit (FU) is adopting an innovate method in association with extension agencies. The FU provides funds to purchase 10 zero till drills and places them at the disposal of the State Department of Agriculture in Haryana. These machines are then sold to the farmers (at a substantially lower than market price available to the FU for bulk purchases) based on farmer demand. The funds are then available to buy more machines and the process is repeated. So far more than 70 good quality drills have been supplied under this facility. In India, this season, more than 500 drills and two dozen bed planters will be in operation, in addition to last years drills already in use with the farmers.

According to the Extension Departments, this method have proved successful so far and the seed money provided by the FU acted as the timely catalyst to increase the adoption of zero tillage and thus expand the availability of drills in the State of Haryana. We expect to see approximately 100,000 hectares of land sown with wheat using Zero Till Drill in the State of Haryana alone!! This will have the potential to save water that can fill a lake 5 Km. long, 1 Km. wide and 100 meters deep and more than 7.0 million litres of diesel!

Laser leveling introduced in North-West IGP

After having witnessed the tremendous potential of using precision land leveling in Pakistan during the Traveling Seminar organized by the Consortium in April 2000, the Consortium has introduced this technology in the Trans Gangetic Plains of India in the current *rabi* season. Spectra Precision Inc. USA, thru' their Dubai Office, provided one unit of a Precision Land Leveler for experimental trails.

Representatives of Spectra India trained approximately 10 tractor operators from Haryana and Uttar Pradesh and the Unit has been put to use continuously since the second week of October. It is expected that about 125 acres of land will be leveled and the zero till drill and raised bed planter will be used to plant the wheat crop. Joe Rickman and Rob Bakker from the International Rice Research Institute (IRRI), Philippines, who have considerable experience in this area, have visited the



Laser Leveler being used in Haryana

experimental fields and we hope to develop a “total package” of crop establishment using land leveler, zero tillage/bed planter and other management methods for effective nutrient, pest and weed management by the next *rabi* season. It is an established fact that precision land leveling can save almost 40% water and when combined with bed planting – which has already shown promising results for both rice and wheat in water use efficiency – the amount of water savings should go up to a whopping 60% or more!

Rice planted on raised beds yields 9 tons per hectare

Consortium scientists initiated farmer field trials in collaboration with RK Naresh and others during the *kharif* (summer) season in Ghaziabad District in Uttar Pradesh (just outside Delhi) and in Karnal and Kurukshetra Districts of Haryana, with Mrs Shakuntla Mehla and JS Mann (both Farmers) and Dr. Samar Singh from HAU, Hisar. In all the fields where rice was grown on beds, the results were good. Yield data is yet to be collated but even more important, farmers indicated that they saved 50% or more water with this system, due to irrigation of furrows only and irrigating less frequently.

Farmers did have weed problems, but using herbicides and hand weeding these were controlled. Termites were a problem in some fields and zinc and iron deficiency were suspected in others. Obviously the chemistry of the “aerobic rice” conditions is different and will be addressed.

The major difference was that the trials were taken straight to the farmers rather than testing first at the experiment station. Some of the farmers have planted wheat on the same beds



Modified Bed Planter

with minimal disturbance. Farmers also insisted that the bed maker be kept in the area and used it to make beds for vegetable growing (Carrots, Brinjal, Okra and Radish). This helps increase cropping diversity in the area.

In Karnal District Mr. Mann, a very progressive farmer, planted rice on beds. He obtained 8.3 tons/ha on one field with the same 50% savings in water. He used a hybrid rice cultivar and normal rice. He

transplanted at the 3-4 leaf stage 21-day-old single seedlings 7cm inside the 75 cm wide raised beds. This farmer combine harvests all his rice. Excessive residue is left after this, but

he has pledged to not burn the residues but instead experiment with alternate ways to manage it. He has tried incorporating and mulching and various retention strategies. Residues management is a problem that needs attention in the coming years. He will be experimenting further on 0-till wheat and wheat on new beds this season. He had excellent fields with these techniques last year.

Mrs Shakuntla Mehla, a woman farmer from Village Jadhala took this technology as a challenge and planted rice in her farm in Kaithal District. She is also the prime mover of zero-till technology, which has caught on in Haryana like wild fire in the previous *rabi* (winter) season. She has a 40-acre farm and experimented with rice on beds, direct seeded hybrid and high yielding varieties (HYV). In her case, the crop got an initial set back due to submergence of one-week old seedlings for more than 48 hours due to heavy rains (220 mm in one day), yellowing due to iron and zinc chlorosis, and some brown plant-hopper damage in the hybrid plots. She was not as successful as Mr. Mann but got nearly 6 tons/ha with the same water saving. She is planning to plant wheat into the same beds.



Mr Daler Singh, a farmer near Ludhiana planted 6 acres of land with rice on beds in Amritsar District of Punjab. The rice was transplanted on the sides of the bed. He obtained almost 9 tons/ha and also saved 50% of his water. He intends to grow wheat on the same beds and then relay transplant mentha plants in the furrows before wheat harvest. The mentha does very well under this system and is better than waiting for the wheat to be harvested. This extra crop provides a very good income

for the farmer.

In the next few years, it seems that bed planting will become a common practice for farmers in North-west India and we plan to extend this technology to other countries in the forthcoming season so as to ensure minimal field preparation for both rice and wheat.

Meeting of the RTCC held in Katmandu

The 9th meeting of the Regional Technical Coordination Committee (RTCC) was held in the Hotel Annapurna, Katmandu during 29 Sep to 1 Oct 2000. All regular members of the committee attended the meeting. Observers from other advanced institutions also participated in the meetings. The two-day RTCC meeting deliberated on the ongoing activities of the Consortium and it was evident that the "transect" approach to research promoted by the Consortium is progressing well and the regional NARS, taking a cue from the same, are re-orienting the resources to take advantages of this approach. Overall, the members expressed satisfaction on various options to further strengthen the resource conservation technologies. The consensus was to promote these technologies as a "best-fit" package for site-specific conditions.

International Workshop

An International Workshop on “Developing an Action Program for Farm-level Impact: Policy Workshop on Rice-Wheat Production Systems” was held during September 25-27, 2000 in New Delhi, India. The workshop was attended over 150 participants from Bangladesh, Ethiopia, India, Indonesia, Italy, Mexico, Nepal, Netherlands, New Zealand, Philippines, Sri Lanka, United Kingdom, and United States of America. An impressive array of senior research managers from International Agricultural Institutions and Donor/Development Agencies presented Papers on four themes viz. Production System Perspectives, Water Management and Environment, Policy and Institutions, and System Ecology Management

The major objective of the workshop was to examine the post-green revolution agricultural productivity issues, especially in the Trans, Upper, and Middle transects of the Indo-Gangetic Plains in India (Punjab, Haryana, parts of Uttar Pradesh and Bihar) and develop an action program to address the constraints of sustainability of rice-wheat production systems of the Indo-Gangetic Plains. The workshop was jointly sponsored by the Indian Council of Agricultural Research (ICAR) and the World Bank and was organized by the Consortium. The Consortium in association with the ICAR will publish the proceedings of the Workshop shortly.

Publications

Four publications under Consortium Paper Series have been published and the titles are:

1. **Nematode Pests in Rice-Wheat-Legumes Cropping System: Proceedings of a Review and Planning Meeting and Training Workshop, 5-10 April, 1999, New Delhi.** Sharma, S.B., Pankaj, Pande, S., and Johansen, C. (eds.) 2000. Consortium Paper Series 7
2. **Stagnation in the Productivity of Wheat in the Indo-Gangetic Plains: Zero-till-seed-cum-fertilizer Drill as an Integrated Solution.** Mehla, R.S., Verma, J.K., Gupta, R.K., and Hobbs, P.R., 2000. Consortium Paper Series 8
3. **Soil and Crop Management Practices for Enhanced Productivity of Rice-Wheat Cropping System in the Sichuan Province of China.** Hobbs, P.R. and Gupta, R.K. (eds.) 2000. Consortium Paper Series 9
4. **Potential Yields of Rice-Wheat System in the Indo-Gangetic Plains of India.** Aggarwal, P.K., Talukdar, K.K., and Mall, R.K., 2000. Consortium Paper Series 10

The Facilitation Unit has initiated a new Series called “Traveling Seminar Report Series” and these publications provide a summary of the “now-famous” Traveling Seminars. Following titles have been published under the Series:

1. **Research and Extension Issues for Farm-Level Impact on the Productivity of the Rice-Wheat Systems in the Indo-Gangetic Plains of India and Pakistan.** Gupta, R.K., Hobbs, P.R., Salim, M., Malik, R.K. Varma, M.R., Pokharel, T.P., Thakur, T.C., and Tripathi, J. (eds.) 2000. Traveling Seminar Report Series 1
2. **Study of Research and Extension Issues in the Sichuan Province of China for Farm-Level Impact on the Productivity of the Rice-Wheat Systems.** Gupta, R.K., Hobbs, P.R., Salim, Chowdhary, N.H., and Bhuiyan, S.I. (eds.) 2000. Consortium Traveling Seminar Report Series 2

All these publications are available free of cost and if you require a copy, please write to the Facilitation Unit (email or snail mail) and they are also available for free download from our Website (please look under Publications).

Food for thought

Anyone who has never made a mistake has never tried anything new. – Albert Einstein