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## 'RWC-An institutional innovation' says RWC review

The external review of the Rice-Wheat Consortium, led by Dr Ashok Seth, has submitted its review report. The review has identified the Consortium as 'an institutional innovation in rice-wheat systems research' and 'is successful because of the commitment owed by its members towards it.' While lauding the success that the Consortium could muster in expanding the adoption of technologies in IGP, it cautioned the Consortium that 'impact assessment work should be mainstreamed into all significant R&D activities of the Consortium' and for this 'the Consortium should have access to baseline surveys made in the region or should be made if not available from the previous projects'. The issue of sustained support to the Coordination Unit of the Consortium has also figured mainly in the report.

The Panel saw the respondents feeling 'highly satisfied' on the coordination capabilities of the Unit and rated it high among all the functional bodies of the Consortium. However, the national

coordination committees, NSC and NTCC, were found a weak link which need to be strengthened, added the report. Looking into the future, Dr Seth commented that the Panel strongly supports continued role of the Consortium in the region because it fully serves the interests of the CG centers in IGP countries. He sees Consortium to be an innovator and supplier of new knowledge in rice-wheat systems, a clearing house for new approaches and methods and a facilitator and catalyst for research and development among national agricultural systems.  
Contact: [rvw@cgiar.org](mailto:rvw@cgiar.org).



The interview process adopted by the review team has revealed the innovative work done by the Consortium partners

## A \$100 M cache for RCTs!

Resource conserving technologies are given a major boost in Pakistan with a World Bank grant of US\$ 100 million to the On-Farm Water Management Project for Punjab. Under this project, which commences from next fiscal year, an estimated 240 Laser land levelling units, 100 zero-till drills, 100 bed planters, 100 furrow bed shapers, and quite few straw choppers and sulfuric acid generators would be

purchased for distribution and adoption by farmers. The excited Mushtaq Ahmad Gill, Director General, OFWM says "Beginning has begun with RCT Package promoted through RWC and CIMMYT which is now trickling down to rice-wheat area of Sindh and Balochistan. All of us in RWC and CIMMYT can take pride for this breakthrough in RCT adoption."

## Rice and wheat in short supply in 2020

The demand for rice and wheat in South Asia are projected at 305 million tons for 2020. An IFPRI, Washington developed International Model for Policy Analysis of Agricultural Commodities and Trade (IMPACT) predicted that the South Asia would end up in deficit in producing its main

food grains, rice and wheat, by 20.46 million tons than the projected supply. Among Bangladesh, India and Pakistan, the major rice and wheat growing countries in South Asia, the situation is predicted to be serious in Pakistan with a deficit of 9.25 million tons followed by India with a deficit of 6.79

million tons. The predictions were made based on the 1997 FAOSTAT data. The model also predicted that the area under rice and wheat crops in the region is going to be more or less stable at the present level.  
Contact: [rvw@cgiar.org](mailto:rvw@cgiar.org).

## Editorial

## Double transplanting of boro rice

Worldwide, rice has been grown in different forms and seasons. The major share of rice area, little over 50%, is under irrigated ecosystems with assured water supply, either from canal or groundwater. The usual practice is to raise the seedling in a nursery and transplant them at an appropriate time depending on the variety and season in which it is grown.

There is a unique method of transplanted rice called double transplanting or twice culture where in the rice is transplanted into a secondary nursery with relatively larger area than the primary nursery before being finally transplanted in the main field. There are specific situations where the double transplanting could prove advantageous. Farmers usually use this technique when there is a water shortage due to delayed onset of monsoons, when main field is not available in time due to floods or occupied with another crop, and to avoid transplanting of aging seedlings. This practice is becoming popular in China and India and is significant relevance to Bangladesh.

Zheng Jianguo at Crop Research Institute recommends twice culture in Sichuan province of China, where rice-wheat system is prevalent, to mitigate the effects of late transplanting of rice. Wheat in Sichuan province is harvested in mid-May while rice nurseries start rising in mid-March to early April because of temperature and rainfall situations. By the time the main fields become available for rice transplanting, seedlings are already over-aged and often pass the tillering phase in the nursery itself.

Under such conditions, twice culture was found beneficial as it provides better growing conditions for rice seedlings before they are finally transplanted to the main field. Jianguo found out that the primary nursery should be sown with a seed density of 500 g m<sup>-2</sup> and the 7-10 days-old seedlings should be transplanted into another relatively larger

**Double transplanting of boro rice in rice-potato-boro rice system in West Bengal. While the potato crop still occupy the main field, the farmer can leasurely tend the rice seedlings in the intermediate field.**



area to be raised for next 40-50 days before being finally transplanted into the main field. His studies also indicated that the double transplanting could increase the rice yields by 13 to 14% over the single transplanting method in the above conditions.

The yield of boro rice in the traditional rice-potato-boro rice system in West Bengal is low due to late transplanting of 60-65-day-old boro rice seedlings in second fortnight of February to first week of March after the potato vacates the fields. Bardhan Roy, Joint director Agriculture, Chinsurah, West Bengal, advises "raise boro rice nurseries in first fortnight of November to transplant 40 days seedlings into a three times larger field to be grown there for next 40 days before they are finally transplanted to main field which is eight times larger than the initial nursery." By doing so, he says, would increase the yield of boro rice up to 54% and net returns by 23% when compared to the farmers' practice in rice-potato-boro rice system. It is best if farmers maintain the area under primary and secondary nurseries and main field in the ration of 1:3:10.

MA Razzaque, CIMMYT Affiliate Liaison Scientist in Bangladesh, says "T. Aman rice-potato-boro rice cropping system was recommended for the irrigated ecosystems by the Bangladesh Rice Research

Institute. This cropping system could potentially be adopted in 1.4 million hectares of land". "For increasing the total productivity of T. Aman-potato-boro cropping system, farmers should adopt double transplanting of boro rice, identify suitable boro rice varieties for double transplanting, use same seedbed for first planting of boro seedlings, and manage the double transplanted boro rice properly", he adds. According to him, this cropping system would strengthen the collaboration between IRRI and CIP, represented by their mandatory crops in the system, through the Rice-Wheat Consortium. Earlier, Razzaque along with scientists from BRRI and BARI visited the boro rice cultivating areas in West Bengal, India and was elated by looking at the prospects of double transplanting in improving the productivity of boro rice in areas where potato is grown.

**The article is based on** the acknowledged inputs from Dr Raj K Gupta, RWC-CIMMYT, Dr MS Kadian, CIP, and Dr MA Razzaque, CIMMYT, Bangladesh.

Roy, B., N.K.Saha, M.S. Kadian, S.G. Ilangantileke, and T. Walker. 2002. Report on characterizing the double transplanting in boro rice in the rice-potato-boro rice cropping system. Department of Agriculture, Government of West Bengal, CIP, and Indian Council of Agricultural Research

Zianguo, Z. 2000. Rice-wheat cropping system in China. p. 1-10. In P.R. Hobbs and R.K. Gupta (ed.) Soil and crop management practices for enhanced productivity of the rice-wheat cropping system in the Sichuan province of China. RWC Paper Series 9. Rice-Wheat Consortium for the Indo-Gangetic Plains, India.

### Writers' Place

#### Editor's Pick

## Wheat in Afghanistan

Craig A Meisner

I wish to share with you all glimpses of my visit to Afghanistan from May 8-15. The

trip was a result of an ICARDA-supported program through Cornell University on improvement of irrigated wheat production in Afghanistan. The objectives of this trip

were to present a lecture on key management factors for irrigated wheat to a 2-day workshop in Kabul Afghanistan, to be part of a team-building traveling workshop for ▶

◀ an additional 4 days, to impart key concepts on management factors for irrigated wheat, and to learn from the growers their constraints for wheat cultivation.

Just to give you a backdrop of what Afghanistan's wheat scenario looks like today, Afghans cultivate wheat in 1.6 million hectares and produce just above one ton per hectare, much lower than the South Asian average. They still manage to consume 115 kg/capita, which is just near to what an average Pakistani citizen consumes and with negligible imports much less than what Iraq imports. This is mostly due to the fact that, according to FAO, the farmers themselves consume 80% of wheat produced.

Afghanistan has just woken up from its three-year drought and is preparing for a good crop this year. Irrigated wheat occupies fifty percent of its cultivated area and produces eighty percent of total wheat production in the country. As a part of the international aid to Afghanistan to revive its agriculture, FAO has been helping the Afghan farmers in producing wheat seed and in sustaining their other cropping systems like barley, rice and legumes. The success so far is that they could produce 20,000 tons of wheat seed last year. The country now has 17 wheat lines, 6 of them for irrigated conditions, thanks to the CIMMYT and ICARDA collaborative efforts.

The prominent thing I observed in the north of Puli Khumri was that the farmers grow wheat there by surface seeding, just similar to the method we are promoting in eastern IGP. Though unknown about the



**'The smiles and kindness of Afghans will not be forgotten'-Craig**

productivity of this wheat, indications are that the farmers just harvest to meet their home consumption. A recent survey of 200 farmers indicated that the most crippling factor in improving the crop productivity here seems to be lack of proper credit facilities as farmers are generally poor and can't often apply the required inputs. Poor wheat prices, as low as \$0.07/kg in Mazar-e-Sharif, reflects the problems. The low wheat prices may force farmers to diversify their cropping system towards non-grain crops—even some staling poppies. The survey also says that weeds and water are the most important factors causing yields to decline.

The small wheat spikes, measuring to half of what normal irrigated wheat produces, indicates that nitrogen might be the most limiting factor during early growth among the nutrients coupled with poor irrigation at critical stages. Added to this is the poor tillering due to high seed rates used giving too high a plant population. Apart from the poor N use at sowing, the high fixation of P in these calcareous soils seem to have added to the plight of the farmers. Using zero-till drills would be a good alternative to sow wheat early in those rice

harvested fields and reduce P fixation as the drill places the P fertilizer in a narrow band. Zinc deficiency was indicated through soil tests as deficient in many of the fields that were surveyed. I observed rampant infestation by wild oats and two-row barley. Sporadic damage by locusts is another thing to be dealt with. I could see some herbicides being sold in the local markets, and they can be tested in the research programs. Labor availability is scanty as many of them are turning to reconstruction jobs.

I saw numerous times the Pakistan-made wheat threshers standing for sale in the markets in Northern Afghanistan. I was told that often Afghans will go to shop in Pakistan. Thus, it is possible to introduce zero till drills, give adequate training and allow them to test this technology. This is an example of the type of close collaboration possible between Pakistan and Afghanistan. While I see that the ideas of greater exchanges between Pakistan and Afghanistan continue to make sense—the presence and value of Dr. Abul Rashid. NARC, Islamabad during our time confirmed the need for more fruitful exchanges. No doubt, my visit as a follow up by FAO, CIMMYT and ICARDA would focus the efforts towards better partnerships. But, my strong suggestion is that donors need to be identified to allow funds to flow through International Agricultural Research Centers and USA Universities, as it is a way to implement funds through scientists quickly without bureaucratic obstacles.



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## TFP of crop sector in Indian IGP

**Dr Praduman Kumar**

The present study measures the total factor productivity (TFP) indices of irrigated crop sector, which occupies 38% of net sown area contributing 50% of total foodgrain production in India, at the district and region levels in the Indian Indo-Gangetic Plains (IGP) and identifies the sources of TFP growth and its implication on food security. The study was outcome of a project supported by the NATP, ICAR.

The TFP was falling or stagnating in more than half of the districts in the Central Plain agro-climatic zone, which has salt affected soils. In the IGP, the high growth in

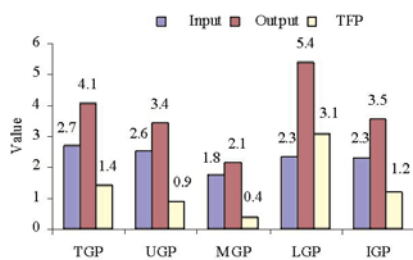
TFP for the crop sector was observed in about one-third of gross cropped area (GCA) during 1981-96. Twenty-three percent of the GCA recorded a moderate growth in TFP and 12% with low growth. About one-fourth of the GCA had not witnessed technical change, while 9% of the GCA showed the sign of declining trend in TFP. The lower Gangetic Plain (LGP) ranked top as beneficiary of the technical change in the crop sector, followed by the Trans-Gangetic Plain (TGP), Upper Gangetic Plain (UGP), and Middle Gangetic Plain (MGP).

The performance of TFP growth pattern was more spectacular in 1980s as

### What is TFP?

Productivity denotes the effectiveness of production technology, which may able to be measured by cost of production or input requirement for the particular product. The lower the cost of production or the lower input requirement is the more production productivity. Thus, in the case of one output and many inputs, the ratio of output to weighted average input requirement shows the production productivity or the total factor productivity (TFP).

compared to that in 1990s (Fig 2). Forty-two percent of the GCA recorded highest TFP growth of 2% in 1981-90 and this area declined to 14% during 1991-96. The area under moderate TFP growth had also declined, while the area under low TFP growth increased. The area under stagnant ▶



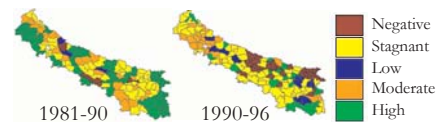
**Fig. 1. Growth in input use, output and TFP of crop sector in the Indo-Gangetic Plain (1981-96)**

▶ TFP had increased from 28% in 1980s to 39% in 1990s. The TFP indices did not improve in more than 39% of the GCA in 1990s and on the contrary, they had declined in 23% of the GCA. A similar pattern in the TFP growth was observed in all the agro-eco regions and sub-regions. The sustainability

issue of the crop sector is emerging in the IGP. This issue has been more serious in the MGP.

In the IGP region, extension accounted for about 45% of the TFP growth, followed by public research (36%), literacy (10%), infrastructure (8%), and urbanization (1.5%). Checking of water table depletion would enhance TFP. This problem has been so severe and serious that it warrants immediate attention in the UGP. The impact of TFP on supply is substantial.

The indiscriminate groundwater utilization sans provision for recharge and declining biodiversity has severely affected the TFP growth in TGP and UGP. On the other hand, declining biodiversity has also erupted several insect pests and weeds in the



**Fig. 2. TFP growth of crop sector in IGP**

regions, which has adversely affected the TFP growth. The study suggested that the optimum utilization of natural resources and an ideal biodiversity-mix are the necessary conditions for sustaining the crop sector at the low cost and ensuring the national goals of food security and poverty alleviation. The first priority for crop research ought to be the breaking of the current irrigated yield ceiling.

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## Innovative rice-based systems for E-IGP

M. Kumar, R. A. Thakur, A.K. Chaudhary, and Raj K Gupta

**D**roughts and floods are common to eastern Gangetic alluvial plains. Historical records show that flood affected areas increased from 2.5 mha in 1952 to more than 15 mha in 2002. It appears that congestion of natural drainage system results in stagnation of flood water in upper reaches. Farmers in lowlands suffer severe crop losses due to flooding during the monsoon season. These areas receive floods of varying intensities and durations. There is a necessity to manage agriculture in flood-prone areas.

Recently, trials conducted in flood-prone low-lying areas of eastern Gangetic plains near Patna, Bihar, mixed cropping with full basal fertilizer dose and intercropping of rice + mungbean + sesame + maize + sorghum/Sesbania proved profitable risk management strategy. Depending on the probable flooding dates and periods of submergence at different positions of the topography, farmers could harvest one or more of the several crops grown in an intercropping system. If floods are received late in the monsoon season and water recedes early, farmers can reap early maturing short-duration crops such as mungbean, sesame and rice.

In Bihar, rice is generally grown in low lands and wheat and other crops in middle and uplands where farmers can develop surface or ground waters during the winter season. In middle and uplands, the profitable



**Farmers are growing boro rice with irrigation schedules of maize. Rice is mainly grown as aerobic rice.**

cropping systems are rice-potato-wheat or Indian mustard and rice-potato-maize + onion or garlic. In these cropping systems, the productivity of rice is in the range of 2-3 t/ha which is mainly due to non-development of ground water for raising rice nursery and due to excessive preparatory tillage leading to late transplanting. Results of numerous farmer participatory field trials showed that advancing rice transplanting up to end of June increases the total system productivity to 10-12 t/ha.

Potato, boro rice (winter rice) and winter maize are known to have very high productivity in eastern Gangetic plains. Nursery rising is the critical aspect of boro rice cultivation in winter season. It is often suggested that winter chilling of the young seedlings improve the potential productivity of boro rice crop. Therefore, in the traditional boro rice cultivating low-lying Tal lands, boro rice nursery is raised during November-December before transplanting in early February. When boro crop is intended to be grown as an intercrop with

maize, both could be direct seeded in ridge-furrow configuration in mid October. Alternatively, these crops could be integrated in rice-potato system which is appropriate for middle and upland conditions.

A new cropping system has been evolved in which a short-duration medium-tall/dwarf rice is direct seeded such as to vacate the fields by early October for planting of potato crop on the ridges. Maize crop is dribbled in the furrows by mid-October. After harvesting potato, maize is earthed up and the furrow is used to transplant boro rice by end of February as an intercrop. Irrigation schedules recommended for maize are followed until mid-April. Direct seeding of boro rice under the well grown up maize canopy will help it to protect from cold injury. In the later stages, the detasseling of maize after pollination, and detaching the green tops after grain filling will help reduce the shading effect on the rice crop. The resultant green maize fodder will also provide fodder for cattle. The results of these participatory trials have been very encouraging.

Similarly, in northwestern IGP, intercropping of wheat/Indian mustard with sugarcane has been found to improve the cane productivity by nearly 10 tons and offers opportunity to the farmers to grow bonus wheat/mustard or other crops without missing the winter season.

*M. Kumar, R. A. Thakur, and A.K. Chaudhary all from Rajendra Agricultural University, Bihar and Raj K Gupta from Rice-Wheat Consortium for the Indo-Gangetic Plains. Contact: dr\_mritunjay@sifj.com*

## Updates

### GIS Update

# Bangladesh Country Almanac going great guns

International Maize and Wheat Improvement Center in association with Bangladesh Agricultural Research Council and a host of participating organizations conducted an advanced training workshop on Bangladesh Country Almanac at Cornell University on 2 to 6 June 2003. BAC is a GIS-based powerful yet user-friendly GIS database system composed of spatially linked data on various agricultural and allied fields and is meant for agricultural research and development.

A team effort of Bangladesh Agricultural Research Council, Sustainable Development Research Initiative, Bangladesh Rice Research Institute, and

CIMMYT, the tool delivers the spatial information on a CD ROM covering agricultural and natural environment characterization information for Bangladesh. The base data provided includes data on climate, soil, cropping, demography, infrastructure, and agricultural production zones. Census and other sources of socioeconomic information was included where possible.

During the presentations made, it was heartening to know that the participating organizations could conduct five in-country workshops attended by more than four hundred participants with an estimated BCA uptake of 25%. The partner

organizations could award 8 mini grants to different institutions in a span of five months.

"The workshop saw creation of 4 new databases and updating of 2 existing databases, making BCA one of the most data rich almanacs put together by the CIMMYT GIS lab" says Dave Hodson, GIS specialist based at CIMMYT, Mexico. The pick of the things was a complete case study made on arsenic problem in Bangladesh and it became an asset to the BCA itself. The workshop also saw potential proposal from Peter Hobbs and McDonald, both from Cornell, for Nepal Country Almanac. Contact: [d.hodson@cgiar.org](mailto:d.hodson@cgiar.org).

### WWW Update

# Scripting the info-strategy for RWC

Making available the right information to the right people at right time is the sine qua non of efficient information management. The Consortium, since its inception, has information management as one of its mandate and it is making all out efforts to draft and implement an effective information management plan. The draft plan envisage to make use of existing information sources emanating from the Consortium-led rice-wheat activities, which include both offline conventional sources like paper-based books and articles in referred journals, and online information sources like RWC Homesite and PRISM. While the efforts are on to revamp the

existing online sources through rigorous quality measures and integrating GIS data into the web, the offline information sources, represented by research paper and



The revamped RWC home page shows dynamic content and allows the users to make PRISM searches

traveling seminar series and newsletters had been the strength of the Consortium. In fact, the Consortium had identified the necessity of reaching the unreached, mostly illiterate and information starved farmers, through a multi-pronged approach and break the digital divide that exists among its stakeholders. The real challenge for the Consortium is motivating its stakeholders to affectively carry the information on conservation tillage to the target farmers as they often depend on the neighbors, radio, television and newspapers. Many of these mass media, at present, don't cater to the conservation tillage practitioners. Contact: [b.krishnan@cgiar.org](mailto:b.krishnan@cgiar.org).

### Socioeconomic Update

# RWC towards better research evaluation

The RWC has been evaluating the socio-economic aspect of the technology adoption. More rigorous studies are being taken up to scale up the uptake of RCTs so that the benefits can be realized on a wider scale and policy can be influenced to promote them for the benefit of the society.

The environmental externalities associated with the adoption of improved crop and resource management practices is being assessed in collaboration with Indira Gandhi Institute of Development Research, Mumbai under FAO-ROA project. The RCTs are also being evaluated to determine

their impact on the most disadvantaged section of the society i.e. rural poor and the women through CABI-DFID project entitled 'Reaping the benefits-assessing the impact and facilitating the uptake of resource conserving technologies in the rice-wheat systems of the IGP of South Asia'.

The RWC has also been involved in bringing together the social scientists from different institutions by organizing workshops and seminars to discuss the socio-economic issues and derive the researchable issues and policy options in the

context of sustainability of rice-wheat system. In future, the RWC intends to focus on understanding the comprehensive temporal patterns of productivity in terms of cropping system scenarios, input use, institution and domestic and international markets. The major future research issues that stand before RWC are the need to better measure sustainability (what is happening?), better diagnose the causative factors behind the changes in sustainability (what are they?) and analyze the role of technologies / policies / investments to address the changes (what can be done?). Contact: [s.parwez@cgiar.org](mailto:s.parwez@cgiar.org).

*Socioeconomics cont...***Impact assessment on RCTs in CAWMA**

Use of resource conserving technologies (RCTs) has spread rapidly in the irrigated areas of IGP. The surveys suggest that the RCTs are becoming popular and being adopted by a large number of farmers. In order to assess the impacts associated with the adoption of RCTs, CIMMYT/RWC is initiating a project on "Adoption and impact of RCTs in the

irrigated plains of South Asia" as a part of the theme "Comprehensive Assessment of Water Management in Agriculture (CAWMA)" and the project proposal is at the advanced stage of approval. The objective of the proposed study is to document the adoption and impacts of RCTs in the western irrigated IGP, measured in terms of technical and

economic parameters. Particular attention will be given on reduction in input use, especially water use, and income gains realized by the farmers. The project is expected to contribute towards generating information and analysis that can be used to accelerate the rate of adoption of environmentally friendly RCTs. **Contact:** [s.parwez@cgiar.org](mailto:s.parwez@cgiar.org)

*Mechanization Update***Indigenization of laser leveler**

With the successful testing of the laser land leveling equipment developed by the Center for Advanced Technology, Indore, India in collaboration with ICAR and RWC, the indigenization of the laser land leveler is complete. According to Dr AG Bhujle, CAT, Indore the satisfactory performance of the indigenous laser equipment means that the CAT would be able to make available the equipment design

to the private manufacturers who can further reduce the cost of equipment upon manufacturing it in large-scale.

The first precision land leveling system in India, imported from Pakistan and has been operated by a farmer, Pramod Tyagi, Bayana village, Ghaziabad, was fitted with earth moving bucket which was indigenously designed and developed with

the help of Dr Joe Rickman, Head, Agricultural Engineering, IRRI. Though the local manufacturing of the bucket reduced the cost of the laser leveling equipment to certain extent, the high cost of imported laser sets, which are essential parts to be fitted with the earth moving bucket, made the total investment still a costly venture. With the total indigenization, the equipment can now be purchased at 40% reduced cost.

**Mungbeans for nutritional security**

AVRDC and RWC are working together in a DFID funded project on Improving income and nutrition by incorporating mungbean in cereal based systems in the Indo-Gangetic Plains of South Asia for intensification and diversification of the rice-wheat cropping system. AVRDC along with the national partners in India, Bangladesh and Nepal have selected and developed mungbean varieties that can mature in about 55 to 65 days and fits well between harvesting of

wheat and transplanting of rice. These extra-short duration mungbeans are resistant/tolerant to MYMV and can be harvested in one picking.

The partners in the project are CIMMYT-RWC, PAU and IARI India; CIMMYT, LIBIRD, FORWARD in Nepal; BARI and BSMR Agricultural University in Bangladesh. The project envisions taking the improved varieties quickly to the farmers, and developing improved recipes for improving iron bioavailability to the rural

and urban poor. At present, the mungbean varieties are cultivated in 50,000 ha in Bangladesh, around 40,000 ha in Punjab and are planted in 21 districts in Nepal.

RWC has introduced two varieties of mungbean, Pusa Vishal and PDM 139 for seed production and large-scale farmer participatory trials in about 100 acres of farm land in Eastern UP and Bihar. Readers can follow this column for more exciting news from this project in the coming issues. **Contact:** [s.shanmugasundaram@cgnnet.com](mailto:s.shanmugasundaram@cgnnet.com).

**Interactive***Letters to the Editor*

Thank you very much for sending the RWIS 44. I appreciate the way the information on LCC for N management, GIS Update, projects on PVS and PPB was presented. Provision of email ID of the persons facilitated direct contact with the person.

Increasing the frequency of the newsletter

*Q&A***Bed planting or zero tillage?**

One important FAQ is "In which situation farmer should go for zero-tillage sowing of wheat and in which condition bed planting of wheat"?

Both rice and wheat crops require different management and soil conditions for best

would help all of us. Please publish the articles invited from the experts in rice-wheat systems. It would also be nice if you can publish information on new research work being done in various national research centers. Information on new technologies and varieties will be helpful to the farmers.

**SP Singh, SKUASTK-RRRS, J&K, India.**

performance. Zerotill sowing of wheat facilitates farmers in saving time, energy and fertilizer and can suitably be taken up in upland conditions. Bed planting of wheat in low lands seems to be an excellent idea for obtaining good yields as wheat can't tolerate the anaerobic conditions there. Beds facilitate good root aeration to wheat.

Yet another question arises is which straw

I acknowledge with thanks the receipt of the RWIS. I found it very informative and useful in my research work on mechanization of rice-wheat cropping system in India. I was excited on how the animal drawn zero-till machine was attached with the two-wheel tractor in Bangladesh. I will also try it at our farm.

**SK Mathanker, CIAE, Bhopal, India.**

would obstruct my zero-till drill operation? Clearly, only loose straw is a problem. At the time of sowing, the anchored straw helps in soil moisture conservation which ensures good seed germination and it control weeds after conversion into soil mulch. **Contact:** [mutahirsyed@hotmail.com](mailto:mutahirsyed@hotmail.com).

## News Room

### National workshop on rice-wheat systems

National Agricultural Research Center, Islamabad, in collaboration with RWC, Bangladesh, organized a workshop on rice-wheat systems from 11 to 12 December 2002 to discuss researchable and developmental issues in the rice-wheat systems. The workshop stressed the importance of inter-institutional collaborative research in rice-wheat systems on a regional basis and technology generation through participation and empowerment. In the two-day workshop, more than 28 research papers were presented in five multidisciplinary technical sessions. Contact: [anjums41@yahoo.com](mailto:anjums41@yahoo.com).



The workshop has called for a strategic approach in dealing with systems issues in IGP

### Kickoff workshop on CPW

A kickoff workshop of the Challenge Program on Water and Food for Indo-Gangetic Basin took place in New Delhi from January 23-24 2003. Jointly organized by ICAR-IWMI-RWC, the workshop was attended by scientists from Nepal, Bangladesh, and India, and IRRI, CIMMYT, ICRISAT and IWMI. The workshop has come out with various strategies on how the various themes of the program can be implemented and has come out with a road map for the same.

### CIMMYT & IRRI DG's visit

The two Directors-General of CIMMYT and IRRI, Drs Masaru Iwanaga and RP Cantrell, paid a visit to the South Asian sub continent from 24 Feb to 6 March 2003. In his first visit as DG, CIMMYT, Dr Iwanaga got to see many things happening in agriculture in the region and how CIMMYT's contribution has made difference towards it. The joint visit of DGs also showed the solidarity of the two institutions towards the development of rice and wheat crops in the South Asia. Together, they visited the conservation tillage sites in India and Nepal and interacted with farmers who are practicing these technologies, met the Directors-General of the national agricultural research systems. They also met Minister of Agriculture, GOI and discussed over their future collaboration with the Indian agriculture.

Responding to the media persons at a joint press meet organized by ICAR, CIMMYT, IRRI and RWC, in New Delhi on 28 February, Dr Masa



"IRRI happily joins hands with CIMMYT and national systems for one more Green Revolution" RP Cantrell

said that the CIMMYT-IRRI-ICAR collaboration is silently building into yet another Green Revolution. He was happy over the performance of the collaboration in promoting the conservation tillage and crop diversification in the eastern IGP.

The DGs have also visited Kallugarhi, Matiyala, Ramraj, Jansath, Mujaffarnagar, Karhat and Varanasi in Uttar Pradesh and Gorans, Pusa, Samastipur, Begusarai, Patna districts in Bihar. Speaking at Patna, Dr Masa opined that the eastern UP and Bihar are blessed with bounty of natural resources and they can be preserved by adopting conservation tillage technologies which saves precious fuel and water in agriculture. They joined the RSC-RTCC in Nepal from 4 to 6 March.



RWC succeeded in leading the development in all the NARSs-RSC-RTCC, 2003

### 2nd PT and mechanization stakeholders meet

A one-day meeting of power-tiller and mechanization stakeholders was conducted in Kathmandu, Nepal on 22 April 2003. Attended by twenty five stakeholders representing farm machinery manufacturers and farmers of Nepal, the meeting identified various bottlenecks in promotion of farm mechanization in the country. The meeting commonly agreed upon to form a power tiller and mechanization network and National Agricultural Mechanization Committee to affectively deliberate on the emerging issues of farm mechanization and look for additional funding support to carry out work on PT mechanization projects which ultimately create irenic condition for mechanization in this hilly nation. Contact: [justice@wlink.com.np](mailto:justice@wlink.com.np)

### Farmer's field day on boro rice

A farmer field day on boro rice was held at RARS, Parwanipur and Biruwaguthi village, outreach site, Parsa District, Nepal on 23 May, 2003 to mark the end of the second successful year of boro rice experiments and demonstrations in the RARS, Parwanipur command area. There were altogether 29 farmers from Dhanusha, Sarlahi, Bara, and Parsa districts who were taking part in trials and demonstrations.

Farmers who participated in the experiments were excited about this technology and expected large areas under this crop in the coming season. Boro rice is a new concept for Nepal and was introduced in the year 2000 with the introduction of cold tolerant rice variety Gautam from India. It can be found only in an extremely small area (approx. 100 hectares) in the far eastern Terai. Contact: [justice@wlink.com.np](mailto:justice@wlink.com.np)

### PRISM workshop in Bangladesh

The third Regional Working Group for Information Technology and Networking (REWIN) was held in Dhaka, Bangladesh from May 25 to 28 2003. The participants represented

### Power tiller and mechanization network

A network of stakeholders in promoting small-scale farm mechanization was conceived in a recently concluded second PT and mechanization stakeholders meet. The network promotes small-scale mechanization through identifying problems plaguing the farm mechanization sector. A brainchild of Mr Scott Justice, CIMMYT Research Affiliate based in Nepal, the network also tries to study the mechanization process in different farm holdings and develop and promote RCT attachments to power tillers. The network is active through a bimonthly electronic mail message system.

agricultural research stations, institutes and universities, and NGOs from the IGP countries of Pakistan, India, Nepal and Bangladesh. The participants were exposed to the working of the Project and Research Information System Module (PRISM). PRISM is a vast repository of project, expert and organizational data accessible worldwide through the Internet.

The workshop concentrated on mainly four processes such as getting National Focal Points introduced to different aspects of data quality, getting new users acquainted with the PRISM, introducing all the participants to new 'technology' pillar which will soon be introduced in PRISM and discussing on budgeting and promotion related issues. The other events include presentation of progress reports by National Focal Points and hands-on training for the new participants. It was decided to hold national workshops to get local users acquainted with the PRISM information system. The public relations and promotion of the PRISM system were also discussed in depth which included RWC-PRISM representation at international IT/agricultural events, national agricultural exhibitions, as well as sessions using mass-media, such as radio, television and newspapers. Finally, estimated budgets for PRISM-enabling users at both the national and regional levels were drafted to cover a three-year period. Contact: [b.krishnan@cgiar.org](mailto:b.krishnan@cgiar.org).



Jubilant third REWIN group posing for a shot

### Traveling Seminar for eastern IGP

There is a growing realization that RWC must respond to the needs of small and marginal farmers of the EGP where land holding size and plot sizes are much smaller than the north western Indo-Gangetic Plains and poverty is large. To ▶

Bangladesh, with an estimate of up to 5 lakh power tillers providing 70% of all tillage needs, provides an excellent model for the remaining eastern Gangetic plains.

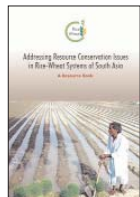
◀ this effect, a traveling seminar was conducted from February 26 to March 5th 2003 with the RWC/ADB/NZAID help. This traveling seminar broke tradition from previous traveling seminars as the focus was subregional eastern Gangetic plains (EGP) and had a power tiller/small farmer focus. Also, in this traveling seminar, there was an abundance of farmers, agricultural engineers and private manufacturers: 7 engineers (one from private manufacturer); 6 farmers; 3 Agronomists; 1 Soc Scientist; and 1 Program Manager have participated. The participants visited Birganj and Kathmandu in Nepal, Jessore, Chuadanga and Dinajpur in Bangladesh and Patna, Nalanda, Begusarai, and Pusa in Bihar. **Contact:** [justice@wlink.com.np](mailto:justice@wlink.com.np)



**Traveling seminars are the better way to strengthen linkages and disseminate results- Participants**

## Bookshelf

### Resource book on rice-wheat systems



A comprehensive publication entitled 'Addressing resource conservation issues in rice-wheat systems of South Asia' covering topics on sustainability, tillage and crop establishment options, resource conservation, and socioeconomic aspects was published by RWC and is now available for distribution from RWC's New Delhi office or offices of the CIMMYT in Nepal and Bangladesh.

### ASA book on rice-wheat systems now available



'Improving the productivity and sustainability of rice-wheat systems: issues and impact' carries the proceedings of an international symposium cosponsored by ASA, IRRI and CIMMYT, held at the 2001 Annual Meetings of the ASA, CSSA, and SSSA on 22nd Oct 2001, and was brought out by JK Ladha et al as an ASA Special Publication 65 can be ordered via the new CPS online shopping cart at IRRI's website. The LDC price is \$25/copy. **Contact:** [j.k.ladha@cgiar.org](mailto:j.k.ladha@cgiar.org)

### Publications in pipeline

▶ Seth, A., K. Fischer, J. Anderson and D. Jha. 2003. The rice-wheat Consortium: An institutional innovation in international agricultural research on the rice-wheat cropping systems of the Indo-Gangetic Plains (IGP). The Review Panel Report. RWC, New Delhi (*This report is meant for limited distribution to select contacts*)

▶ Srivastava, S. K (ed.) 2003. Biology and management of stem borers of rice-wheat system. RWC, New Delhi.

## GO Ferrara awarded



Guillermo Ortiz-Ferrara, Principal Scientist and Regional Coordinator for wheat germplasm in South Asia, was conferred with Gold Medal for Peace by His Majesty, Government of Nepal (HMG/N) and the International Organization of Journalists at a ceremony in Nepal on 26th January 2003. This is the first time the award being given to an agriculturist. Ortiz-Ferrara accepted the award in the name of the whole team working in the country, MOA, NARC, Extension Department, CIMMYT, DFID and the hundreds of male and female farmers.

## Sunder named DDG [R] of AVRDC



Dr S Shanmugasundaram is the first DDG-Research of the Asian Vegetable Research and Development Center effective 1 May 2003. He was instrumental in establishing and managing vegetable research networks such as SAVERNET, AVNET and CLVNET. As a plant breeder, he was responsible for spreading vegetable soybean across the world as a new vegetable crop. He earlier served as the Director of Program I-Vegetables in Cereal-Based Systems and as a legume breeder at the Center, after joining the AVRDC, Taiwan in 1972.



## Jag Shoran is RW Coordinator for India

Dr Jag Shoran, PD, Directorate of Wheat Research, Karnal, India was named as the new National Coordinator (Rice-Wheat) for India. To this effect, a memorandum was issued by the GOI on 26 February 2003. Dr Jag Shoran has rich experience in development of varieties of wheat, barley and okra, and in registration, development and identification of new genetic stocks and development of barley yellow dwarf resistant wheat lines.

## Planner

▶▶ 2nd World Congress on Conservation Agriculture to be held at Igaussu Falls, Parana, Brazil from 11 to 15 August 2003 will host a special session for South and Central Asia on 13th afternoon. Coordinated by Dr JK Ladha, IRRI, the session consists of lectures and a general discussion on resource conserving technologies in rice-wheat systems of South and Central Asia. Contact for more information on regional session: [j.k.ladha@cgiar.org](mailto:j.k.ladha@cgiar.org). Visit [www.febpapdp.org.br](http://www.febpapdp.org.br) for general info on the Congress.

▶▶ 9-11 July 2003. Comprehensive Water Assessment stakeholders meeting in Karnal, Haryana.

▶▶ 8-12 September 2003. Integrated soil, water and nutrient management for sustainable rice-wheat cropping systems in Asia organized by IAEA in Nanjing, China.

## Faces



**PK Tyagi:** A farmer by profession and avid follower of RCTs got into providing service to farmers in laser levelling and zero-till sowing their fields. He is the first Indian farmer to own a laser leveling machine and leveled 600 ha of farm land and helped more than 200 farmers in sowing their zero-till wheat crop. He owns 2 ha of land where he grows rice, wheat, potatoes, and peas. His zero-till wheat yields 4.8 t/ha and he says 'I believe this can still yield better'.

One hour of life, crowded to the full with glorious action, and filled with noble risks, is worth whole years of those mean observances of paltry decorum, in which men steal through existence, like sluggish waters through a marsh, without either honor or observation. ~Sir Walter Scott~

The RWIS is a half yearly newsletter aimed at providing information about various activities, projects, technologies developed and other events of significance in rice-wheat arena. It is brought to you by the Rice-Wheat Consortium for the Indo-Gangetic Plains (RWC), an ecoregional program of CGIAR.

We appreciate your feedback to improve the functionality of this newsletter. Please send your comments to The Editor, RWIS, [s.prabhakar@cgiar.org](mailto:s.prabhakar@cgiar.org).

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