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Accelerated female participation in promotion of rust resistant wheat varieties in the Nepali hills

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The frequent wheat stripe rust epidemics in the hill regions of Nepal have been attributed to the prolonged cultivation of old varieties such as Nepal 297 and RR21. In the last two decades rust resistant varieties Annapurna 1, Kanti and Pasang Lhamu were released but were not widely adopted due to lack of farmer preference. With a view to enhance genetic diversity for stripe (yellow) rust resistance in combination with resistance to Pgt race Ug99, participatory varietal selection (PVS) programs were extensively launched in 12 districts. Pre-released genotypes were selected by farmers and other stakeholders through co-ordinated interaction, discussion and sustained field visits. Around 1,000 progressive farmers have participated in the PVS program in the last five years. Interestingly, an increased participation of women has occurred. The female participation level in PVS programs in districts such as Lalitpur was around 70%. Similarly, in the middle and high hills of far western areas, there was more than 50% female participation in wheat cultivation through PVS. The key criteria for variety preference by women farmers were taste, soft bread and better straw quality. On the other hand, male farmers preferred varieties with less awns, easy threshing ability, earliness, high yield and rust resistance. Gautam and WK1204 were the most frequently selected varieties in the PVS program and their cultivation has increased by 30% in planting area over the last five years. In the last two years female farmers have shown increased interest in new rust resistant varieties such as Danphe#1, Danphe#2 and Becard#1.
Nepal-CIMMYT collaboration in increasing food security through wheat research and development

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The research partnership between the Nepal Agriculture Research Council (NARC) and CIMMYT has made a significant impact in ensuring food and nutrition security in Nepal through increased wheat production. In the last 50 years, the introduction of semi-dwarf varieties and other co-created innovations in research and development have led to a seven-fold increase in wheat area and a 14-fold increase in production; that is, more than a doubling of productivity. In the process, 34 varieties were released. In the last five years (2005-06 to 2010-11), the area increased from 0.67 to 0.77 m ha, production increased from 1.44 to 1.85 m t and productivity from 2.07 to 2.412 t/ha. Recent NARC-CIMMYT collaboration played an instrumental role in development, release and dissemination of agronomically superior Ug99-resistant varieties Vijay, Gaura and Dhaulagiri in the last three years, and Danphe 1 and Francolin are in the release process. Seed production of resistant varieties for 2012-13 was sufficient to cover 5.4% of the wheat area. Female farmer engagement in setting varietal selection criteria and evaluation through participatory varietal selection (PVS) has enhanced successful identification and deployment of farmer-preferred varieties. This was more successful in hilly areas where seed networking systems and linkages are weaker. PVS conducted at more than 70 sites annually has enhanced genetic diversity. The collaboration led to increased local knowledge of rust resistance genes and their use in breeding and pathogen virulence monitoring. Increased capacity building and an increased awareness of the need for resistant varieties and pre-release seed multiplication by farmers, the seed industry, planners and the national agricultural system has been achieved.
Going beyond component technologies to integrated systems for enhancing the adoption of rust tolerant wheat varieties: Experience of EAAPP in Ethiopia

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The abnormally extended dry season rainfall in Ethiopia in 2010 created suitable weather for stripe rust development and spread. The epidemic caused considerable crop loss due to the wide use of susceptible wheat varieties Kubsa and Galema. To prevent the devastating effects of stripe rust and other foliar diseases, a total of eight bread wheat and two durum varieties were released by the national wheat research program in 2010 and since. However, farmers continued to be at risk, because seed producers were reluctant to multiply the new varieties as these were not sufficiently popularized but instead focused on multiplication and supply of old varieties. For fast-tracking replacement of susceptible varieties, the Eastern Africa Agricultural Productivity Program (EAAPP) is engaged in demonstration, promotion and popularization of newly released varieties along with recommended production packages in 42 wheat growing districts of Ethiopia by linking the formal and informal seed systems. To measure the level of farmer satisfaction with newly released wheat varieties, a five-point Linkert scale was used on 200 EAAPP beneficiary farmers. The study indicated that the mean productivity from technology increased by 45% compared to the control. The weighted average of perception of the respondents was 4.46. This shows that the beneficiaries were satisfied with the new technologies.
Determinants of adoption of rust resistant improved wheat varieties in the Robe and Digelu Tijo districts of Oromiya region, Ethiopia

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This study investigated the determinants of adoption of improved wheat varieties in the Robe and Digelu Tijo districts in the Oromiya region. The objectives were to assess factors that affect the adoption and intensity of use of improved wheat varieties in the Arsi zone with specific reference to the Robe and Digelu Tijo districts. One hundred and fifty farmers in the study area were selected and interviewed in 2012. To identify the model that best identifies the determinants of adoption and level of adoption of improved varieties, a model specification test was carried out using the LR test. The LR result preferred the D-H model. The results of the D-H model provided empirical evidence of a positive impact of sex of household head, field day participation, access to all weather roads, and district in enhancing the adoption of improved wheat varieties. With regard to the intensity of use of improved wheat varieties, sex of household heads and access to all weather roads had a significantly negative impact on intensity of use of improved wheat varieties while access to credit, active family force (households with members between the ages 15 and 60), market distance and district had a positive impact on intensity of use of improved wheat varieties. The overall findings of the study emphasized sex of household head, field day participation, access to all weather roads, access to credit, active family force, district and market distance. Hence, policy makers should give emphasis to these variables.