

Impacts of International Wheat Breeding Research in Developing Countries, 1966-97

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and H.J. Dubin



CIMMYT^{MR}



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ECONOMICS PROGRAM

INTERNATIONAL MAIZE AND WHEAT IMPROVEMENT CENTER (CIMMYT)



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Abstract: This report, which updates and extends the findings of an earlier CIMMYT study published in 1993, examines the impacts of international wheat breeding research in the developing world. Covering the period 1966-97, the report reviews investment in wheat breeding research by national and international breeding programs, documents the use of improved germplasm, estimates farm-level adoption of modern varieties (MVs), discusses factors that affect the adoption of MVs, and estimates the gross value of additional grain production attributable to international wheat breeding efforts. The area planted to wheat MVs in developing countries continues to expand. By 1997, slightly over 80% of the total area planted to wheat in developing countries was planted to MVs. During the past 10-15 years, the rate of wheat yield growth achieved in farmers' fields slowed in many favorable production environments, but spillovers from research conducted in favorable environments and continuing diffusion of MVs led to more rapid yield growth in many marginal production environments. Most wheat breeding research is carried out by public breeding programs, including international agricultural research centers and national research organizations. Within the international wheat breeding system, CIMMYT remains the dominant partner. During the late 1990s, about 62% of the area planted to wheat in the developing countries was planted to CIMMYT-related varieties, and about 20% was planted to CIMMYT crosses. Returns to international wheat breeding research continue to be high. For a total investment of US\$ 100-150 million per year, the international wheat breeding system produces annual benefits of US\$ 1.6 billion or more.

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