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**Title:** THE HISTORY AND SUCCESS OF THE PUBLIC-PRIVATE PROJECT ON GERmplasm ENHANCEMENT OF MAIZE (GEM)

### Author

■ Pollak, Linda

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### Interpretive Summary:

**Technical Abstract:** The Latin American Maize Project (LAMP) was the first coordinated international project for evaluating a major world crop. In LAMP, 12 countries cooperated to evaluate their native germplasm accessions. Before the LAMP accessions could be used as sources of breeding material in the USA, some process had to be established to enhance them so they could enter commercial corn breeding channels. A coordinated and cooperative effort among public and private sectors was organized, the Germplasm Enhancement of Maize project (GEM). The project provides the corn industry early breeding lines by using germplasm enhancement to improve and adapt useful exotic germplasm. The ultimate objective is to improve and broaden the germplasm base of corn hybrids grown by American farmers. Traits targeted for improvement are agronomic productivity, disease resistance, and yield. The project has grown to include international cooperators, both



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2010. Conserving and Enhancing Maize Genetic Resources as Global Public Goods— A Perspective from CIMMYT. *Crop Science* 50:13–28. Pardey PG, Koo B, Van Dusen E, Skovemand B, Taba S, Wright BD. 2004. CIMMY T genebank. In: *Saving Seeds: The economics of conserving crop genetic resources ex situ in the Future Harvest centers of the CGIAR*. CABI Publishing, UK . pp. 21–47. Pollak LM. 2003. The history and success of the public-private project on germplasm enhancement of maize (GEM). *Advances in Agronomy*. 78:45-87. Available from: <http://www.public.iastate.edu/~usda-gem/Publications/Publications/Advances%20in%20Agronomy.pdf> . Date accessed: 3 September 2010. The CGIAR Research Program MAIZE is an international collaboration between more than 300 partners from the public and private sectors, national institutions, international research organizations and seed companies. This unique partnership seeks to mobilize global resources in maize research and development to achieve a greater strategic impact on maize-based farming systems in Africa, South Asia and Latin America. MAIZE News. What do 30 years of research on climate-resilient crop adoption tell us? As part an effort to mobilize decades of scientific and development research towards the eradicat GEM project represents a collaboration of maize breeders and scientists from public research institutions and the seed industry, with the objective of incorporating novel germplasm, primarily from landraces, into elite germplasm (Pollak, 2003). Until 2009, 65 GEM released varieties had improved amino acid profiles (index of lysine, methionine and tryptophan), oil content greater than 4.5% and protein content greater than 13% and unique starch thermal properties (<http://www.public.iastate>. Maize Genetic Resources-Science and Benefits-. Book. The Latin America Maize Project (LAMP) [48] and the Germplasm Enhancement of Maize (GEM) program [7,49] provide an example of such an approach. After examining ear-colonizing pest resistance, 20 maize lines from the USDA-ARS Germplasm Enhancement of Maize (GEM) Program were evaluated for whorl-feeding fall armyworm (FAW) (*Spodoptera frugiperda*) resistance using 4 maize inbred lines as the resistant and susceptible controls. Both FAW injury ratings at 7- and 14-d after infestation, and predator abundance and diversity at whorl stage (V6-V8) were recorded in 2009 and 2010. The survey of the diversity and abundance of predators in each experimental plot were conducted 7 d after the FAW infestation. The history and success of the public-private project on Germplasm Enhancement of Maize (GEM) Pollak et al. *Advances in Agronomy* 2003. Member Articles.