INGER: EVALUATING AND SHARING THE WORLD'S ELITE RICE BREEDING AND GENETIC RESOURCES

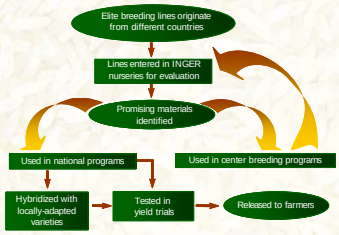
Objective

To facilitate the unrestricted and safe multilateral exchange of rice breeding and genetic resources and information among national agricultural research and extension systems (NARES) of rice-growing countries and international agricultural research centers (IARCs) such as IRRI, WARDA, IITA, CIAT, and ICARDA.

How INGER works

Member institutions contribute elite breeding lines to INGER. These are multiplied at IRRI, assembled into different nurseries and sent to NARES partners. Cooperators evaluate these nurseries for adaptation to different rice ecosystems or tolerance for biotic and abiotic stresses. The best breeding materials are selected by NARES for direct release as commercial varieties to farmers or used as parents in hybridization.

The Centralized Seed Stock Unit, handles all seed and nonseed biological materials exports, as well as germplasm imports from the different rice breeding programs of IRRI.



Major achievements

▪INGER entries from 68 countries have been used in 51 countries for making more than 18,000 new crosses to develop new inbred lines and hybrid rice combinations. Some 244 released varieties in India and more than 200 inbred lines released in China used INGER entries as parents in crosses.

▪In China, 10 released hybrids had INGER entries as restorers and 36 released hybrids used INGER entries as parents for developing restorers.

Country where bred and released	No. of released varieties	Period when released
Thailand	12	1997-2007
India	244	1975-2006
Indonesia	62	2000-2005
Sri Lanka	13	1985-2005
Bangladesh	22	1973-2007
Myanmar	21	1980-2006
Nepal	61	1975-2006
China	>200	1990-2007

▪The Centralized Seed Stock Unit has dispatched 50,912 seed samples to 69 countries from 2003 to 2007.

▪More than 48,000 nursery entries and 2.63 million seed samples have been sent to 80 countries for evaluation and use. Some 667 INGER entries were released directly as varieties in 62 countries. The economic value for each directly released entry has been estimated at US$2.5 million per year (Evenson and Gollin 1997).

•INGER-sponsored training activities, postdoctoral fellowships, international workshops, and site visits considerably enhanced and strengthened the national rice research capacity of NARES. INGER offers the Rice Breeding Course designed to train the next generation of rice breeders for the launching the Second Green Revolution. In 2007, 47 from 17 countries have completed the course.

Future plans and strategies

To transform INGER into a model network for multilateral and global access, sharing, and utilization of elite breeding lines and genetic resources and associated knowledge for the benefit of national programs, INGER plans to

▪Streamline and develop quality management system in INGER operations;

▪Institute faster data submission, analysis, knowledge generation, and dissemination procedures through ICT;

▪Compose and distribute nurseries aligned with NARES' needs;

▪Infuse diverse and better characterized breeding and genetic resources using molecular marker technology;

▪Link with various rice consortia and networks to become the common platform for breeding material exchange;

▪Enhance NARES' capacity on plant breeding and enliven genetic resources sharing through the Rice Breeding Course;

▪Strengthen collaborations with other IARCs (CIAT, WARDA,ICARDA) and NARES to effect a global revitalization of rice germplasm exchange and capacity building;

▪Regularly participate in discussions of international bodies on relevant issues such as plant variety protection (UPOV) and genetic resources access and benefit sharing (ITPGRFA); and

▪Raise awareness on INGER in various fora in order to mobilize policy and donor support for the network.

Reference:
Evenson, R.E. and Gollin 1997. Genetic resources, international organizations, and improvement in rice varieties . Econ. Dev. Cult. Change 45:471-500.

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