



Public-Private Partnership For Development and Dissemination of Hybrid Rice in Asia

Sant S. Virmani

Virmani Consulting International

4425 Partney Court, Plano, Texas USA.

**(Formerly, Principal Scientist, Plant Breeding
Genetics and Biotechnology Division, IRRI, Manila,
Philippines)**

Sant@Virmani.org

Rice producing nations call for increased focus on production (CORRA meeting announcement, Hanoi, Vietnam Sept. 2007)

Reasons: Rising consumer prices


Causes:

- **Increasing population**
- **Reducing area available for rice**
- **Water scarcity**
- **Climate change**
- **Ongoing crop diversification**

Hybrid rice recognized an important technology for the purpose

A strong public-private partnership key to faster development and dissemination of this technology

Impact of hybrid rice technology in China

- 
- Increased paddy yield over inbred rices: 1.5 t/ha in about 15 m ha
 - Increased farmers income: \$100/ha
 - Increased paddy production: 22.5 M t/year (Worth \$4.5 B)
 - Rice land saved due to increased yield: 4.0 million ha.
 - Water saved and made available for diversified cropping system 2.4 billion cu m
 - Development of large effective seed industry producing 250,000 t seeds (worth \$625 m)
 - Increased rural employment generation

Progress made outside China (1991-2007)

- Area of hybrid rice: 2.25 million ha.
- Increased yield: 1-1.5 t/ha
- Increased production: 2.5 m t (Worth \$450 million)
- Development of hybrid rice seed industry in public, private and NGO sectors.




Potential Impact of Hybrid Rice on Seed Industry Outside China

- Possible Area Coverage by 2015 with HR: 10 m ha
- HR Seed Requirement: 140,000 t (worth \$ 420 m) attracting additional private seed companies
- HR Seed Production Area: 100,000 ha
- Rural Employment Opportunities
Generation through Seed Production: @ 100 person days/ha (mostly for female)
- Positive impact on seed quality of inbred seeds



Reasons for Success of Hybrid Rice in China

- 
- **Continuous availability of improved HR technology using required HR**
 - **Organized seed industry at grass-root to provincial levels in joint public-private sector**
 - **Very close link between R&D , seed industry and extension network on hybrid rice**
 - **Excellent policy support from local, provincial and national government**

Strengths of various sectors in development and dissemination of hybrid rice technology

Sector	Technology generation	Seed production and marketing	Technology dissemination	Policy support
Public	★★★★★	★★★	★★★★	★★★★★★
Private	★★★★	★★★★★	★★★★★	—
NGO/ Farmer Cooperative	★	★★★	★★★★★	—
Public and private	★★★★★★	★★★★★★	★★★★★★	★★★★★★

★★★★★★ = Very strong; ★★★★★ = Strong; ★★★★ = Intermediate;
★★★ = Weak; ★ = Very weak

Relative Strength of Public-Private Partnership on hybrid rice in some Countries in Asia

- 
- **China** *****(?)
 - **Vietnam** *****(?)
 - **India** **
 - **Philippines** ***
 - **Indonesia** **
 - **Bangladesh** *
 - **Note: IRRI-Private sector Partnership is emerging**

Models of public-private sector partnership

- Mutually acceptable model (s) and mechanism (s) to forge a close public-private sector partnership are needed to enhance the pace of development and dissemination of hybrid rice technology



Issues constraining public-private partnership (identified through an IRRI study in 2003)

Promotion of the available hybrids

- Unclear mechanisms for assessing hybrid demand
- Uncoordinated strategies for increasing awareness and demand of public-private hybrids.
- Inadequate interest of public seed companies in promoting public and/or private hybrids.
- Inadequate interest among private seed companies in promoting public hybrids.
- Inadequate coordination between state agricultural development agencies and private sector to promote private hybrids

Pricing and subsidy

- Differential procurement pricing of hybrid seeds by the two sectors.
- Differential treatment to public and private hybrids when subsidies are involved.



Issues constraining public-private partnership

Linkage between research institutions and seed industry

- Inadequate

Accreditation procedures and evaluation process

- Lack of mechanism for accreditation of private hybrids at state level
- Public sector's perception of the private sector's testing procedures
- Private sector's perception of the public sector's testing procedures

Issues constraining public-private partnership

Research and development

- Lack of understanding on labeling of public hybrids by the private sector
- Lack of mechanism for recognizing public breeder/institutions in NARS for developing and sharing public hybrids and parental lines
- Protection of public and private parental lines and hybrids
- Unclear policy at national / state government level for accessing elite public parental lines and hybrids on regular basis
- Mistrust in both sectors about the superiority of each other's hybrids

Issues constraining public-private partnership

Research and development... continued

- Lack of coordination and collaboration between the two sectors for developing hybrids with the desired grain quality
- Shortage of plant breeders for the seed industry (Recent issue)

Research management and policy support


- Inadequate commitment and policy support of some research managers for developing the technology



Suggestions for Tackling the issues

- 
- **Concerned parties need to sit together to discuss these issues and reach consensus on roles and responsibilities of different sections operating at grass root, national and international levels to forge effective partnership for development and dissemination of hybrid rice technology**


Proposed Model of IRRI-Private Sector Partnership

- 
- **Establish Consortium on Hybrid Rice**
 - **Specify proposed terms and conditions of partnership**
 - **Discuss terms and conditions with private sector to seek its buy-in of the proposed consortium**
 - **Work closely with APSA and other agencies operating at international and/or national level for establishing such partnership**

IRRI and APSA collaboration

- 
- IRRI and APSA in collaboration with third parties can play the role of honest broker to help in strengthening public-private partnership in the national programs by;
 - Learning about the aspects of PPP in China and Vietnam that are applicable in free economy countries
 - Identifying and/or validating issues constraining PPP in national programs
 - Facilitating dialogues among public and private sector representatives and policy makers in national programs to discuss the issues and agree on mutually acceptable solutions

IRRI and APSA collaboration

- 
- **Suggesting appropriate models of public-private sector partnership for adoption at various levels of implementation in national programs**
 - **Following up the implementation arrangements of the agreements made and assessing their effectivity and suggesting amendments, if necessary.**



A strong public-private sector partnership, established for hybrid rice, may pave the way for:

- **Significant financial commitments to support national and international programs not only on hybrid rice but also on other seed-based technologies**
- **Tackling the issue of shortage of plant breeders for the seed industry**
- **Increased farmers' income, rice production efficiency, national food security, seed trade and rural employment.**



**Thank You
for
Your Attention**