

Status and Prospects of Hybrid Rice Commercialization in the Philippines

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Outline

- Why produce more rice
- The HRCP
- Objectives and components
- Strategies
- Status of adoption
- Impacts
- Challenges
- Prospects

Why Produce More Rice

- Philippine population growing at 2.3%
- Increasing trend of per capita consumption – from 95 kg/year (1995) to 120 (2007)
- Consumption outpaces production
- High cost of imported rice

Why Produce More Rice

“The increasing demand of Phil. population coupled with the declining resource base needs a technology-based growth in agriculture especially in rice production. The country’s capability to push yield further will determine the sustainability of rice food security in the future”
(Sebastian et al., 2005)

Hybrid Rice Commercialization Program (HRCP) in the Philippines

- Launched by President Gloria Macapagal Arroyo (PGMA) under the Million Jobs Program on March 4, 2002.
- Under EO No. 76, PGMA designated PhilRice as the lead agency in implementing the program.

Coupled with other investments in agriculture, hybrid rice technology provides hope for the achievement of the country’s goal to produce enough rice for Filipinos...

Hybrid rice has a 15% yield advantage over the inbred varieties

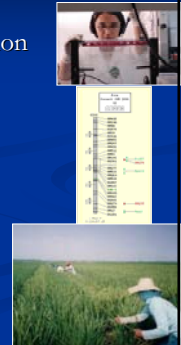
Objectives

- to reduce rice importation and attain self-sufficiency
- to increase rice production with less land and improve farm yields
- to create employment opportunities in the rural areas



Components

- hybrid rice commercial production (F1 cultivation)
- hybrid seed production
- technology demonstrations
- training
- information campaign
- marketing assistance
- research and development



Strategy 1. Program Empowerment

Technical briefings on hybrid rice seed technology participated in by:

- total of 459,250 extension staff
- R&D implementers
- seed inspectors
- agricultural technicians
- farmers



Strategy 2. Information Dissemination

- campaign materials
- printed materials
- TV advertisements
- radio plugs and jingles
- instructional and promotional videos
- other broadcast media releases



Strategy 3. R&D

- Breeding using biotechnology to expedite variety development
- development of experimental and seed production farms
- putting up of greenhouses, growth chambers, biotechnology and grain quality laboratories
- improvement of drum seeders, mechanical dryers, tillers and other specialized farm equipment to suit the characteristics of hybrid rice
- development of crop management options



Strategy 4. Support activities

- Training of extension staff
- Tapping the private sector for seed production, distribution and marketing



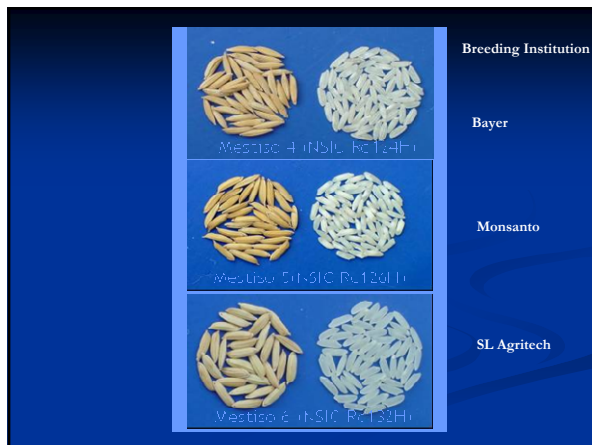
Philippine hybrid rice varieties, 1994-2007

Variety	Line Designation	Breeding Institution	Year	Average Yield (t/ha)	Maximum Yield (t/ha)
PSB RC26H (Magat)	IR64616H	IRRI	1994	5.6	7.6
PSB RC72H (Mestizo)	IR68284H	IRRI	1997	5.4	9.9
PSB RC76H (Panay)	CRH 05	MONSANTO	1998	4.8	7.9
NSIC RC114H (Mestizo 2)	IR75207H	IRRI	2002	5.8	8.7
NSIC RC116H (Mestizo 3)	IR75217H	IRRI	2002	5.8	8.6
NSIC Rc124H (Mestizo 4)	BIGANTE	BAYER	2004	5.7	9.1
NSIC Rc126H (Mestizo 5)	MRH 005	MONSANTO	2004	6.2	9.5
NSIC Rc132H (Mestizo 6)	SL 8	SL Agritech	2004	5.9	8.7
NSIC Rc163H (Mestizo 7)	IR78386H	IRRI	2006	6.7	10.6
NSIC Rc162H (Mestizo 8)	BIO 401	BIOSEED	2007	5.8	7.7
NSIC Rc164H (Mestizo 8)	RIZALINA 28	HYRICE	2007	6.4	8.5
NSIC Rc166H (Mestizo 10)	PSD 3	SYNGENTA	2007	6.5	10.6
NSIC Rc168H (Mestizo 11)	BCS 064	BAYER	2007	6.5	10.5

Most popular hybrid rice varieties, 2004 DS to 2006 DS.

Variety	2004		2005		2006	All Seasons
	DS	WS	DS	WS	DS	
Percentage %						
SL 8H	26	29	35	36	69	45
Mestizo 1	45	40	43	44	18	34
Bigante	18	10	12	7	7	10
Mestizo 3	8	10	7	13	3	7

Maintaining steady seed supply is key to popularity...



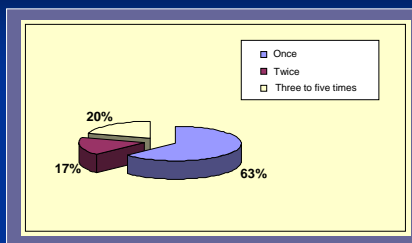
How many farmers adopted HR

Percentage of hybrid rice adopters in 4 key provinces based on a quick survey, 2004 DS to 2006 DS (n=508)

Province	Adopter (%)	Non-adopter (%)
Nueva Ecija	42	58
Isabela	38	62
Iloilo	16	84
Davao del Sur	28	72
All	30	70

Much needs to be done to attract more farmers to plant hybrid rice!!!

Number of times adopters planted hybrid rice (n=152)

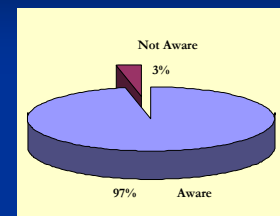


20% of sample farmers are full adopters after 4 crop seasons. More farmers did not repeat planting hybrid rice...

Awareness of non-adopting farmers about hybrid rice (n= 356)

Reasons for not adopting

- High seed cost
- High labor cost
- Susceptibility to diseases like bacterial leaf blight
- Lack of skill to grow HR



Undeniably, there are technological and loopholes that need to be patched. Farmer education is crucial...

Seed subsidy

- key for the promotion and initial adoption of HRCP in the country.
- sustainability is an issue, thus gradual phasing-out of the seed subsidy to be implemented by the government
 - 50% seed subsidy as current strategy



What farmers say...

Adopters

- Higher yields provides the incentive to plant (83%)
- Premium price of hybrid rice especially Mestizo 1 (4%) - at least 30 cents/kg advantage over inbred

Non-adopters

- High seed cost prevents farmers to plant (49%)
- Susceptibility of hybrids to diseases (19%)



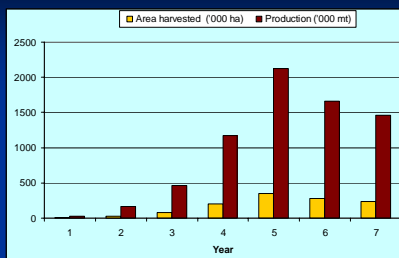
Percentage of farmer adopters who will and will not plant hybrid rice without seed subsidy (n=152)

Province	Will plant (%)	Will not plant (%)
Nueva Ecija	81	19
Isabela	62	38
Iloilo	75	25
Davao del Sur	68	32
Davao del Norte	15	85
All	61	39

Impacts



National Production



A steady increase in area harvested and production from 2001 to 2005. Decline seen in 2006 and 2007 is a result of low supply of seeds as government had stopped subsidizing the seed production of hybrid seed cooperatives.

Job Creation

- generated a total of 85,266 jobs during the 2002 WS-2004 DS period
- benefited a total of 247,887 hybrid rice farmers and 1,857 seed growers

Higher labor is required in seed production, seedling management, transplanting, harvesting and threshing operations



Farm Productivity

- Average yield increased by 11% from 2002-2004 (5.4 mt/ha hybrid vs 4.9 mt/ha inbred)
- Gross income advantage ranged from 15 to 19%
- Average net income was 20% higher than inbred



Adoption of other technologies

- lower seed utilization per hectare
- patterns of fertilizer usage
- soil analysis
- integrated nutrient and pest management
- leaf color chart
- synchronous farming
- the use of 20 kg seed ha⁻¹
- sparse seedling rates
- 1-2 per hill planting rates
- minus-one element technique (MOET)



Financial and economic impact

- financial and economic benefit cost ratio of HRCF were estimated at 1.56 and 1.13, indicating that benefits outweighed costs
- US dollar saving from rice imports, the program had earned US\$ 23.25 million



The challenge...

To sustain and further enhance the productivity gains posed by HRCF over the past years ...



The needs...

- prioritize funding support for the program for better efficiency. Re-visit subsidy as a strategy.
- further strengthen the linkages and coordination among the government, PhilRice, and other major stakeholders of the program



The needs...

- identify and characterize the most suitable areas for cultivation
- medium and long term continuation of upstream research on hybrid parental lines
- on-farm adaptive research on hybrid commercial production through technology promotion and training



The needs...

- strengthen the institutional capacity of National Seed Quality Control System (NSQCS) to ensure adherence to quality standards in hybrid rice seed production



...by 2010

- A private sector-led hybrid rice commercialization is envisioned



- gradual phasing out of seed subsidy should be implemented

The government funds could then be invested in:

- farm-to-market roads
- irrigation facilities
- extension activities
- information dissemination
- rice research
- other more tangible projects



...continue and expand the socio-economic monitoring and evaluation of the HRCP

- to analyze the profitability and productivity impact of the HRCP among its major stakeholders- seed growers and F1 commercial rice farmers



Prospects

- Hybrid Rice as a key strategy to increase rice production and achieve rice self-sufficiency
- 1.14 M ha to be planted and expected to contribute 6.8 M mt in 2009 and 2010.



Bright future of hybrid rice in the Philippines...



Thank you