
The Philippines

Impact of the *Green Revolution* on Agriculture

Rice: The Primary Crop



Major Events of the Green Revolution

- 1960s- the government of the Republic of the Philippines with the Ford Foundation and the Rockefeller Foundation established IRRI (International Rice Research Institute)
 - 1962- the IRRI crossed Dee-Geo-woo-gen and Peta rice strains
 - 1968- IR8, or “miracle rice,” was formed
 - 1981- the use of miracle rice reaches **81%** of total rice crops
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Benefits

- IR8, “miracle rice,” produced ten times the amount of rice as traditional varieties
 - As a result of the switch to farming IR8, annual rice production in the Philippines increased from 3.7 to 7.7 million tons in 2 decades
 - The large increase in rice production allowed the Philippines to become an exporter of rice for the first time in the 20th century
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Table 1 – Means and Coefficients of Variation of the Variables Used in the Analysis

	Farmers' yield (kg)	Yield frontier (kg)	Ratio of farmers' yield to yield frontier	N (kg)	Pesticide (kgai/ha)	Labor (pre-harv.) (MDS)	Tractor days	Age	Schooling	Family size/ha	Distance from main canal (kms)
N. ECIJA											
1980	4337 (31.3)	7297 (11.4)	0.6 (33.6)	80 (59.2)	1.26 (70.6)	47.5 (73.2)	2.26 (91.8)	46 (26.8)	4.7 (63.7)	5.23 (95.2)	1.16 (112.9)
1986	4183 (34.4)	7892 (7.7)	0.53 (32.9)	93 (42.9)	1.38 (57.3)	55.8 (97.3)	3.22 (54.8)	46 (26.8)	4.7 (63.7)	6.12 (136.2)	1.16 (112.9)
1988	4826 (31.3)	8013 (7.0)	0.6 (30.4)	100 (35.4)	1.13 (75.9)	39.7 (74.6)	3.27 (50.4)	46 (26.8)	4.7 (63.7)	5.3 (130.6)	1.16 (112.9)
LAGUNA											
1966	2532 (41.2)	5216 (4.4)	0.48 (40.3)	14 (95.0)	0.77 (60.8)	61 (32.3)	0.34 (184.4)	60 (18.6)	5.37 (64.7)	3.52 (55.2)	0.20 (99.8)
1970	3492 (39.5)	5948 (4.7)	0.69 (38.9)	50 (55.9)	0.78 (65.2)	51.6 (24.6)	1.14 (76.6)	60 (18.6)	5.37 (64.7)	3.23 (49.8)	0.20 (99.8)
1975	3713 (30.8)	6664 (3.0)	0.56 (31.0)	86 (39.4)	0.76 (35.8)	51.5 (28.0)	1.3 (58.6)	60 (18.6)	5.37 (64.7)	3.27 (49.6)	0.20 (99.8)
1981	4578 (29.7)	7146 (2.7)	0.64 (29.2)	66 (45.5)	0.79 (38.9)	46.4 (22.9)	2.98 (59.0)	60 (18.6)	5.37 (64.7)	3.14 (49.4)	0.20 (99.8)
1984	4746 (33.5)	7352 (4.1)	0.64 (31.5)	52 (64.5)	0.87 (54.7)	43.5 (33.4)	3.25 (49.0)	60 (18.6)	5.37 (64.7)	3.81 (68.6)	0.20 (99.8)

Environmental and Agricultural Problems

- Chemical fertilizers used in conjunction with miracle rice eroded soil
 - Increased rice production led to increased water consumption
 - Pesticides and fertilizers used in rice farming polluted water and caused siltation
 - Declining water quality poses a threat to future rice production, due to the high amount of clean water required to grow rice
 - The Philippines did not have sufficient funding to improve irrigation systems→ fell behind neighboring countries
 - Vulnerable to recurring natural disasters, which posed a large threat to the agriculture-based economy
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Rice Production Afterwards

- 1973- the Philippines experienced domestic/international problems causing a downfall in economic development that continued until 1986,
 - Tropical storms and drought adversely affected yields
 - Rising debts→ Crop loan supply depletion→ Falling income→ Poor agricultural production
 - Farmers were squeezed by rising debts and declining income
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Present and Future

- New developments:
 - 33 new strains of rice since IR8
 - IRRI developing rice that can survive underwater for <2 weeks
 - Transition to organic fertilizers
 - Concerns:
 - Overfarming and chemical pesticides
 - Output levels declined after initial boom
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Works Cited

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