Philippine Agricultural and Food Policies: Implications on Poverty and Income Distribution

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Outline

- Motivation
- Background on Philippine agricultural and food sectors
  - structure, policies, programs
- Poverty trend
- Policy simulation model
  - CGE
  - microsimulation
  - policy experiments
- Simulation results
- Conclusions and Policy Insights

Production Structure - Economy (%)

Sectors	1991-94	2005-07
Agriculture	21.6	14.2
Industry	33.0	31.6
Manufacturing	24.1	22.7
Services	45.4	54.2
Total	100	100

Production Structure - Agriculture (%)

Commodities	1993		2007	
	Area	Value of output	Area /1/	Value of output
A. Cereals	51.4	40.9	54.1	48.6
Palay /2/	26.3	28.6	33.8	35.7
Corn	25.2	12.3	20.3	12.9
B. Major crops	33.0	34.4	36.6	35.6
Coconut	24.6	13.2	27.0	11.7
Sugarcane	3.1	5.5	3.1	5.7
Banana	2.6	6.0	3.5	11.4
Other major crops	2.7	9.7	3.0	6.8
C. Others	15.6	24.8	9.3	15.8
Total	100.0	100.0	100.0	100.0

/1/ Data for 2005 /2/ Rice paddy

Net Trade, US$ million
(exports less imports)

Commodities	1980-84	1985-89	1990-94	1995-99	2000-04	2005-06
Agriculture	1,201	681	57	-1,086	-994	-807
Food	1,076	636	291	-719	-765	-638
Manufactures	-2,206	-1,383	-4,561	-3,817	3,798	1,404

Reasons Behind Worsening Agricultural Net Trade

- Declining productivity in agriculture
  - TFP contribution:
    - 36% in 1961-80
    - 9% in 1980-98
- Declining revealed comparative advantage (RCA) in agriculture
  - RCA of 3 in 1960 to 0.8 in 1998
- Increasing demand for items with higher income elasticities
  - wheat, milk, dairy products, beef
- Increasing pressure from high population growth

Trade Policies

- 1950s and 1960s – import substitution
- 1970s – export promotion
  - both periods supported non-agriculture and created policy bias against agriculture
    - policies – high tariffs, quantitative restrictions, taxes on agricultural exports, overvalued exchange rate, government marketing agencies
- 1980s, 1990s, present – Trade reform
  - tariff reduction (series of 4 tariff reduction programs)
  - tariffication of quantitative restrictions (except rice) which increased tariffs on major agricultural products
  - TRQs
  - relative protection favors agriculture
- Domestic support

Nominal Tariff Rates (%)

Sectors	1990-94	1995-99	2000	2001	2002	2003	2004	2005
Sectoral weighted average	28.8	21.3	17.4	14.1	12.6	11.8	10.8	14.4
Agriculture (agri)	23.6	19.5	16.6	15.7	15.1	14.9	14.5	14.4
Manufacturing (mfg)	32.3	23.2	18.7	14.3	12.4	11.3	9.9	15.2
Food processing	46.2	40.4	35.1	27.0	24.6	23.1	21.5	31.6
Ratio (%): agri. tariff ÷ mfg tariff	0.7	0.8	0.9	1.1	1.2	1.3	1.5	0.9

Nominal Protection Rates (%)

				Coconut				
Year	Rice	Corn	Sugar	Oil	Copra	Beef	Chicken	Pork
1960-64	20	53	9	-16	-24	30	115	-13
1965-69	12	44	86	-29	-31	-32	163	-24
1970-74	4	19	-37	-31	-35	-53	84	-38
1975-79	-13	30	-26	-20	-28	-25	91	-39
1980-84	-13	25	19	-28	-37	15	100	-28
1985-89	16	67	122	-16	-31	6	56	2
1990-94	26	70	51	-7	-26	31	69	43
1995-99	67	86	107	-12	-20	103	43	88
2000	87	104	82	-17	-33	73	23	53
2001	83	79	73	-21	-33	26	8	37
2002	63	51	111	-13	-18	18	5	76
2003	49	30	86	21	-20	28	-2	49
2004	21	41	47	-10	-30	-1	-5	32
2005	15	53	15	-16	-34	5	0	47
2006	19	51	2	-11	-32	16	22	80
2007	27	32	80	-10	-28	26	27	94

Gov't Agricultural Programs

- Agriculture and Fisheries Modernization Program (AFMP) which started in 2001
  - Five objectives: food security; poverty alleviation and social equity; income enhancement and profitability; global competitiveness; sustainability
  - Programs: rice, corn, sugar, high-value commercial crops, livestock, fisheries
  - Support: budget allocation, tariff and import duty exemptions for imported agricultural inputs
  - Rice program: Hybrid Rice Commercialization Program (HRCP)

Gov't Expenditure by Commodity Group (%)

Commodity groups	2000	2001	2002	2003	2004	2005
Rice	39.1	53.8	59.0	53.2	56.6	58.0
Non-rice	11.5	12.6	8.3	7.5	9.6	8.7
Livestock	6.5	8.2	5.7	4.4	5.3	4.2
Fisheries	9.2	12.3	14.0	16.6	13.7	8.5
Other commodities	33.7	13.1	13.0	18.2	14.9	20.6
Total	100	100	100	100	100	100

Hybrid Rice Commercialization Program

- The hybrid rice seeds technology was launched in 2001.
- Two-pronged approach: government encourages domestic production of hybrid seeds; gives incentives to farmers to increase adoption of hybrid seeds.
  - government buys hybrid seeds from growers at guaranteed price of P2,400 per bag
  - government sells the seeds to farmers at half the price (P1,200 per bag); additional P200 discount if farmers pay in cash.
  - government gives P500 discount to farmers on chemical fertilizers for every bag of hybrid seeds purchased
- Between 2001 and 2005, the government spent P10 billion

Hybrid Rice Commercialization Program

- Performance: not very encouraging
  - only 5% of total rice fields is planted with hybrid seeds
  - the drop-out rate among participating farmers is very high – 86 percent in 2004 wet season
    - the yield advantage of hybrid seeds over inbred seeds is not uniform across rice fields and in different provinces
    - farmers need to purchase hybrid seeds every planting season because seeds cannot be reused - yield will drop drastically for reused hybrid seeds
    - hybrid rice seeds are expensive (hybrid-P2,400 per bag versus inbred-P1,400 per bag)

- Expensive hybrid seeds due to high production cost
  - labor intensive: labor cost in the Philippines is high
  - fertilizer and pesticide-intensive
  - requires special storage facilities because seeds are partially open and are susceptible to seed-borne insect pest diseases especially in humid tropical conditions in the Philippines

Poverty and Food Consumption

	Poverty incidence, %		
	1997	2000	2003
Philippines	33.2	34.0	30.4
Rural	48.6	48.8	
Urban	16.3	18.6	

	Share of food in total consumption, %					
	Poor			Non-poor		
	1997	2000	2003	1997	2000	2003
Philippines						
Food	64.6	63.3	62.6	49.9	48.1	47.7
Cereals	30.2	27.9	27.0	15.3	13.5	12.8
Rural						
Food	64.9	64.2		53.2	52.0	
Cereals	30.9	29.6		19.0	17.2	
Urban						
Food	63.3	61.1		47.5	45.4	
Cereals	27.7	23.6		12.5	10.9	

Simulation Model

- Dynamic-recursive CGE model
  - 41 sectors
  - Skilled and unskilled labor
  - Capital
  - Land
  - Calibrated to 2000 SAM

- Microsimulation
  - 2000 Family Income and Expenditure Survey
  - Randomized trials. Uses recursively CGE results on: household income, consumer prices, and agriculture/non-agriculture employment.
  - Computes FGT indices in decile and in socio-economic household groups.

Policy Experiments

- Trade reform scenario ("Special products") – gradual annual reduction of NPRs of rice, corn, sugar, beef, chicken, pork and processed meat from ave. of 2005-07 levels to 10% in 2020. Improvement in NPR of coconut oil from ave. negative level in 2005-07 to 0% in 2020.

- 5% increase in total factor productivity in rice ("Increase in rice TFP") from 2008 to 2020. Production scale parameter of rice is increased by 5% in 2008 and retained until 2020.

Macro and Major Sectoral Effects
(% change from baseline)

Variables	Special products	Increase in rice TFP
Real GDP	0.42	0.21
Real exchange rate	1.2	0.33
Consumer price index	-2.59	-0.32
Composite price		
Agriculture	-2.53	-0.75
Non-agriculture	-0.22	-0.03
Imports		
Agriculture	2.82	-0.04
Non-agriculture	-1.09	0.31
Domestic demand		
Agriculture	1.00	0.95
Non-agriculture	-0.41	0.31
Composite commodity		
Agriculture	1.47	0.77
Non-agriculture	-0.60	0.31
Output		
Agriculture	0.88	0.91
Non-agriculture	-0.38	0.28
Exports		
Agriculture	-1.58	0.39
Non-agriculture	-0.39	0.26

Factor Prices
(% change from baseline)

Factor prices less inflation	Special products	Increase in rice TFP
Wages of skilled	2.55	0.48
Wages of unskilled	2.72	0.26
Returns to capital, agriculture	3.12	0.42
Returns to capital, non-agriculture	2.87	0.48
Return to land	3.49	0.30

Income and Consumer Price Effects
(% change from baseline)

	Special products		Increase in rice TFP	
Household groups	Real income	Consumer prices	Real income	Consumer prices
First decile	2.0	-1.8	0.8	-0.7
Second decile	2.2	-1.9	0.8	-0.6
Third decile	2.3	-2.0	0.7	-0.6
Fourth decile	2.3	-2.3	0.8	-0.5
Fifth decile	2.5	-2.5	0.7	-0.5
Sixth decile	2.7	-2.8	0.6	-0.4
Seventh decile	2.8	-2.9	0.6	-0.3
Eighth decile	2.9	-3.0	0.5	-0.3
Ninth decile	2.8	-2.9	0.5	-0.2
Tenth decile	2.3	-2.4	0.5	-0.2
Overall	2.5	-2.6	0.6	-0.3

Poverty and Income Distribution Effects
(% change from 2000 index)

Household groups	Index	Index in 2000	Special products	Increase in rice TFP
Philippines	GINI	0.51	-0.03	-0.07
	P0	34.0	-3.7	-1.0
	P1	10.0	-5.2	-1.6
	P2	4.2	-6.3	-2.0
Urban	P0	18.6	-5.6	-1.5
Rural	P0	48.8	-3.0	-0.9
First decile	P0	85.4	-0.7	-0.2
Second decile	P0	71.0	-1.5	-0.5
Third decile	P0	58.0	-1.8	-0.6

P0 = poverty incidence; P1 = poverty gap; P2 = poverty severity

Conclusions and Policy Insights

- Food prices in the Philippines are high because of high trade protection. Poverty effects are significant because large portion of poor's income is spent on food.

- Simulation results indicate that continued reform in trade is poverty-reducing. Maintaining trade protection on major food items or reversing the trade reform program based on 'special product' arguments may have negative impact on poverty in the Philippines.

Conclusions and Policy Insights

- Improving rice productivity in the Philippines is crucial. It improves domestic rice supply, reduces the price of rice and decreases dependence on rice imports. But the present Hybrid Rice Commercialization Program is costly, inefficient, and not sustainable. There are major program design flaws. Massive government program subsidies distort farmers' choice between inbred and hybrid. Experts recommend government to focus on R&D activities that improve yield of inbred rice.