



TRANSFORMATION OF RURAL ECONOMIES IN ASIA AND THE PHILIPPINES

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Outline of this presentation

- I. Introduction
- II. Driver of transformation
- III. Strategic processes that accompany transformation
- IV. A case study of rice-growing villages in the Philippines



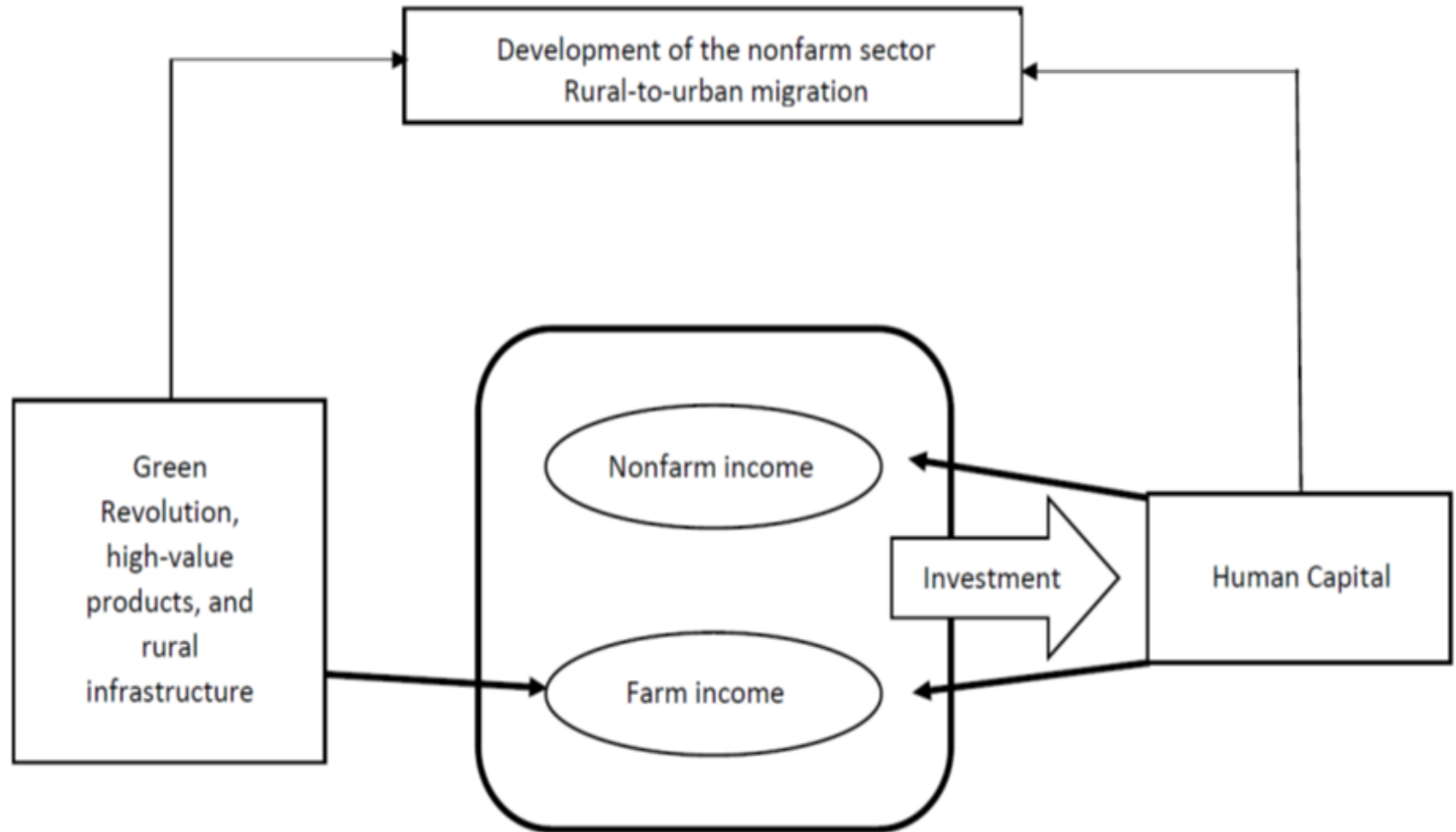
I. Introduction

- Asia's sustained growth and development is brought about by its rapid economic transformation (ADB, 2020)
- Economic transformation or structural transformation is the shift of the locus of economic activities away from agriculture to industry and services.
- Share of agriculture in GDP and employment declined as industry's share increased followed by "deindustrialization" when the service sector gained importance.



Introduction (2)

- Developing countries that have higher share of their GDP from industry and services have higher GDP growth rate.
- Developing countries that are undergoing faster transformation or those that are in advanced stage of transformation have lower incidence of poverty (e.g., Sri Lanka, Thailand, Malaysia)
- “Pre-mature servification” is characterized by a quick shift from agriculture to services bypassing the industry.





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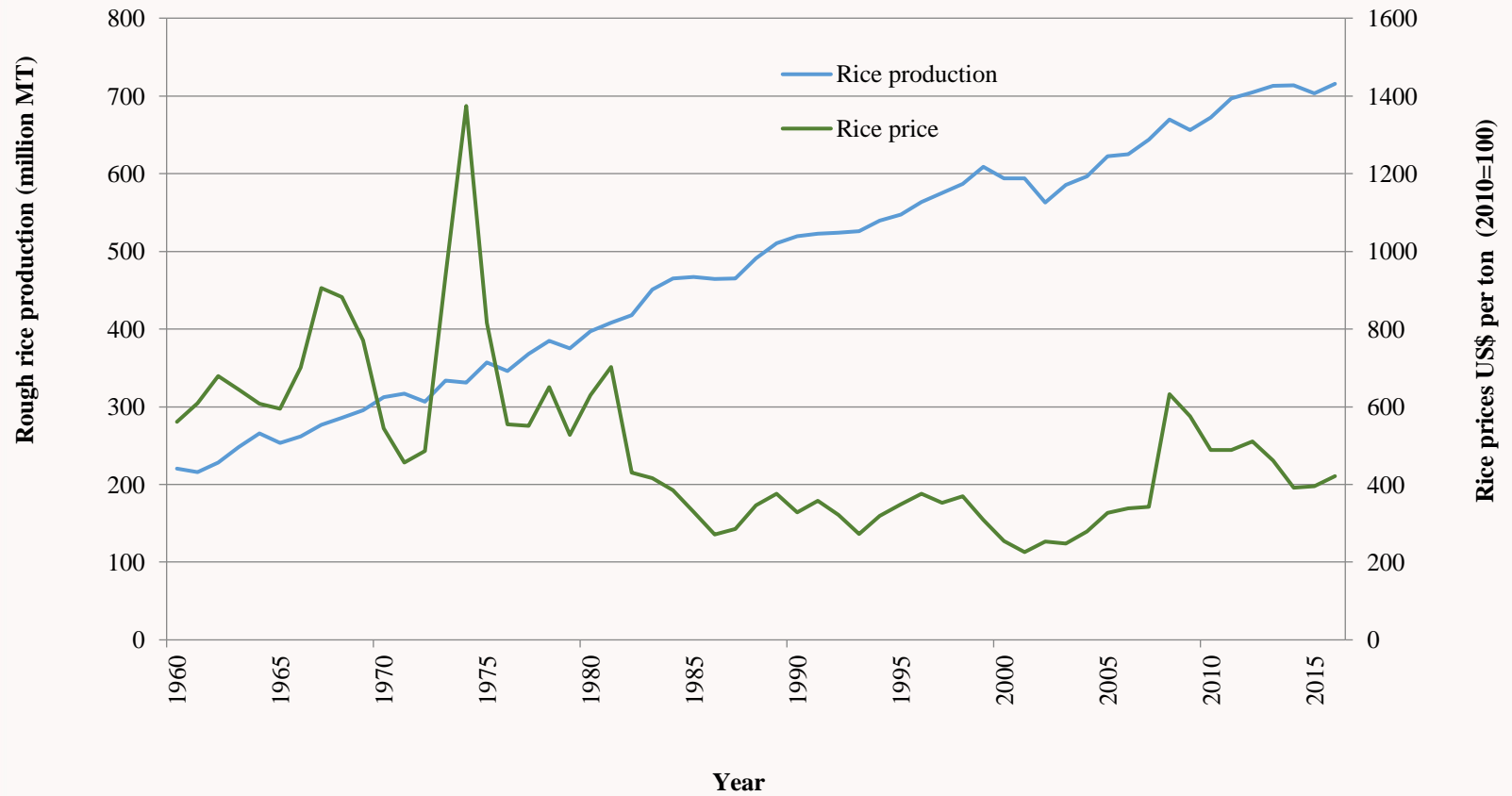


II. Driver of transformation

- Major propelling force for economic transformation is the **Green Revolution (technological progress in agriculture)**
- Green Revolution focuses on major staple crops in Asia such as rice, maize and wheat
- Green Revolution has resulted to increased food production and decreased food prices.

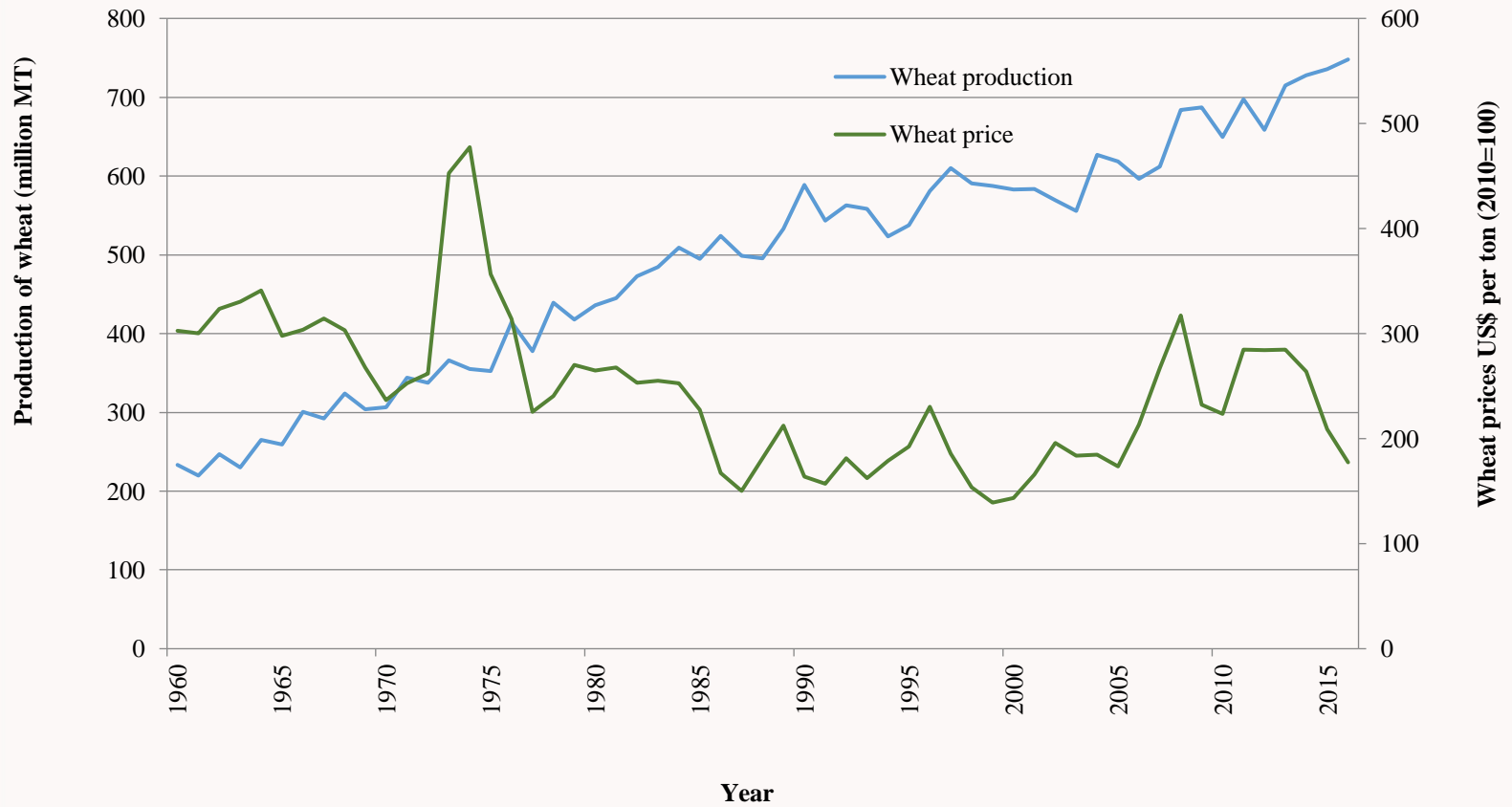


Rice



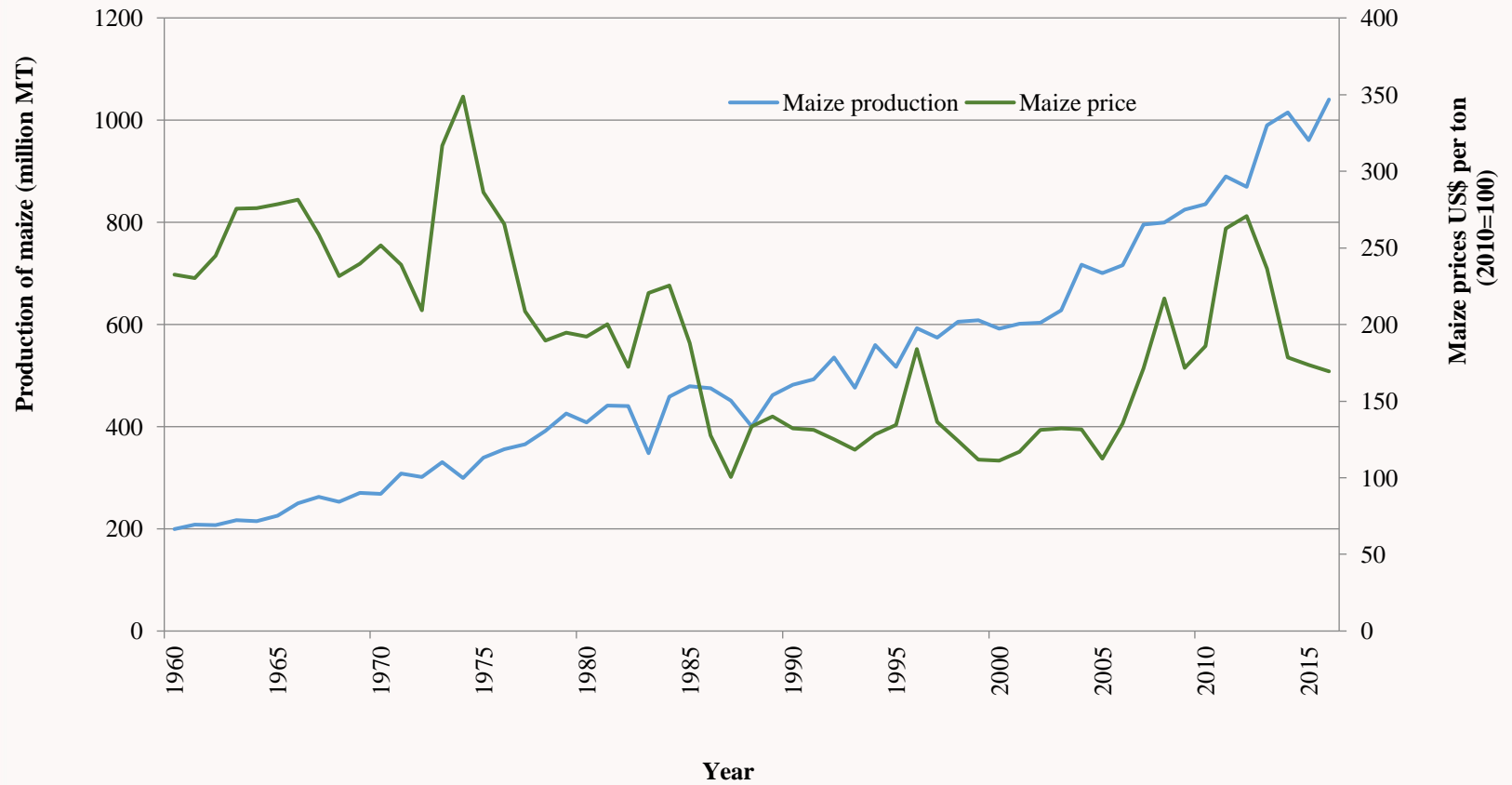


Wheat





Maize





II. Driver of transformation (2)

- Decline in food prices are translated to the deterioration of the terms of trade in agriculture (i.e., the decline in farm prices vis-à-vis nonfarm prices)
- Decline in the relative profitability of agriculture induces the release of production resources to nonfarm sector
- Increased food production releases family labor away from subsistence farming and into nonfarm pursuits



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III. Strategic processes that accompany transformation

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III. Strategic processes that accompany transformation

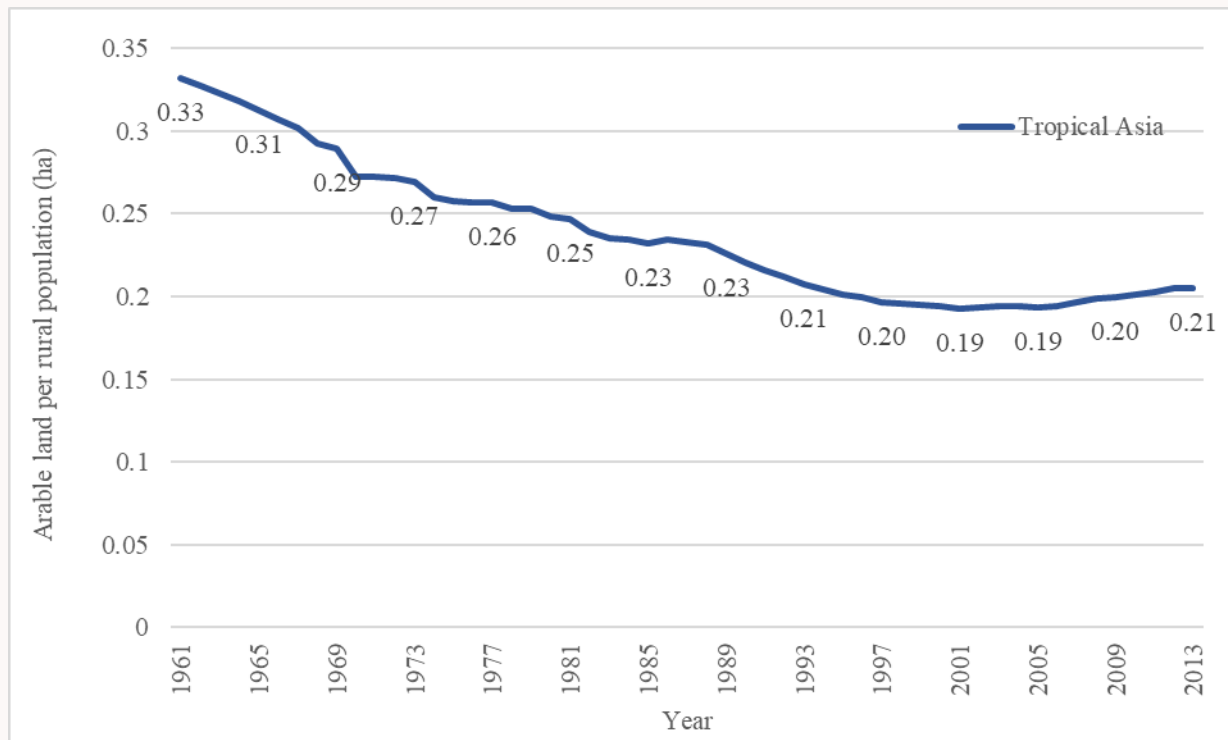
1. **Rising productivity in rice farming**
2. Development of high-value agricultural products and contract farming
3. Investments in human capital
4. Lucrative employment opportunities in the rural nonfarm sector
5. Rural-to-urban and overseas migration



Strategic processes that accompany transformation (2)

Rising productivity of rice farming

- Induced by population pressure: Decline in arable land per rural population → land-saving technology





Strategic processes that accompany transformation (2)

Rising productivity of rice farming

- Induced by borrowed technology from abroad and adaptive research
- Green Revolution was launched using technology from abroad that was adapted to local agro-ecological conditions in the tropics
- Early rice breeding technologies were borrowed
- Focus mainly on modern rice varieties and extended later to farm machinery and good farm practices



Strategic processes that accompany transformation (3)

Rising productivity of rice farming

- The modern varieties (MVs) of rice in tropical Asia today are essentially equivalent to the *poinlai* varieties in Taiwan.
- IR8 was the first MV. IR8 a breed between Peta, a tall variety from Indonesia and Dee-Geowoo-Gen, a semi-dwarf variety from Taiwan. IR8 was modeled after the high-yielding Japanese varieties → technology transfer
- MV1: high-yielding
- MV2: high-yielding, resistant against pests and diseases
- MV3: : high-yielding, resistant against pests and diseases, good grain quality



Strategic processes that accompany transformation (4)
Rising productivity of rice farming

- Hybrid rices and genetically modified rices
- Knowledge-intensive crop management practices such IPM.
- Improved efficiency and save the environment.



III. Strategic processes that accompany transformation

1. Rising productivity in rice farming
2. Development of high-value agricultural products and contract farming
3. Investments in human capital
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5. Rural-to-urban and overseas migration



Strategic processes that accompany transformation (5)

Development of high-value agricultural products (HVAPs) and contract farming (CF)

- Consumer demand shifts away from cereals to HVAPs such as fresh fruits and vegetables and livestock.
- HVAPs are characterized by market failures: information asymmetry and thin markets for inputs, credit and markets
- Contract farming emerged as an institutional innovation that corrects market failures (Production contract and Marketing contract: PC is concerned for product quality, e.g., organic fruits and vegetables – contractor supplies all inputs and technology



Strategic processes that accompany transformation (5)

Development of high-value agricultural products (HVAPs) and contract farming (CF)

- Contract farming improved small farmers income (Setboonsargn et al., 2008, Cadyadi and Waibel, 2013) and reduced poverty (Huddleston, 2011)
- Poor farmers are excluded from contract farming because contractors tend to minimize transactions costs
- Farmers cooperatives enable small farmers to benefit from contract farming



III. Strategic processes that accompany transformation

1. Rising productivity in rice farming
2. Development of high-value agricultural products and contract farming
3. **Investments in human capital**
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Strategic processes that accompany transformation

Investments in human capital

- Green Revolution induces investments in human capital.
- GR → higher production → higher household income → schooling investments
- Table 1 shows that countries in tropical Asia that have higher gross enrollment rates in secondary and tertiary schooling tend to have a higher share of its GDP from industry and services.
- Causality is difficult to establish but there is clear association



Table 1. School enrollment ratio and shares of gross domestic product in Southeast Asia and South Asia

	Gross primary enrollment ratio			Gross secondary enrollment ratio			Gross tertiary enrollment ratio		
	1990s	2000s	2010s	1990s	2000s	2010s	1990s	2000s	2010s
Southeast Asia									
Cambodia	93.15	125.02	114.76	20.60	30.70	54.83	1.14	5.04	13.93
Indonesia	111.15	108.68	107.16	48.47	62.74	83.15	11.07	17.24	31.58
Lao PDR	104.34	111.99	112.29	25.16	41.29	58.82	1.86	7.86	16.69
Malaysia	96.44	98.37	103.60	67.76	78.95	82.43	12.32	29.40	41.36
Myanmar	103.83	98.07	106.68	24.98	43.09	58.59	5.34	10.77	15.51
Philippines	108.08	106.86	107.33	74.67	81.11	87.21	27.14	28.87	32.70
Thailand	96.77	99.99	99.43	43.66	72.92	105.11	22.50	43.35	50.44
Vietnam	111.40	101.79	110.26	46.58	NA	NA	4.43	14.41	26.89
South Asia									
Bangladesh	83.80	101.63	114.25	38.13	49.23	64.58	4.92	7.24	17.21
India	92.71	102.28	107.83	45.08	52.42	71.58	6.07	11.73	25.56
Nepal	114.82	121.15	145.10	37.75	44.90	69.23	5.06	7.36	13.93
Pakistan	58.63	77.19	86.66	25.20	28.93	38.37	2.61	4.85	9.54
Sri Lanka	107.87	100.36	100.51	85.05	NA	98.68	4.76	NA	18.80
	GDP share of agriculture			GDP share of industry			GDP share of services		
	1990s	2000s	2010s	1990s	2000s	2010s	1990s	2000s	2010s
Southeast Asia									
Cambodia	44.70	31.94	27.47	15.25	23.92	27.81	35.88	38.63	38.74
Indonesia	18.35	14.71	13.35	41.91	46.20	40.96	39.74	38.84	42.59
Lao PDR	42.75	29.15	17.80	18.84	21.82	30.49	42.73	42.51	42.27
Malaysia	13.15	9.02	8.87	42.54	45.83	38.75	47.15	46.09	51.24
Myanmar	NA	47.88	27.94	NA	16.91	33.38	NA	37.22	38.68
Philippines	17.81	13.74	11.43	36.02	33.74	30.64	46.17	52.53	57.93
Thailand	10.05	9.23	9.61	37.12	38.09	36.10	54.25	52.68	54.28
Vietnam	30.24	21.14	16.82	28.90	38.27	33.29	40.86	40.59	39.55
South Asia									
Bangladesh	26.58	19.33	14.70	22.16	23.49	27.05	47.30	52.27	53.35
India	25.58	18.49	16.82	27.33	29.18	27.35	38.55	44.45	47.43
Nepal	40.94	33.84	26.62	19.68	16.75	13.26	33.49	45.24	50.13
Pakistan	23.57	23.04	23.42	22.19	19.13	19.18	44.65	52.05	52.51
Sri Lanka	23.83	14.10	7.98	26.56	28.90	27.63	49.61	57.01	56.70

Note: 1990s is the average of 1990-1999, 2000s is the average of 2000-2009, and 2010s is the average of 2010-latest



III. Strategic processes that accompany transformation

1. Rising productivity in rice farming
2. Development of high-value agricultural products and contract farming
3. Investments in human capital
4. **Lucrative employment opportunities in the rural nonfarm sector**
5. Rural-to-urban and overseas migration



Strategic processes that accompany transformation

Lucrative employment opportunities in the rural nonfarm sector

- Rural nonfarm economy (RNFE) include all activities in rural areas except farming.
- RNFE is substantial accounting for 30% of full-time employment in Asia and Latin America, 20% in West Asia and North Africa, and 10% in Africa. Women account for about 25% of employment in household-based RNFE.
- Development of RNFE is pro-poor, RNFE is a risk reduction strategy and serves as diversification of household earning.
- Pro-poor through the wage channel: as RNFE expands, agricultural labor become scarce and agricultural wages go up.



III. Strategic processes that accompany transformation

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Strategic processes that accompany transformation

Rural-to-urban and overseas migration

- People migrate because of higher wages
- Migration has positive impacts on the local economy: (1) Increases household consumption, (2) Remittances could be used for productive investments. Yang (2008) shows that remittances in the Philippines particularly overseas remittances are spent on children's schooling and small enterprises, (3) induces land consolidation and usage of machinery through the wage channel

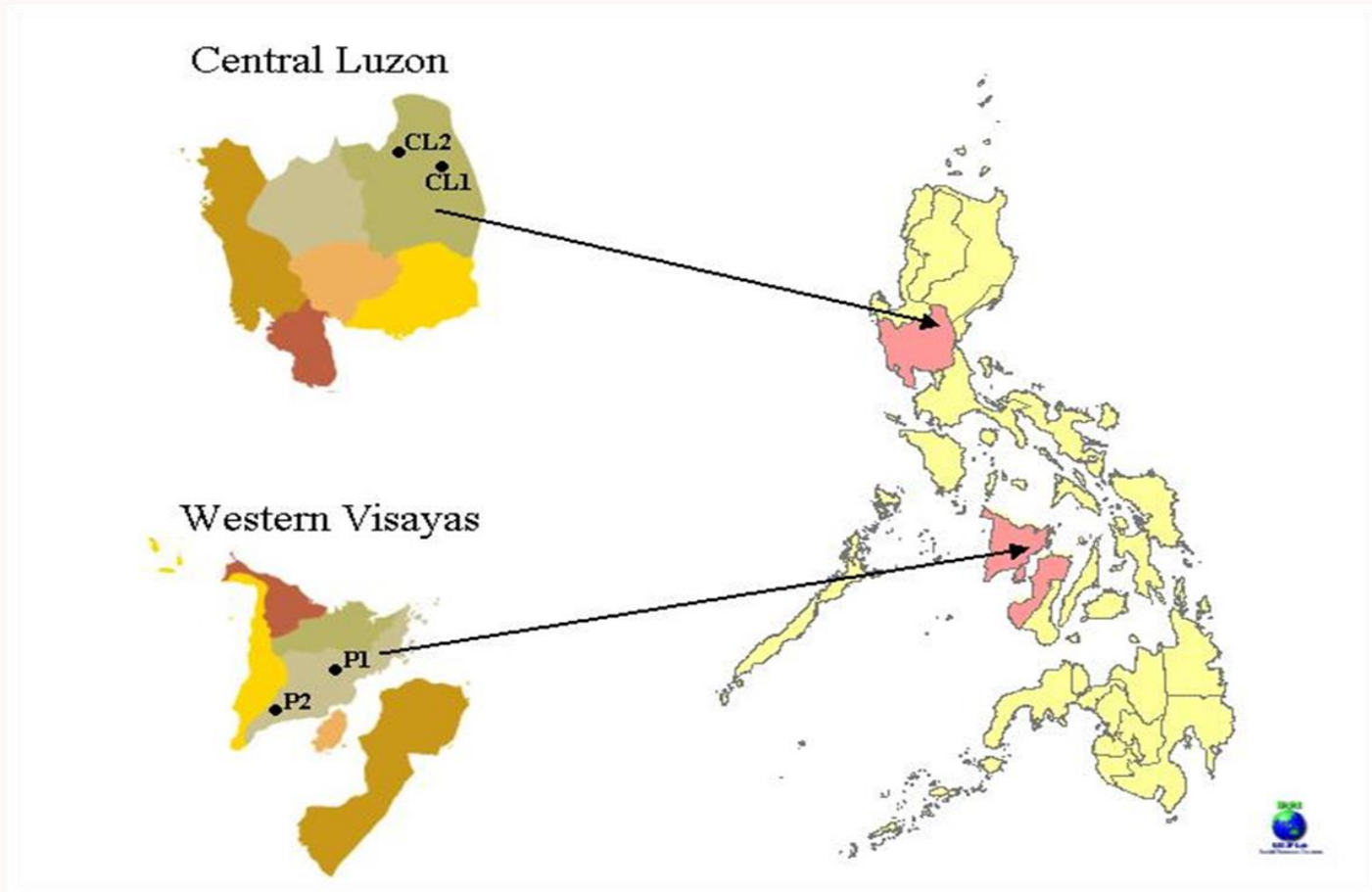


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A case study of rice-growing villages in the Philippines





Philippine villages

- Repeated surveys on the villages for 37 years since 1985
- CL1 → Irrigated: CL2 → rainfed
- P1 → irrigated: P2 → upland
- 323 households in 1985, 1,330 households in 2008



Philippine villages

- Drivers of transformation
 1. **Population pressure**: Increase in the proportion of landless households and decline in farm size
 2. **New rice technology**: High rate of adoption of MVs, increase in fertilizer application, rise in yield
 3. **Land reform**: Conversion of share tenants to owner cultivators or leaseholders or amortizing owners who became EP holders later
 4. **Urbanization and commercialization**: Expansion of local towns and emergence of contract farming
 5. **Infrastructure**: Electricity, irrigation, bridge, local roads and highways



Philippine villages

- Strategic processes that accompany the transformation
 1. **Increasing productivity of rice farming**: Increased yield and increased cropping intensity
 2. **Investments in higher education**: more children in secondary and tertiary school, average schooling attainment rose from 7 to 10 years
 3. **Nonfarm work and migration** (focus of this case study)



Main Story of the Philippine villages

- **Green Revolution** → increased yield and cropping intensity → higher farm income → higher household income → investments in children's schooling → higher human capital → nonfarm employment and migration



Nonfarm work and migration in three generations

- The most important strategy to halt the transmission of poverty from parents to children is for the younger generation to engage in **nonfarm work and to explore job markets beyond the villages in local towns, big cities and even overseas.**
- Transmission of poverty → need information on pairs of parent and child
- G1 (grandparents), G2 (parents), G3 (children)
- We focus on poverty of G2 and G3



Nonfarm work and migration in three generations

- G1: 1985 survey by IRRI
- G2: 1989 survey by Quisumbing (1994)
- G3: our own survey
- We did tracking of children based on data from G2.
- We classified G3 based on the status of G2 (whether landless or farmer)
- Children were classified further based on their residence: (1) study villages, (2) local towns, (3) big cities and (4) overseas



Table 3. Description of the three generations in the sample

Category	Number	%	Year of Birth	Completed Years in School	Inherited Land (ha)
Parents of respondents (G1)					
With job in agriculture	243	46	1907	3.4	1.14
With nonfarm job	38	7	1909	6.2	0.44
With overseas job	1	0	1910	n/a ¹	n/a
Unemployed and others ²	253	47	1911	3.1	0.61
All	535	100	1909	3.4	0.83
Respondents and siblings (G2)					
With job in agriculture	680	46	1940	6.0	0.57
With nonfarm job	259	17	1943	9.0	0.23
With job in the big cities	85	6	1944	9.3	0.08
With overseas job	48	3	1949	10.1	0.51
Unemployed and others	413	28	1940	6.0	0.24
All	1,485	100	1941	6.9	0.39
Children of farmer households (G3)					
With job in agriculture in study villages	287	24	1971	8.8	0.17
With nonfarm job in study villages	202	17	1972	11.0	0.08
With job in agriculture in local towns ³	45	4	1968	8.7	0.23
With nonfarm job in local towns ³	76	6	1973	11.9	0.01
With job in the big cities	193	16	1973	11.1	0.03
With overseas job	78	6	1971	12.8	0.01
Unemployed and others	316	27	1972	10.2	0.02
All	1,197	100	1972	10.4	0.07
Children of landless households (G3)					
With job in agriculture in study villages	46	14	1972	8.0	0
With nonfarm job in study villages	48	15	1974	10.9	0
With job in agriculture in local towns	11	4	1971	6.8	0



With nonfarm job in local towns	26	8	1974	10.8	0
With job in the big cities	56	18	1975	10.6	0
With overseas job	35	11	1973	12.9	0
Unemployed and others	97	30	1973	9.4	0
All	319	100	1974	10	0

Source: Estudillo et al. (2014), Table 3

Notes: 1 n/a means data is not available

2 Includes housekeepers, discouraged workers, retired workers,
and people with disability

3 Includes small cities



What determines the choice of jobs of G3?

- **Education and farmland** are major forms of wealth transfers from parents.
- Education affects the choice of nonfarm jobs and decision to migrate to the cities.
- Inherited farmland positively affects the choice of jobs in farming, negatively affects the choice of nonfarm work.
- The coefficient of parental income in a regression of children's income is weak and not statistically significant. PARENTAL WEALTH has become weak in explaining children's economic destiny.



Income growth and poverty reduction

Table 4. Household income composition of respondents and children in the study villages in the Philippines (annual income at USD PPP 2005)

Source	Household Income of Respondents (G2) in 1985	
	Farmer households	Landless households
Rice income	1,104 (58%)	329 (36%)
Nonrice income	342 (18%)	119 (13%)
Nonfarm income	225 (12%)	369 (41%)
Remittances	224 (12%)	91 (10%)
Total income	1,895 (100%)	908 (100%)
Poverty incidence		
Head count ratio (%)	42	65
Poverty gap ratio (%)	20	26
Number of observations	230	65

	Household Income of Children of Respondents (G3) in 2008	
	Married children from farmer households	Married children from landless households
Rice income	610 (8%)	81 (1%)
Nonrice income	757 (9%)	484 (7%)
Nonfarm income	5,452 (67%)	5,372 (81%)
Remittances	1,322 (16%)	691 (11%)
Total income	8,142 (100%)	6,629 (100%)
Poverty incidence		
Head count ratio (%)	26	34
Poverty gap ratio (%)	12	16
Number of observations	527	129



Findings from Table 4

- Sources of household income (I) rice income, (II) nonrice farm income, (III) nonfarm income, and (IV) domestic and foreign remittances.
- Shift of household sources of income away from farm to nonfarm from G2 to G3
- Poverty reduction from G2 to G3
- Transmission of poverty did not take place because G3 become highly involved in nonfarm work and migration in local towns, big cities, and overseas.
- Landless children whose parents are land poor were able to catch up with the farmer children. Improved income distribution



Main findings from the Philippine villages

- Transmission of poverty did not take place
- Participation in the nonfarm labor market and migration are important pathways in moving out of poverty
- The landless children are able to catch up because they are geographically more mobile.
- In the course of transformation, they are no losers.



Concluding remarks

This study shows the importance of putting priority in developing agriculture first in the early stage of development, as agriculture could serve as a propeller of economic transformation and an engine of growth. My review of literature consistently shows that the Green Revolution is by far the most important underlying strategic process that induces economic transformation of rural economies.



Q and A

If you have questions and clarifications,
please email me at

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