

“The Loop Survey:

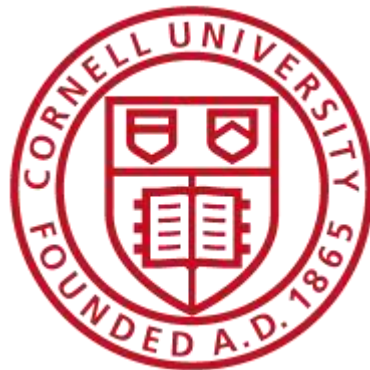
***A retrospective view of technological
and other changes in Central Luzon
rice farms over five decades
(1966-2012),”***

Randy Barker

Sept 21, 2015



JOINT VENTURE



PART 1: The loop survey

PART 2: Take-home message:

Implications for Philippines

PART 3: Take home game:

The Game of Rice



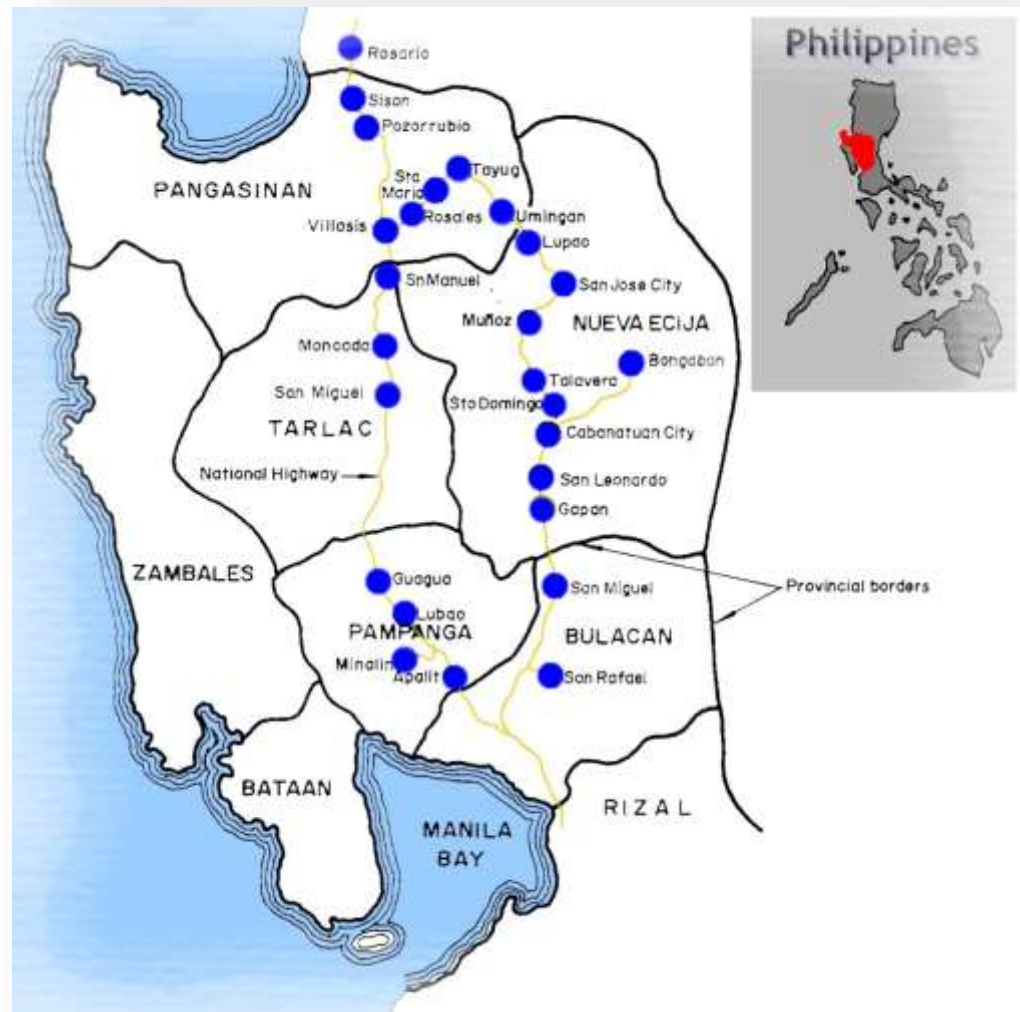
What is the Loop Survey?

- ➔ The survey was initiated in 1966
- ➔ It covers detailed records on the production systems in both wet and dry season
- ➔ Conducted every four to five years until 2011-12 23 rounds of survey



Central Luzon Loop Survey

➔ The survey fields are observed at specific kilometer posts along the “**loop**” of national highway (e.g., the 50th, 100th, 150th etc.)



We overview changes in

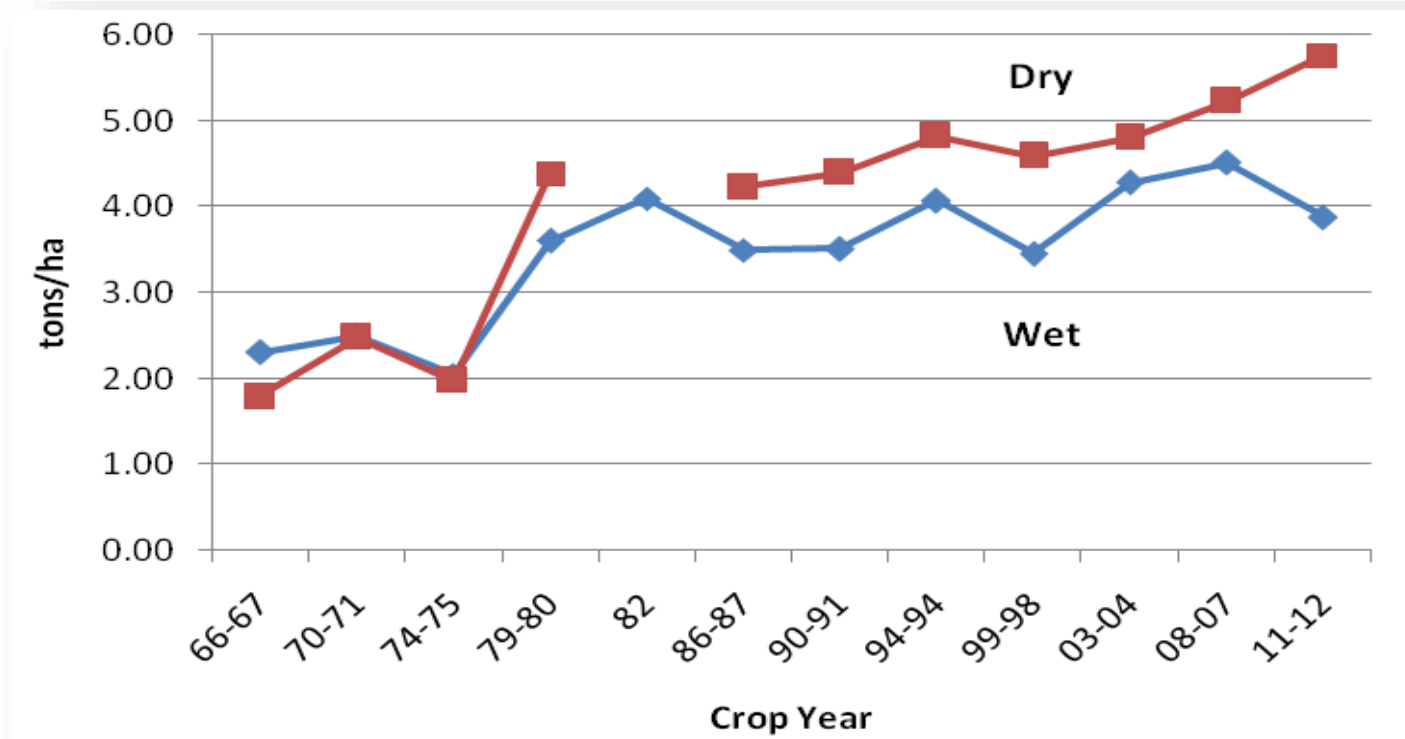
1. Yields and varieties
2. Machine use and labor use
3. Profitability and its distribution
4. Macro level impact
5. Rice farmers' characteristics



CHANGES IN YIELD AND VARIETIES



Yield growth over five decades



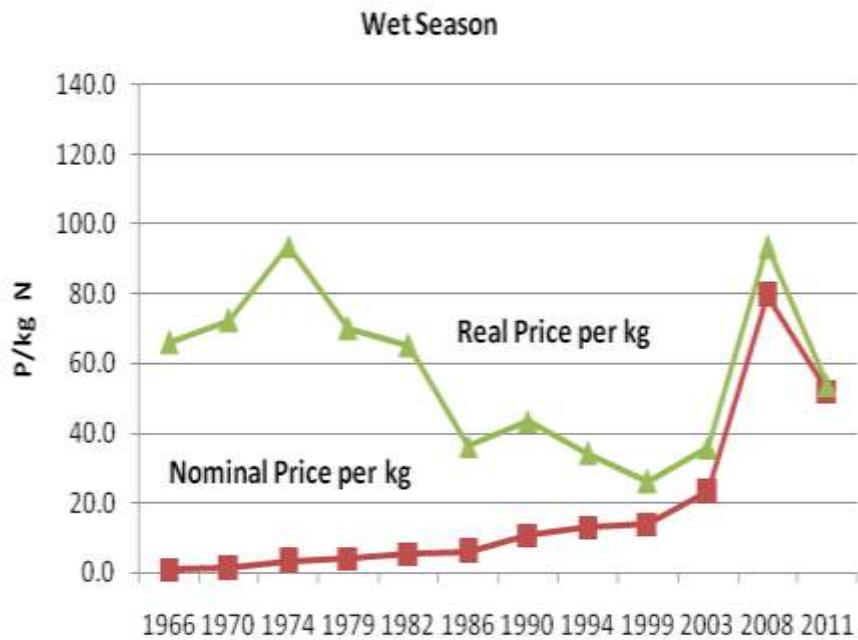
- ➔ Yields have more than doubled.
- ➔ Dry-season yields have been continuously increasing.
- ➔ Wet-season yields have plateaued at 4 t/ha in the past decade.

CHANGES IN CROP MANAGEMENT PRACTICES AND INPUT USE

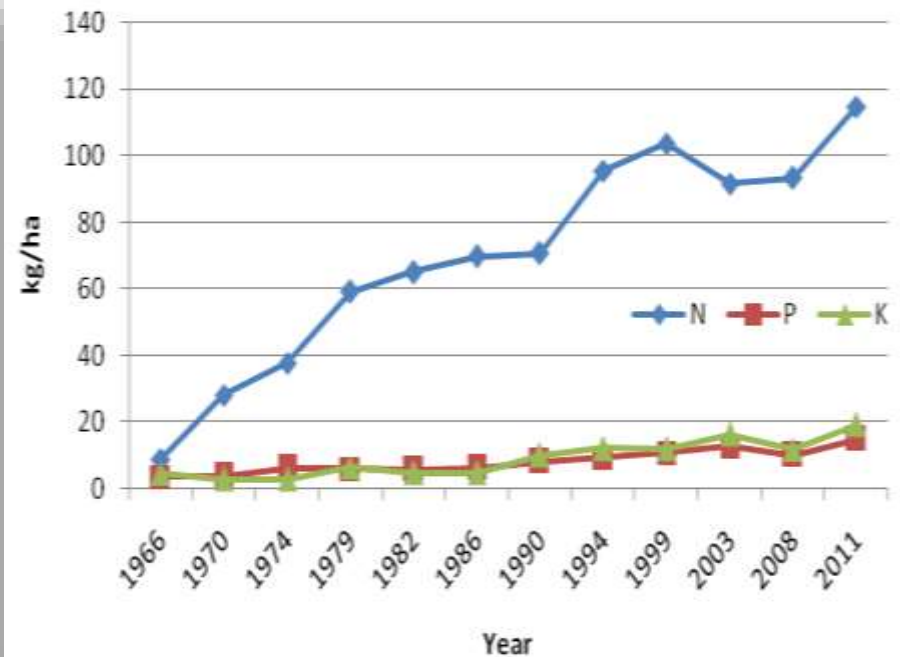


Fertilizer price and use

N Price, WS



N P K application, WS

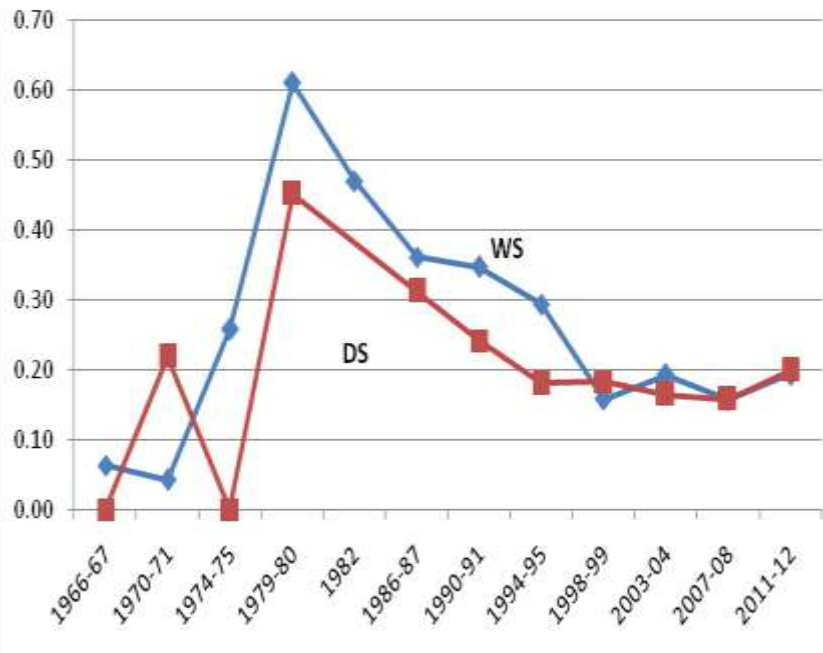


➔ Similar in DS

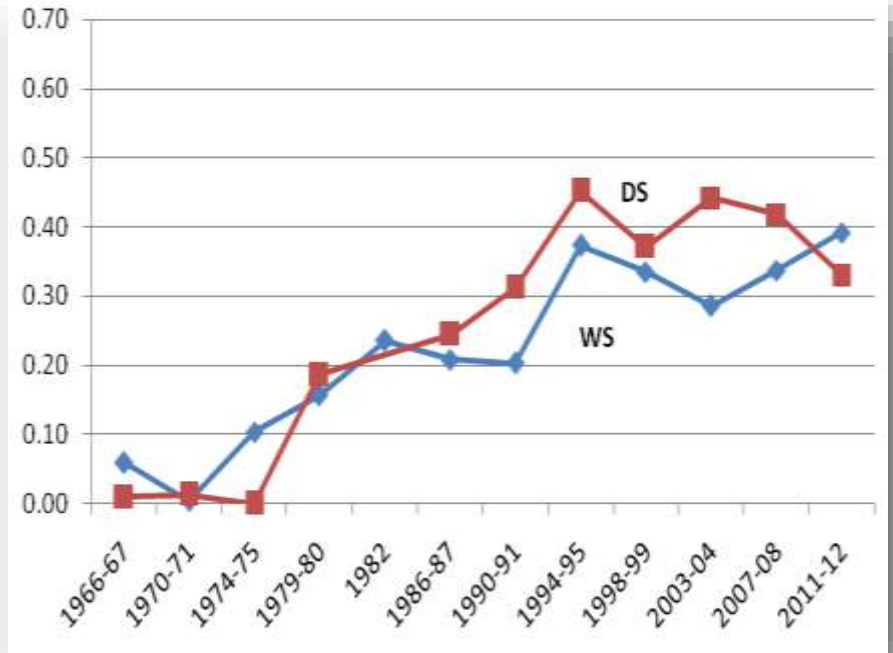


Insecticide and herbicide use

Insecticide use



Herbicide use



(kg active ingredients per ha)

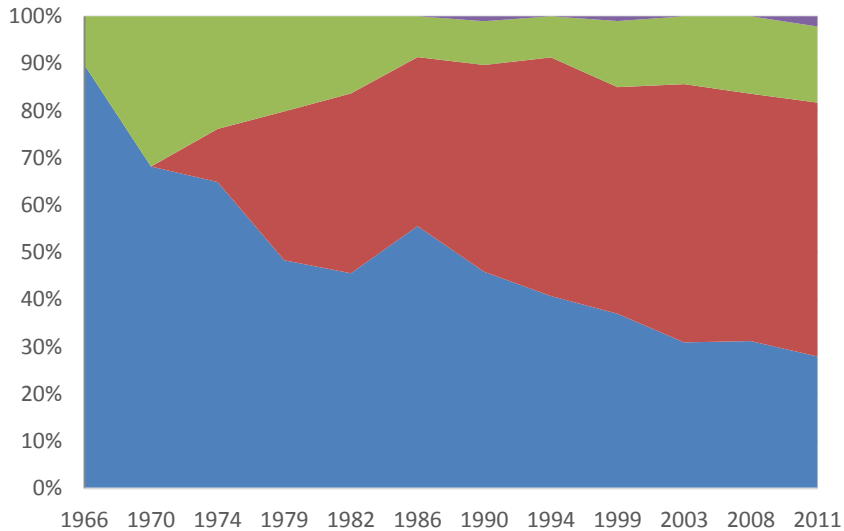
- ➔ Education campaigns & IPM → the reduction of insecticide use in the 80s.
- ➔ Direct seeding in the 80s → herbicide use in DS > WS.

MECHANIZATION AND LABOR USE



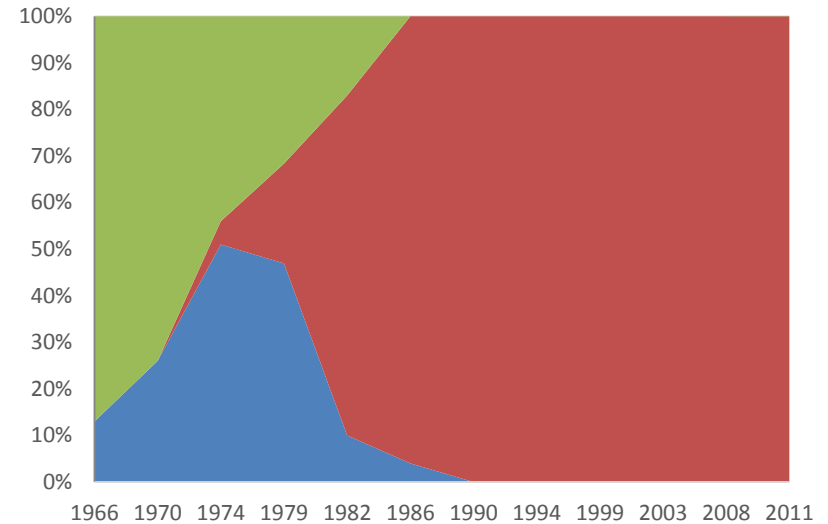
Progress of small scale mechanization

Land preparation: WS



■ Animal ■ Power tiller (2W)
■ Large tractor (4W) ■ Rotavator

Threshing: WS



■ Manual threshing ■ Small thresher
■ Big thresher

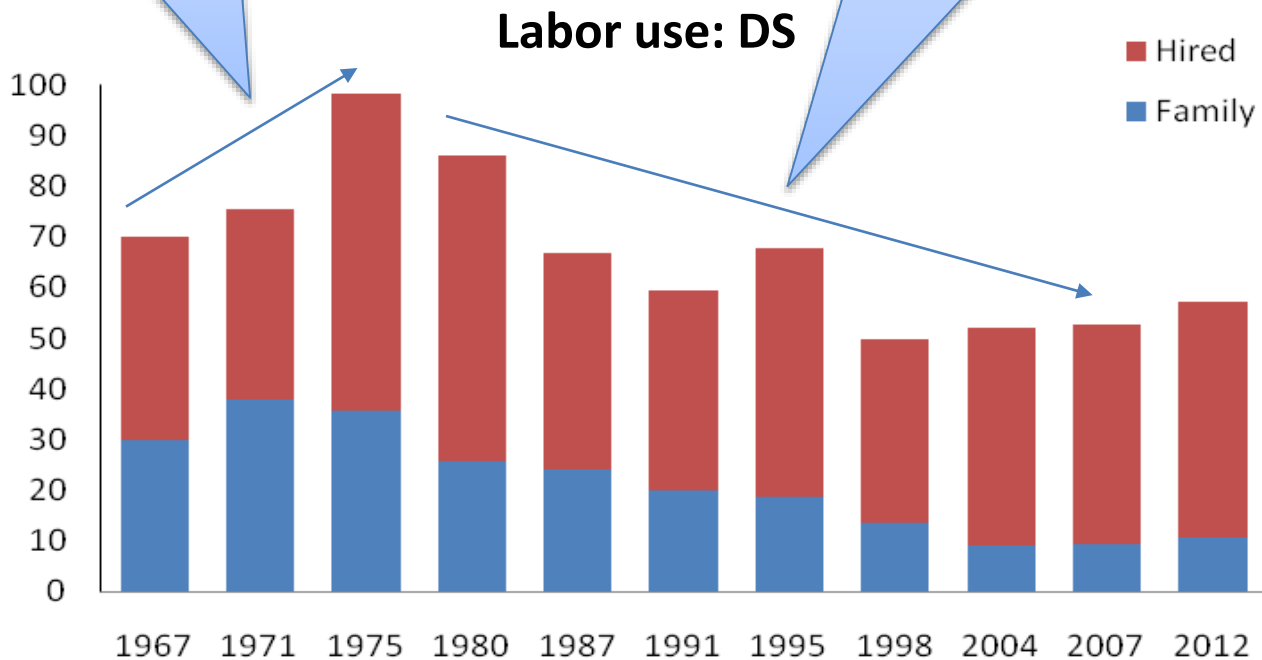
- ➔ Similar in DS.
- ➔ Small scale mechanization has proceeded successfully.



Labor use: historical trend

MV is labor using for crop care. → Labor use increased.

Mechanization, direct seeding (in DS only), short duration MVs



Substitute hired labor for expensive family labor

➔ Similar in DS

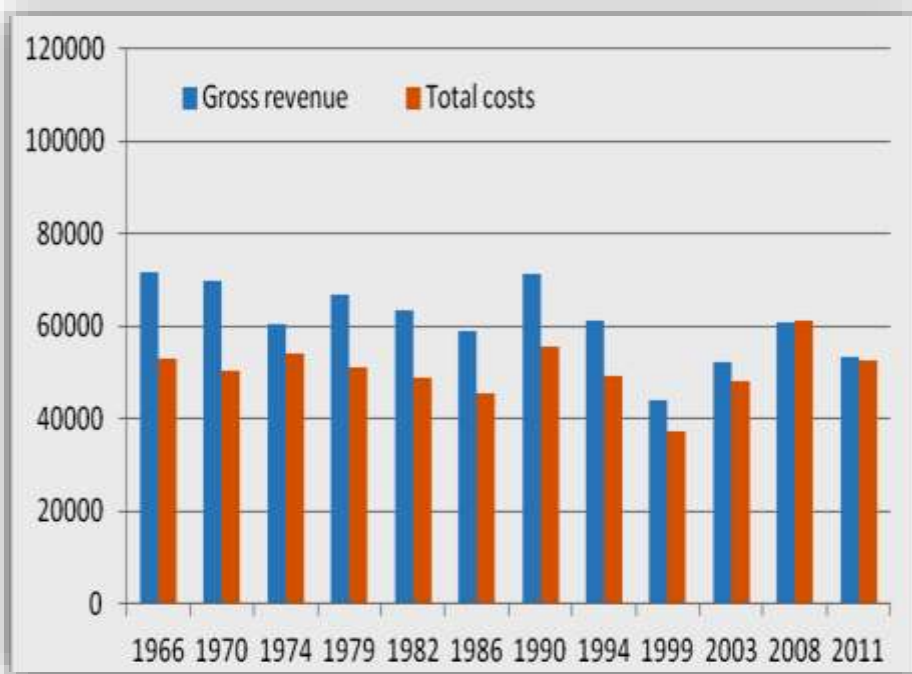
CHANGES IN PROFITABILITY



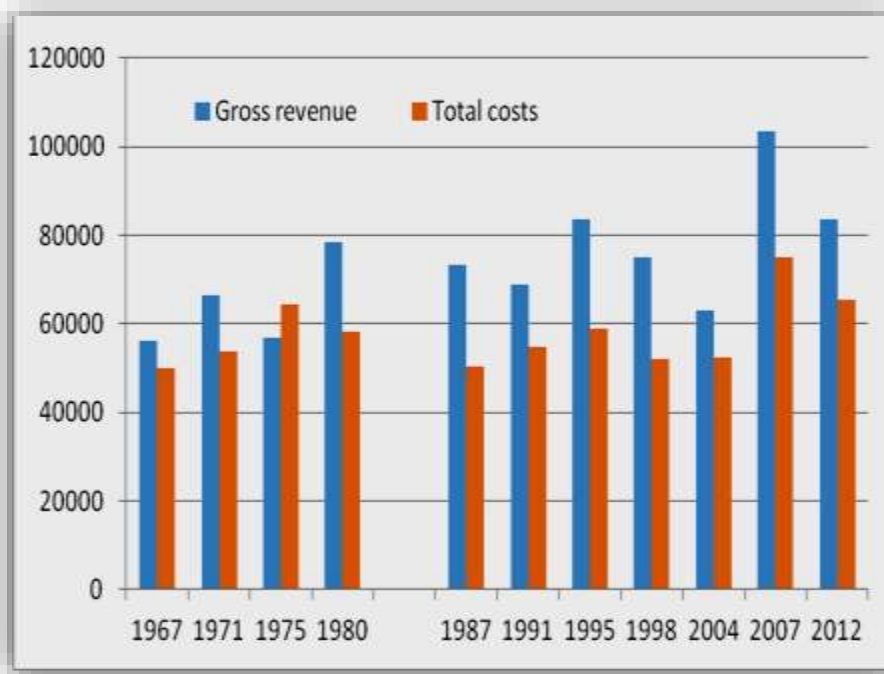
Changes in profit

Real price
at 2012

Wet Season



Dry Season



➔ Declining profit in WS, almost zero in the 2000s.

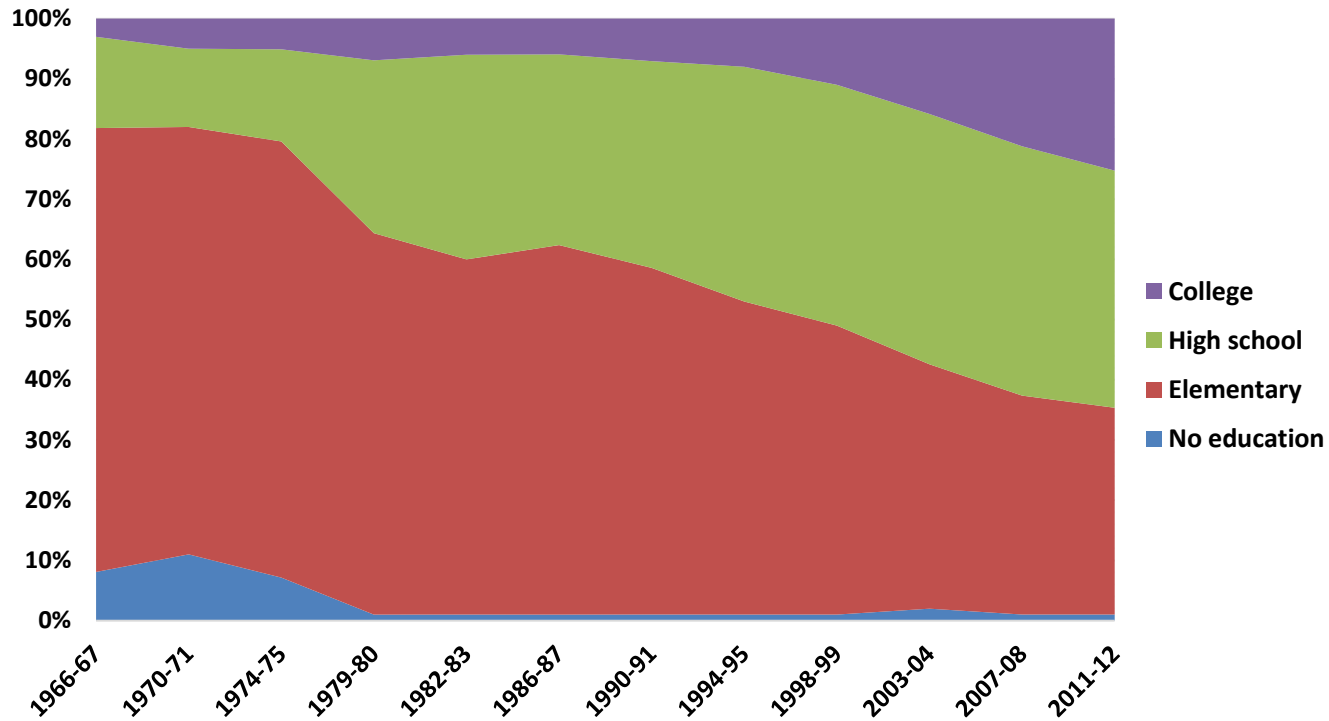
➔ Maintained profit in DS.

- ➔ Gross revenue= price x yield
- ➔ Total cost= payout cost* + imputed cost**
 - * fertilizer, hired labor, etc.
 - ** family labor, owned tractor, etc.

CHANGES IN RICE FARMERS' CHARACTERISTICS

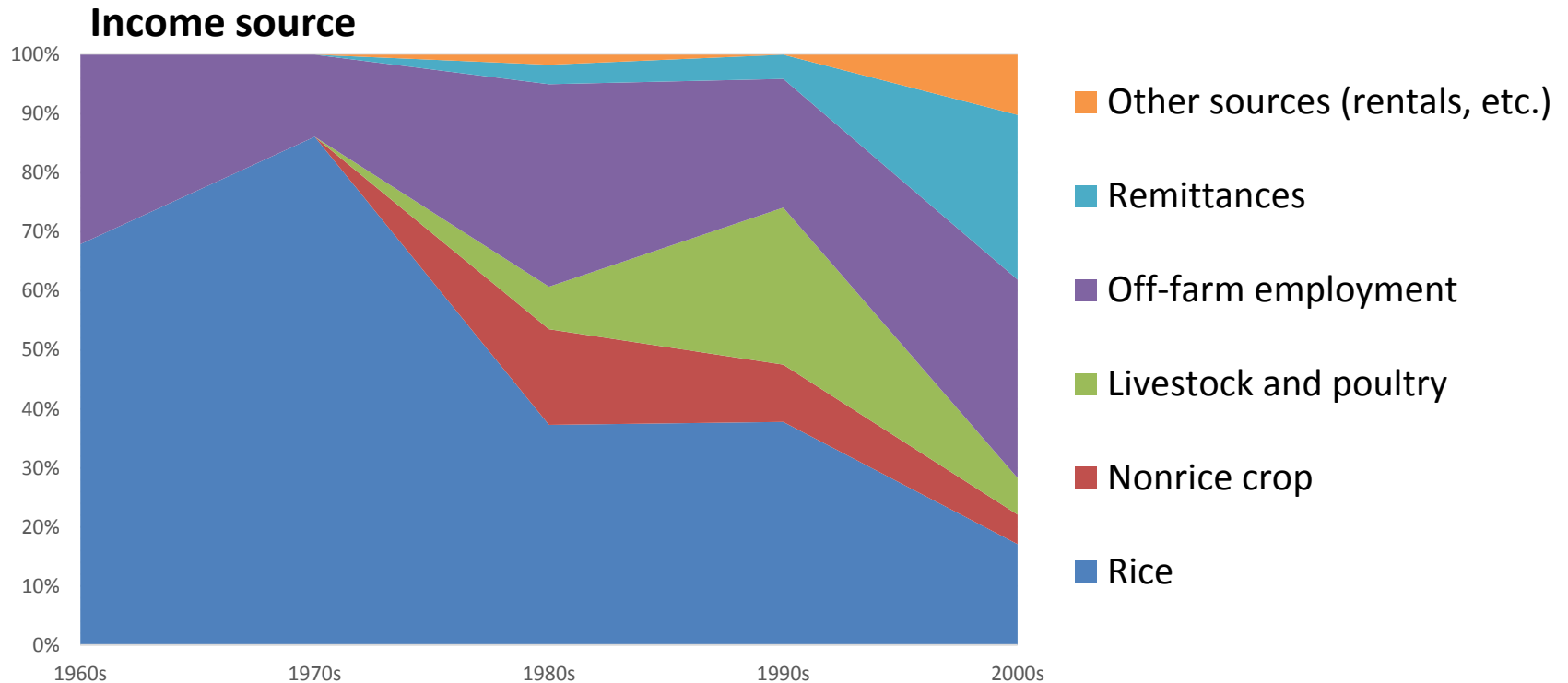


Educational attainment, improving



➔ Increasing number of high school and college graduates among young.

Changes in income sources



- ➔ Rice farming was major income source.
- ➔ Rice farming has become a side business.



TAKE HOME MESSAGES



Table 9.1. Changes in sources of household income (%), six selected case studies, Central Luzon Loop farmers, 1960 to 2000.

Sources of income	1960s	1970s	1980s	1990s	2000s
	Percent				
Rice	67.9	86.1	37.3	37.8	17.1
Nonrice crop			16.2	9.7	5.0
Livestock and poultry			7.2	26.6	6.2
Off-farm employment	32.1	13.9	34.3	21.8	33.6
Remittances			3.3	4.1	27.9
Other sources (rentals, etc.)			1.7		10.2



*sarap
mag*

RC



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LYDIA'S STORE

AB

~~MAYBE~~

DON'T BE A MAYBE



NEW *Coca-Cola*
mismo!
300mL

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Government Warning: Cigarette smoking is dangerous to your health.









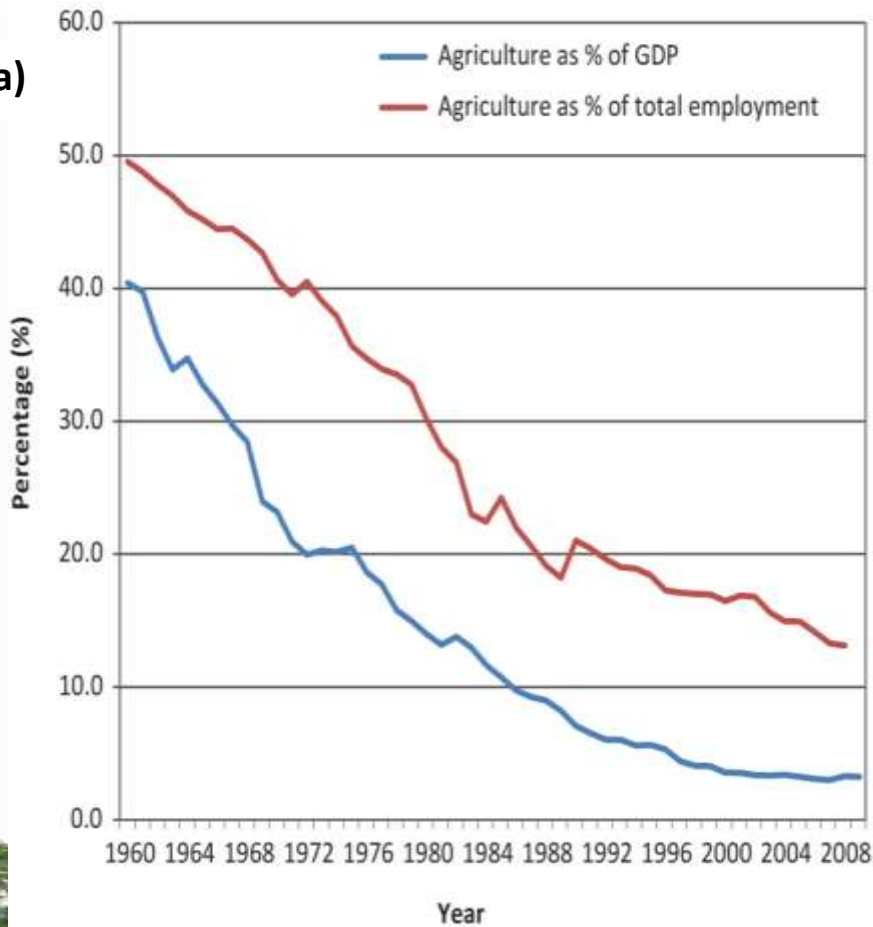
TAKE HOME MESSAGE 1

- ➔ MAN DOES NOT LIVE by RICE ALONE
- ➔ PARTICULARLY in the WET SEASON in CENTRAL LUZON

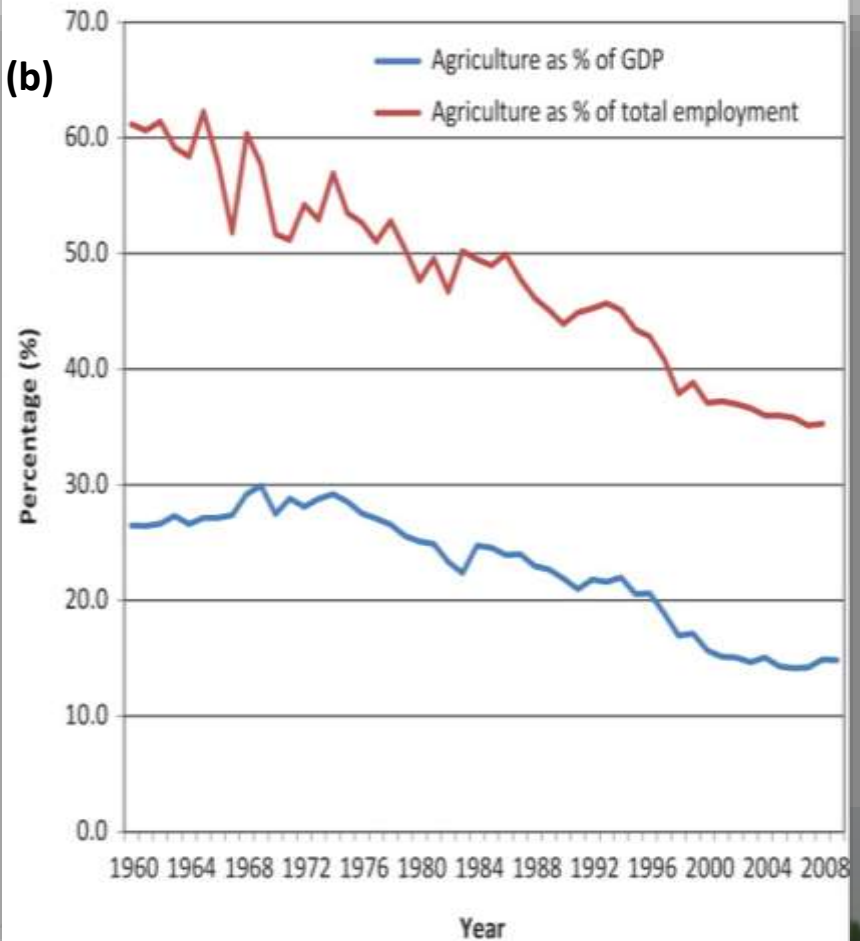


Figure 3. Trends in the % of the labor force in agriculture and the % in GDP from 1960 to 2008 for (a) Taiwan and (b) the Philippines.

(a)



(b)



Source: Huang-hao Chang, National Taiwan University .
(data for Taiwan)

Source: Christina David, Philippine Institute for Development Studies . (data for the Philippines)

TAKE HOME MESSAGE 2

THE PHILIPPINES

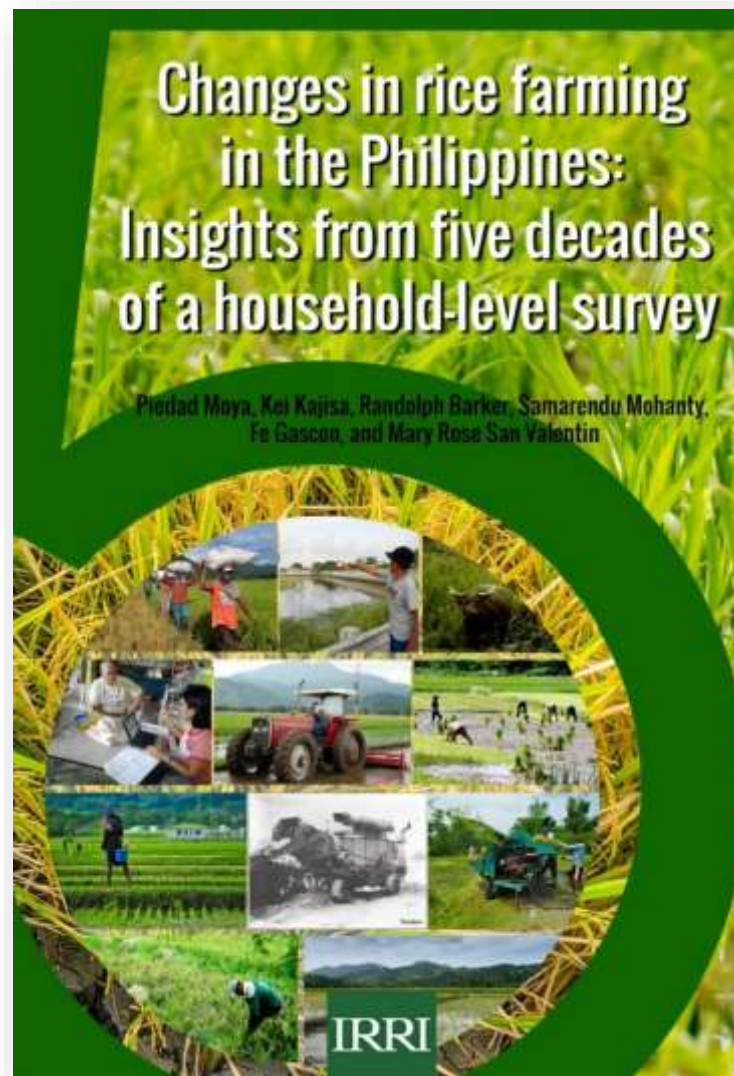
- ➔ IMPORTS RICE and
- ➔ EXPORTS LABOR
- ➔ AND THAT'S NOT SO BAD



Acknowledgements

Years	Persons responsible	Researchers/enumerators that conducted the interviews
1966-67	Randolph Barker, Stanley Johnson, Ben Hur Aguila	Violeta Cordova
1970-71	Randolph Barker, Violeta Cordova	Fe Gascon , Geronimo Dozina Jr.
1974-75	Randolph Barker, Robert W. Herdt, Chandra Ranade	Ricardo Guino, Bonifacio Cayabyab
1979-80	Robert W. Herdt, Ricardo Guino, Violeta Cordova	F. Gascon, Dolor Palis, Sylvia Sardido, Perla Pantoja, Aida Papag
1982	Robert W. Herdt, Fe Gascon	Dolor Palis, Sylvia Sardido, Perla Pantoja, Leonida. Yambao
1986-87	Keijiro Otsuka, Fe Gascon	Dolor Palis, Luisa Bambo, Esther Marciano
1990-91	Cristina David, Fe Gascon	Joel Reaño, Alvaro Calara, Luisa Bambo, Milagros Obusan
1994-95	Mahabub Hossain, Fe Gascon	Esther Marciano, Joel Reaño
1998-99	Mahabub Hossain, Fe Gascon	Joel Reaño, Teodora Malabanan, Aida Papag, Nancy Palma
2003-04	David Dawe, Kazushi Takahashi, Fe Gascon	Maria Shiela Valencia, Milagros Obusan, Violeta Cordova, Mary Rose San Valentin
2007-08	Kei Kajisa, Pie Moya	Fe Gascon, Mary Rose San Valentin
2011-12	Sam Mohanty, Pie Moya	Joel Reaño, Mary Rose San Valentin, Teodora Malabanan

***For
more
details***



*Comprehensive
documentation
of the changes
in rice farming
for half a
century!*

Downloadable *for free* at

<http://irri.org/resources/publications/books/item/changes-in-rice-farming-in-the-philippines-insights-from-five-decades-of-a-household-level-survey>

Data set is also downloadable at

<http://ricestat.irri.org/fhsd/php/panel.php?page=3>

GROW YOUR OWN RICE CROP:

FACE THE CHALLENGE THAT FARMERS FACE

THE GAME OF RICE is an interactive simulation game designed to expose the player(s) to the many decisions that rice farmers must make and the nature of the risks they face – potential crop damage from typhoons, rats, insects, birds, snails etc.

Visit <http://game-of-rice.munkeewired.com/>



WEBSITES TO VISIT

*The Book is downloadable **for free** at*

<http://irri.org/resources/publications/books/item/changes-in-rice-farming-in-the-philippines-insights-from-five-decades-of-a-household-level-survey>

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