Economic resilience of Philippine agriculture

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Outline

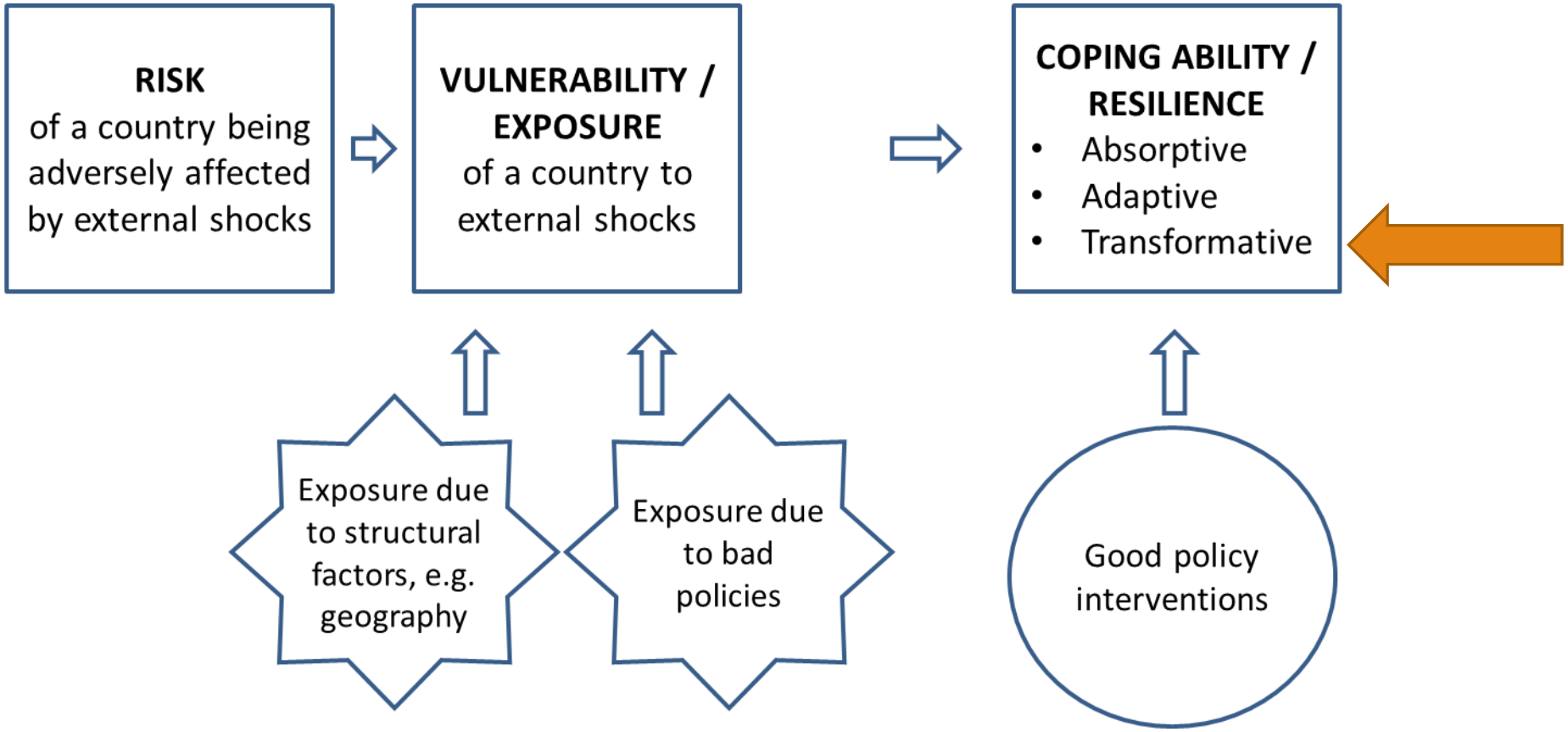
- Concept of economic resilience
- Vulnerability of food and agriculture systems in the Philippines
- Resilience and structural transformation
- Increasing economic resilience: constraints and options

CONCEPT OF RESILIENCE

What is economic resilience?

- *Resilience*: refers to the capacity of systems to bounce back from adverse experiences and adapt or adjust to a new state of nature
- ***Economic*** *resilience:* ability of an economy to withstand or recover from the effects of exogenous shocks (Briguglio, Cordina, Farrugia and Vella, 2008)
- Key distinction: measures to reduce exposure to risk **not identical** to economic resilience!

Risk, Vulnerability, Resilience



Source: Llanto (2016) modification of Figure 2 in Briguglio et al (2008)

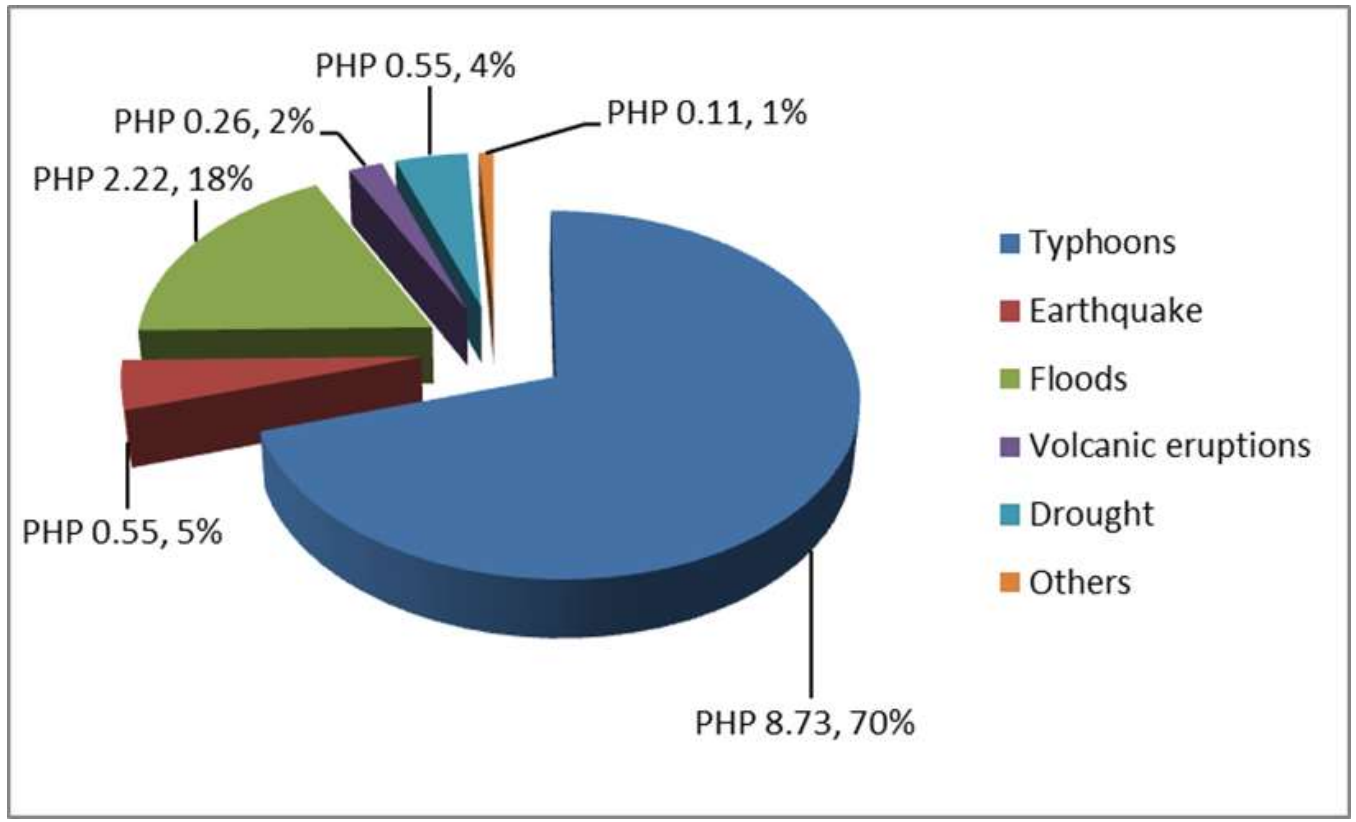
VULNERABILITY OF FOOD AND AGRICULTURE SYSTEMS IN THE PHILIPPINES

Vulnerability to external shocks

- During the Asian Financial Crisis of 1997/1998, poor performance of agriculture sector more related to widespread drought and El Nino phenomenon than to external shock (Balisacan and Edillon 2001; Datt and Hoogaveen 1999).
- During the Global Financial Crisis, sector did not contract, although its growth substantially decelerated from 4.8% in 2007 to 3.2% in 2008.
- Sharp drop in growth in 2009 (0.2%) attributed from devastation in Luzon unleashed by three major typhoons

Natural disasters

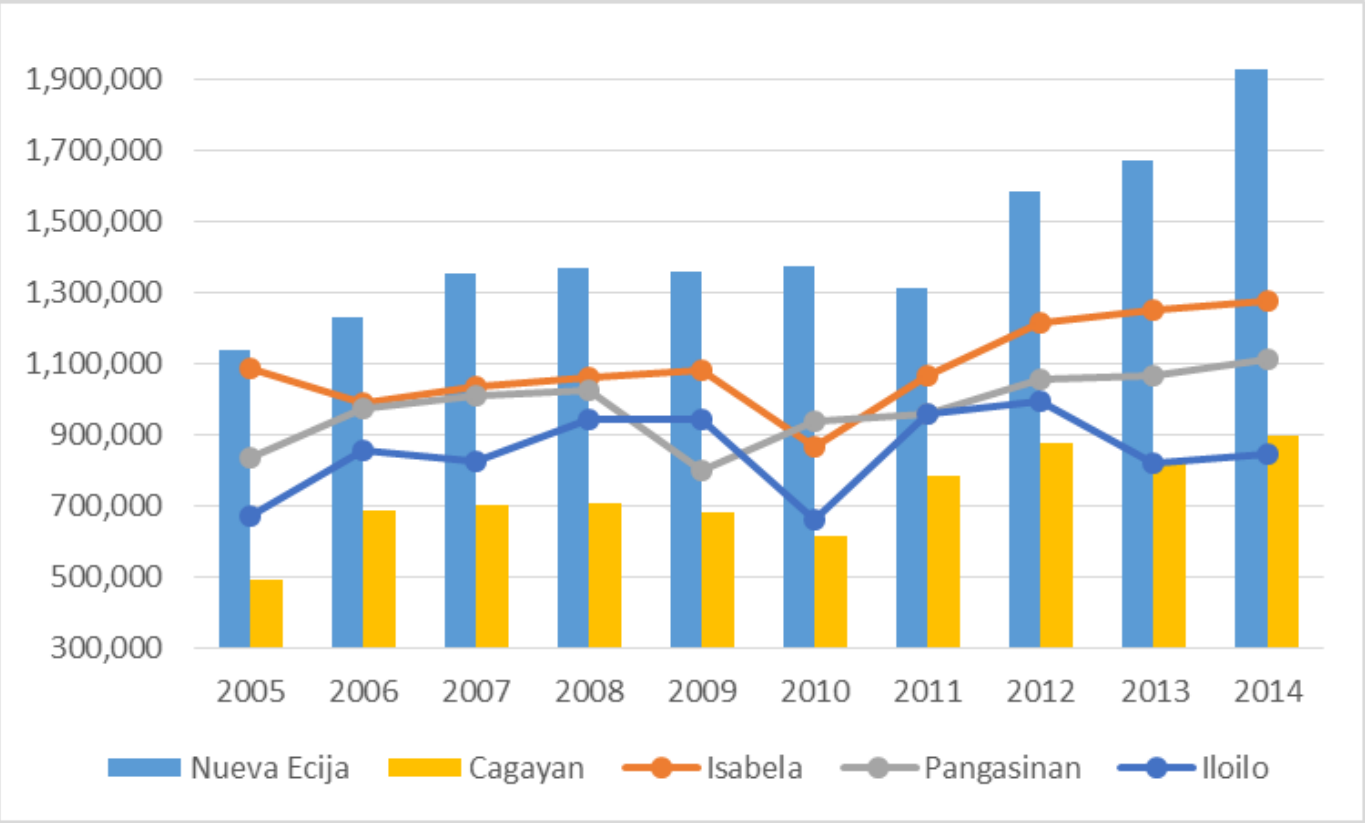
Costs of natural disasters: agriculture, 1990-2006



Source: NCCAP 2011-2018, Climate Change Commission

- High level of exposure to natural shocks - geography
  - typhoons affect most
  - second is floods
  - aggravated by climate change

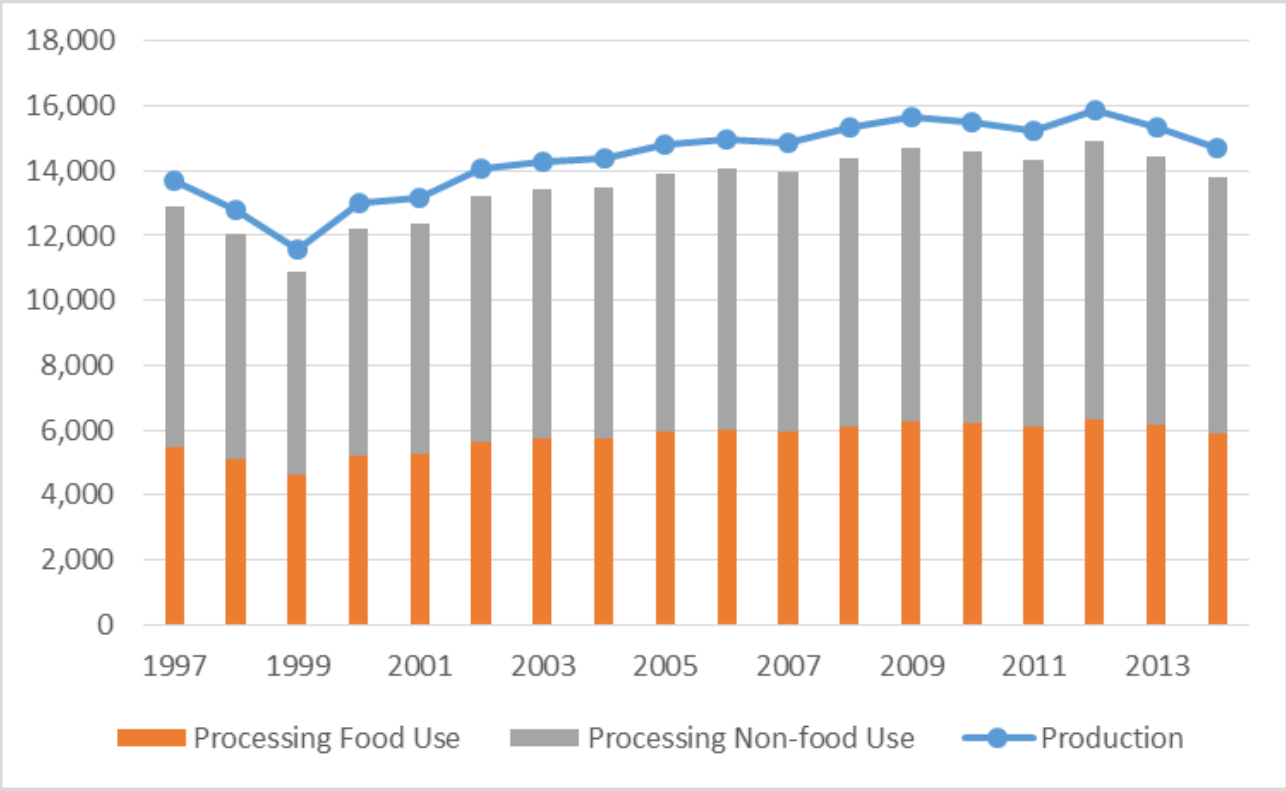
Production trends: Rice



- *Coefficient of variation*:
  - PH 0.083
  - 50 out of 79 rice producing provinces exceed this
- *Correlation coefficient*:
  - Output: average = 0.50
  - Growth: average = 0.29

Production trends: Coconut

Coconut output (in-husk), and processing utilization, 1997 – 2014, in '000 t

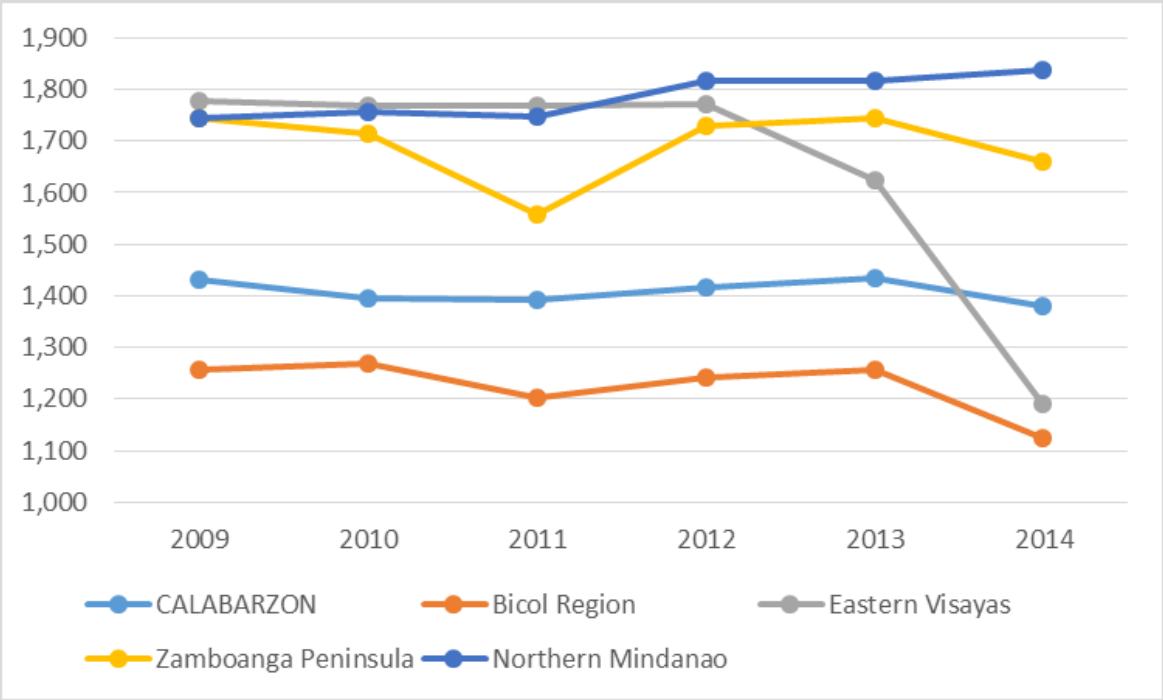


- In 2009, coconut production peaked at 15.7 million tons with 1.2% p.a average increase since 1997
- The trend was reversed since 2009 up to 2014
- 94% of the total production goes to processing wherein 57.4% of this goes to non-food use
- Since 2007, non-food use was partly devoted to biodiesel production

Source: PSA CountryStat (2015)

Production trends: Coconut, regions

Figure 1: Coconut output (in-husk), in '000 tons, major producing regions



Source: PSA CountryStat (2015).

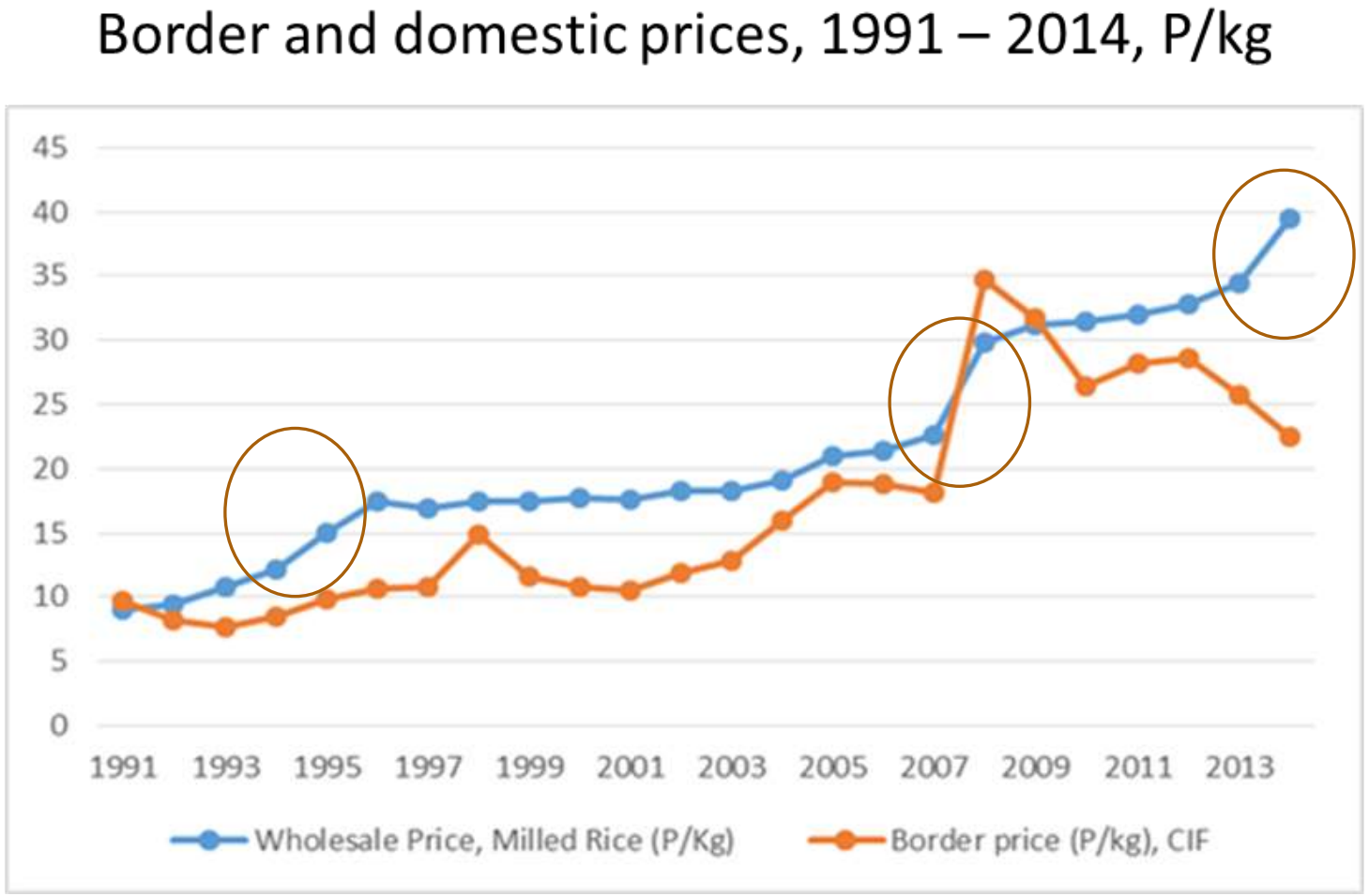
Regions producing more than a million tons of coconut per year (in 2009):

- Only Northern Mindanao has increase in output
- All the regions: reduction in output.
- The steepest drop: Eastern Visayas from 2012 onward; the decline from 2013 to 2014 → Typhoon Yolanda.
- The other regions: pest infestation (most notoriously, the "cocolisap"), as well as the prolonged dry spell.

Case of economic integration

- Two sources of supply shocks: Domestic and Foreign
- Economic isolation: reduced exposure to Foreign shocks, increased exposure to Domestic shocks
- Economic integration: the reverse
- Net effect of integration – see the case of Singapore

Price policy: case of rice



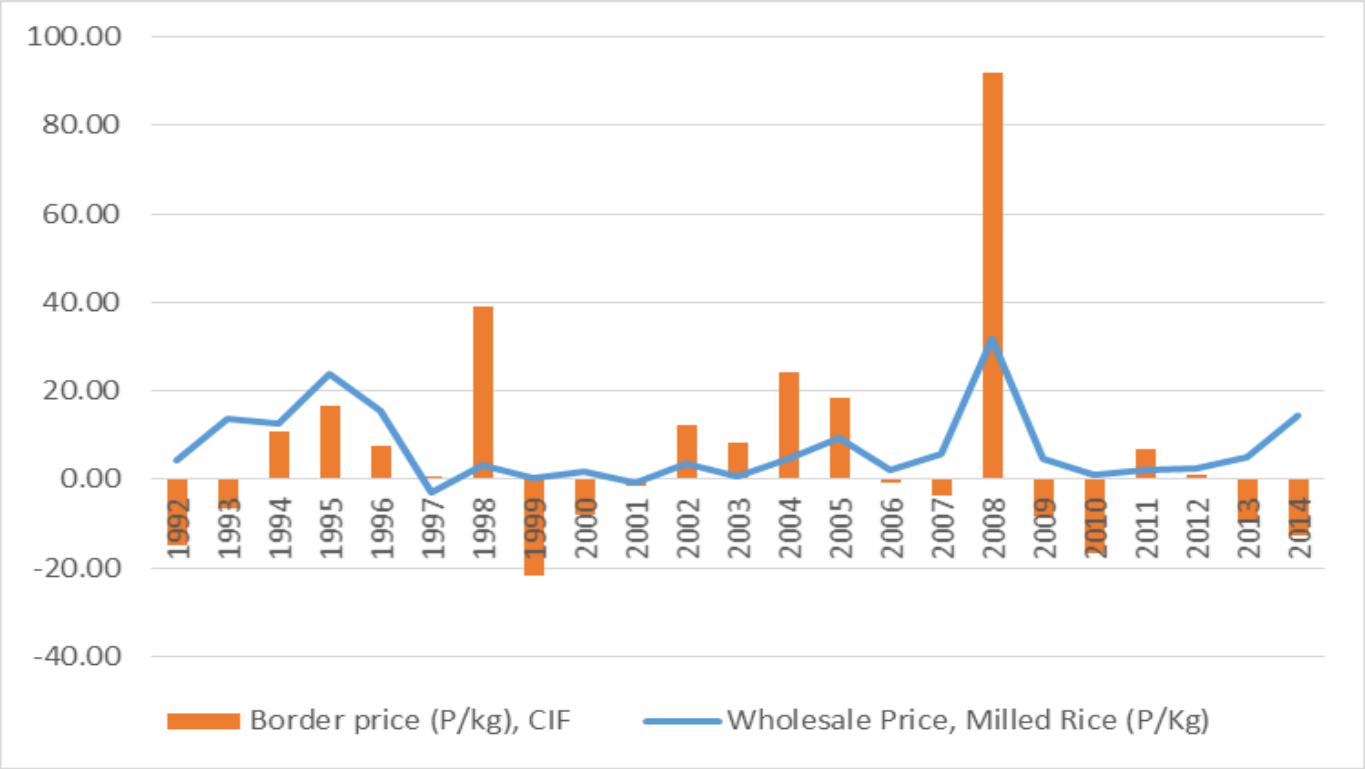
- Domestic prices mostly stable, but typically higher than world price
- Three episodes of price spike
- 1994: mistiming of imports → precautionary import policy →Lesson learned for 1997 El Nino

Recent food price shocks

- World price of rice, the country's main staple, rose steeply from about US$300/mt in October 2007 to about US$800/mt in May 2008 → worldwide panic, including Philippine rice market
- Government raised imports, expanded retail subsidy program, but domestic rice prices rose by about 40%
- Recent surge in 2014: despite decreasing world prices
  - Ultimately traceable to price stabilization policy in line with self-sufficiency targets

Ratchet effect:

Growth in annual wholesale and border price, 1992 – 2014, in %



- World price grows very erratically over time.
- Domestic price rarely declines. Wholesale prices have fallen only twice, in 1997 and 2001, only by 3% and 0.1%, respectively
- Average annual growth of 2.5% from 1997-2008; after price spike in 2008-2009, domestic prices average growth was 3% from 2010-2013

Disaster response: case of rice

- NFA mandated to keep 15 days equivalent rice consumption throughout the year, and buffer stock of 30 days equivalent at beginning of June
- Extends down to local level
- Local stockpile is key to quick disaster response
  - Provincial NFA – has MOA with many (most?) LGUs to sell rice on credit in times of calamity
  - Regional DSWD: similar arrangement with regional NFA to supply rice, either on credit, or as “virtual stockpile”

The bigger picture: Resilience and vulnerability, selected countries

Economy	Resilience Index	Vulnerability Index
Singapore	0.974	0.971
Hong Kong, China	0.877	0.713
Japan	0.674	0.106
Malaysia	0.624	0.587
Thailand	0.467	0.363
Philippines	0.353	0.485
Sri Lanka	0.328	0.415
India	0.301	0.201
Nepal	0.208	0.327
Indonesia	0.161	0.174
Bangladesh	0.136	0.313
Pakistan	0.069	0.349

Vulnerability = lack of resilience?

Singapore paradox: the seeming contradiction that a country can be very vulnerable and yet manages to register high GDP growth

Hypothesis: it is **good policies** that offset significantly whatever vulnerability an economy faces (Briguglio et al, 2008)

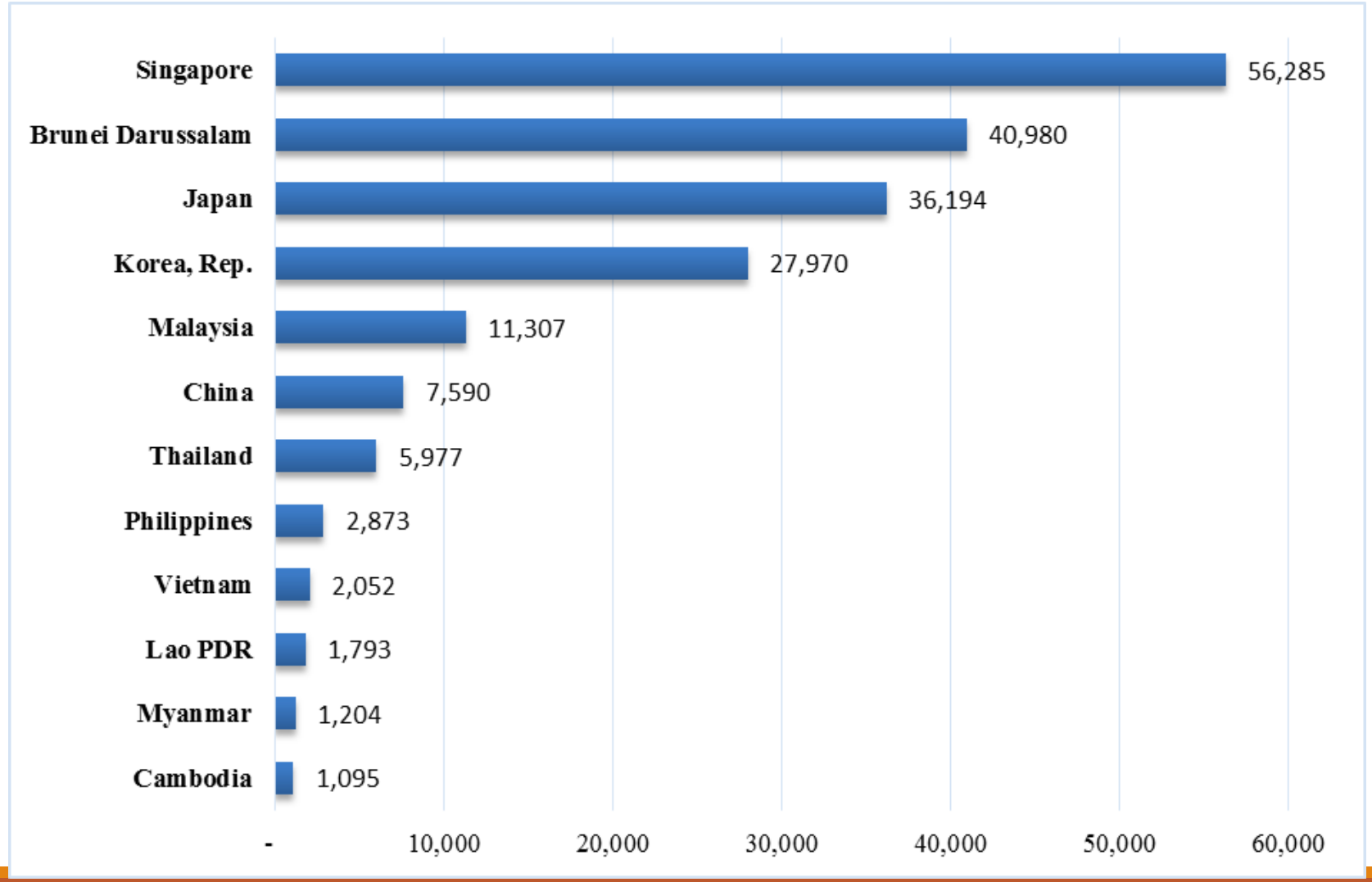
Policy conversations have shifted from reducing vulnerability to exogenous shocks to building resilient systems

Structural transformation and resilience

- Transformed, modern economy – greater capacity to absorb and manage risks
  - Economic transformation key to economic resilience
- Shift from agrarian economy to modern industrial base: structural change (from low productivity to high productivity sectors) + technological progress (sustained productivity growth throughout economy)

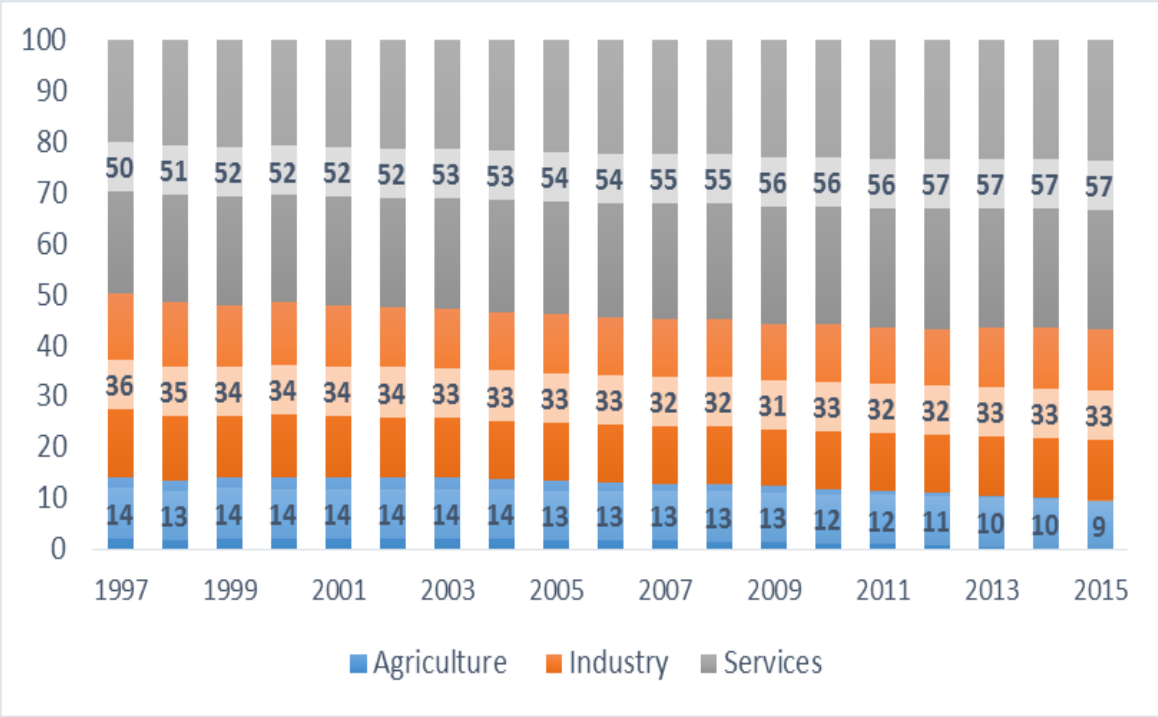
RESILIENCE AND STRUCTURAL TRANSFORMATION

Per capita income (in $US), 2014

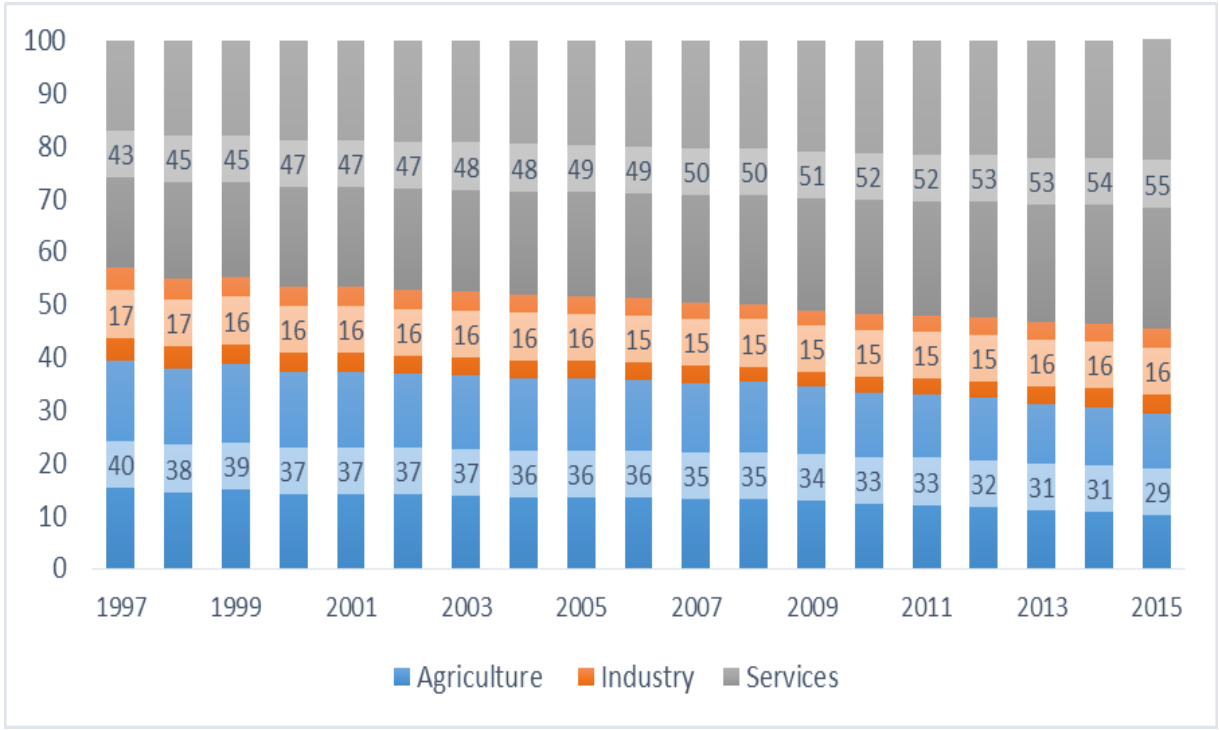


Structure of economy is shifting

Shares in output



Shares in employment

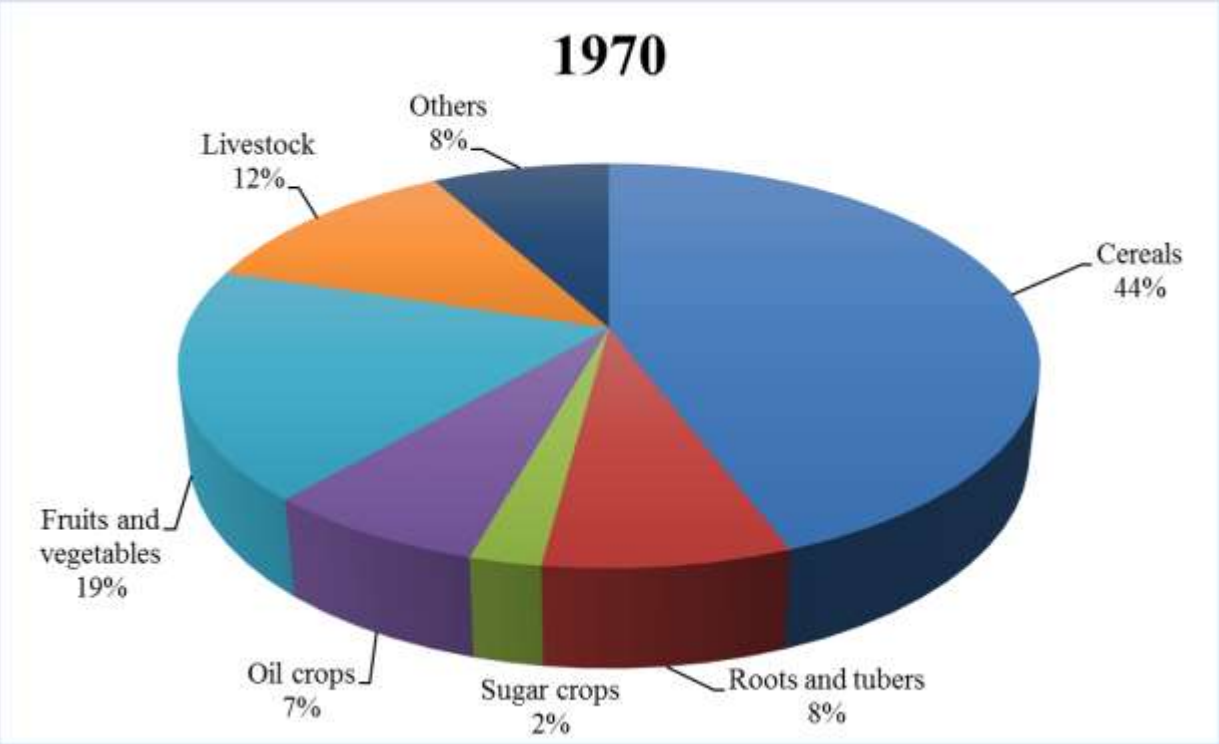


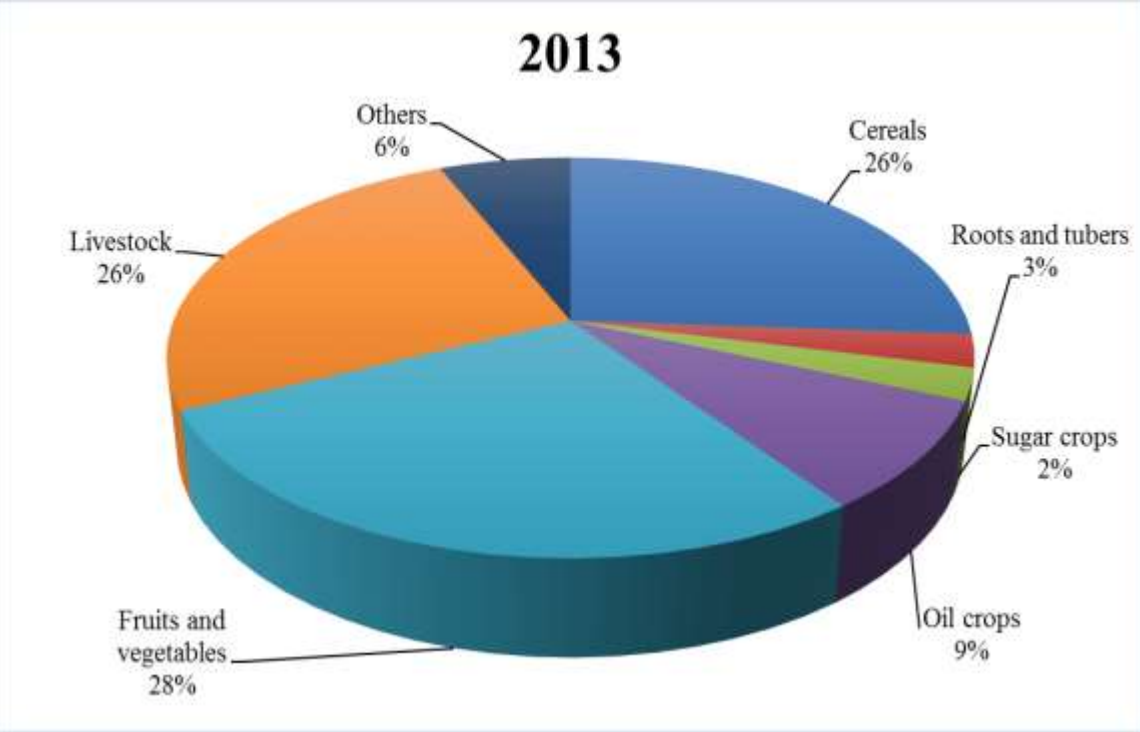
Services biggest share of output and employment

Agriculture shrinking
But still large share of employment

Industry one third of output, only one-tenth of employment

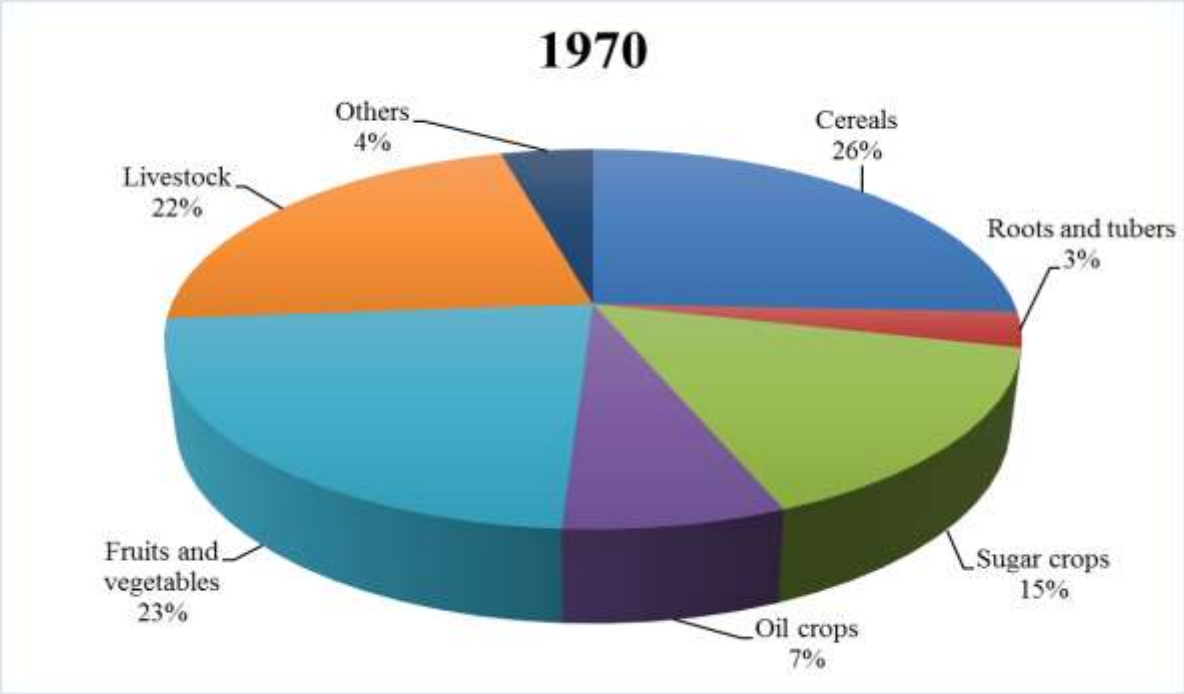
Diversification of output in developing Asian Countries

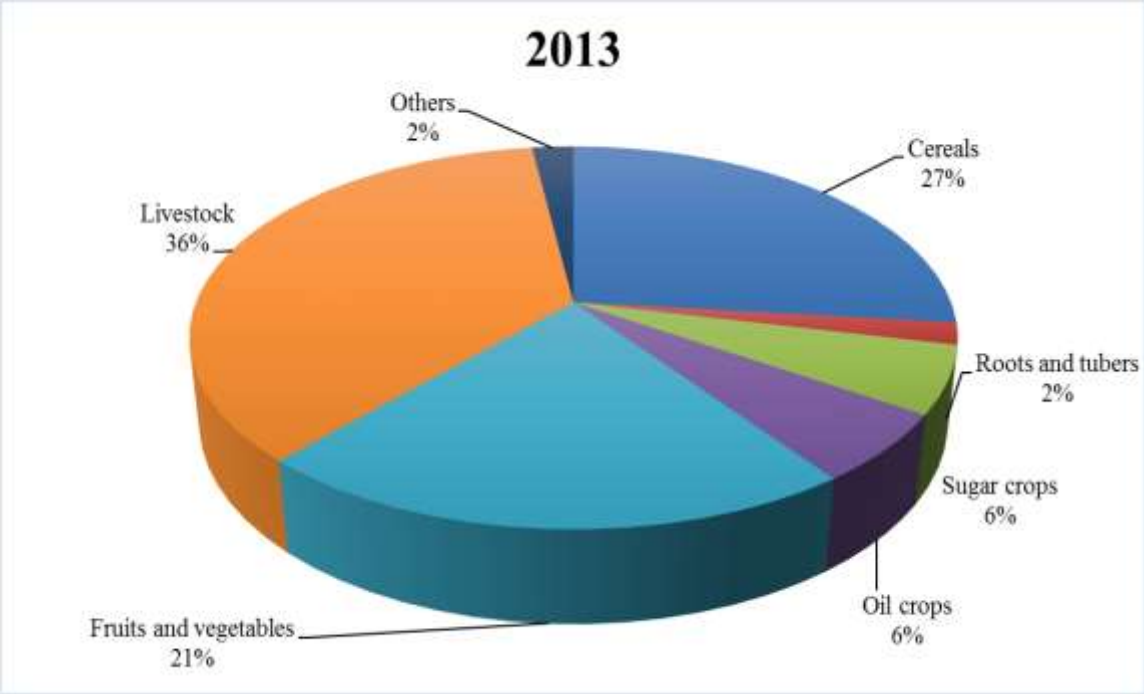




- Shift to livestock, horticulture, away from food staples

Diversification of agricultural output in the Philippines





Livestock increases; cereals maintained, fruit and vegetables declined

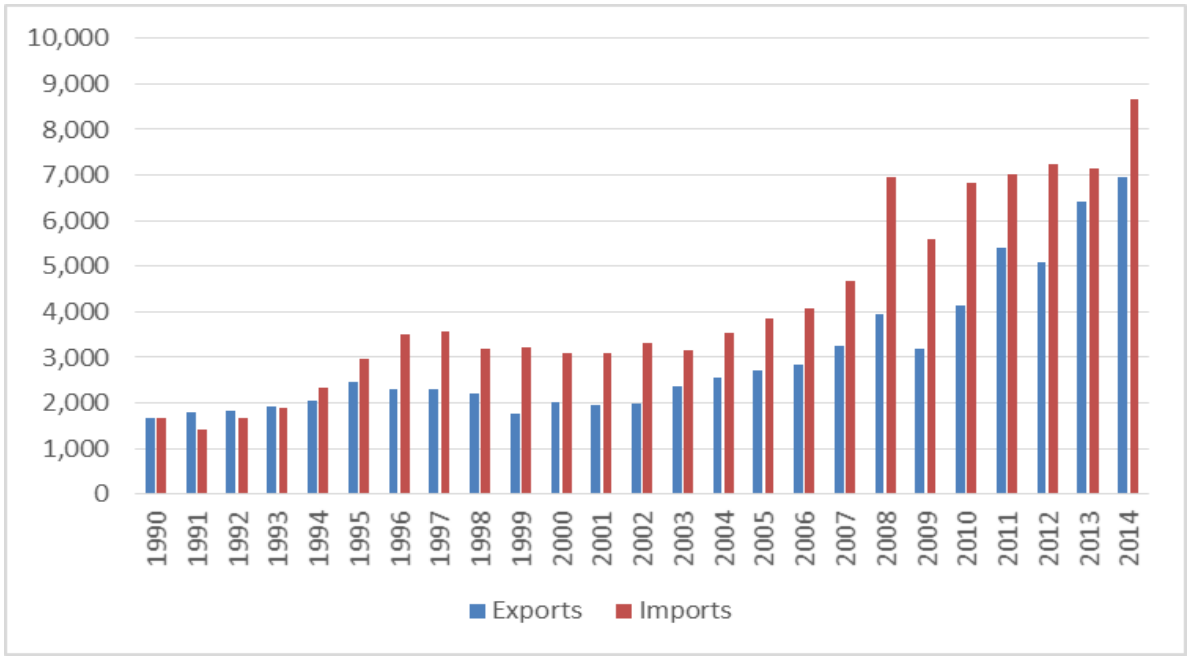
Comparison of Costs and Returns, 2014

Crop	Farmgate Price (P/kg)	Gross Returns	Net Returns	Labor Cost	Value Added
Palay	20.08	80,360	31,375	13,656	52,679
Corn	13.12	39,045	16,712	7,457	27,830
Vegetables	23.03	288,770	147,539	45,358	215,008
Fruits	21.76	162,413	86,893	22,086	127,369
Coffee	75.32	48,355	17,252	18,328	39,988

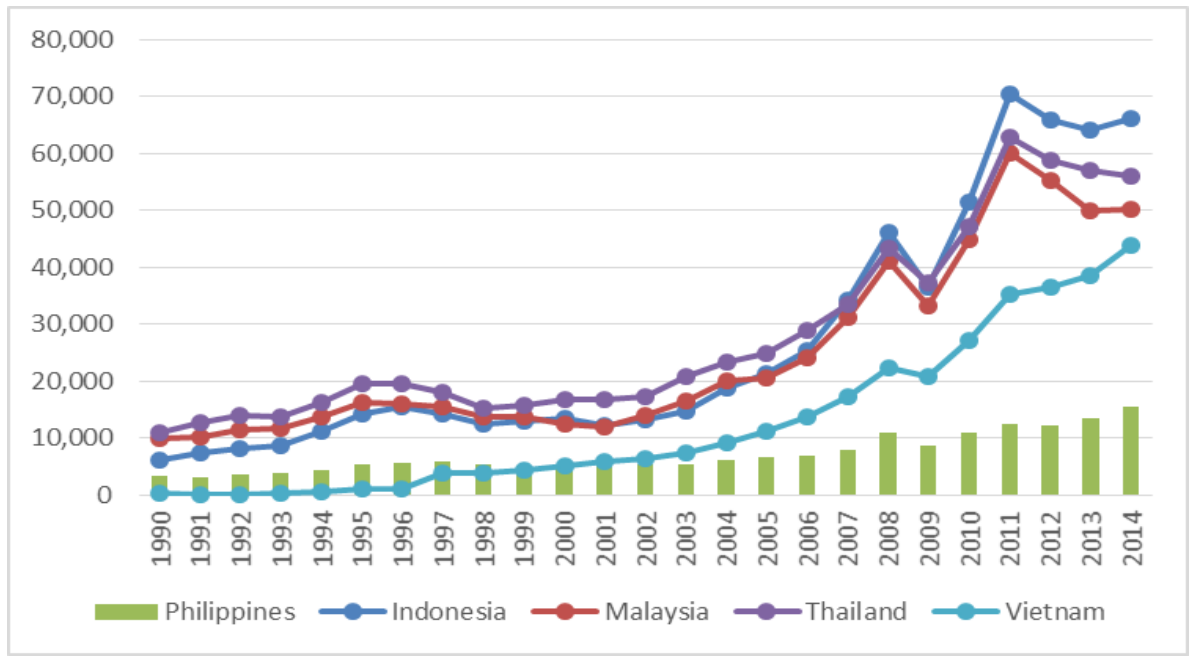
Persistent large disparities in net income per ha favoring high value crops = resources not being allocated to higher return commodities

Patterns in agricultural trade, in $US millions (1990-2014)

Philippine agricultural exports and imports



Agricultural trade, selected ASEAN countries



- Increased exposure of agricultural producers to price risk – but improved resilience of household consumption
- Need to grow export markets – but country's exports have been left far behind

INCREASING ECONOMIC RESILIENCE: CONSTRAINTS AND OPTIONS

Lack of investment in public goods

- R&D provision has been insufficient, falling below the rule-of-thumb of 1% of agricultural GVA
- insufficient allocation to major commodities and high value added products (ex: absence of a rubber research institute)
- mismanagement of common pool resources
- rural infrastructure backlog
- poor contract enforcement and property rights regimes

Problems in agricultural supply chains

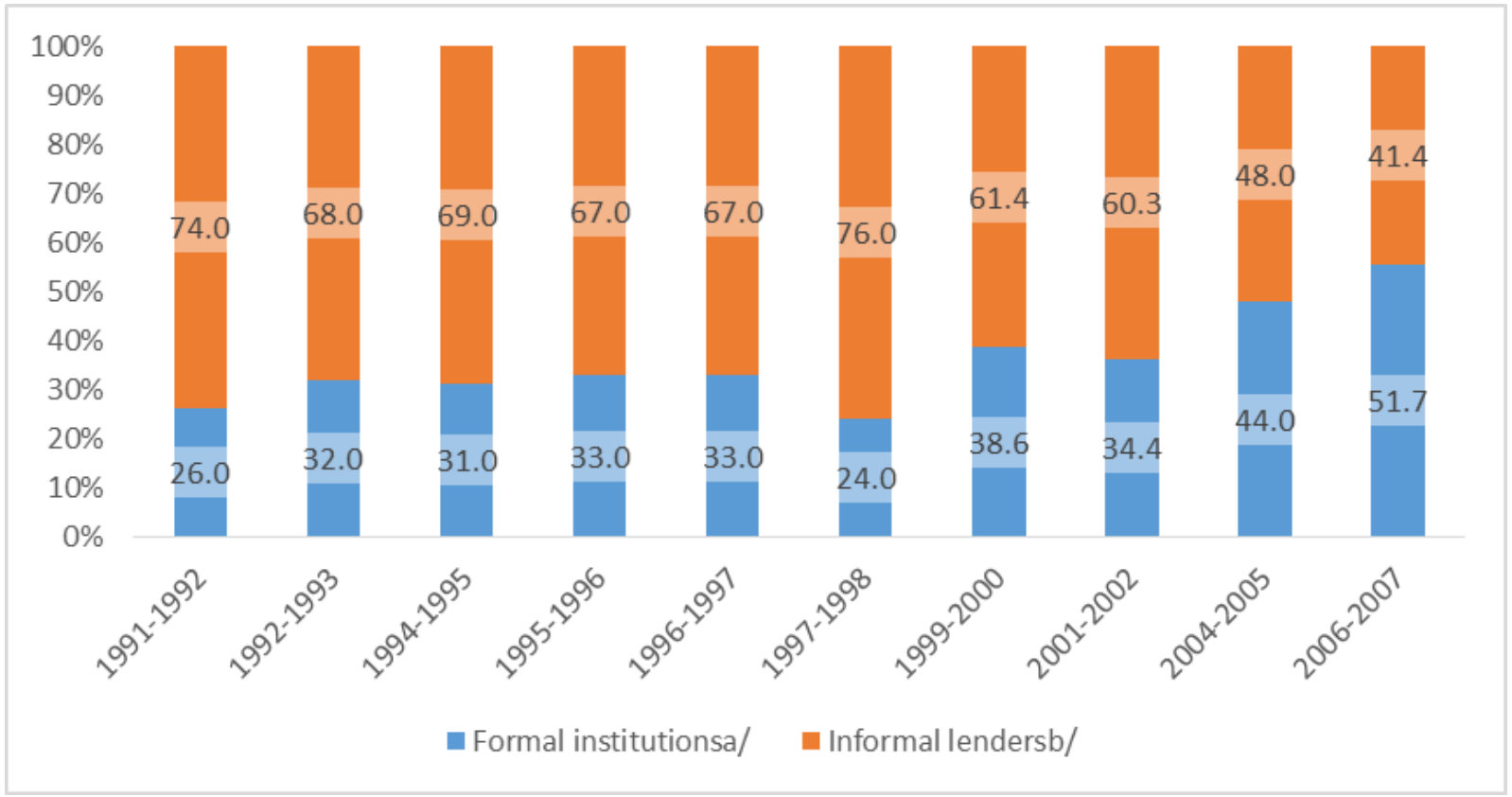
- Weak regulatory and certification systems
  - Cacao processors for instance need certification of Good Manufacturing Practice (GMP) in order to export; this could be especially difficult for small processors who lack funds to invest in the needed machines, technology, and certification process.
  - Enabling MSMEs to achieve food standards may require complementary support such as technical and financial assistance from government.
- Inadequate access to technology and finance

Accelerating structural transformation: vertical and horizontal measures

- Increase investments in: R&D, extension systems, irrigation facilities, regulatory systems and transport infrastructure
- Others: eco-zones and industrial centers, tax incentives, flexible price stabilization schemes
- Performance-based allocation for subsidies/incentives to agribusiness sub-sectors
- Creation of a regulatory system facilitating business registration and licensing, standards and enforcement, contract compliance

Development of risk instruments

Borrowing by small farmers and fishers, 1991 – 2007 (Source: ACPC)



- Credit: not really risk instrument as such, but critical coping mechanism in case of shock
- Small farmers still rely on informal finance, though formal borrowers have been increasing

Development of risk instruments Microfinance

World Bank gave the finance indicator an above average score → regulatory environment in the agri sector microfinance institutions, credit unions, electronic money and warehouse receipts (Enabling the Business of Agriculture, 2016)

Crop Insurance

- Philippine Crop Insurance Corporation (PCIC) - government org for agri insurance
- Dual objectives of insurance programs:
  - protecting farmers against production risks
  - protected lenders from loan default
- However: problem of financial viability and sustainability
  - Alternative: weather indexed insurance?

Futures markets

- Spot versus forward markets: the latter exist in contract farming, other markets (sugar, banana, etc.)
- A true futures market: secondary market for the forward transaction
- Numerous prerequisites:
  - Grades and standards
  - Warehouse receipts
  - Regulatory framework

Food security protection: consumers

- Repeal monopoly of NFA, liberalize importation by private sector, subject to payment of tariff = “tariffication”
- Maintain rice buffer stocking by government agency (National Food Corporation?) – source by paddy procurement, rice importation, private inventory regulation
- Enter long term supply contracts with ASEAN exporters
  - Supply agreements: e.g. BERNAS
  - Contingent forward contracts: APTERR Tier 1 Programme

Conclusion

- Philippines – especially food and agriculture systems - highly vulnerable
- All the more require economic resilience: role of policy.
- Economic development – overlaps considerably with economic resilience
- Instruments specific to mitigating and addressing risk in agriculture and food systems
  - Traditional as well as novel instruments for production risk
  - Reforms in addressing food security risks

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