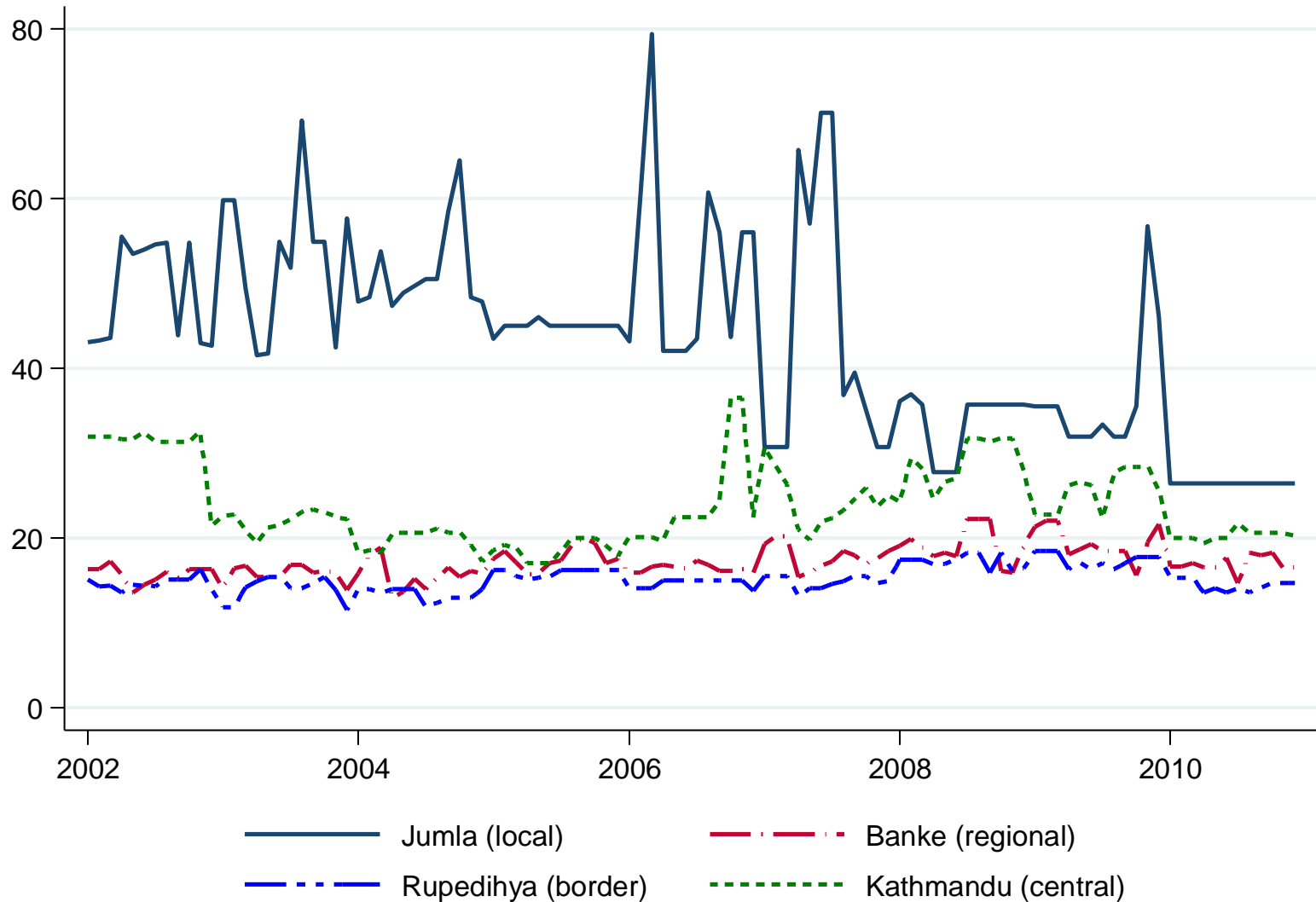


Food prices, their determinants and connections to child nutrition in Nepal

Gerald Shively and Ganesh Thapa
Purdue University, USA

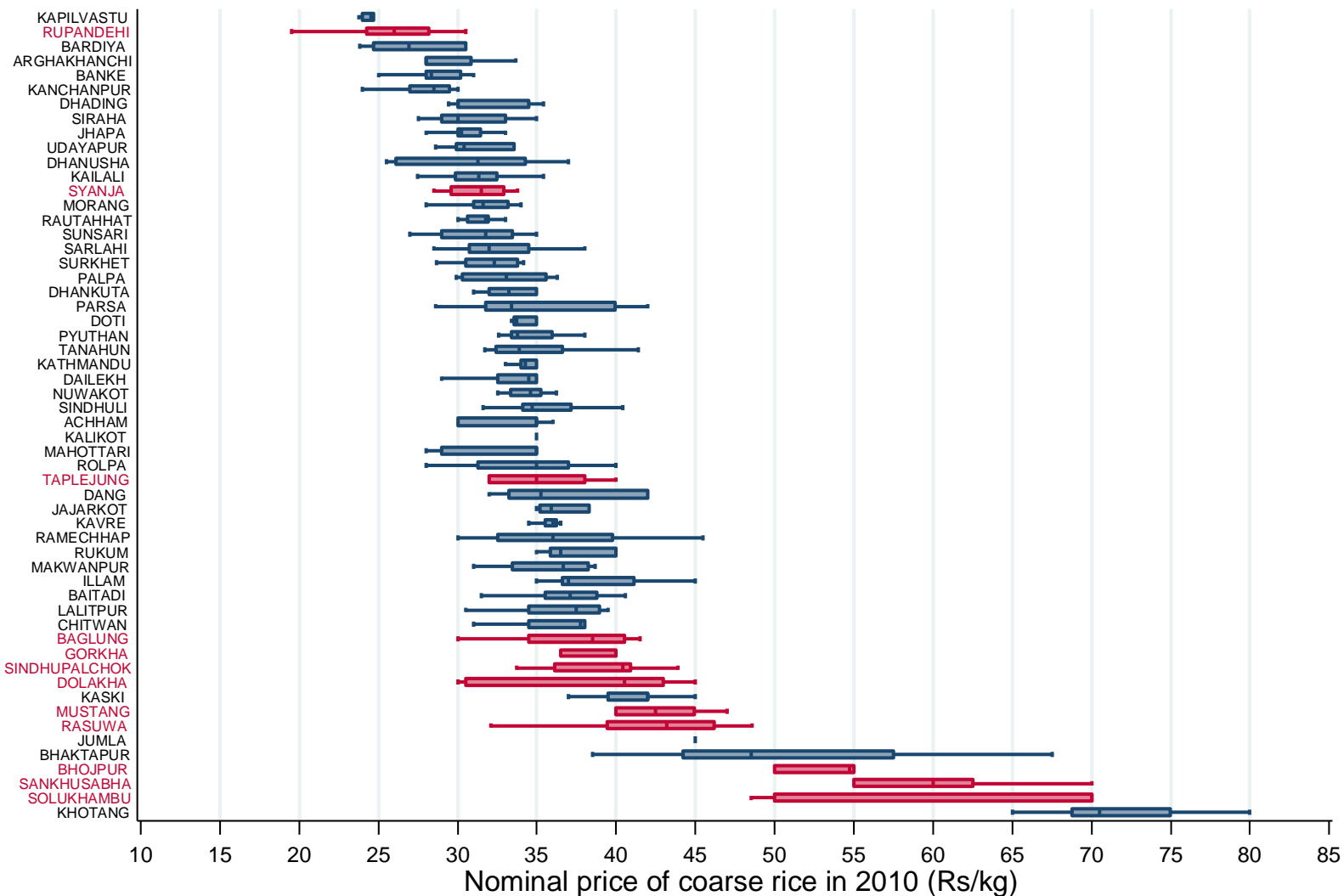
NIL Scientific Symposium 3
Kathmandu
19 November 2014

Monthly rice prices in four markets, 2002-2012



Source: Nepal Agribusiness Promotion and Marketing Development Directorate

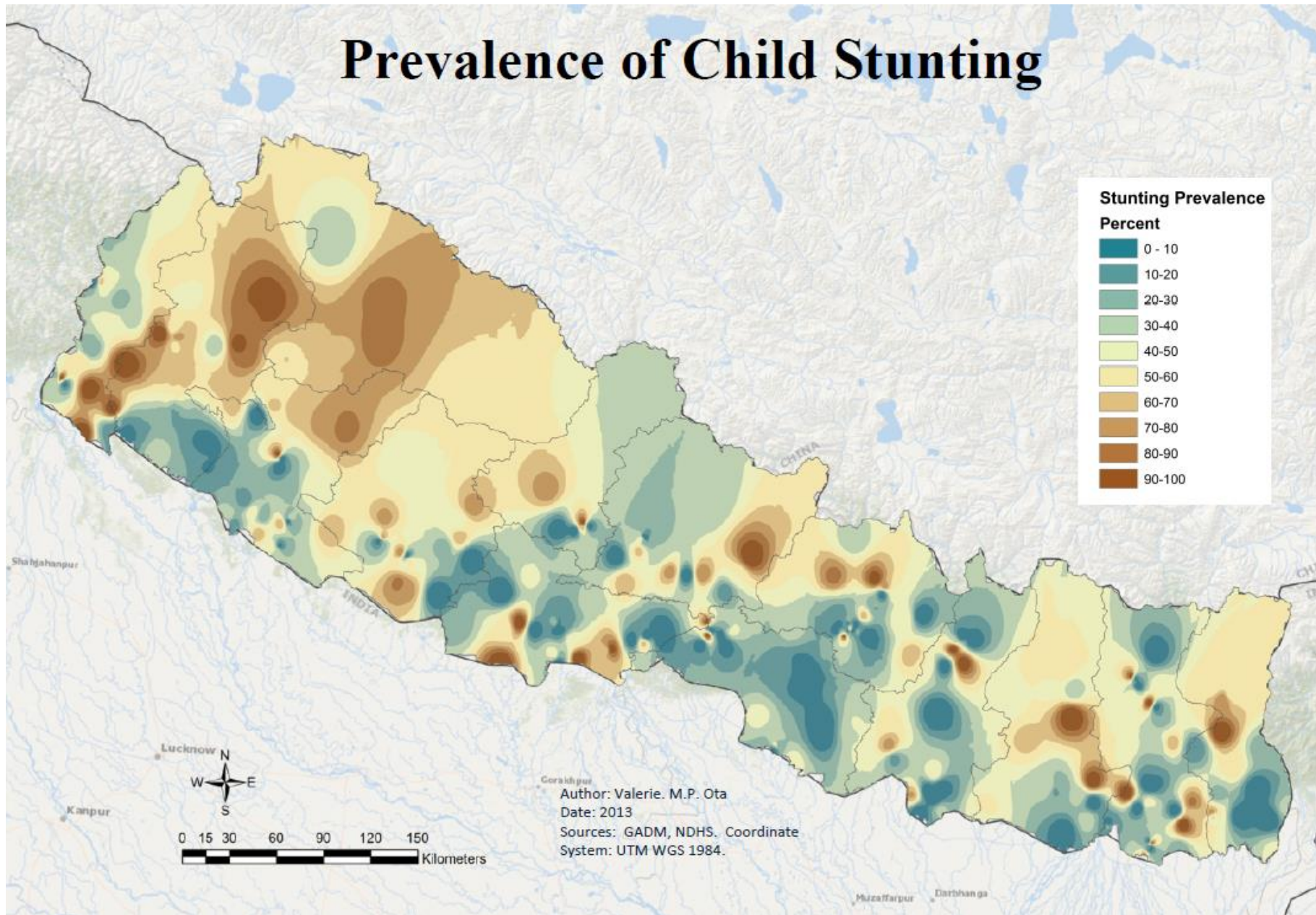
Nominal price of coarse rice (by district) in 2010



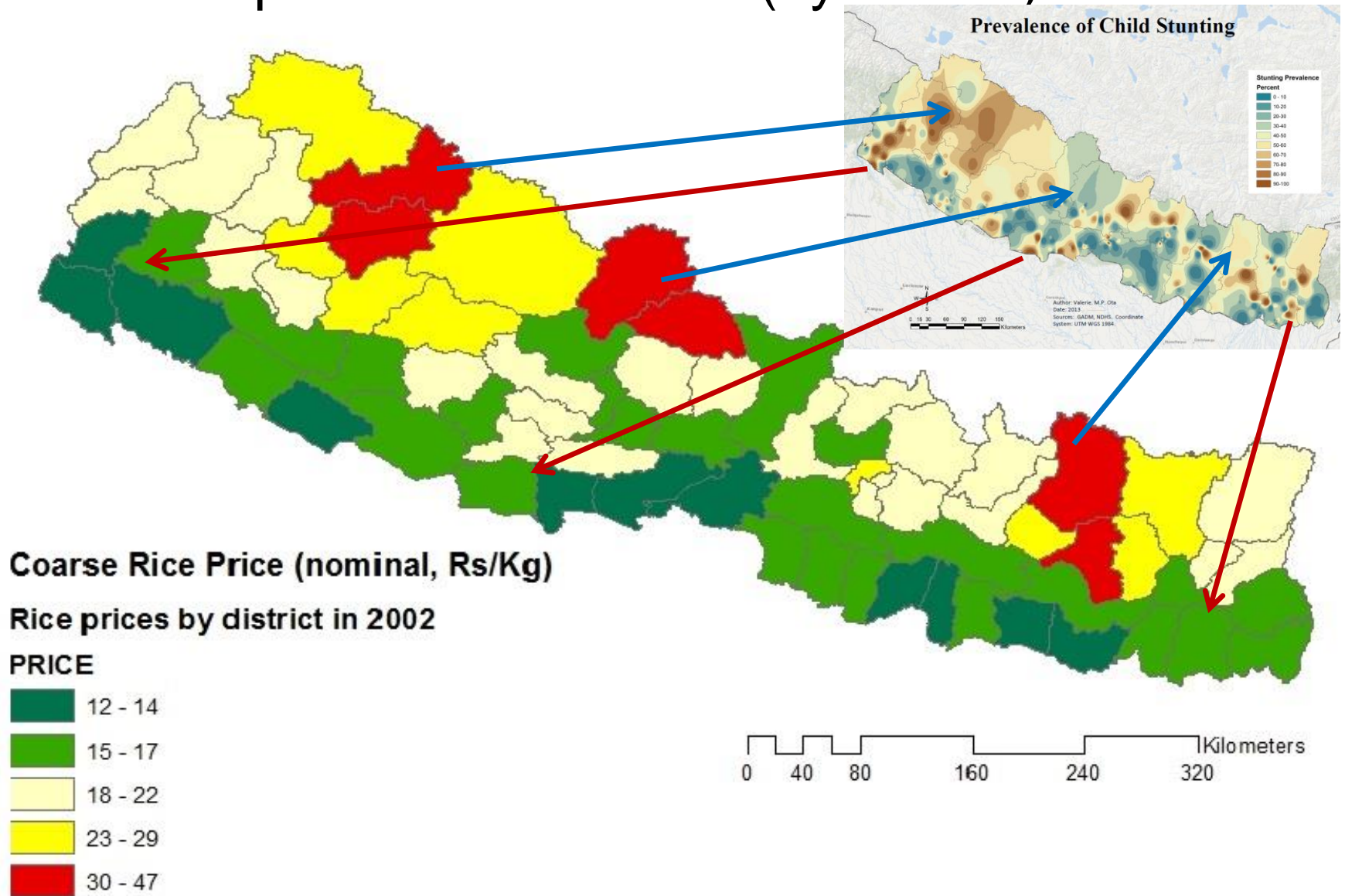
Note: Each bar represents the 12 month price distribution; Suaahra districts indicated in red.

Source: Nepal Agribusiness Promotion and Marketing Development Directorate

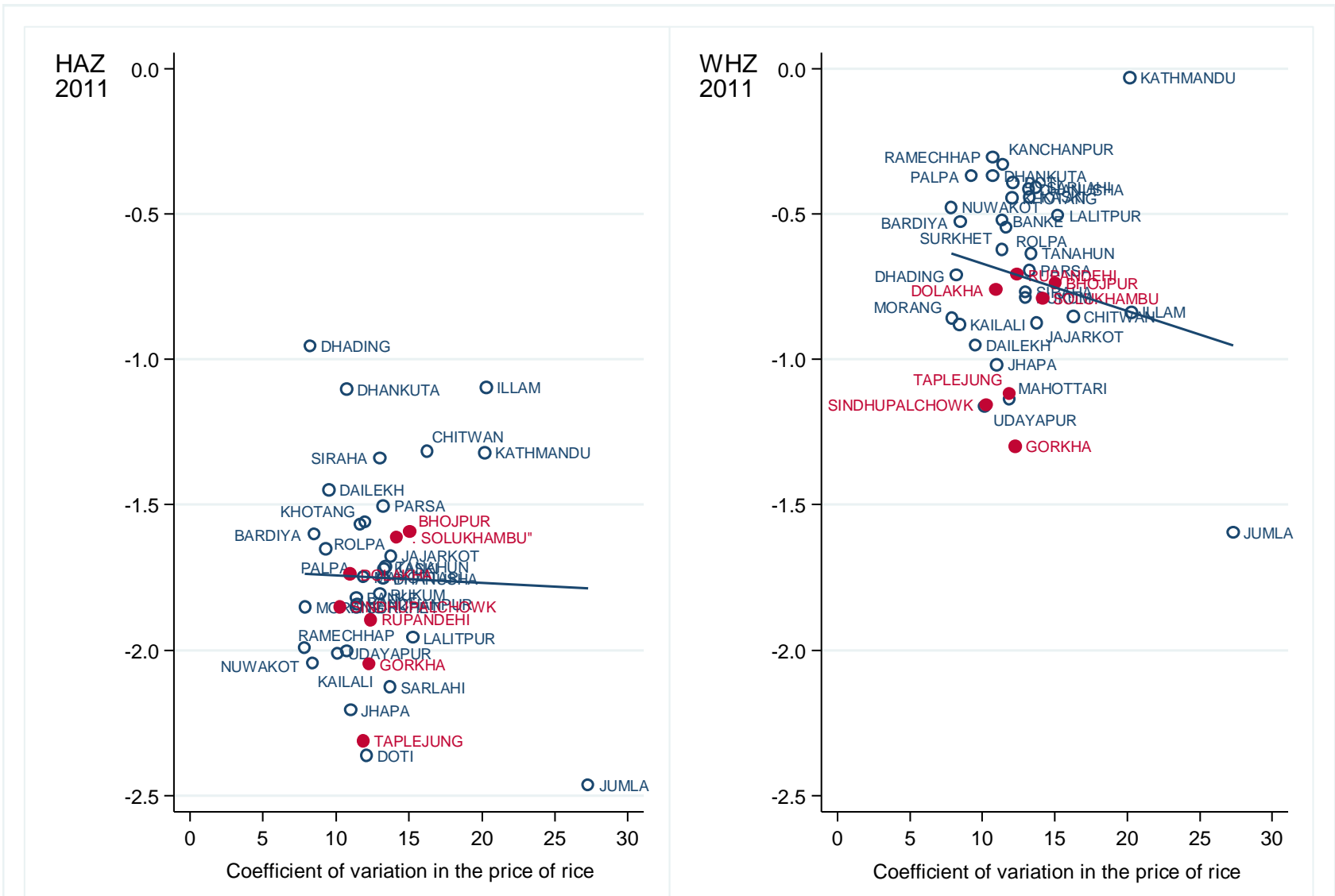
Prevalence of Child Stunting



Nominal price of coarse rice (by district) in 2002

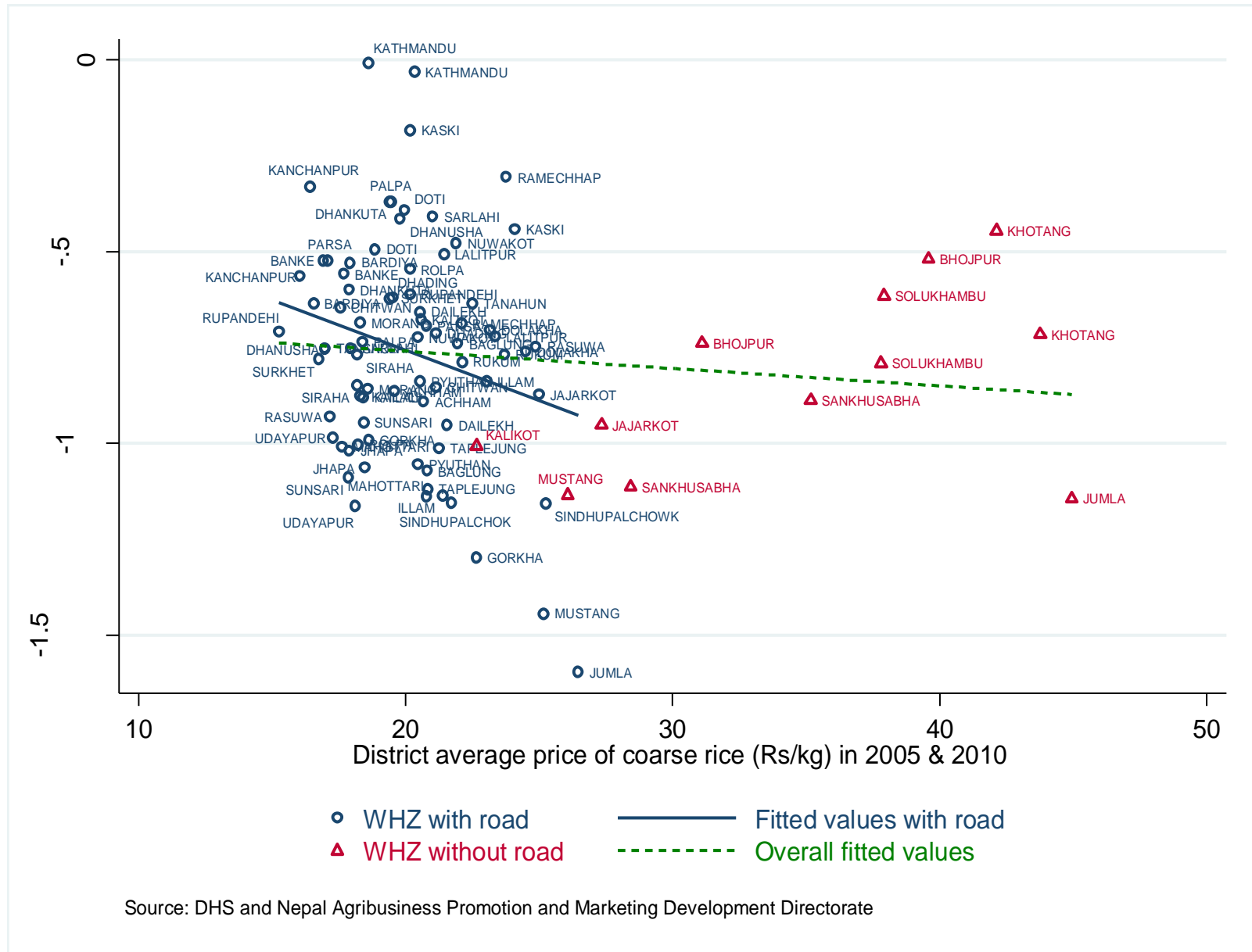


District level price volatility and average HAZ and WHZ



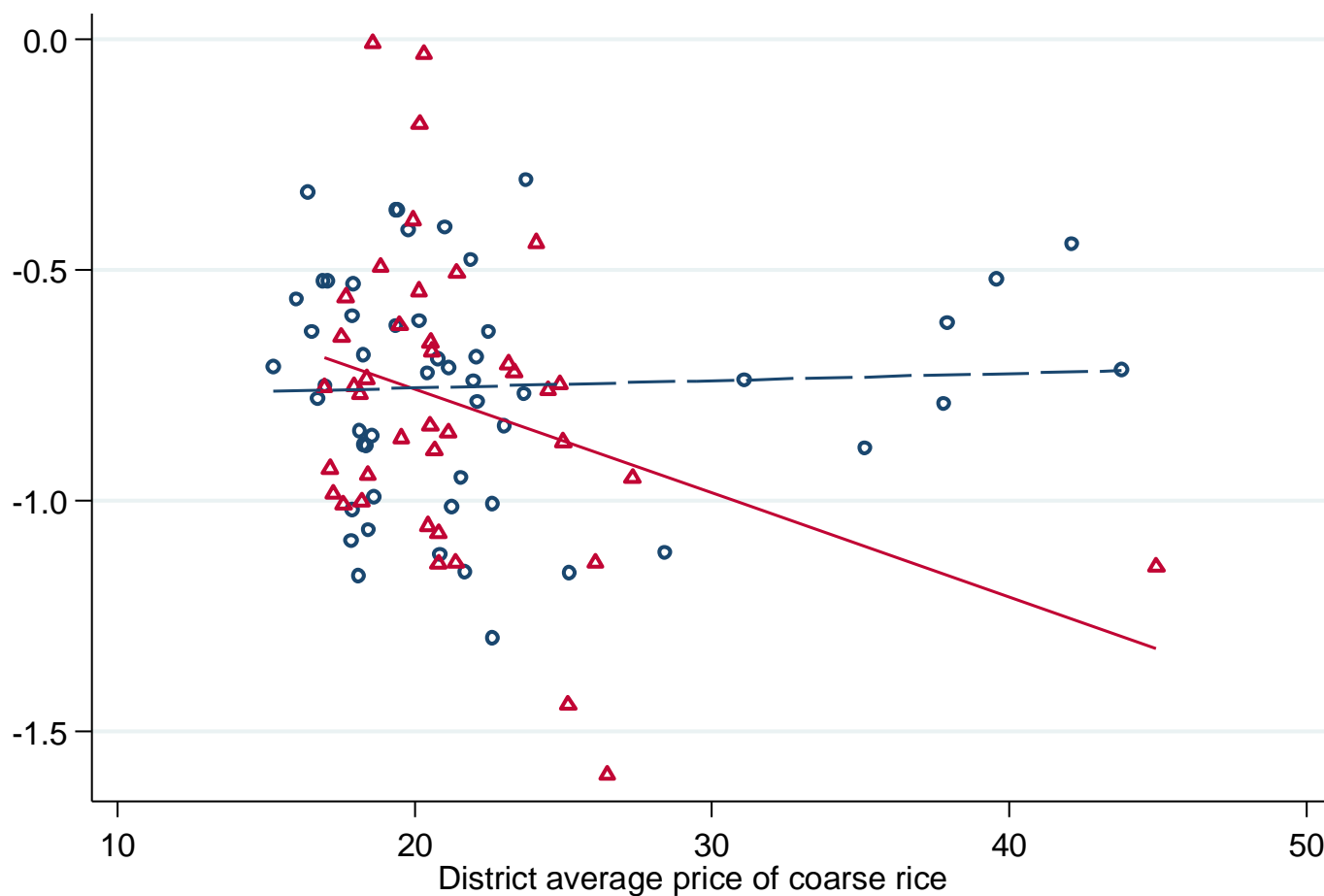
Note: Based on monthly prices of coarse rice (in Rs/kg) over the period 2002-2010, deflated by CPI. Suaahara districts indicated in red.
 Source: DHS (2011) and Nepal Agribusiness Promotion and Marketing Development Directorate

District average WHZ and real price of coarse rice



District average WHZ and real price of coarse rice

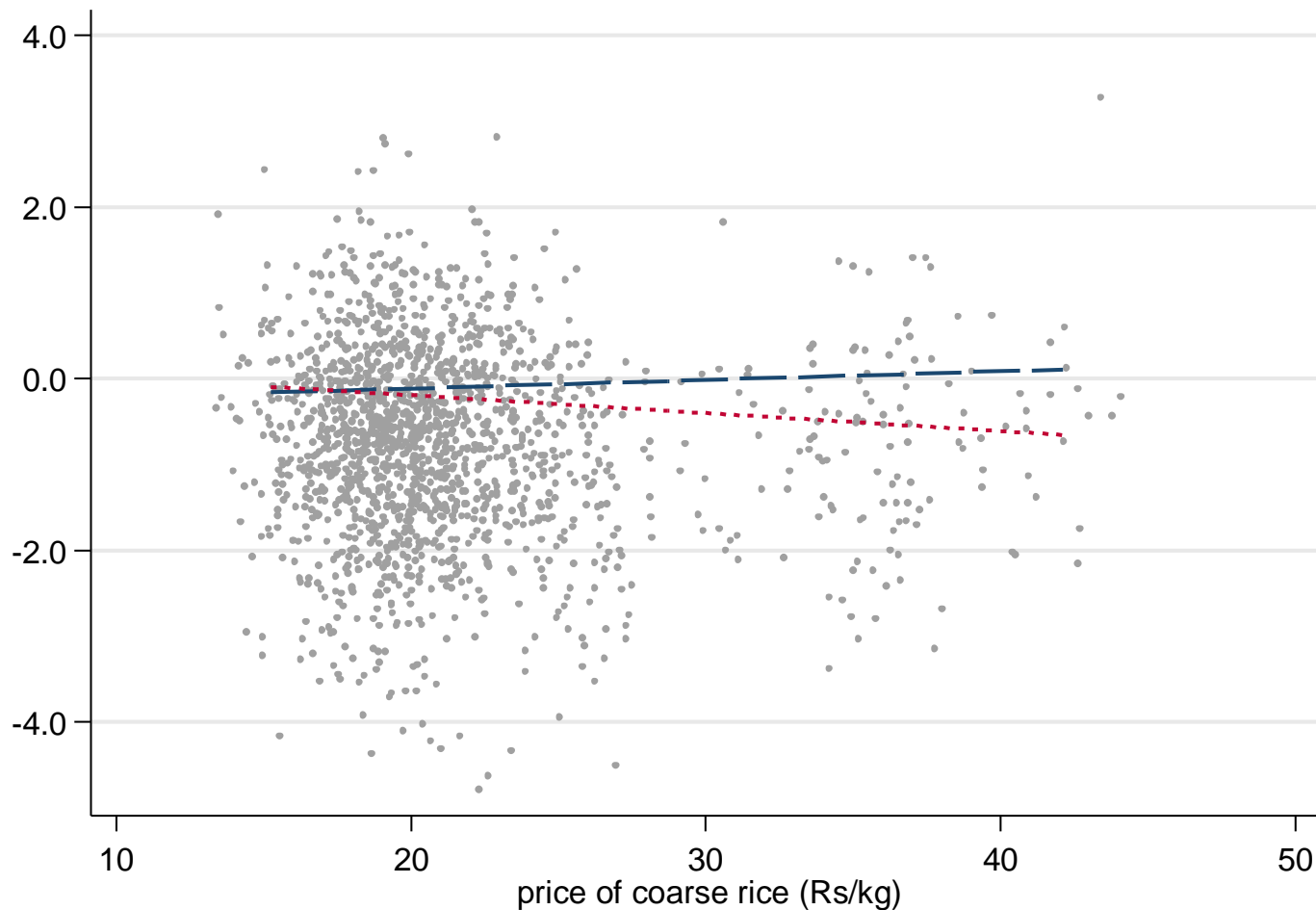
WHZ
2006 & 2011



Note: Coarse rice price (Rs/kg) for 2005 & 2010, deflated by CPI
Source: DHS and Nepal Agribusiness Promotion and Marketing Development Directorate

Household WHZ and real price of coarse rice

WHZ
2006 & 2011



..... bottom quintile - - - - top quintile

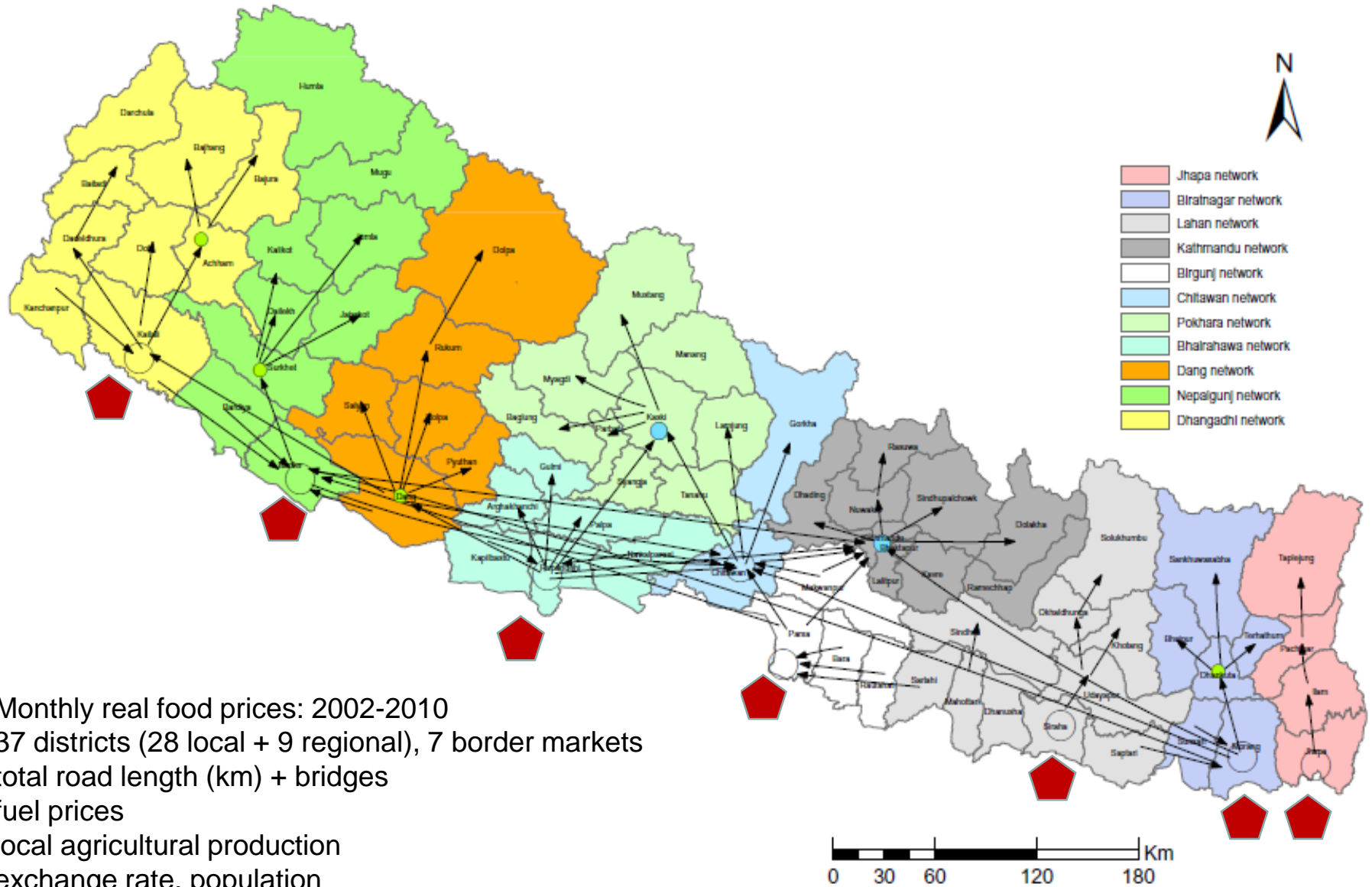
Note: Average 2005 prices paired with 2006 WHZ and average 2010 prices paired with 2011 WHZ
Source: DHS (2006 & 2011) and Nepal Agribusiness Promotion and Marketing Development Directorate

Food prices and nutrition outcomes

Key points:

1. Food prices and nutrition outcomes are correlated, but not everywhere strongly.
2. The same can be said for food price volatility and nutrition outcomes.
3. Food prices are more strongly correlated with WHZ (short run) than HAZ (long run).
4. Prices are more highly correlated with “average” outcomes, than “specific” outcomes.
5. In general, low prices are “beneficial” in food deficit districts and at low incomes. The reverse is more likely true in food surplus districts and at higher incomes.
6. Roads (and bridges) matter: weaker price correlations for isolated markets.

What explains price movements?



Monthly real food prices: 2002-2010
37 districts (28 local + 9 regional), 7 border markets
total road length (km) + bridges
fuel prices
local agricultural production
exchange rate, population

Approach: multilevel regression models

Key findings:

1. Price variance:

- 5% is explained by differences across time
- 31% is explained by differences in zones
- 64% is explained by differences within districts

2. Surprisingly high degree of market connectedness and fairly rapid price transmission.

3. Order of importance: local, regional, central, and border markets.

4. **Population and fuel prices (+)**, **road length and bridge density (-)**
Magnitude of impact for fuel price is smaller than expected ($\epsilon \approx 0.05$)

5. District-level **agricultural production matters (-)**.

6. Roads and bridges are especially important in explaining (lowering) price volatility.

Multiple points of entry for policy!

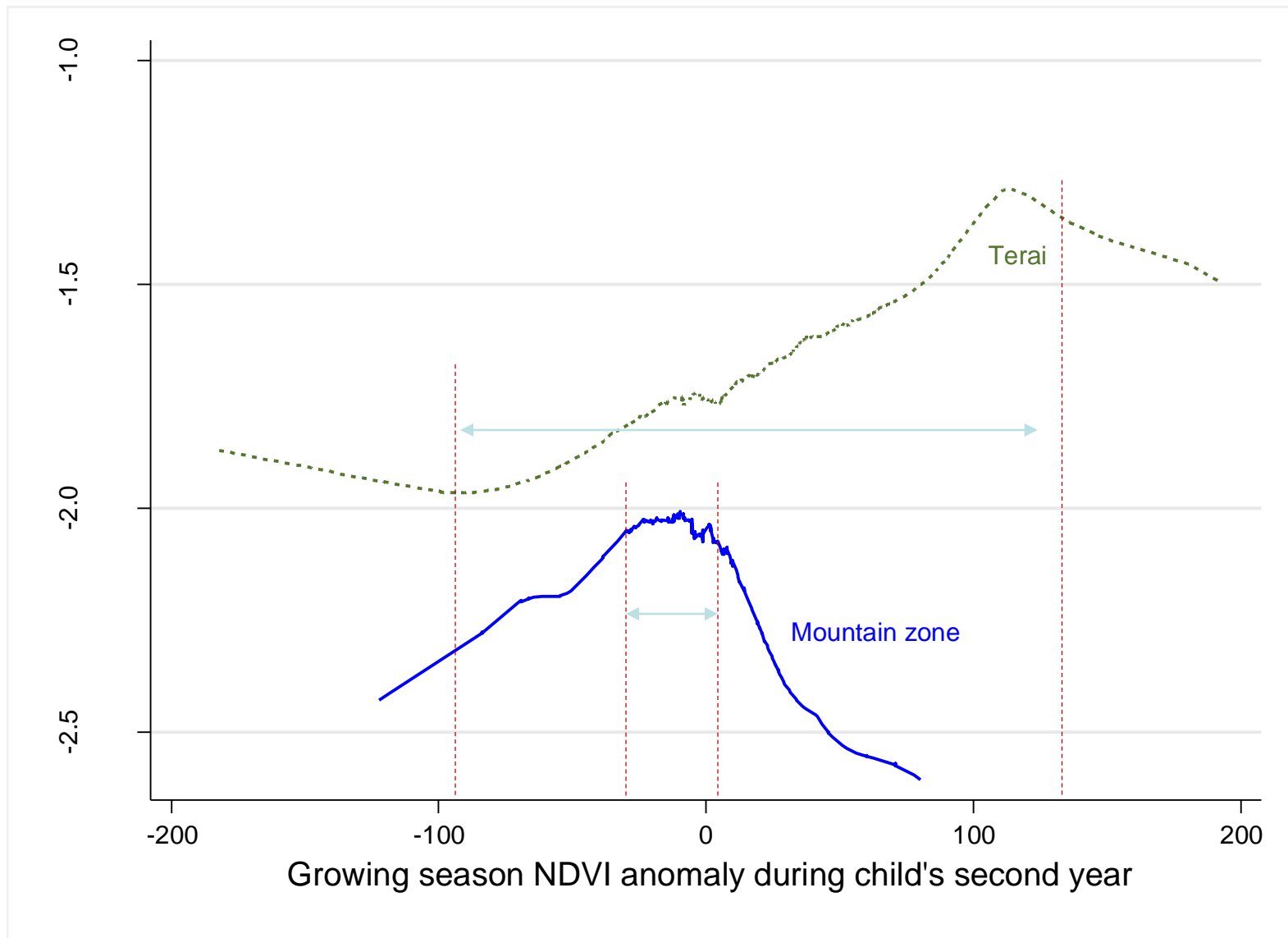
Final Conclusions

1. Food prices and food price volatility matter for (short-run) nutrition outcomes.
2. Food price volatility matters to nutrition outcomes.
3. Food prices are sensitive to a range of policy variables, among them:
 - agricultural production
 - fuel prices
 - market infrastructure (roads and bridges)

Caveats:

1. Average relationships may not match specific situations.
2. Food price changes affect buyers and sellers differently.
3. Isolation and environmental conditions matter

Linear growth and vegetative health in Nepal, 2011



Source: Based on 2011 Nepal DHS; children > 24 months only; n=273 (mountain zone), n=556 (Terai)