



AgEcon SEARCH
RESEARCH IN AGRICULTURAL & APPLIED ECONOMICS

The World's Largest Open Access Agricultural & Applied Economics Digital Library

This document is discoverable and free to researchers across the globe due to the work of AgEcon Search.

Help ensure our sustainability.

Give to AgEcon Search

AgEcon Search

<http://ageconsearch.umn.edu>

aesearch@umn.edu

*Papers downloaded from **AgEcon Search** may be used for non-commercial purposes and personal study only. No other use, including posting to another Internet site, is permitted without permission from the copyright owner (not AgEcon Search), or as allowed under the provisions of Fair Use, U.S. Copyright Act, Title 17 U.S.C.*



Understanding the Relationship between Production Diversity and Dietary Quality in Smallholder Farm Households in Fiji

Anna Finizio, Sharmina Ahmed, Wendy Umberger

Contributed presentation at the 60th AARES Annual Conference,
Canberra, ACT, 2-5 February 2016

Copyright 2016 by Author(s). All rights reserved. Readers may make verbatim copies of this document for non-commercial purposes by any means, provided that this copyright notice appears on all such copies.



Understanding the Relationship between Production Diversity and Dietary Quality in Smallholder Farm Households in Fiji

Anna Finizio, Sharmina Ahmed, Wendy Umberger
Global Food Studies, University of Adelaide

AARES Annual Conference 2016

Motivation

Agriculture can be important for shaping nutrition outcomes:

1. Direct consumption of food crops or animals.
2. Income generated from the sale of agricultural goods



Recent Studies

- Household production diversity and dietary diversity (Herforth, 2010; Jones et al, 2014; Kumar et al, 2015; Malapit et al 2015)
- Household production diversity and child and infant dietary diversity (Kumar et al, 2015; Malapit et al, 2015)
- Access to agricultural markets have greater positive effects on household dietary diversity than increased production diversity (Sibhatu et al, 2015).
- Women's empowerment (Jones et al, 2014; Malapit et al, 2015)

Motivation

- Pacific Island Countries:
 - Nutrition transition: *Trade in food* (Evans et al, 2001; Hughes and Lawrence, 2005; Thow and Snowden, 2010)
 - Obesity and diabetes epidemic
- Fiji:
 - Nutrition transition: *Shift from local to imported* (Hone, 2003; Hughes, 2003; Thow and Snowden, 2010; Snowden et al, 2010)
 - Diabetes the main cause of death in 2014 (Fiji Ministry of Health, 2015)
 - Agriculture generates income for approximately 65% of Fijians (Fiji Ministry of Agriculture, 2009)



Data

- PARDI Retail Transformation Study 2013-2014
 - Farmers in evolving horticultural value chains in Fiji
- Partnered with Ministry of Agriculture Fiji, University of South Pacific and UN Women Fiji.
- 600 Rural Agricultural Households
- Both male and female of the household interviewed
 - Female survey
- 79 different food categories across a mix of 10 types of retail formats.



Australian Government

**Australian Centre for
International Agricultural Research**



Research Question

- What is the association between production diversity and household diet diversity (as a measure of diet quality) in rural agricultural households in Fiji?

Empirical Strategy






We estimate the following reduced form regression:

$$\text{diet diversity}_{hh_i} = \alpha + \beta \text{ production diversity}_{hh_i} + \varepsilon_i$$

Empirical Model:

$$\begin{aligned} & \text{diet diversity}_{hh_i} \\ &= \alpha + \beta_1 \text{ Permanent crop count}_{hh_i} + \beta_2 \text{ Temporary crop count}_{hh_i} \\ &+ \beta_3 \text{ Crop and livestock count}_{hh_i} \\ &+ \beta_4 \text{ Crop and livestock and fish count}_{hh_i} \\ &+ \beta_5 \Delta \text{ in income from horticulture}_{hh_i} \\ &+ \beta_6 \Delta \text{ in income from other agriculture}_{hh_i} \\ &+ \beta_7 \text{ Sale to modern market}_{hh_i} + \varepsilon_i \end{aligned}$$

Key Findings

Production Diversity Variables	Impact on Diet Diversity
Permanent Crops	Vegetables, Fruits and Dairy 
	Fats 
Crop, Livestock and Aquaculture	Fruits 
Income from horticulture	Vegetables, Fruits and Grains 
Sale to Modern Markets	Vegetables, Fruits and Dairy 

Robustness Check

Kumar, Harris & Rawat (2015) *Journal of Development Studies*

Control Variables:

1. Market Accessibility:

- The effect of access to a more diverse diet via market accessibility.

2. Gender

- The role of women in household diet quality and food security.
- Variables: Agriculture, Income and Food Purchasing

3. Socio-economic Status

- Household Size, Ethnicity, Education, Location

Conclusion

- Production diversity in Fijian rural agricultural households is positively associated with diet quality:
 - Increased consumption
 - Income from horticultural produce
- The sale of produce to modern markets affects the consumption of healthy foods by the household.



Thank you!

<http://www.adelaide.edu.au/global-food>

<http://www.adelaide.edu.au/global-food/blog/>

anna.finizio@adelaide.edu.au