

*International Irrigation*  
*General and Territory Sales Managers*  
**TECHNOLOGY AND INNOVATION MEETING**  
*May 8 – 12, 2017 Valley, NE*

***CIRCLES***

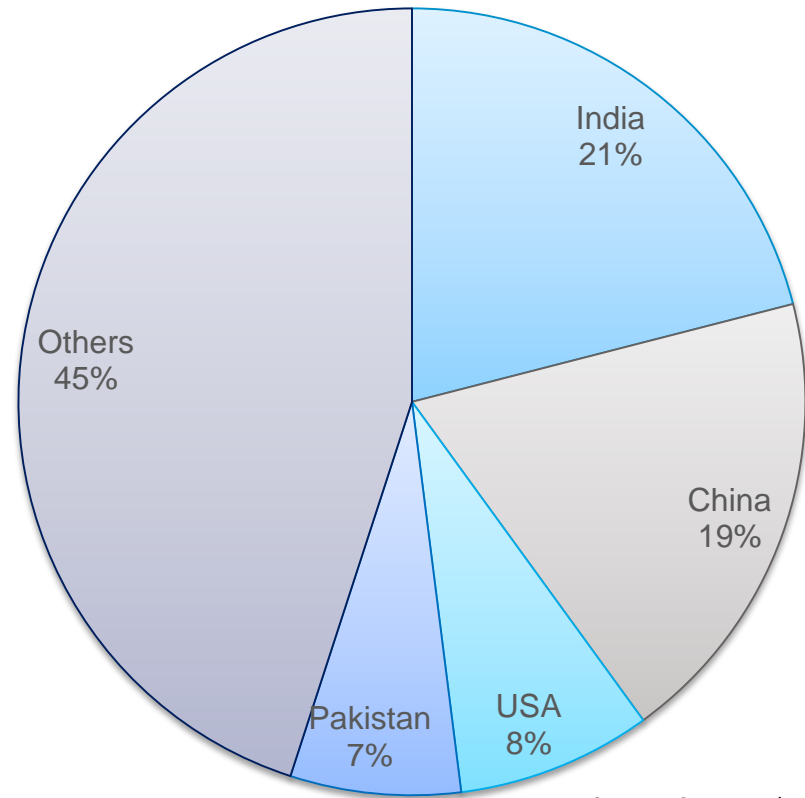
*Rich Berkland*



# World Irrigation 325 Million Hectares

## Top Fifteen:

India	62.0
China	60.0
USA	24.7
Pakistan	19.1
Iran	8.6
Indonesia	6.7
Mexico	6.5
Turkey	5.7
Bangladesh	5.2
Thailand	4.7
Vietnam	4.6
Russia	4.5
Brazil	4.4
Uzbekistan	4.3
Egypt	3.7



Source: ICID Annual Report 2014-2015

# DEMOGRAPHICS

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**570,000,000** FARMS IN THE WORLD  
**84%** ARE LESS THAN **2** HECTARES  
**1%** ARE MORE THAN **50** HECTARES

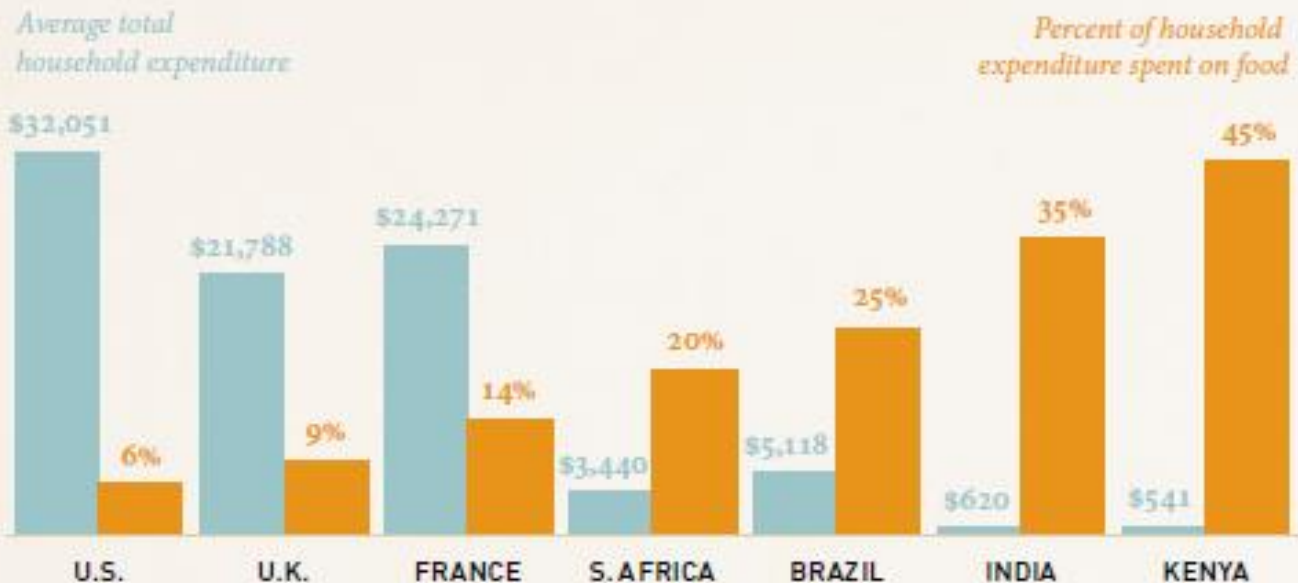
**61%** OF THE POPULATION IN **SUB-SAHARA AFRICA** ARE FARMERS  
**25%** OF THE POPULATION OF **INDIA** ARE FARMERS  
**21%** OF THE POPULATION OF **CHINA** ARE FARMERS  
**<2%** THE POPULATION OF THE **USA** ARE FARMERS

**76%** OF THOSE LIVING IN **EXTREME POVERTY** IN THE DEVELOPING WORLD LIVE IN **RURAL AREAS**

Source: FAO Data

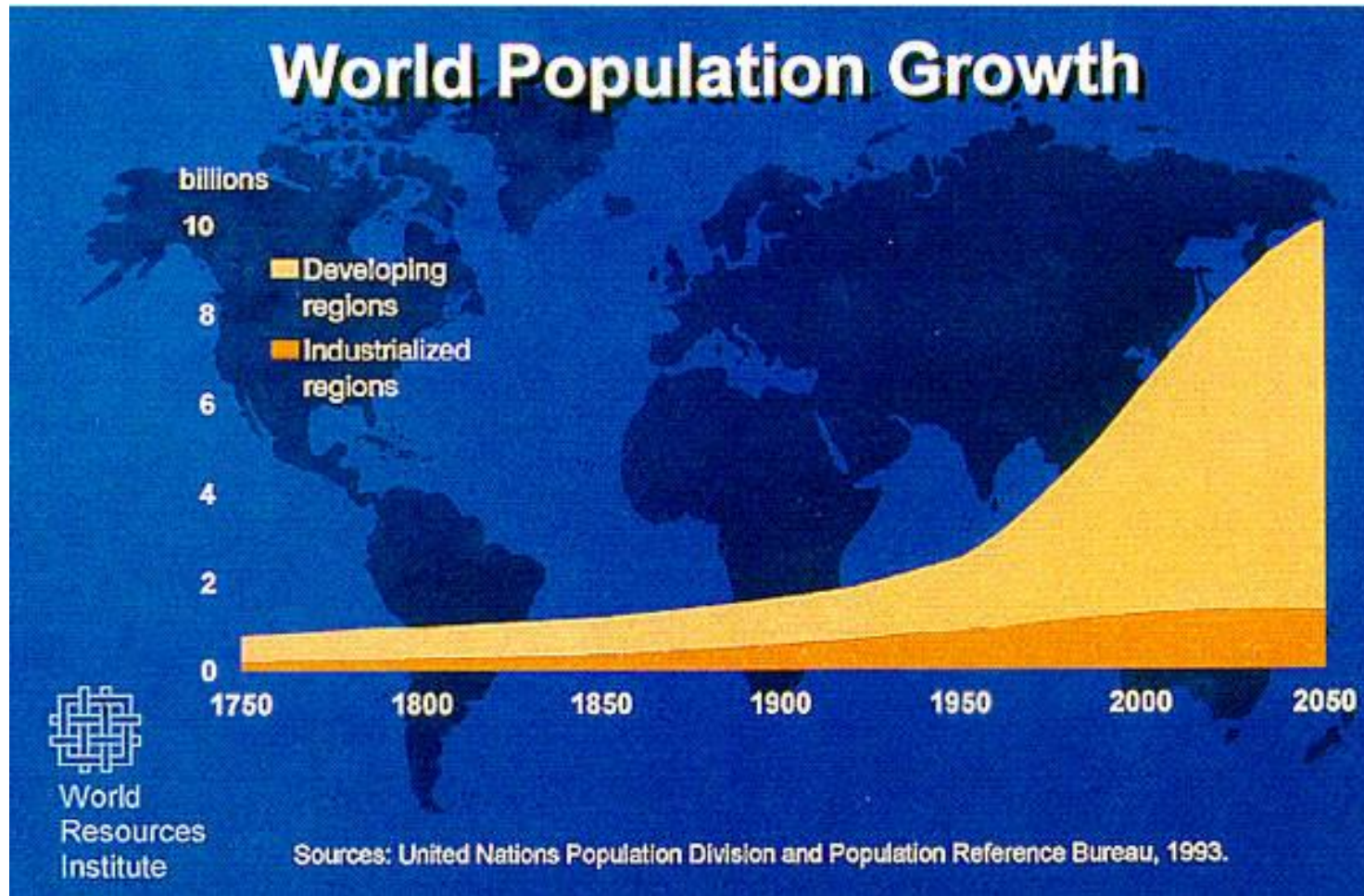
# Percentage of Income Spent on Food

The Poor Spend a High Percentage of Their Income on Food



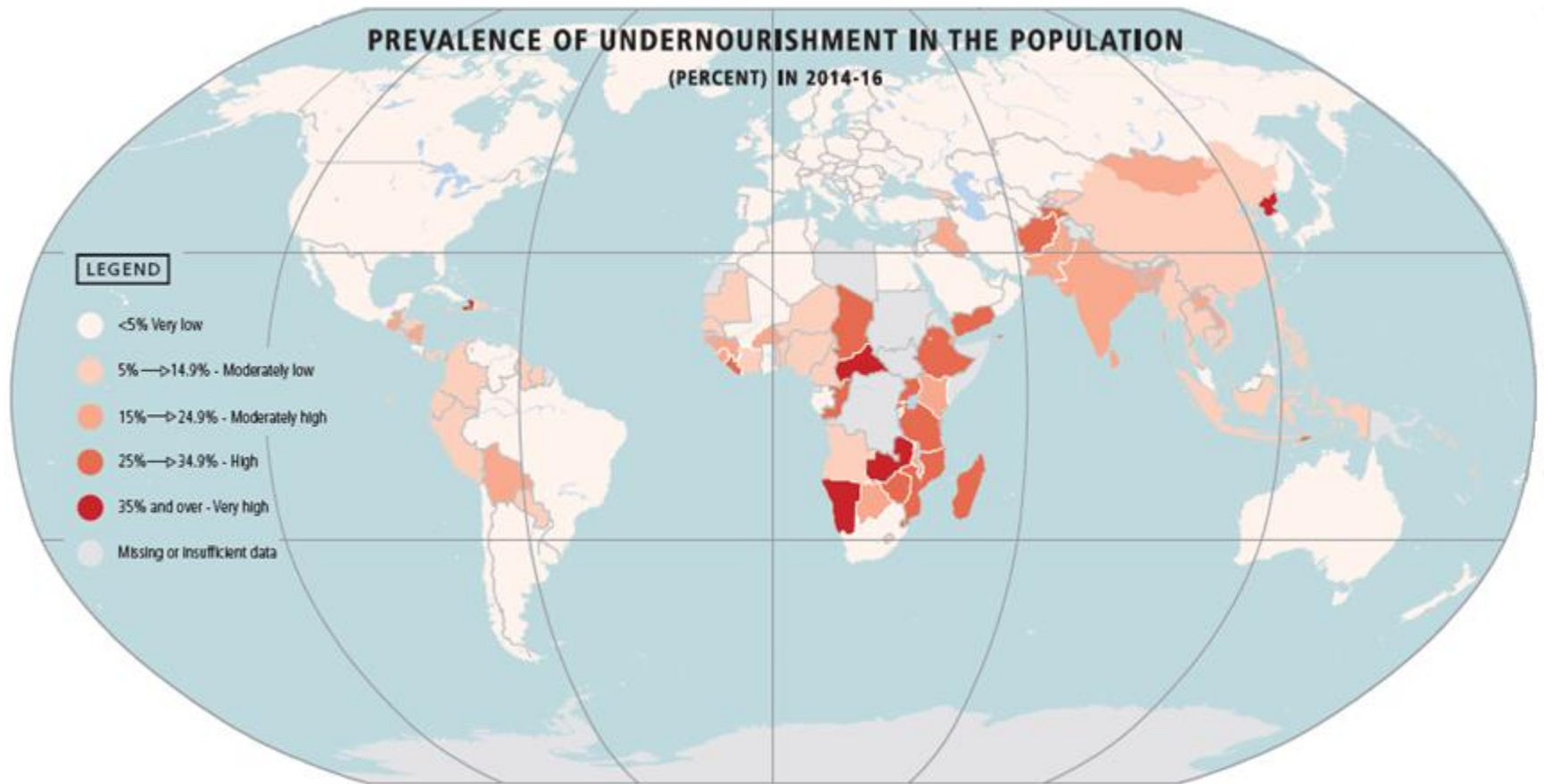
Sources: World Bank 2009; U.S. Department of Agriculture 2009; Euromonitor International

# World Population Projections





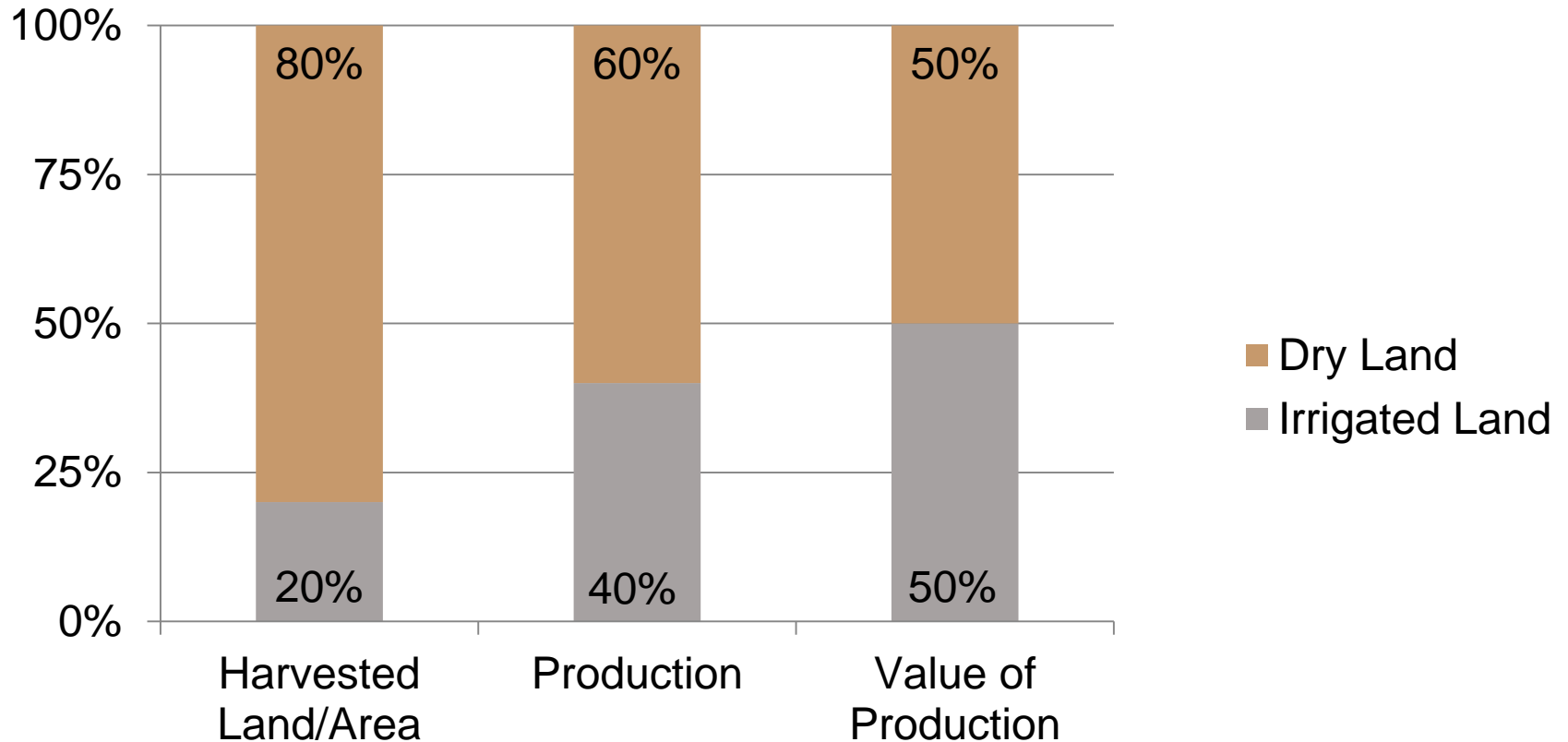
# Undernourished Worldwide



Source: FAO Statistics Division (ESS)

# Production

## Irrigated Land vs. Dry Land



Source: Christofidis, Demetrios (2005). Ministerio da Agricultura, Brasil, and FAO

# $\pi r^2 = \text{Area of a Circle}$



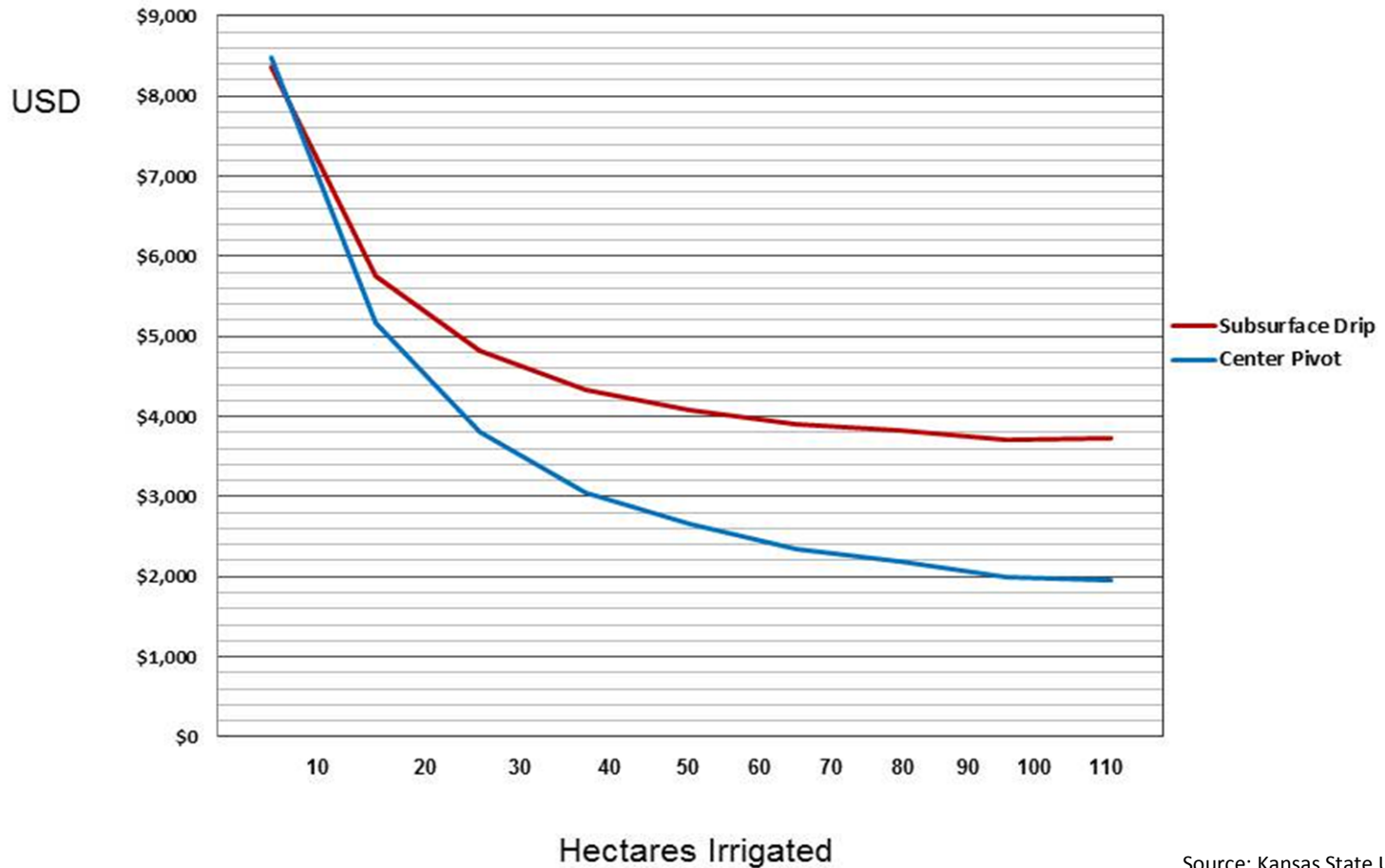
100 Meter Radius = 3 hectares  
200 Meter Radius = 12 hectares  
300 Meter Radius = 28 hectares  
400 Meter Radius = 50 hectares  
500 Meter Radius = 78 hectares

Source: Valmont Irrigation



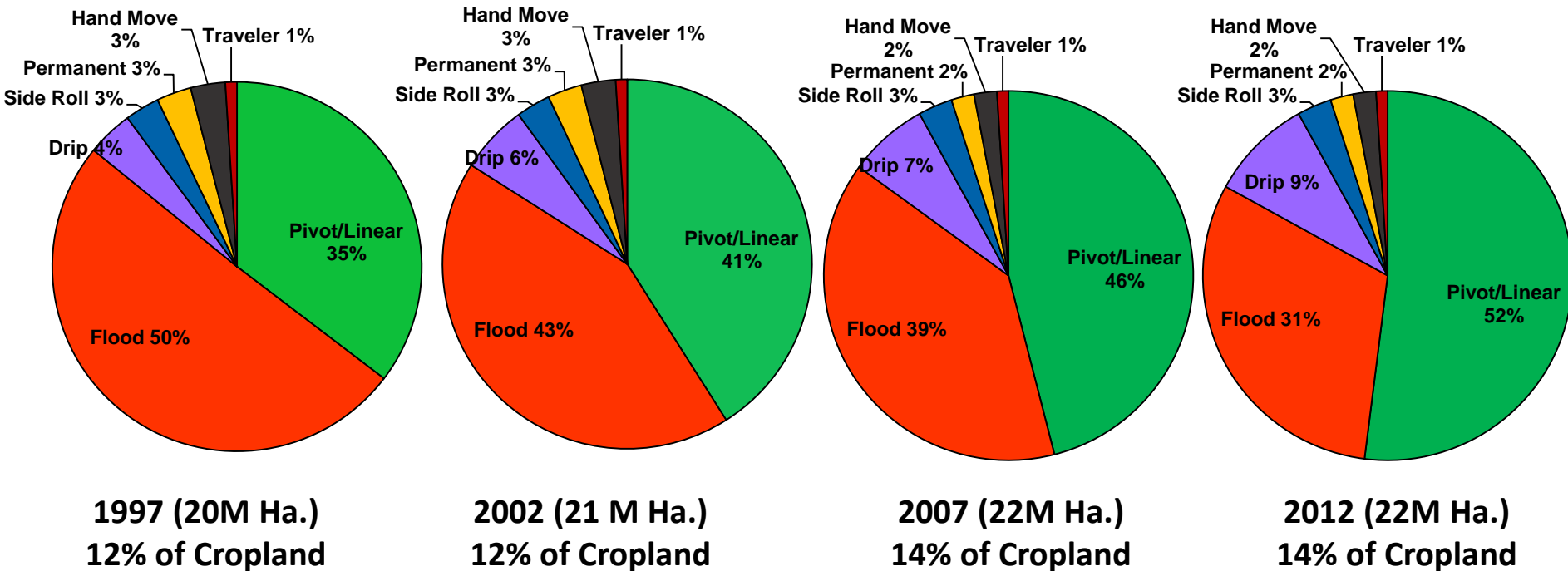
# Cost Per Hectare

*(installed with water supply)*



Source: Kansas State University, (2012)

# Hectares Irrigated by Method - USA



Source: 1998, 2003, 2008, 2012 Farm and Ranch Irrigation Surveys  
 USDA, National Agricultural Statistics Service

# *Multi-User Pivot – Kenya*



# ***Introducing the Shared-Pivot Concept***

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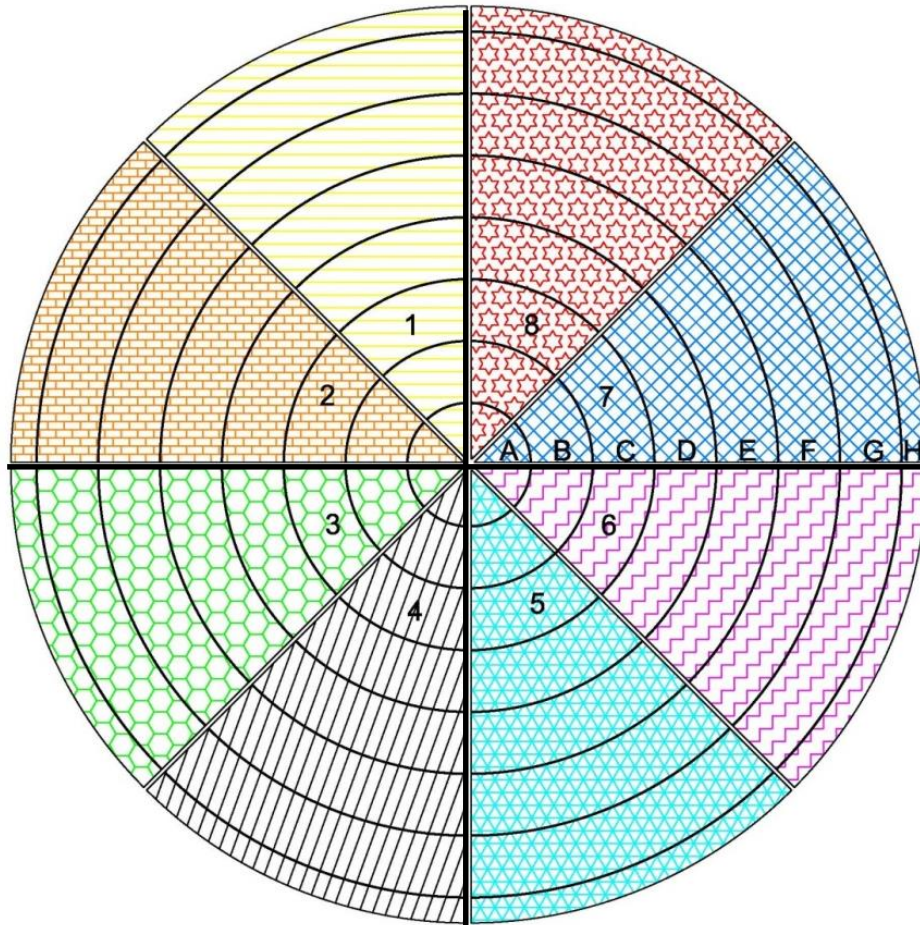
*The goal is to demonstrate how smallholder farmers can dramatically increase net household income by farming under Center Pivot irrigation, with:*

- ***Technology***: Use of modern methods in irrigation, seeds, tillage, fertilizer, and pest control.
- ***Finance***: Flexible, affordable credit and opportunity to build equity.
- ***Market Linkage***: Access to local, regional, and export markets.
- ***Institutional Support***: Empowering farmers and their communities.



# Pivot Map

**56 Total Hectares/8 Sectors**  
**7 Hectares Per Sector**



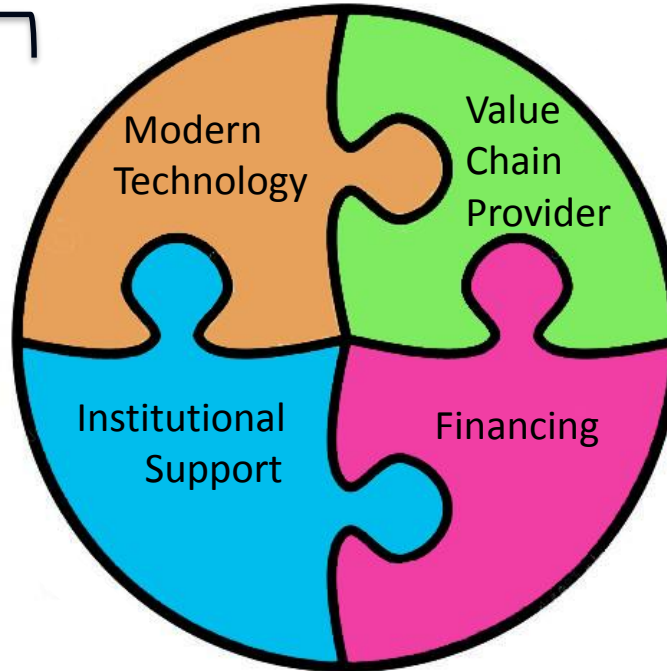


# CRITICAL ELEMENTS

## UNFUNDED

### INSTITUTIONAL SUPPORT

- Commercial Production Teams
- Community engagement and empowerment
- Savings groups
- WASH programming
- Partnership facilitation
- Site water and soil analysis
- Water extraction impact
- Monitoring and reporting
- Technical support
- Local academic collaboration
- Best Practices



## MARKET FUNDED

### VALUE CHAIN PROVIDER

- Crop plan
- Market assessments
- Farm management
- Transport
- Crop storage / Cold chain
- Market engagement
- Mechanization
- Irrigation scheduling
- Irrigation management

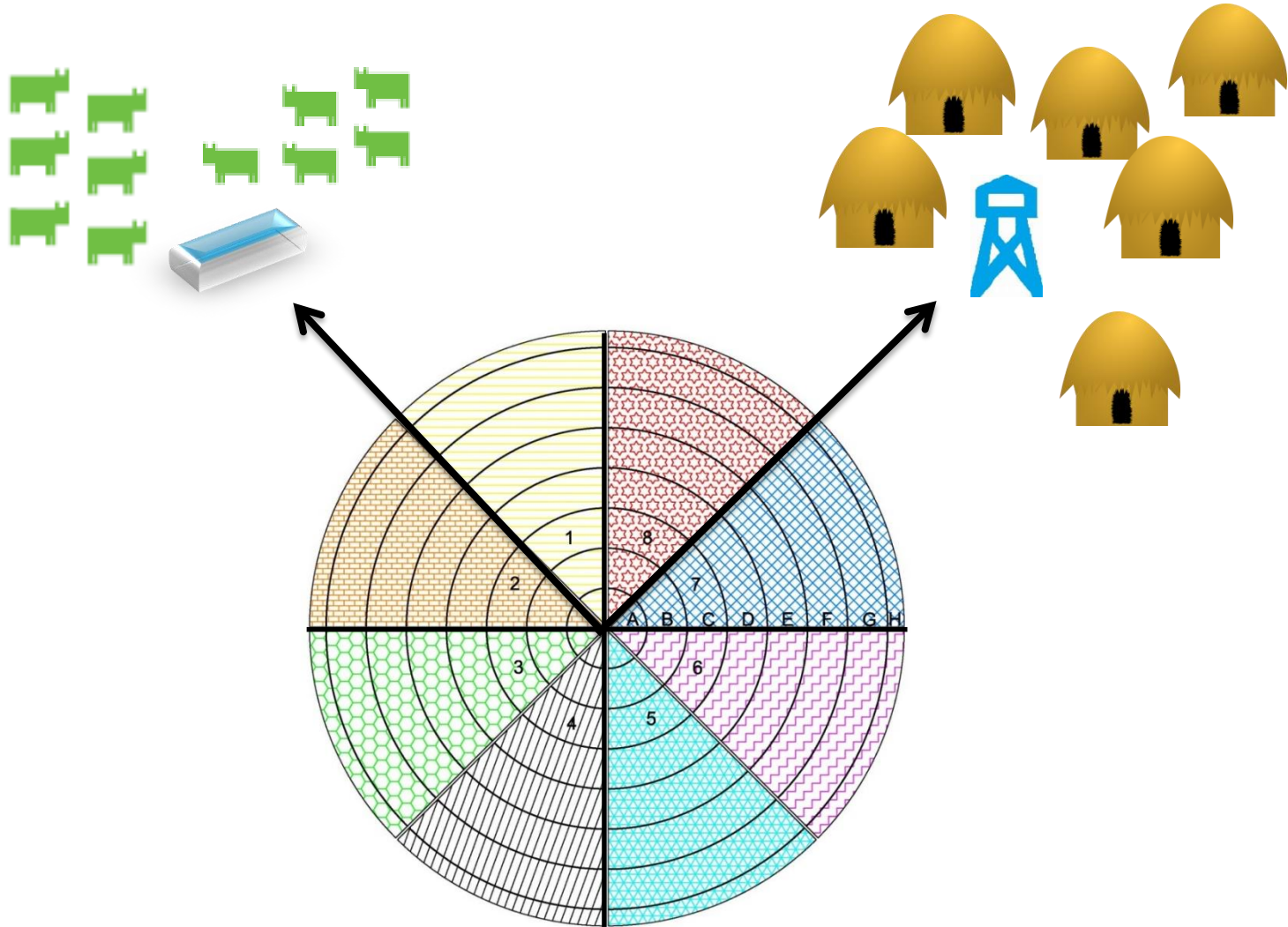
### FINANCING ENTITY

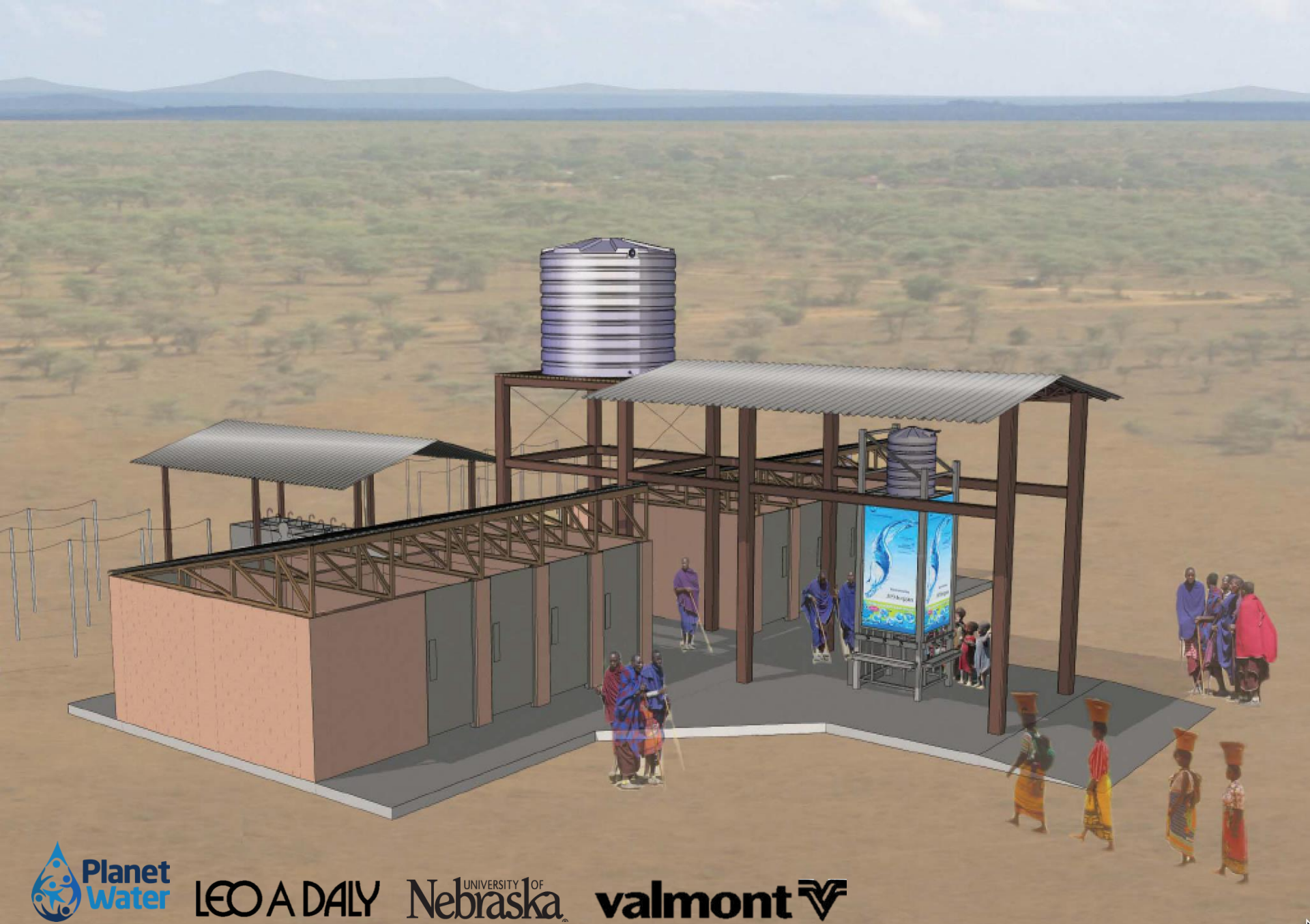
- Medium-term loan (5 years) for irrigation equipment
- Seasonal credit for crop inputs
- Payments to be made in kind from production delivered

### VALMONT

- Site selection
- Irrigation and pump equipment
- Training, service and support of equipment once installed
- Site water & soil analysis
- Spare parts
- Technical consultation


# Community Water System





LEO A DALY

UNIVERSITY OF  
Nebraska

valmont 

# Projects with Smallholder Production Groups Sharing Pivots

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COUNTRY	PROJECT NAME	NUMBER OF PIVOTS
GHANA	Holstein	2
GHANA	VegPro	1
GHANA	Babator	4
GHANA	IWAD	4
NIGERIA	Alliance Agriculture	100
TANZANIA	Dodoma	1
RWANDA	Matiba	4
RWANDA	Lake Nasho	62
RWANDA	Kagitumba	37