Water and the other Three Revolutions Needed to End Rural Poverty

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Millennium Goals on Hunger & Poverty

- Reduce by half the proportion of 1.1 billion people living on less than a dollar a day
- Reduce by half the proportion of 800 million people who suffer from hunger

WITH BUSINESS AS USUAL,
BOTH THESE GOALS WILL LIKELY FAIL
Meager Progress in Achieving Millennium Poverty Goals in the Semi-Arid Tropics

Percent of Population Living in Extreme Poverty

- South Asia: 1990 - 44%, 1999 - 37%
- Sub-Saharan Africa: 1990 - 48%, 1999 - 47%
The Face of Global Poverty

- 1.1 BILLION people earn less than $1 a day
- 800 MILLION live in rural areas in developing countries and earn their living from farming

The Key to Achieving Millennium Poverty Goals is Increasing Smallholder Prosperity
The Most Important Feature of Dollar-a-Day Farms in Poor Countries is Their Small Size

**India**
Average Farm Size (ha)

- 1960: 2.7
- 1980: 1.6

**Bangladesh**
Average Farm Size (ha)

- 1983: 0.9
- 1999: 0.72
Because of the small size of dollar-a-day farms

increasing smallholder prosperity
boils down to increasing income from one hectare farms and 1000 square meter plots
Nothing Less Than
Four Revolutions
are Needed To End Rural Poverty

• A Revolution in Water

• A Revolution in Agriculture

• A Revolution in Design

• A Revolution in Markets
I. A Revolution in Water:

Water is the key entry point for increasing smallholder income
The Challenge: Opening Smallholder Access to Affordable Small Plot Irrigation

- Affordability
- Divisibility
- Expandability
- Profitability
Treadle Pumps
Low Cost Drip Irrigation
Low Cost Water Storage
II. A Revolution in Agriculture: Downsizing Cash Crop Farming to Fit Small Plots

- New varieties of cash crops optimized for smallholdings
- Improved farming practices for labor-intensive production of high value crops on small farms
III. A Revolution in Design
The Ruthless Pursuit of Affordability

• **FACT:** 90% of today’s designers work for the richest 10% of the world’s customers

• **CHALLENGE:** Teach design students in developing and developed countries the ruthless pursuit of affordability

• **CHALLENGE:** Focus the energy of world’s best designers on the problems of the rural poor
Example:

$1 Drip Kit
IV. A Revolution in Markets: Creating New Wealth Enhancing Markets to Serve Poor Customers

- Learn why rural markets in developing countries are so inefficient
- Create smallholder oriented markets for inputs and outputs
Ending Rural Poverty Begins and Ends with Small Farmer Prosperity
SUMMARY

1. Increasing the income of dollar-a-day farmers is the key to ending poverty

2. The private sector marketplace is the prime mover to make it happen

3. Dollar-a-day farms are very small

4. Smallholders accumulate wealth by exploiting their comparative advantage in the marketplace
SUMMARY Continued...

5. A key first step is opening access to affordable small plot irrigation

6. Radical refocusing of agriculture, markets, and design is essential to optimize smallholder income

7. Without a revolution in development theory and practice, the Millennium Goals on Poverty and Hunger will not be reached
Access to Affordable Water is the First Step Out of Poverty