How to Feed the World in 2050?

- Urgent to redefine a global strategy in using agriculture for development due to:
  - Food crisis: higher and more volatile prices
  - Rising demands on agriculture: population, income, biofuels
  - Rural poverty and food security: 75% rural and 1 billion chronic hungry
  - Growth deficits in agriculture-based countries: Sub-Saharan Africa
  - Climate change, resource scarcities, and environmental services

- Objective of this presentation: Considerations toward an answer
Outline of the argument

I. Historical perspective on agriculture in development
II. Current crises and resurgence of demands on agriculture for development
III. Emergence of a new paradigm of using agriculture for development
IV. Why the continued under-use of agriculture for development?
V. Conditions for success in using agriculture for development
VI. The way forward
I. Historical perspective on agriculture in development

- Well defined classical paradigm of the role of agriculture in development in the 1960s

  - **Grounded in history:** Western experience, Asian miracles
  - **Grounded in theory:** Agriculture on the road to industrialization
  - **Grounded in empirical regularities:** Agricultural transformation
  - **Grounded in behavior:** Agriculture responsive to incentives
I. Historical perspective on agriculture in development

- Successes, but many implementation failures in the 1970s
  - **Urban bias** in Import Substitution Industrialization
  - **Integrated rural development** to meet broadened development objectives flawed:
    - Overestimated state capacity to coordinate
    - Underestimated emerging private sector roles
    - Undermined cooperative producer organizations
  - Many failures in **agriculture-based projects**
    - Too complex, insufficient support
I. Historical perspective on agriculture in development

Leading to 20 years of neglect of agriculture under the Washington Consensus (1985-2005)

- Adjust the macro-fundamentals but no sectoral policy
- Industrialize through open economy not through agriculture
- Descale the role of the state in agriculture despite pervasive market failures
- Reduce rural poverty through transfers instead of rising autonomous incomes
- Investment in agriculture discouraged by low international commodity prices (OECD farm policies) and adverse environmental effects
I. Historical perspective on agriculture in development

Neglect of agriculture: Decline of the shares of agriculture in public expenditures and in overseas development assistance
II. Current crises and resurgence of demands on agriculture for development

Following 20 years of neglect, five crises put agriculture back on the development agenda:

1) The global food and financial crises: Rising food insecurity and hunger
2) Stagnation of productivity growth in Sub-Saharan Africa agriculture
3) World poverty still overwhelmingly rural
4) Increasing rural-urban income disparities
5) Rising resource scarcity and unmet demands for environmental services
II. Current crises and resurgence of demands on agriculture for development

Crisis 1: Global food and financial crises
The world food situation has changed drastically in the last three years. This implies three major policy shifts:

• Need give greater attention to the supply side of agriculture to achieve sustainable productivity gains and greater resilience to shocks.

• Need raise again the issue of food security as a policy concern: Combine trade, national food reserves, level of food self-sufficiency, social safety nets, and role of subsistence farming.

• Need focus not only on chronic poverty but also on vulnerability to price and income shocks for net buyers of food: “new poor” and risks of irreversibilities in assets, health, and education due to shocks.
II. Current crises and resurgence of demands on agriculture for development

Crisis 2: Stagnant productivity growth in SS-Africa agriculture

Area expansion has historically been the main source of output growth in cereal production in SS-Africa, but largely exhausted
II. Current crises and resurgence of demands on agriculture for development

Stagnant yields are associated with low fertilizer use and limited irrigated area. Understanding the determinants of yield growth (technology adoption) is a major research challenge.
II. Current crises and resurgence of demands on agriculture for development

Crisis 3: World poverty still overwhelmingly rural

75% of world poor are still rural, and rural poverty is rising in SS-Africa and South Asia: Key to meet MDG#1
II. Current crises and resurgence of demands on agriculture for development

Crisis 4: Rural-urban disparities are increasing

Rising urban-rural income disparities in India and China as sources of political tensions
II. Current crises and resurgence of demands on agriculture for development

Crisis 5: Rising resource scarcities and unmet demands for environmental services

The rate of deforestation is accelerating in LAC and SS-Africa. Conservation agriculture, rapidly expanding worldwide, is barely adopted in Africa due to lower yields and high labor costs.
III. Emergence of a new paradigm of agriculture for development

These crises put new demands on using agriculture for development, but with no possible return to the classical paradigm for two reasons:

- “Development” is no longer just industrialization (1950-60) but multidimensional (1970-)
  • Growth, poverty/hunger, vulnerability, equity, sustainability

- The structural context for agricultural growth has changed drastically
  • Globalization, integrated value chains, technological and institutional innovations, environmental constraints
III. Emergence of a new paradigm of agriculture for development

Hence emergence of a new paradigm of Agriculture for Development to replace the classical paradigm

- Two features of the emerging paradigm
  1) Because development is multidimensional:
     • Win-wins exist, but **trade-offs** are expected
     • Need **priority setting** at the national level
  2) Need use both the **process** and the **outcome** of agricultural growth to achieve these multiple dimensions
     • Role of smallholder farming

But two barriers to overcome:
Continued under-use of agriculture for development
Unclear how to succeed in using agriculture for development
IV. Why the continued under-use of agriculture for development?

Successful structural transformations in Asia
IV. Why the continued under-use of agriculture for development?

But agriculture is still under- and mis-used in Africa and Latin America: Labor is pushed out of agriculture without associated growth in GDP per capita.
IV. Why the continued under-use of agriculture for development?

- Resources are being committed to a Green Revolution for Africa (NEPAD, G8, WB, AGRA), but will it succeed?
- What we know: It must be different from the Asian GR because of
  - Heterogeneity of conditions
    - Need decentralization and participation
  - Multiple effective constraints
    - Need a multisectoral approach
  - Small countries
    - Need regional cooperation
IV. Why the continued under-use of agriculture for development?

- It must be different from the Asian Green Revolution

In addition:
- It must go beyond cereals to include high value activities
- It must deal with sustainability and environmental friendliness
  - Beyond the seed-fertilizer-water package toward agro-ecology, agro-forestry, and conservation agriculture.
- It must address brand new challenges
  - Energy prices, climate change, integrated value chains, globalization
- It must succeed urgently given the rapid changes in the world food situation and distress of rural populations.

→ Answer: Continued under-use because we do not know enough about how to do it, and are not adequately equipped to do it successfully
V. Conditions for success in using agriculture for development

- Proposition: Two conditions for success in using agriculture for development

- Condition 1: Need to re-conceptualize the role of agriculture for development in the new paradigm
  1) Recognize the complementarities and trade-offs in the multiple functions of agriculture for development
     - Define country priorities and strategy
  2) Design the process of agricultural growth to achieve development beyond market forces
     - With eventual growth opportunity costs (e.g., debate on farm size)
  3) Redefine the role of the state in support of agriculture
     - State to set social priorities among conflicting functions, overcome market failures, regulate, and engage in private-public partnerships.
V. Conditions for success in using agriculture for development

- Condition 2: Need to re-design approaches for effective implementation in the new paradigm

1) **Experiment** with new approaches and internalize lessons for scaling up successes in policy and practice
   - Derive lessons from past mistakes and identify impacts in new options
2) Fix the **governance** structure for the state to fulfill its new functions for agriculture
   - Redesign ministries of agriculture to use growth for development with a territorial perspective and a role for producer organizations
3) Develop **expertise** in using agriculture for development
   - At the local (decentralization), national, and international levels
   - Key role of the FAO as source of world expertise in using agriculture for development
VI. Conclusion: The way forward

Positive developments in support of using agriculture for development: Grounds for optimism

- Greater public awareness of importance of agriculture for development, including poverty, gender, environment
- More attention from politicians to food crises, hunger
- More resources committed by governments, foreign aid, new players, private sector
- Many localized success stories

But can we deliver?

- Do we know how to do it?
- Do we have the capacity to do it?
VI. Conclusion: The way forward

Guidelines for a successful use of agriculture for development: Grounds for concern

- The biggest mistake we can make is believe that it is easy to do and that we already know enough to do it.
- **Effort** must be massive, concerted, and sustained to succeed: commitments must be met and continued
- Short term political concerns with **food** must be translated into long term concerns with **agriculture**
- **New approaches** must be devised and evaluated (WDR)
- **Capacity** to effectively use the resource committed is the main limiting factor to be addressed (FAO).
VI. Conclusion: The way forward

Making the emerging paradigm of Agriculture for Development succeed is essential but still uncertain

It is a major challenge and opportunity that the international community must address

alain@berkeley.edu