

Agriculture in African Development: why demography matters

Prof. Michael Lipton

Africa Task Force

11 July 2007

Facts: farm backgrounds & output

- SSA farm value added/ha (and /worker) ↓
(1961-2002 SSA FVA/ha ↓18%; S Asia ↑18%)
- Diverse, fragile soil-water in SSA *and* Asia, But:

	Irrigated Area (% Cropland, 2002)	NPK Fert. Use (Kg/ha of cropland, '02)
SSA	3.7*	9
China	35	140
S. Asia	40	100

*(ex South Africa/Madagascar/Sudan 0.7)

Facts: farm backgrounds & output (cont.)

- Use of NPK Fertilizer 1981-2002
 - Has risen x3 S Asia, static for SSA.
- Ag research:
 - falling in SSA (and donors 'crowd out' domestic); rising in Asia.
 - This, plus crop-mix, irrig, → less SSA spread, impact of better seeds.
- % farm output growth due to area expansion:
 - Asia, almost none; SSA, all+, exhausting soil.
- PPP \$/day poverty 1981-2001
 - SSA 42→46%, E Asia 58%→16%, S Asia 52%→31%.

Facts: farm backgrounds & output (cont.)

- SSA: 75% \$1/day PPP poor are rural (S Asia 70%);
- SSA: 68% have ag as main income source (S Asia 60%).
- Typically 3-4% SSA govt expenditure & investment is ag (Asia 1960-90, 20-25%); CAADP pledges rise to 10% minimum.
- Price bias vs ag no longer worse than Asia, but urban transport/ access/ pub exp bias far worse.

Facts: demography, dependency, absorption: Asia

- child mort ↓ from 50s, fert ↓ from 60s, CBR ↓ from 1970s.
- *DepR*↑, slowing development 1950-65; stable 1965-75; then ↓↓ (Bloom-Williamson; Kelley-Schmidt; Eastwood-Lipton.)

Facts: demography, dependency, absorption: Bangladesh

- **IMR:** 200 (1950-5), 104 (1985-90), 59 (2000-05); projected 23 (2025-30), 13 (2045-50).
- **TFR** 6.7-6.8 1950-65, ↓↓ to 3.25 by 2000-2005 (projected 1.94 2045-50).
- **CBR** stable 1950/5 (46.6)-1960/5 (47.3), ↓ to 1975-80 (41.1), then ↓↓ to 27.6 by 2000-5 (projected 18.5 2025-30, 145.1 2045-50).
- **So DepR rose from 70 (1950) to 90 (1965, 70,75)** (because IMR↓↓ but CBR↓).
- Then, as CBR↓↓ and earlier-born kids reached working age, DepR ↓ to 64 (1975-2005). Projection: ↓ to 49 by 2030 (then ageing shuts 'window').

Facts: demography, dependency, absorption: Bangladesh (cont.)

- Fam plg & women's opps → ..DepR↓; projection credible.
- Past irrig, ag research → labour income up, cheaper food for poor; pov↓ from 1975-80 → lab-intsve export growth.
- Credible that Bangladesh can absorb extra Labor, Savings productively, so demog bonus → growth, pov↓.

Facts: African population, dependency, absorption

- 80% SSA popn (not W, Cent) show clear fert↓; CMR-TFR-CBR-DepR sequence as in Asia.
- BUT higher base-TFR ↓ later (c. 1980); slower/ halting; & with fewer benefits: little absorption, at rising real wages/returns, of growing shares of workers/saver, as in Asia's Green Revolution.

African population, dependency, absorption (cont.)

KENYA: Favourable case, depends on pro-transition policy, ag absorption:

- **IMR** 134 (1950-5) → 67 (1985-90); then trendless to 2000-5 (68), yet projected fall: 43 (2025-30), 27 (2045-50)
 - **TFR** rose from 7.5 (1950-5) to 8 (1970-5), then fell to 5.0 (1995) but stagnated to 2005; renewed fall projected to 3.22 (2025-30) , 2.39 (2045-50).
 - **CBR** crawled down: 51.4 (1950-55) to 45 (1985-90); fell to 37.5 (1995-2000), but then stabilised (38.8 in 2000-05); projected to renew fall, to 27 in 2025-30, 20 in 2035-50.
- So **DepR** first rose: 78 (1950), 111-112 (1975, 1980, 1985), then fell to 84 (2005); projected 63 (2030), ?52 (2050). Big *potential* bonus, **if** IMR↓ → TFR → CBR → DepR resumes, & **if** family planning, female-ed growth: but policy-dependent.

SSA demographic bonus: where? (1)

- Transition advanced: S Africa, Botswana; Kenya, Zimbabwe? (HIV-AIDS? No).
- But UN projections *assume* steady TFR falls even if none so far.

Nigeria:

- **IMR** 184 in 1950-5, ↓20/decade to 127 (1980-5), then *slowed to 7/decade to 100, 2005*.
- **TFR** 6.8-6.9 1950-90, ↓to 5.9 2000-5.
- **CBR** stable c. 48, 1950-90; only ↓to 42, 2000-5.
- **DepR** 81 (1950), 94-6 (1985-90-95), 90 (2005).
- **Yet projected CBR**↓ at 6/decade underpins
- **DepR** projected ↓32% 2005-30 (90-62).
- **CBR→DepR** projs hopeful; feasible?
- **If so**, oil v. ag to employ extra 15-65s→pov↓?

Ethiopia

- **IMR** 200-100 1950-5/2000-5. Fall is slowing.
- **TFR, CBR** crawled ↓ to 1985-90; some speedup since.
- **DepR** (89 (1950), 92-5 (1975-2000), 90 (2005));
- projections *assume 6/decade CBR* ↓ as workforce ↑: DepR 67 (2030); **26% ↓ 2005-30**), 52 (2050; **43% ↓ 2005-50**).
- **Using bonus v. poverty**: like Kenya, one of SSA's better ag support systems but water (& policy) problems to raise ag-based employment.

SSA demographic bonus: where? (2)

DemR Congo:

IMR 167-117, 1950-75; static to 2005.

TFR 6 (1950-5) ↑ to 6.7, stable 1980-2005.

CBR stable c 48, 1950-2005.

So **DepR** 90 (1950) to 98-102 (1985-2015).

Yet UN model assumes IMRs, CBRs crash, so

DepR projection 102 (2005), 88 (2030) (↓14%),
62 (2050): pure wishful thinking. Even if OK, how
to turn bonus into poverty reduction?

SSA demographic bonus: where?

(cont.)

- **Generally:**
 1. TFR↓ → DepR↓ trsn started in 80% SSA pop.
 2. Slow, and self-moving in only a few cases. Needs policy on demand, *supply* (children).
 3. 'Asian' bonus from trsn - faster growth, pov reduction - needs productive *absorption* of L, S.
 4. Smallholder-led growth only plausible way.
 5. Are there 'policy-proof' paths for Ethiopia, Nigeria, even Dem R Congo?
- Help to cut child mortality, improve female ed and job access (cf. Bihar, UP vs Kerala, S India), *and support family planning* will be crucial to sustain, speed, or achieve demog trans'n in SSA.

From demog transition to bonus: CAADP?

- CAADP (2002) is first, and AU-based, commitment to match aid with domestic support for ag development. (Less crowding out?)

4 'pillars':

- (i) more area under sustainable land-water systems [CAADP Briefing Paper Feb 06: '\$150m advanced prep Angola, Botswana, Lesotho, Malawi, Mozambique, Namibia, Swaziland, Tanzania, Zambia, Zimbabwe'];
- (ii) improving rural infrastructure/market access;
- (iii) more food supply/less hunger;
- (iv) agricultural research, disseminat'n, adop'n [double-counting initiatives under way – NERICA, W Afr cassava, FARA?].

CAADP (cont.)

But progress is slow:

- CAADP overstretched; many meetings, few appraised projects
- first 'natl compact' (Rwanda) 2007!
- long collapse of ag aid unreversed
- little direct funds, though major USAID ***pledge*** (condt'l on regional compacts and good projects)

CAADP (cont.)

- Gates-Annan initiative? Key role of seed & water technology. The transgenics debate & EU.
- Institutional issues: Asian green revolution shows capacity of transformed smallholder technology to steamroller weak institutions and cut poverty, *provided poor have land access.*

Demog transition and SSA's ag opening

- 'A tide in the affairs of men' (and women farmers) in SSA?
- Post-AU/Gleneagles dilemma: SSA govts *and* donors seek ways *beyond* (not against) welfarism, to production-led poverty reduction.
- Everywhere this has come from employment income led by smallholder ag.
- In demog transition, this means affordable scope for rising (workers-savers-taxpayers/dependants) to bring higher wages-investments/dependant (& cheaper food).

Demog transition and SSA's ag opening (cont.)

Requires 'realising' CAADP & Gates/Annan by

- a) ending pseudo-environmental/pseudo-scientific blocks on irrign, fertiliser, transgenic seeds
- b) sharply reviving domestic, international public outlay on agro-infrastructure for smallholders
- c) supporting appropriate (often existing) rural institutions for finance, seed distribution, and in parts of S and E SSA land access for the poor.

This can be done. But is it led by supply, or (farmers', consumers') political demand?