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## UNSCRAMBLING AFRICA: REGIONAL REQUIREMENTS FOR ACHIEVING FOOD SECURITY

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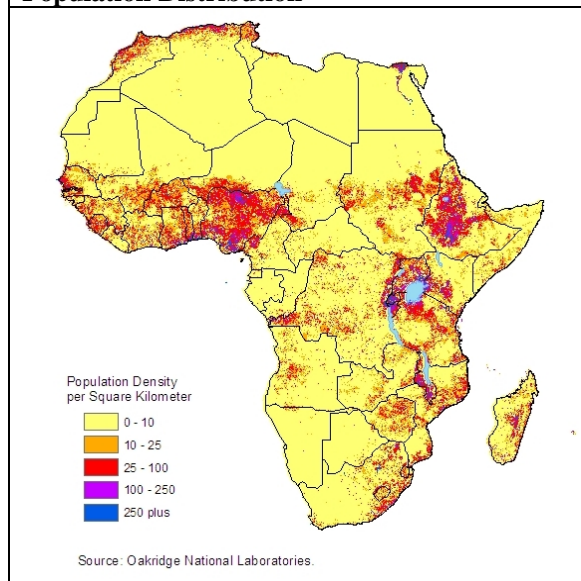
**SUMMARY:** Africa has inherited highly arbitrary political borders that vastly complicate current efforts to accelerate agricultural growth and reduce hunger. Because Africa's inherited political borders arbitrarily partition agro-ecological zones and natural market sheds, current country borders serve as barriers, hampering agricultural technology transfer, hindering agricultural trade and dampening incentives for farmers and agribusinesses to invest in Africa's many regional breadbasket zones. Feasible solutions revolve around neutralizing these deleterious effects through regional scientific networks and corridor development programs.

**A FRACTURED INHERITANCE:** The broad outlines of Africa's current political boundaries emerged from the Berlin Conference of 1884-85 when the European powers launched the final phase of their scramble for Africa. Over the hectic ensuing decades, a complex series of thrusts and counter-thrusts by European, African and Arab agents combined with a hazy understanding of African geography to partition Africa into a distinctive, irregular jigsaw puzzle of political boundaries that cut through linguistic and ethnic groups, agro-ecological zones, pastoral migration routes and natural market sheds. Today, efforts to reduce hunger founder in this dense thicket of inherited political boundaries (Figure 1).

Productivity growth in agriculture remains critical for achieving food security, both for increasing food availability and for raising incomes and purchasing power of Africa's poor. Yet new agricultural technologies spread slowly across agro-ecological zones partitioned into multiple small countries with differing languages, phytosanitary controls and seed certification processes. Likewise, agricultural pests and diseases – such as cassava mealy bug, trypanosomiasis and foot and mouth disease – powerfully affect agri-

cultural productivity. Because these biotic stressors easily transit the political borders that partition any given agro-ecological zone, individual countries face chronic difficulties in raising farm productivity in the absence of effective regional collaboration.

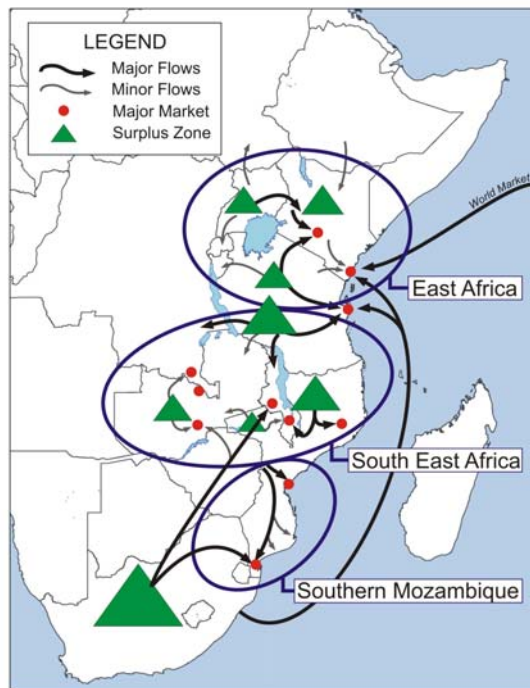
**Figure 1. Africa's National Boundaries and Population Distribution**



Equally constraining, political borders frequently separate Africa's many surplus food production zones from cross-border deficit markets they would most naturally serve (Figure 2). They separate surplus millet and sorghum producers in southern Mali and Burkina Faso from deficit markets in half a dozen surrounding countries; surplus maize in South African silos from deficit markets throughout southern and eastern Africa; food surplus zones of northern Mozambique and southern Tanzania from intermittently deficit markets in Malawi, Zimbabwe and eastern Zambia; and livestock exporters in Mali, Mauritania, and Niger from coastal markets across West Africa.

Despite widespread smuggling, border controls and poor perimeter infrastructure disrupt market signals, raise transaction costs and limit market integration. The problem becomes especially acute in the 40% of African countries that political partition has left land-locked.

**Figure 2. Maize Market Sheds in Eastern and Southern Africa**



Source: Govereh et al. 2008.

Ultimately, achieving African food security will depend on significant, broad-based gains in agricultural productivity combined with a successful coupling of the continent's many breadbasket zones and cross-border deficit markets. Africa's current patchwork of political borders greatly complicates both core tasks.

**CENTRIFUGAL FORCES:** European imperial powers clearly initiated the partition of Africa. But they do not bear sole responsibility for Africa's fractured political landscape.

African leaders have contributed to this political fragmentation. The Barotse and Tswana kings approached the British to request separate protectorate status for their kingdoms. At the request of the Mossi king, who sent two sons and 10,000 soldiers to fight for the French during World War II, France carved out Upper Volta (now Burkina Faso) from portions of Côte d'Ivoire, Mali and Niger. Malawian and Zambian leaders opted out of the Central African Federation after a decade of political union, leaving Southern Rhodesia (now

Zimbabwe) on its own. Indeed, Africanist scholars generally conclude that African leaders frequently played an active role in the framing of Africa's current political borders.

Donors, in turn, largely reinforce this splintered political landscape. By default, bilateral diplomatic conventions favor country-to-country aid programs. International law vests political sovereignty with national governments. So donors wishing to reward specific countries or influence United Nations votes deploy aid as one of several available instruments of international statecraft. For these reasons, aid professionals face diplomatic pressure from their own foreign ministries to align assistance programs with individual countries.<sup>1</sup> Even a donor sensitive to the importance of regional activities, such as the United Kingdom's Department for International Development (DfID), allocates approximately 70% of African agricultural funding for country-focused programs and 30% for regional activities. In contrast, recent US government aid for African agriculture has designated over 90% for country-specific programs and less than 10% for regional activities. Similarly, over the past two years, the Alliance for a Green Revolution in Africa (AGRA) allocated 80% of total resources for country-specific programs and 20% for regional efforts. Even more concentrated, the new Global Fund for Agriculture and Food Security Programs (GAFSP), established by the G8 in response to the world food crisis of 2008, has allocated 100% of its initial 2010 allocations for country-specific agricultural programs and none for regional activities.

In addressing the problem of Africa's land-locked countries, Paul Collier concludes that the "massive move among the donor community toward this so-called 'country ownership' ... is a big mistake." As he explains, "If so much aid goes to Uganda, which

<sup>1</sup> The Paris Declaration on Aid Effectiveness, endorsed in March 2005, commits donors to align aid programs with recipient, rather than donor, priorities. Given the composition of signatories, which included 54 developing countries but no regional economic communities, the Paris Declaration referred to aid recipients as "partner countries". This, in turn, led to language advocating support for "partner country strategies" and "partner country priorities". As a result, most donor programs developed in response to the l'Aquila commitments focus on "priority countries", "country-owned" strategies and "country-led" processes. New donor funding for agriculture, consequently, remains heavily concentrated in individual country programs, leaving very little support for regional activities.

Uganda controls, and so much aid goes to Kenya, which Kenya controls, then Kenya will under spend on the transport that Uganda needs .... What is needed instead is to take a slice of aid to Uganda and Kenya before the governments of Uganda and Kenya get any of it and assign that to a transport corridor.” (Collier 2009).

### **A TWO-PRONGED REGIONAL STRATEGY:**

Recent research examining episodes of superior agricultural performance in Africa concludes that sustained agricultural growth has historically occurred where two key conditions converge: a) a steady stream of productivity-enhancing agricultural technology; and b) favorable market incentives for farmers and agribusinesses (Haggblade and Hazell 2010). Both require regional collaboration.

**Regional Scientific Networks:** Regional research programs amplify productivity gains by facilitating cross-country technology spillovers. As a rule of thumb, international research suggests that technology spillovers can roughly double the impact of agricultural research investments. In Africa, where multiple small countries partition common agro-ecological zones, the potential for cross-country spillovers looms even larger. West Africa’s millet belt crosses seven countries while its coastal root crop zone transits ten (Figure 3).

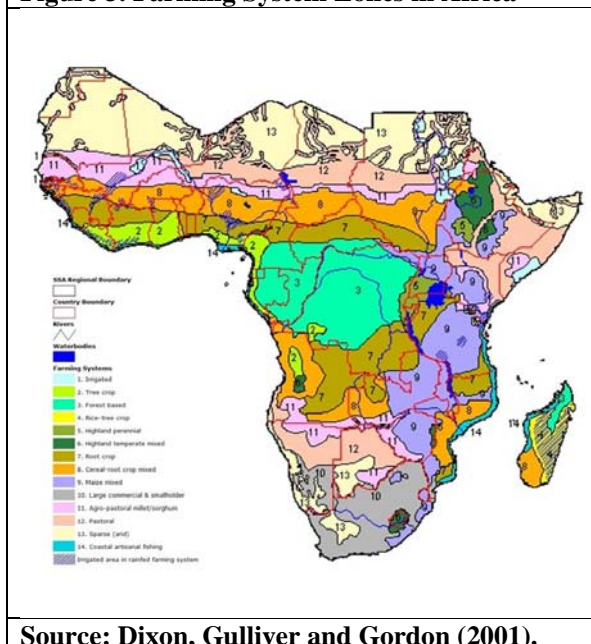
Because African agro-ecological zones spill across multiple political jurisdictions, new technology developed in one location does not automatically become available to farmers in neighboring countries. To facilitate productivity spillovers, agricultural researchers must collaborate early in their research process to identify strategic regional priorities, ensure timely testing of improved genetic material and harmonize technology release and foundation seed protocols across the full range of countries straddling a given production ecology range. For this reason, strategic breeding and variety registration offer particularly significant efficiency gains from regional consolidation

Economies of scale offer prospects for significant efficiency gains through regional agricultural research. In 2000, forty percent of African national agricultural research systems employed less than five full-time equivalent scientific staff, handicapping efforts to staff key specializations and achieve critical mass. Under regionally coordinated agricultural research and education networks, the sharing of genetic material, standardized certification protocols and investments in specialized staffing and equipment all become possible. Regional agricultural research

programs offer a cost-effective vehicle for responding to the high fixed costs of modern biological research, Africa’s acute small country problem, and the need to maximize spillovers across common agro-ecological production zones.

**Regional Trade Corridors:** Given the peculiar configuration of Africa’s political borders, which separate many breadbasket zones from the deficit markets they could most economically serve, regional trade flows will become increasingly important for maintaining farmer incentives in high-potential zones (Figure 2). In farm input supply, procurement economies derived from bulk fertilizer imports, regional logistics platforms and intra-Africa regional trade can reduce the farm-level price of imported fertilizer by as much as 30% to 50%.

**Figure 3. Farming System Zones in Africa**



**Source: Dixon, Gulliver and Gordon (2001).**

To enable African farmers to meet the continent’s food security needs internally will require puncturing the continent’s dense network of political borders with a series of strategic development corridors. The presidents of South Africa and Mozambique launched the first of Africa’s development corridors in 1995 to stimulate regional trade and investment-led economic growth along the Maputo Development Corridor (MDC) linking Johannesburg and Maputo. Within a decade, the MDC had attracted over \$5 billion in private sector investments. Since the launching of the MDC, an array of African regional organizations, foundations, researchers and donors has undertaken three dozen corridor studies across Africa. In general, this evidence



suggests that commercial viability often requires anchoring infrastructural trunk lines at major mineral deposits. With the addition of feeder roads, land allocation for commercial farming clusters and associated communication and financial services, many natural resource corridors can also serve to catalyze private investments in agriculture, agro-processing and trade.

As a management tool, development corridors provide a means of marrying together infrastructure financing and price risk insurance<sup>2</sup> (funded by donors) with trade policy reforms (by national governments) and investments in agricultural production and trade (by farmers and agribusinesses). In essence, the trade corridor strategy mimics the accidental historical model embodied in the Union of South Africa: rooting infrastructure investments at major mining sites and ports, while parallel private investments in agricultural productivity enable high-potential agricultural zones to use this infrastructure to serve regional food markets.

**PERFORMANCE OF AFRICA'S REGIONAL ORGANIZATIONS:** African leaders have pledged to seek full economic integration across the continent, beginning with the formation of regional economic communities (RECs)<sup>3</sup> and using these as designated building blocks. Both advocates and skeptics correctly note that many of Africa's RECs face serious capacity constraints and, consequently, offer a highly mixed performance record. While ECOWAS and EAC have made important gains in trade and investment liberalization as well as regional agricultural programs, other RECS have stumbled.

In general, specialist regional organizations with narrowly focused, technical mandates have performed best. The nine-member regional grouping of Sahelian states, the Comité Permanent Inter Etats de lutte contre la Sécheresse dans le Sahel (CILSS), established in response to the

Sahelian drought of the early 1970's, has served an effective role in developing regional early warning systems and harmonizing regional responses to food market pressures in the region. The Pan-African Rinderpest Campaign, launched by the OAU's Inter-African Bureau on Animal Resources (IBAR) in 1986, led ultimately to the eradication of the continent's deadliest livestock threat. A similarly broad alliance of international and African agricultural research scientists across 20 countries in Africa's cassava belt developed a successful biological control program for countering the deadly cassava mealy bug. Their identification, mass rearing and distribution of a predator wasp brought the mealy bug under control, saving cassava production valued at \$2.2 billion with a \$15 million investment. Regional breeding programs for major food staples – such as maize, cassava, sorghum, bananas, cowpeas and beans – have resulted in widespread productivity gains across their respective agro-ecological zones.

**CONCLUSIONS:** Regional programs offer the potential to stimulate agricultural growth far more effectively than an isolated collection of individual country programs, because regional platforms deliver the two fundamental pre-requisites – more productive technologies and improved market incentives – more effectively and at lower cost. If the international community wishes to improve African food security durably and efficiently, then donors, like African leaders, will need to embrace regional solutions for unscrambling Africa.

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<sup>2</sup> Call options on the South African Futures Exchange (SAFEX) offer the simplest tool available for capping import price and guaranteeing quantities, thereby protecting African governments as they enable expanded trade in politically sensitive food markets.

<sup>3</sup> Africa's eight RECs include the Arab Maghreb Union (UMA), the Common Market for Eastern and Southern Africa (COMESA), the Community of Sahel-Saharan States (CEN-SAD), the East African Community (EAC), the Economic Community of Central African States (ECCAS), the Economic Community of West African States (ECOWAS), the Intergovernmental Authority on Development (IGAD) and the Southern Africa Development Community (SADC).