

Rome 12–13 October 2009



Investment

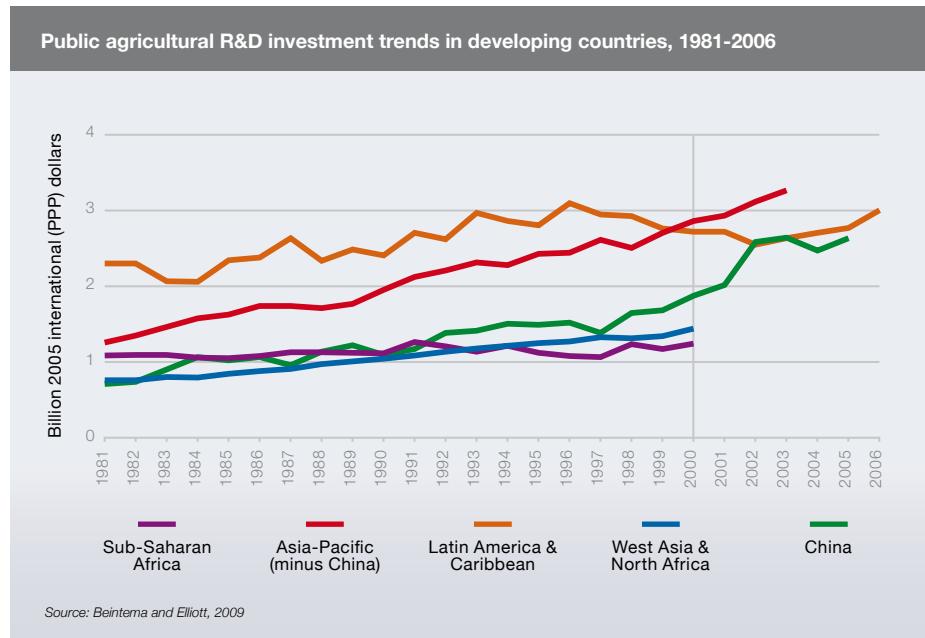
THE CHALLENGE

The latest UN estimates of population suggest that by 2050 the planet will be populated by 9.1 billion persons, up from the current population of 6.8 billion. This represents a 34 percent increase over the next 41 years. The latest FAO estimates indicate, however, that agricultural production would need to grow globally by 70 percent over the same period (by almost 100 percent in developing countries) to feed this population, because of a shift in demand towards higher value products of lower caloric content and an increased use of crop output as feed to meet rising meat demand. Further, these predictions of additional output are likely to be a low estimate, as they do not take into account any increases in agricultural production to meet possible expansion in demand for biofuels.

The same FAO study calculates that the investments required in developing countries to support this expansion in agricultural output amount to an average annual net investment of US\$83 billion (in 2009 US dollars). This total includes investment needs in primary agriculture and necessary downstream services such as storage and processing facilities,

but does not include public goods like roads, large scale irrigation projects, electrification and others that are also needed. The global gap in what is required vis-à-vis current investment levels can be illustrated by comparing the required annual gross investment of US\$209 billion (which includes the cost of renewing depreciating investments) with the result of a separate study that estimated that developing countries on average invested US\$142 billion (in 2009 US dollars) annually in agriculture over the past decade. The required increase is thus about 50 percent.

Another challenge is to increase capital stocks in areas that are lagging both in terms of hunger reduction and agricultural productivity. A study looking at the long-term trends of investment in agriculture since the 1970s showed that, in general, the countries that performed best in terms of reducing hunger were also countries that manifested higher net investment rates per agricultural worker. Throughout the 1990s, the value added per worker in the group of countries with less than 2.5 percent of the population undernourished was about 20 times higher than in the group with more than 35 percent undernourished.



THE ISSUES

WHAT KIND OF INVESTMENTS?

Most of the investment, both in primary agriculture and downstream sectors, will have to come from private sources, primarily farmers themselves purchasing implements and machinery, improving soil fertility, etc. For a better functioning agricultural system and improved food security, three kinds of public investments are also needed: 1) direct investment in agricultural research and development; 2) investment in sectors strongly linked to agricultural productivity growth, such as agricultural institutions, extension services, roads, ports, power, storage and irrigation systems; and 3) non-agricultural investment to bring about positive impacts on human

wellbeing, like the reduction of hunger and malnutrition. The latter type of investment includes education, particularly of women, sanitation and clean water supply, and health care.

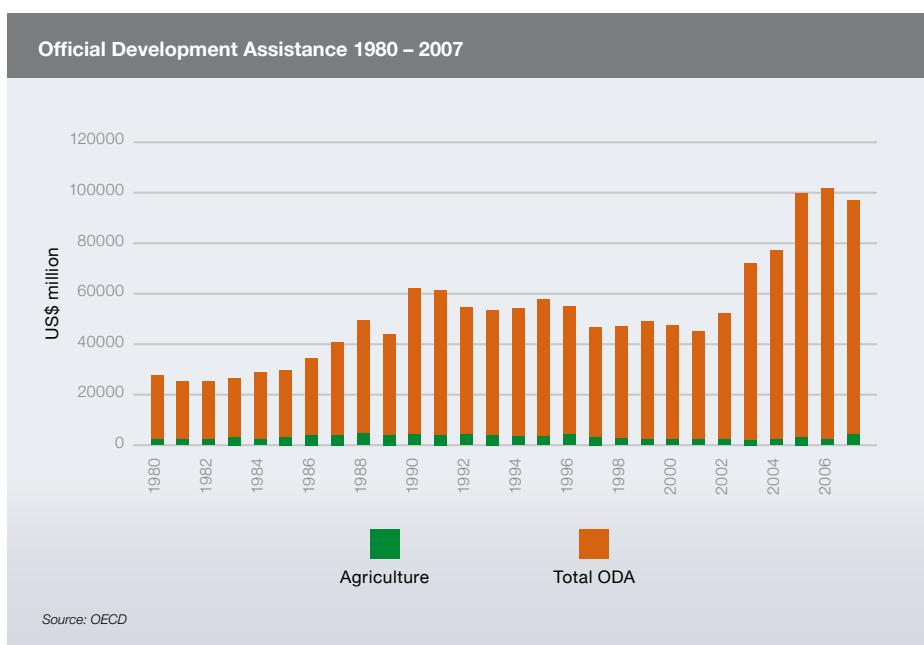
Farmers and prospective farmers will invest in agriculture only if their investments are profitable. Many types of public goods, such as the above mentioned, that make private investments financially viable can only be provided by the public sector. Private sector investment needs to be encouraged at all stages in the value chain – upstream of the farm, in seed and fertilizer production and distribution, and downstream in processing, marketing and distribution. Countries need to create a favourable investment climate and address issues such as lending

policies to agriculture, risks and limitations on the ability of microfinance systems to bring about a step-change in production and productivity.

The projected US\$83 billion net annual investment in agriculture to 2050 foresees some US\$20 billion going to crop production, US\$13 billion to livestock production, with a further US\$50 billion to downstream support services such as cold and dry storage, rural and wholesale market facilities, and first-stage processing.

REGIONAL NEEDS

The outlook to 2050 suggests that interregional differences in capital stock per worker are likely to become more pronounced, roughly doubling in East Asia, South Asia and the Near East and North Africa regions, tripling in Latin America, but stagnating in sub-Saharan Africa. This means that by 2050, an agricultural worker in Latin America would have 28 times the capital available compared to his colleague in sub-Saharan Africa. The huge differences in capital intensity are at the heart of differences in output per worker. A critical element in the divergent developments in labour productivity across regions is largely a reflection of the different developments in the agricultural labour force of the various regions. In Latin America, for instance, labour force employed in agriculture will be almost halved, while in sub-Saharan



SOME BASIC FACTS

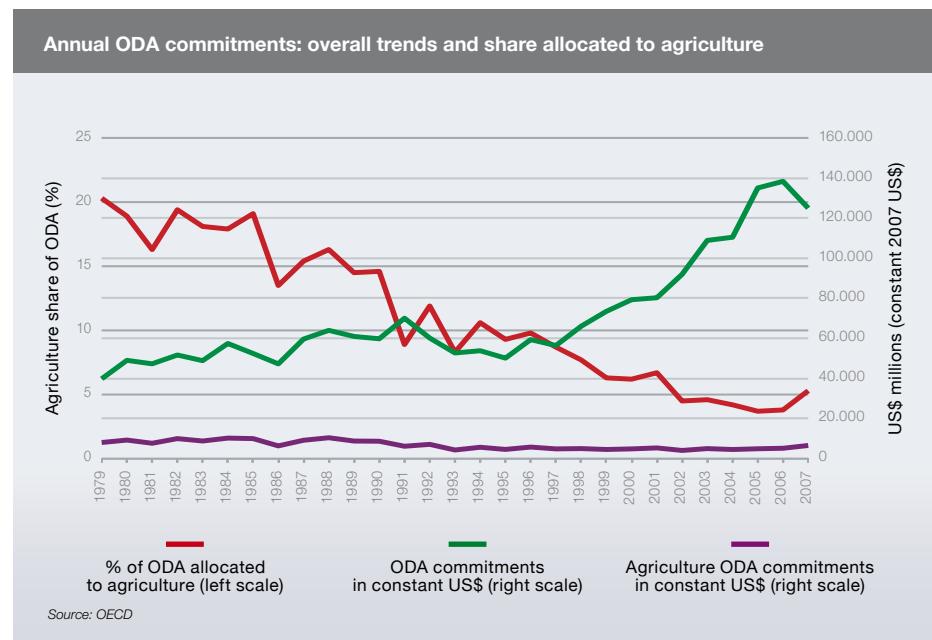
- There has been a global slowdown in the rate of accumulation of capital stocks in primary agriculture (net investment). While such stocks grew annually at 1.1 percent in the period 1975–1990, the rate was only 0.5 percent during 1991–2007.
- Growth of the population active in agriculture has outstripped growth of agricultural capital stock in sub-Saharan Africa and

South Asia, regions where many countries experience the highest prevalence and greatest depth of hunger. Countries with more than 35 percent of the population undernourished saw capital stock in agriculture grow annually by 1.29 percent between 1975 and 2007, while population grew by 2.16 percent. Countries where the average undernourished individual consumes less than 88 percent of the minimum daily energy requirement saw capital stock grow by 1.47 percent annually and population by 1.77 percent.

Africa it will nearly double. Of the projected US\$83 billion total annual investment needed in agriculture, as much as US\$29 billion would need to be spent in just two countries – India and China. Of the total, US\$11 billion will be needed in sub-Saharan Africa, US\$20 billion for Latin America and the Caribbean, US\$10 billion for the Near East and North Africa, US\$20 billion for South Asia, and US\$24 billion for East Asia.

INTERNATIONAL INVESTMENTS

The capacity of the poorer developing countries to fill the investment gap is limited. The share of public spending on agriculture has fallen to an average of around 7 percent in developing countries, even less in Africa, and the share of official development assistance going to agriculture has fallen to as little as 3.8 percent. Commercial bank lending to agriculture in developing countries is also small – less than 10 percent in sub-Saharan Africa. Private investment funds targeting African agriculture are an interesting recent development but current investments are still small. Given the limitations of alternative sources of investment finance, foreign direct investment in developing country agriculture could make a significant contribution to bridging the investment gap. Such investment has been increasingly



directed towards land acquisition and leasing, with investor motivation varying among biofuels production, portfolio diversification and overall food security. Although there are potentials for developmental benefits from this type of investment through technology transfer, employment creation, infrastructure development and export earnings, the related food production increases are often meant to be exported to the investing company, raising a number of possible political and economic concerns when investments are made in a country that itself is food insecure. The key issue is whether the prospects for food security and poverty reduction in developing countries, and globally in general, are better

with or without such investments, and what are the best ways to maximize benefits and avoid negative effects.

RESEARCH AND DEVELOPMENT

Investments in agricultural research and development have shown to have very high rates of return and have an important role to play in fighting hunger and poverty. At present, much public research is carried out by the International Research Centers of the Consultative Group on International Agricultural Research (CGIAR). While there is general recognition of the utility and benefits provided by this system of international research bodies and affiliated organizations – which have enormously contributed to the global pool of available

► Looking ahead to 2050 and broken down by type of investment, 60 percent of the total needed would go to replacing capital stock; the rest would go to additions to the capital stock (i.e. gross capital formation). Broken down by activity, primary agriculture would get more than half while the remainder would go to downstream needs (processing, transportation, storage, etc.). Within primary agriculture, mechanization would account for the single biggest investment area (25 percent) followed by expansion and improvement of irrigation (nearly 20 percent).

► In 2000, total global public spending on agricultural research and development totalled only some US\$23 billion (at 2005 prices) and has been highly uneven.

► Development aid to agriculture decreased by some 58 percent in real terms between 1980 and 2005, even though total official development assistance increased significantly – by 112 percent – over the same period. This meant that the share of ODA going to the agricultural sector fell from 17 percent in 1980 to 3.8 percent in 2006, with the same downward trend observed in national budgets.



1. What are the priorities for agricultural investment by both public and private sectors?
2. Should the investment focus be on high-potential areas, or on more marginal areas and so-called “orphan” crops that may have more significance for food security?
3. How can the extra resources required for investment in agriculture be mobilized from both public and private sectors?
4. What kind of international institutional framework is needed to encourage and target foreign direct investment (e.g. code of conduct)? How can public-private partnerships be forged in the area of agricultural research and development?

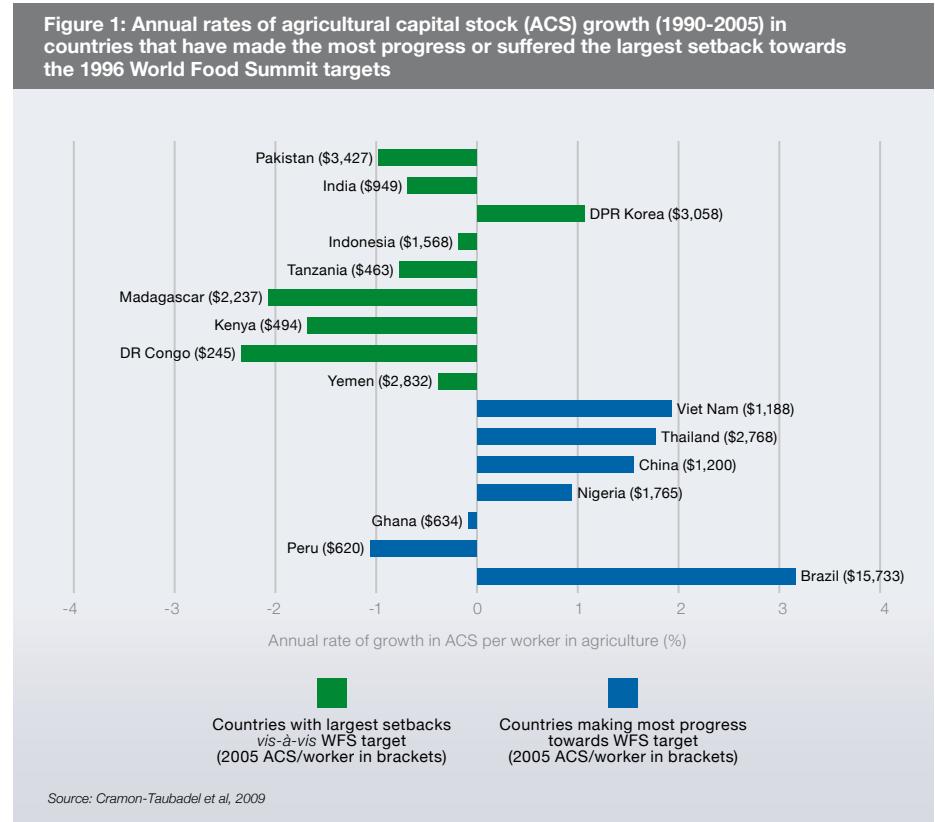
agricultural technology and knowledge – the question of how to increase and sustain the financing of such bodies is not straightforward as often governments do not perceive as in their interests to make substantial contributions towards an entity whose benefits will be spread well beyond the scope of their constituents or borders.

Another important challenge is to bridge the gap between research and development in the main cereals, and that done with the staples that are most important for small farmers in regions with high prevalence of hunger; for example, coarse grains like sorghum and millet.

Data on private sector investments in agricultural research and development remain limited. In 2000, the private sector as a whole spent an estimated US\$16 billion, roughly 41 percent of the global total (public and private). But most private sector investments were made by private companies in high income countries.

By contrast, the role of the private sector in most developing countries – which should be encouraged – is limited given the lack of funding opportunities and incentives for private research and the uncertain returns.

Figure 1: Annual rates of agricultural capital stock (ACS) growth (1990-2005) in countries that have made the most progress or suffered the largest setback towards the 1996 World Food Summit targets



For further information



High Level Expert Forum - How to Feed the World in 2050

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