The investment imperative

THE CHALLENGE

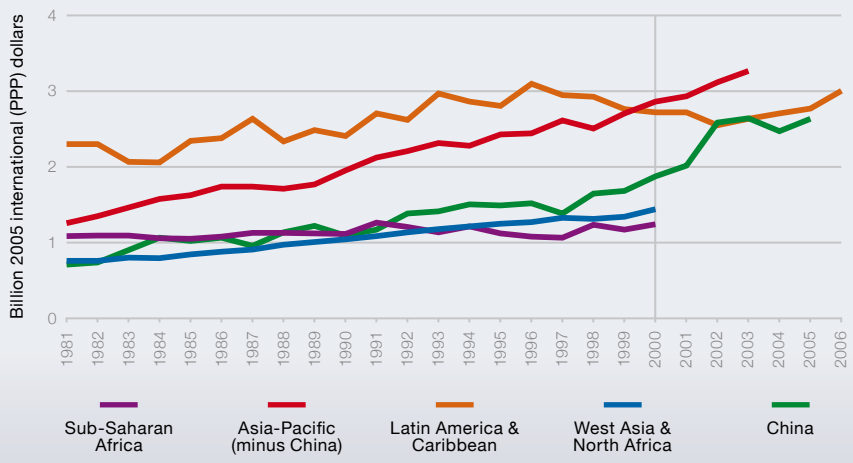
The latest UN estimates of population suggest that by 2050 the planet will be populated by 9.1 billion persons, up by 2.3 billion from the current population of 6.8 billion. This represents a 34 percent increase over the next 41 years. The latest FAO estimates indicate that agricultural production would need to grow globally by 70 percent over the same period (by almost 100 percent in developing countries) to feed this population, driven by an increase in demand and a shift towards higher value products and an increased use of crop output as animal feed to meet rising meat, milk and egg demand. These predictions of additional output needs are likely to be a low estimate, as they do not account for feed requirements in aquaculture and any potential increases to meet possible expansion in demand for liquid biofuels for the transport sector.

Already today, over one billion people worldwide are undernourished. In developing countries, one in three children under the age of five is stunted and 148 million children are underweight. Micronutrient malnutrition affects approximately two billion people, more than 30 percent of the world's population. Agriculture development has a key role to play in the reduction of food insecurity and malnutrition. However, investment and growth in this sector have been slow over the past decade. Overall, national and international priorities, as reflected in poverty reduction strategies and development plans, often fail to address key factors underlying agricultural sector growth, rural development, and food and nutrition security. Long-term investments in agricultural development, efforts to build institutional capacity and empower organizations of rural poor people, and emergency and safety net initiatives that address the needs of those currently unable to provide for themselves are not linked and harmonized.

FAO estimates that the investments required in developing countries to support the required expansion in agricultural output amount to an average gross annual investment of USD 209 billion in 2009 prices (or USD 83 billion net of depreciation). This total includes investment needs in primary agriculture and necessary downstream services such as storage and processing facilities, most of which will be funded from private sources (including farmers), but it does not include essential public investment in roads, large irrigation projects, rural electrification, improved education and others that are also needed such as the management of aquatic resources. It is estimated that gross annual investment in the agricultural capital stock of developing countries is currently about USD 142 billion (2009 prices), so the required increase is about 50 percent of the current level.

Another challenge is to increase capital stocks in areas that are lagging both in terms of hunger reduction and agricultural productivity. Analysis of 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 countries with more than 35 percent of undernourished population.

Public agricultural R&D investment trends in developing countries, 1981-2006



Source: Beintema and Elliott, 2009

THE ISSUES

WHAT KIND OF INVESTMENTS?

Most of the investment, both in primary agriculture (including livestock, aquaculture, fisheries and agroforestry) and downstream sectors, will have to come from private sources, primarily farmers themselves purchasing implements and machinery, improving soil and pond fertility, etc. For a better functioning agricultural system and improved food security, four kinds of public investments are also needed:

- direct investment in agricultural research and development (R&D);
- public and private investments into the management of natural resources that are critical for sustainable growth in production and increasing productivity in particular land and water resources, wild capture fisheries, forests and related ecosystems;
- investment in sectors strongly linked to agricultural productivity growth, such as R&D institutions, extension services, roads, irrigation schemes, ports, power, storage and marketing systems; and
- non-agricultural investment to bring about positive impacts on human wellbeing, like the reduction of hunger and malnutrition. This includes education (particularly of women), sanitation and clean water supply, healthcare and safety nets.

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. Public sector research and extension must be strengthened to deal with important food crops that have little potential for private sector investment. Local private sector investment needs to be encouraged at all stages – upstream of the farm, in national seed and soil enhancement inputs, fertilizer production and distribution, and downstream in storage, processing, marketing and distribution. Countries need to create a favourable investment climate for rural producers and address issues such as land tenure, management of water and fishery resources, lending policies to agriculture, risks and limitations on the ability of micro-finance systems to bring about a step-change in production and productivity. Climate change will make it imperative that national programmes develop the capacity to breed or at least re-select crop and fish varieties adapted to the changes; seed multiplication and production systems must also be in place so farmers have access to the new adapted varieties.

Official Development Assistance 1980 – 2007

Source: OECD

REGIONAL NEEDS

The outlook to 2050 suggests that inter-regional differences are likely to become more pronounced in terms of capital stock per worker, which will be 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 to his counterpart in sub-Saharan Africa. The

SOME BASIC FACTS

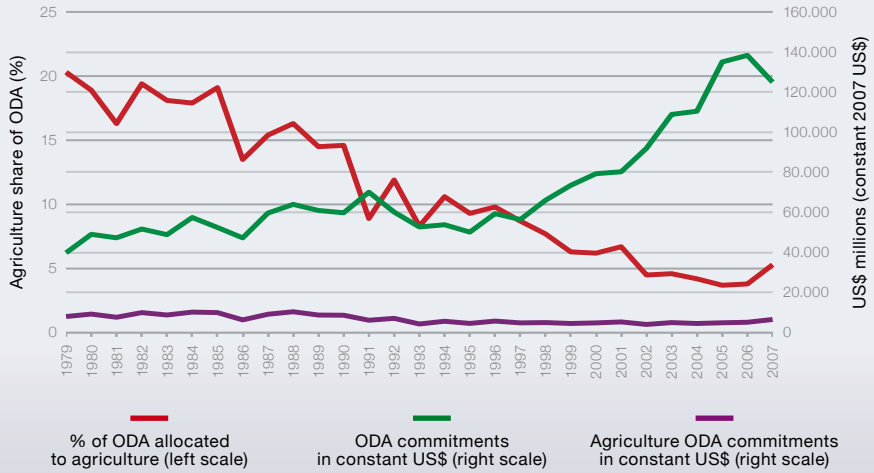
- **There has been a global slowdown in the rate of accumulation of capital stocks in primary agriculture (net investment). While such stocks grew annually at 1.1 percent in the period 1975-1990, the rate was only 0.5 percent during 1991-2007.**
- **Growth of the population active in agriculture has 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 1.3 percent between 1975 and 2007, while population grew by 2.3 percent.**

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 Africa it will nearly double.

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 ODA going to agriculture has fallen to as little as 3.8 percent in 2006. The capacity for managing natural resources that sustain food production are in the decline in many countries. 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 actual 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 liquid biofuel production, portfolio diversification and food security concerns of the investing country. 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 country, raising a number of possible political, economic and social 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.

Annual ODA commitments: overall trends and share allocated to agriculture



Source: OECD

RESEARCH AND DEVELOPMENT

Investments in agricultural research, education and development have been 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 centres of the Consultative Group on International Agricultural Research (CGIAR). While there is no doubt about the utility and benefits provided by this system of international research bodies and affiliated organizations – which have contributed enormously to the global pool of available 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. It is clear that massive public and

- **Looking ahead to 2050 and broken down by type of investment, 60 percent of the total needed would go to replacing obsolete 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 about 40 percent while the remainder would go to downstream needs (processing, transportation, storage, etc.). Within primary agriculture, mechanization would account for the single biggest investment area followed by expansion and improvement of irrigation.**

- **Development aid to agriculture decreased by some 58 percent in real terms between 1980 and 2005, even though total official development assistance (ODA) 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 the lending portfolios of international financial institutions and development banks. Presently agriculture's share in total ODA stands at around 5 percent.**

private investments in R&D need to be made if agriculture is to benefit from the use of new technologies and techniques and to successfully overcome emerging challenges, including increasing water scarcity and climate change.

POLICY CONSIDERATIONS ARISING FROM THE FAO HIGH-LEVEL EXPERT FORUM ON HOW TO FEED THE WORLD IN 2050 (ROME, 12-13 OCTOBER 2009)

The discussion of investment was arranged around five major issues raised by the presenter and the moderator.

- The panel agreed that both appropriate policies and a critical mass of investment are essential in achieving the Millennium Development Goal of hunger reduction in the world. Without the right policies in place, even significant investments pumped into the system will not necessarily bring the desired result.

- The degree to which investments result in progress in hunger alleviation varies from country to country. China and India have demonstrated very significant success in hunger alleviation, and there was general agreement that CAADP sets a sound framework for investment in sub-Saharan Africa. However implementation in some cases has not been effective and investment has not always reached the intended target, thus the need for improvement.

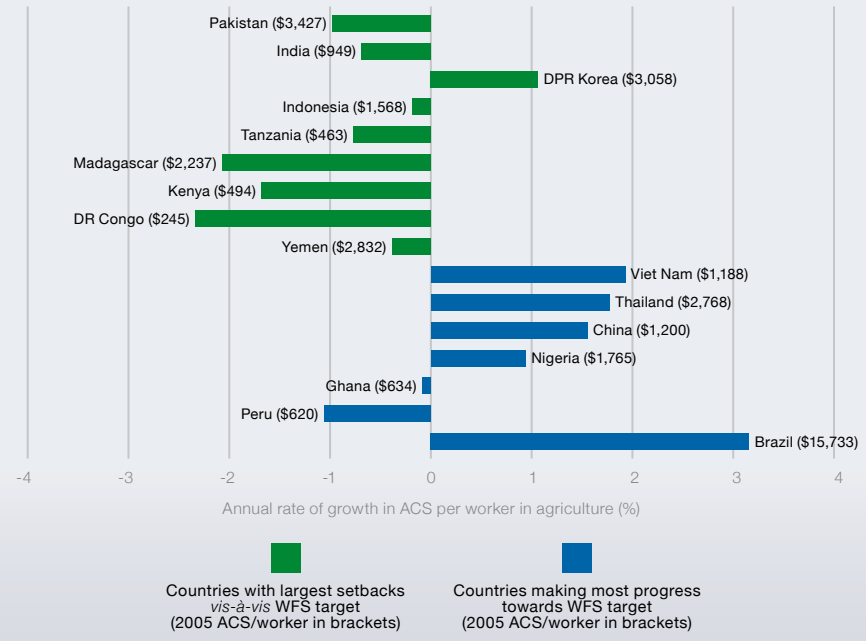
- The key elements in creating an attractive environment for investors are a sound regulatory framework and reasonable taxation. Private equity funds were proposed as an innovative instrument for attracting private investments, especially in situations where banks are not eager to lend to agriculture. Smallholder associations can also be a useful instrument to help small producers accumulate funds for investment. An additional policy tool considered by the panel was state support for start-up investments, which normally have higher risks and need external support.

- All panellists agreed that increased public investment in infrastructure and agricultural R&D are crucial for attracting private capital to agriculture. For most developing countries, it is very important to reduce the risks facing private investors, especially smallholders.

- The panel agreed that increasing cross-boarder foreign investment in primary agriculture directed towards acquisition or leasing of land has the potential to increase resources available for agricultural development, but that special discipline should be imposed on such investments to safeguard the interests of all concerned parties, and particularly the local populations.

Finally, there was general agreement with the observation that in the future the quality of investments will be at least as important as the volume of investments.

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



Source: Cramon-Taubadel et al, 2009

For further information

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