

Chapter 5

Agriculture and Rural Development Status in LDCs

Hoseana Bohela Lunogelo and Solomon Baregu¹

Summary

This chapter is a first attempt to monitor the actions of development partners – whether unilaterally or jointly with least developed countries (LDCs). In doing so, the chapter examines recent trends in LDCs' agricultural and rural development, with a particular focus on East African LDCs. The chapter attempts to assess the progress made towards achieving the Istanbul Programme of Action (IPoA) set targets, and proposes areas for monitoring with respect to resolutions and commitments to improve agriculture productivity, enhance food security and reform the rural sector.

The chapter provides five key messages as follows. First, there has been some awakening in both the governments of LDCs and the donor community to the need to improve agricultural production through yield-enhancing interventions and the application of sustainable management approaches for the LDCs' stock of natural resources. Also needed are productivity improvements along the commodity value chains in the agricultural sector, which will eventually result in a reduction of food and income poverty in these countries. Second, there is still room to improve donors' support approach through some stand-alone projects. With the increasing efforts that are made by the donors, having a unified approach towards development support amongst these partners would enhance progress in agricultural and rural development in the LDCs. This would also help to reduce duplication of projects, wasteful spending and, in some cases, outright conflicts among donors, and also between recipients at community levels. Third, this chapter reveals that there has been a positive increase in investments in public agricultural research and development (R&D) in the East African region. For instance, Uganda's investments in public agricultural R&D quadrupled during 2000–08, primarily as a result of increased donor funding and development bank loans. This has enhanced the country's agricultural productivity, enabling it to feed other countries in the region such as Sudan. Despite these promising developments, it is recommended that more resources are still required to promote R&D, especially in the deployment of skilled manpower to manage the national agricultural research systems (NARS). Fourth, there seems to be little progress in implementing common agricultural development strategies and investments in research, including developing and strengthening centres of excellence to be shared among the East African states. Each country has therefore proceeded to develop and use its own infrastructural facilities in the absence of a system to pool scarce resources from either internal sources or donors. This is an obvious weak link in the expected South–South co-operation

on development management. However, emerging Africa's home-grown initiatives under The Comprehensive Africa Agriculture Development Programme (CAADP), where countries have developed some compacts for attracting investments in the sector, offer some hope of cross-fertilisation of ideas and practical experiences in applied research for promoting a green revolution in Africa. Fifth, there appears to be some paradigm shift in the way multinational investments in the sector will be shaped in the future, with LDCs seeking a win-win partnership engagement with the smallholder interests in mind. The new thinking is meant to minimise challenges that come with land tenure and old forms of land grabbing.

Therefore, LDCs, at least those in Africa, offer a new frontier for food and industrial commodity production, which is much needed for the continent itself and for the rest of the world. The remaining challenges ahead include hastening technology transfer and improvements in rural infrastructure to facilitate productivity improvements and commodity value addition. Enhancing intra regional trade would appear as among the strategies to be pursued by African countries as they diversify markets for their commodities instead of relying on the traditional European and American markets and recently on ever-increasing importation of cheap goods from China (Wen Jiabao 2012).

5.1 Introduction

Among the East African countries, only Kenya does not belong to the list of 49 countries which constitute a group of LDCs, whose average income per capita per year is less than USD 1,000.² As shown in Table 5.1, the majority of LDCs come from Africa, Asia and the Pacific Islands, with more than 69 per cent located in Sub-Saharan Africa. The decision to give special attention to a list of LDCs was first endorsed in 1971, and this was followed by the first UN Least Developed Countries conference dedicated to the matter in 1981.³ Among the follow-up initiatives of that conference was the establishment of the Group of Seventy-Seven (G77). This group had unqualified support from Tanzania, which hosted one of its meetings as part of building solidarity among LDCs and developing countries (South-South co-operation: SSC) as a way of seeking a new world economic order (WEO).

It is estimated that the donor states in the world provided about USD 44 billion to the LDCs in 2010, an increase of USD 6.6 billion from the previous year. This is equivalent to 0.11 per cent of their gross national product (GNP) in the form of official development assistance to the LDCs (UN CTAD 2012), which is still below the set 0.2 per cent of their GNP. The occasions for UN-LDC conferences have been used to remind these countries of their earlier commitments to allocate a higher proportion of their GNP in development support to LDCs and developing countries in general.

This chapter therefore attempts to propose areas for monitoring with respect to resolutions and commitments to improve agricultural productivity, enhance food security and reform the rural sector. It builds on some preliminary benchmarking work prepared by the Overseas Development Institute (ODI) for the Commonwealth Secretariat as an input to the first meeting of experts on the LDC IV Monitor project in Dhaka, Bangladesh (7–9 September 2012). The chapter, however, focuses on the

Table 5.1 List of least developed countries, 2012**List of UN categorised least developed countries, 2012****Africa: 34 countries**

Angola	Central African Republic ^a	Djibouti	Gambia
Madagascar	Mozambique	Senegal	Togo
Benin	Chad ^a	Equatorial Guinea	Guinea
Malawi ^a	Niger ^a	Sierra Leone	Uganda ^a
Burkina Faso ^a	Comoros ^b	Eritrea	Guinea-Bissau ^b
Mali ^a	Rwanda ^a	Somalia	United Republic of Tanzania
Burundi ^a	Democratic Republic of the Congo	Ethiopia ^a	Lesotho ^a
Mauritania	São Tomé and Príncipe ^b	Sudan	Zambia ^a
		South Sudan	Liberia

Asia: 14 countries

Afghanistan ^a	Bhutan ^a	Kiribati ^b	Myanmar
Nepal ^a	Salomon Islands ^b	Tuvalu ^b	Yemen
Bangladesh	Cambodia	Lao People's Democratic Republic ^a	
Samoa ^b	Timor-Leste ^b	Vanuatu ^b	

Caribbean: 1 country

Haiti

^a Also known as LDCs^b Small islands

LDCs found in the eastern part of Africa and anticipates integrating Caribbean, Asian and Pacific LDCs.

5.2 IPoA on rural development

5.2.1 Context

While opening the United Nations fourth conference on the Least Developed Countries in May 2011 in Istanbul, Turkey, the UN Secretary General Ban Ki Moon reminded the world that the 48⁴ LDCs were home to more than 880 million people who represented 'the poorest and weakest segment of the international community'. It is estimated that 75 per cent of these people make less than USD 2 a day, which is less than about USD 900 a year. Since the majority of them live in rural areas it means that poverty is mainly a rural phenomenon, where there are minimal facilities and services in health, education, electricity, water and transport. In realisation of the need for African countries to improve the performance and contribution of agriculture to food security, wealth and job creation, in 2003 African countries agreed in Maputo to increase their annual allocation to the agricultural sector to at least 10 per cent of their national budgets. It included ensuring that agricultural gross domestic product (GDP) expands at an annual rate of at least 6 per cent in those countries where agriculture is the mainstay of the economy.

Within the horn of East Africa, the East African Community (EAC), which consists of four LDC countries,⁵ has strategies for rural development and agriculture, both of which are implemented through five-year strategic plans, the current one running from 2011 to 2016. There is stress on the importance of investment in rural development projects, and in particular on promoting common interventions in agriculture, fisheries and forestry. The community has sector-based institutions such as the Lake Victoria Basin Commission, which among other things co-ordinates development interventions in, for example, the fisheries sector (e.g. Lake Victoria Fisheries Organisation – LVFO – which has a large programme on fisheries resource management and research funded by the European Union (EU) and the environment (e.g. World Bank-funded Lake Victoria Environment Management Programme – LVEMP), and overall economic management programmes such as the Nile Basin Subsidiary Action Programme (Nile-SAP), which covers water resource management and sharing, economic and social development projects, capacity-building initiatives and mobilisation of funding. In all these there are components covering research and development. The process of preparing the plan for the Nile basin, including the costs of running the secretariat in Uganda, was funded by a consortium of donors, including the World Bank and the EU. Among the successes from the EU-funded interventions in fisheries management in the Lake Victoria basin has been the use of research data on the fish species population and characteristics in guiding management plans, including designing open and closed fishing seasons. This has involved investments in marine research vessels and reconnaissance equipment.

5.2.2 Issues of focus for IPoA

As shown in Table 5.2, the main intervention areas for agriculture and rural development include promoting responsible international investment in agriculture and improving systems for collection and delivery of humanitarian food relief so as to minimise the impact on production systems of recipient communities, and reducing commodity price volatility so as to stabilise producer incomes and also prevent inflationary pressures among consumers. These issues were identified as requiring joint actions between LDCs and developed countries. Actions that will mostly be the responsibility of LDCs include strengthening institutions and policies that support productivity enhancement, and providing safety nets for vulnerable groups.

Despite the observed surge in the application of fertiliser by Tanzanian farmers, its scale of use is less than 10 kg per hectare (Figure 5.1), compared with the Sub-Saharan average of 16 kg per hectare, Malawi's average of 27 kg per hectare and Vietnam's average of 365 kg per hectare. The actual level of improved seeds application is only 10 per cent of the national requirements (MAFSC 2010).

5.2.3 Anecdotal evidence of impact of support in rural development in East Africa

The growth of the agricultural sector during the past 15 years has been slow and stagnated at between 3 and 5 per cent per annum for the EAC partner states. This has

Table 5.2 Agreed intervention areas for agriculture and rural development^a

Objective	Indicators proposed	Examples of interventions in East Africa
Joint action		
(a) Promote responsible international investment in agriculture and call for all investors to conduct agricultural practices in accordance with national legislation, taking into account national sovereignty over natural resources, environmental sustainability and the importance of promoting the wellbeing and improving the livelihood of the local communities and indigenous people, as appropriate;	Aid and foreign direct investment (FDI) flows, Organisation of Economic Co-operation and Development (OECD) National Accounts; The OECD database will provide information on international investment (aid and FDI) flows to the agricultural sectors	Donor Joint Assistance Strategies in place in Rwanda, Ethiopia, Uganda and Tanzania. G8 committed in June 2012 to mobilise the private sector to support investments in the rural sector using some agreed principles for responsible partnerships. Should minimise displacement of smallholder farmers, but empower them as contract farmers. Example: Southern Agricultural Growth Corridor of Tanzania (SAGCOT) is a by-product of G8 support to engage the private sector to invest in modernising agriculture in partnership with government and smallholder farmers based on win-win conditions. SAGCOT is regarded as a pioneer programme in East and Central Africa where international capital is jointly mobilised by an LDC government, leaders of developed countries (through G8 and G20 forums) and the private sector (through the World Economic Forum). It is expected to have a regional impact in solving food insecurity
(b) Further explore the feasibility, effectiveness and administrative modalities of a system of stockholding in dealing with humanitarian food emergencies or as a means to limit price volatility;	Food Production Index, World Development Indicators; Food supply data, Food and Agriculture Organization (FAO) STAT; Food Hunger MAP, FAO STAT; The proposed World Development Index (WDI) and FAO indicators will provide supply-side information. The FAO Hunger Map will provide information on location of food insecurity	Already in place in Tanzania, where World Food Programme (WFP) purchases surplus food for distribution to famine areas and refugee camps in the region. Famine warning system in place, funded by, among others, the US Agency for International Development (USAID). FAO working with institutions in 7 countries in East Africa. ^b Donor support to the East African Grain Growers Council to establish a Commodity Exchange Market, in place. EAC states in advanced stages to establish border markets for food marketing. Tanzania to build two international food markets at Makambako (Njombe regions for grains) and Segera (Tanga region for horticultural products) by end of 2014

(continued)

Table 5.2 Agreed intervention areas for agriculture and rural development^a (continued)

Objective	Indicators proposed	Examples of interventions in East Africa
(c) Pursue policy options to reduce price volatility, including improved information systems for stocks and production, greater transparency in commodity markets, and free movement of food supplies	Agricultural Price Statistics, FAO STAT; On stocks and production, the above 'food production index of WDI' and 'Food supply data of FAO'	Research in establishing a system for balancing free movement of cereals in the region and buffering supplies within the country of origin is needed. Capitalisation of National Food Reserve Agency (NFRA) has taken place and is already engaged in mopping up surplus to stabilise producer prices for grains and also to release stocks into the market when consumer prices escalate to unaffordable levels
Action by LDCs	Value of Agricultural Production, FAO STAT; The indicator will help measure the outcomes of the action	An African institution, AfDB, in collaboration with the International Fund for Agricultural Development (IFAD), the Organisation for Petroleum Exporting Countries (OPEC) Fund and some bilateral agencies such as the Belgian Survival Fund (BSF), has in recent years been working closely with EAC governments to strengthen farmer-based institutions and linkage between farmers and research institutions. For example, in Tanzania: ^c RFSDP (finance), followed by AMSDP (marketing), to current programme on promoting value addition. Pearl Capital Partners, a Kampala-based specialised African agricultural investment fund manager, received funds worth USD 25 million from a group of investors ^d to invest in at least 20 agricultural-related small and medium enterprises in East Africa

(continued)

Table 5.2 Agreed intervention areas for agriculture and rural development^a (continued)

Objective	Indicators proposed	Examples of interventions in East Africa
Provide safety nets to poor smallholder farmers	<p>Agricultural Price Statistics, FAO STAT; Note: these prices do not truly reflect the support the farmers might be receiving since not all support schemes may be captured by these statistics</p>	<p>Donors in recent years have offered financial support to governments of Malawi and Tanzania to provide subsidised agricultural inputs, irrespective of lack of empirical evidence on the economic returns. Use of fertilisers and improved seeds in Tanzania have increased (see Figure 5.1)</p> <p>Tanzania received support from World Bank for a second phase of Tanzania Social Action Fund (TASAF-II) that will provide targeted cash-in-kind grants to vulnerable households to support their capacity to raise productivity and engage in income-generating activities</p>

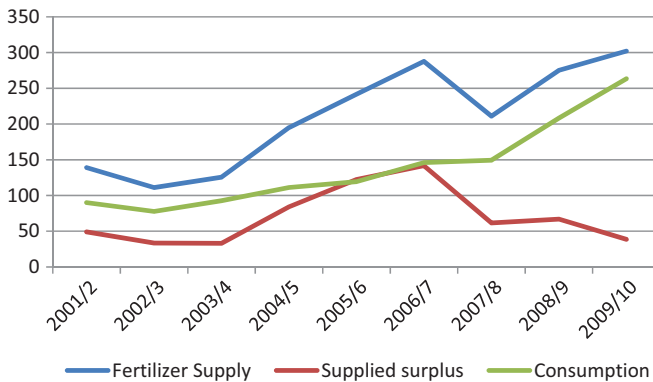
^a Template based on paper prepared by ODI for the Commonwealth Secretariat in preparation for the LDC IV Monitor project meeting in Dhaka, Bangladesh (7–9 September 2012).

^b Burundi, Ethiopia, Rwanda, Uganda, Kenya and Tanzania. Economic and Social Research Foundation (ESRF) is co-ordinating the project on behalf of Ministry of Agriculture, Food Security and Cooperatives (MAFSC) in Tanzania.

^c Rural Financial Services Development Programme (RFSDP), Agricultural Marketing Services Development Programme (AMSDP).

^d The fund has been invested into the African Agricultural Capital Fund (AACF) received from USAID, Bill and Melinda Gates Foundation, the Gatsby Charitable Foundation and the Rockefeller Foundation

Figure 5.1 Effect of subsidies on trend of fertiliser consumption in Tanzania (thousands of metric tons)



Note: Government fertiliser subsidies were stepped up in 2008.

Source: MAFSC (2012)

resulted in the observed reduced contribution of agriculture to the GDP relative to other sectors, such as the service sector. Its contribution decreased from about 45 per cent to about 25 per cent, while the service sector has increased to about 50 per cent. The massive support going to agriculture after years of neglect will certainly bring some positive impacts. This can be witnessed by some anecdotal evidence coming out of the five EAC partner states as a result of special rural development initiatives.

- a) In Tanzania, some interesting results have been reported with respect to:
- i) Input support subsidy to targeted areas and the increased supply of different categories of farm equipment (hand-held motorised tractors (power tillers) and tractors) to enhance production and productivity. Consequently, three of the five targeted regions for fertiliser and seed inputs have been reporting huge surpluses (e.g. Mbeya region alone had an officially recorded 2,000 tons surplus of rice⁶), such that at any one time government godowns (with a carrying capacity of about 250,000 tons) are always full, compelling the government to lift food export bans, which have prevailed since independence. The government announced in Parliament that it intends to promote cereals as a tradable good without export restrictions.
 - ii) The warehouse receipt system has stimulated the cultivation of cashew nuts and coffee, whose total production has been on the increase despite some teething problems in the functioning of the system for cashew nuts.
 - iii) A private–public partnership (PPP) approach in promoting farming as business by smallholder farmers with the support of large-scale commercial farmers has been piloted in Morogoro region for sugarcane and paddy crops. In paddy, individual farmers have achieved yields up to 8 tons per hectare, compared with the commercial farm's yield of between 4 and 5 tons per hectare.⁷ This indicates that, given the right package of support, smallholder farmers can achieve the desired results.

- iv The support to the private sector in promoting smallholder horticultural farmers in northern Tanzania has resulted in a fast-growing export industry in cut flowers, French beans and fruits.⁸
- b) In Rwanda, the International Fund for Agricultural Development (IFAD) has supported a significant reduction of poverty through rural development projects such as the PDRCIU (Project d'Appui au Plan Stratégique de Transformation de l'Agriculture au Rwanda) which has facilitated construction and rehabilitation of feeder roads which, as a result, has provided access to markets, opened up new cultivation areas and reduced transport costs (Table 5.3). Eastern Province of Rwanda is among the most notable areas in which this project, along with other initiatives, has facilitated poverty reduction. Donor support to land conservation (like that funded by the US Department of Agriculture through the World Vision⁹) has also minimised land degradation and therefore increased land productivity.

In 2012, the World Bank approved USD 80 million of project support to Rwanda, intended for the promotion of rural development activities. The fund aimed to support the Rural Sector Support Project (RSSP), third phase 2013–16.¹⁰ Since the inception of this project in 2001, more than 200,000 farmers have benefited from it, and the fund now intends to target more than 100,000 in the current third phase.

- c) In Uganda, support by 20 development partners (the major ones being the EU, Denmark, Sweden, Ireland, IFAD, African Development Bank, United Kingdom and the World Bank) to the Plan for Modernisation of Agriculture (PMA) and National Agricultural Advisory (extension) Services (NAADS) has proved useful as the country has been the main source of food for South Sudan and eastern parts of Democratic Republic of the Congo.

In addition, since 2008, the country has also received a lot of support in water and sanitation through the Joint Water and Sanitation Programme (2008–13), which is also aligned with Uganda's 2004 Poverty Eradication Action Plan (PEAP). This programme costs around USD 150 million, being supported by the Danish International Development Agency (DANIDA), which alone provides USD 66 million. Other partners include the African Development Bank (USD 27 million);

Table 5.3 PDRCIU – Impact of road rehabilitation on transport costs

Distance	Transportation means	Cost (1999–2000)		Cost (2009–10)	
		RWF	USD	RWF	USD
Nyagatare–Rukomo (17 km)	Motorcycle	2,000–2,500	3.36–4.20	800–900	1.34–1.51
	Car	–	–	–	–
Gabiro–Ngarama (20 km)	Motorcycle	2,000–3,000	3.36–5.04	800–1,000	1.34–1.68
	Car	9,000–10,000	15.12–16.80	2,500–3,000	4.20–5.04

Source: IFAD (Rwanda), 2011

the Austrian Development Agency (ADA) (USD 19 million); the Swedish International Development Cooperation Agency (SIDA) (USD 14 million); the Department for International Development, United Kingdom (DFID) (USD 10 million); the EU (USD 9 million); and the German Deutsche Gesellschaft für Technische Zusammenarbeit und KfW (USD 6 million). Furthermore, the donor community, through the Water and Sanitation Subsector Working Group (WSSWG), contributes 40 per cent to the sub-sector and the rest is from the Government of Uganda (AfDB 2011).

- d) In Burundi, the World Bank has provided loans for the revitalisation of the agricultural sector. On the other hand, the World Food Programme (WFP) has supported farmers by purchasing from them food stocks meant for food relief to internally displaced people. The same arrangement has been applied in Tanzania. Table 5.4 details some of the other initiatives from development partners in Burundi.
- e) In Ethiopia, support by IFAD, African Development Bank (AfDB), World Bank, Government of Ireland and the Belgian Survival Fund (BSF) has enabled the country to make significant improvements in agriculture. Through support on small irrigation projects, the country has experienced a reduction of 'hungry months' from six to two months due to larger and more reliable yields as well as increase in income (IFAD 2009). Furthermore, there have been other initiatives supported by Canadian organisations. Such initiatives are the Agriculture Market Growth project (2012–13) which aims to increase the sustainable incomes of primarily women smallholder farmers and agro-pastoralists in the Ethiopian regions of Oromia and Southern Nations, Nationalities and People's Region.¹¹ Table 5.5 provides a list of other donor-supported projects in Ethiopia.

5.3 IPoA on food and agricultural productivity

In agriculture, productivity can be measured in terms of the optimal output possible from unit factors of production, the ones which are mostly used being those of land and livestock units (yield or output per unit area (e.g. hectare) of land and per animal) and manpower (output per unit level of effort, mostly man-day or adult equivalent). In crops, for example, productivity measurements have to take into account the 'technical potential maximum yields with latest available variety in an area, if all the constraints are removed, at generally prevailing solar radiation, temperature and daylight' (Biodiversity et al. 2012: 8).

5.3.1 Context

Lower productivity and slow growth in most of the developing countries and especially in small family farms are a major cause of the observed food insecurity. According to the Food and Agricultural Organisation (FAO) (Biodiversity et al. 2012), the gap between farmers' yields and technical potential yields¹² reflects largely sub-optimal use of inputs and insufficient adoption of most productive technology, often linked to lack of market integration. Yield gaps were estimated to range from

Table 5.4 Burundi donor projects matrix

Organisation	Key sectors of activity	Effective disbursements 2008–10 (USD)
EU Commission	Agriculture, humanitarian assistance, government and civil society, health, transport and warehousing	348.7 million
World Bank	Agriculture, water supply and sanitation, education, government and civil society, infrastructure, health, financial and private sector	218,5 million
USAID	Agriculture, humanitarian assistance, government and civil society, health	110.7 million
Belgium	Agriculture, water supply and sanitation, education, infrastructure, health	77 million
Germany	Agriculture, humanitarian assistance, water and sanitation, reintegration of refugees, health	76.8 million
Norway	Humanitarian assistance (construction of shelters), demobilisation programme, reinsertion and reintegration of demobilised persons	70.3 million
Netherlands	Government and civil society (land issues), financial and private sector (micro-finance and Burundi business incubator)	53.7 million
AfDB	Agriculture, budgetary support, water and sanitation, infrastructure	44 million
United Kingdom	Humanitarian assistance, education, government and civil society	43.5 million
Japan	Humanitarian assistance, support to the electoral process, construction, health, transport	42.7 million
France	Humanitarian assistance, education, government and civil society, health	32 million
China	Health, road transport	6.9 million

Source: CNCA (July 2011)

11 per cent in East Asia to 76 per cent in Sub-Saharan Africa in 2005. The average global rates of growth in yield of most of the major cereals are declining. According to FAOSTAT (Biodiversity et al. 2012), since the 1980s growth in wheat and rice yields has fallen from 2.53 per cent to around 1 per cent. The yield of maize, which is a major staple food in East Africa, showed growth of slightly less than 2 per cent over the last decade.

In East Africa, while it might seem that there is no co-ordinated approach to international support in agricultural R&D, the region has never been short of donor agencies, which are either fully or partially dedicated to the cause of improving Africa's

Table 5.5 Donor projects matrix for Ethiopia

Project name	Donor	Action area(s)	Objective(s)	Implementing agency/ government counterparts	Time period	Budget	Regions
Ethiopia Sustainable Tourism Development Project	World Bank	Private Sector development	Increasing the number of tourists, income and jobs from the tourism sector	Ministry of Culture and Tourism	2009/10–2014/15	USD 35 million	National
Economic growth corridors	UN Development Programme (UNDP)	Economic governance	Strategise on how best to develop and utilise Ethiopia's economic growth corridors and poles for enhancing growth	MOFED, with support from UNDP	2008–11	USD 1.6 million	Addis Ababa
Strengthen business associations to advocate for policy	Center for International Private Enterprise	BMO Promotion/PPD	To build the capacity of Ethiopian business associations to mobilise coalitions around common policy concerns and partner with government in advancing market-based reforms	Precise Consult International PLC	2008–13	Around USD 200,000 annually	Addis Ababa, Amhara, Tigray, Oromia, SNNPR, Harar, Dire
Private sector development through value chains	GIZ/ Engineering Capacity Building Program (PSD Pillar)	1. Value chains support 2. Firm level support	Upgrade value chains in the areas of agro processing, leather, textile and pharmaceuticals	GIZ/ECBP & DED/ DAAD/CIM/ KfW/Sequa MoCB/MoE/ MoTI/MoST/ MoWUD	November 2005 – June 2015. Current phase: 2009–12	EUR 55 million	Addis Ababa, Amhara, Oromia, Tigray, SNNPR

Source: USAID (2010)

agriculture. They include, but are not limited to, multinational agencies such as the UN FAO, IFAD, AfDB, the World Bank, US Agency for International Development (USAID), the International Food Policy Research Institute (IFPRI) and, in most recent years, home-grown initiatives such as the African Green Revolution in Agriculture (AGRA) through the support of the Bill and Melinda Gates Foundation, the Gatsby Charitable Foundation and the Rockefeller Foundation. Additionally, there are new initiatives that follow the G8 and G20 commitments such as Feed the Future (FtF) and Grow Africa, CAADP, AGRA and others.

The eagerness among individual donors to brand their support, in fulfilment of their country's and the international mandate to support developing countries, has more often than not led to duplication of efforts, wasteful spending and, in some cases, outright conflicts among donors and also between recipients at community levels. The most recent case has been an apparent duplication of effort to support harmonisation of research to produce improved seeds and policies for bulking and marketing them within the EAC region. While the Food, Agriculture and Natural Resources Policy Analysis Network (FANRPAN) had already got some support from the Netherlands, AGRA is being supported by Grow Africa to intervene on the same project. A suggestion by delegates to the Annual Regional Policy Analysis Dialogue¹³ on the possibility of harmonising the two interventions proved futile as each donor insisted on maintaining its own identity.

Fortunately, at the regional level there is hope of co-ordinating donor support through the Association for Strengthening Agricultural Research in East and Central Africa (ASARECA) – working to implement regional objectives as stipulated in the EAC Development Strategy (2011–16) – and, most recently, the EAC Food Security Action Plan, which was endorsed by the EAC Legislative Assembly in 2011.

Funding of research has traditionally come from a country's own government, especially in maintaining the basic research infrastructure, and from donors, for actual research and provision of equipment and technical assistance. Among the donors who have been in the forefront in support of research in East Africa are the World Bank, the EU, the Netherlands, Sweden, Denmark and, most recently, China, Korea and India.

Some of the support provided by donors for agricultural research in East African LDCs includes:

- a) ASARECA: support for research on commodity value chains in 12 countries: Burundi, Democratic Republic of the Congo, Ethiopia, Eritrea, Madagascar, Sudan, Malawi, Kenya, Uganda, Tanzania, South Sudan and Rwanda. Focusing on main staple food crops (maize, bananas, cassava, sorghum, beans, paddy, etc.) and livestock (dairy and poultry) from production, storage and processing to marketing (ASARECA 2012).
- b) Uganda: the United Kingdom (DFID) has supported the strengthening of client-oriented agricultural research and development (COARD), whose programme has been useful in responding to area-specific crop and livestock technology

requirements for improved productivity in Central Uganda (Serere Research Station, Soroti). This experience was taken from a pilot in Kenya. Uganda has also benefited from the EU support and DFID in establishing a NARS, with its headquarters in Entebbe (Flaherty et al. 2010a).

- c) Tanzania: support by DFID in research on cashew nuts (coastal and southern Tanzania) and coffee (northern and southern highlands), as well as support by the Netherlands in soil characteristics and suitability research, which has been ongoing for several years now (Flaherty and Lwezaura 2010). Among the newest entrants in support of agricultural research are the governments of Korea and China (both in paddy production). Recently, USAID and India have committed some funds for training agricultural sector experts at Masters and PhD levels.
- d) Ethiopia: IFAD has supported Ethiopia through the introduction of a competitive research grants system; farmer research groups that enable farmers to get involved in research on an ongoing basis; and a system of research extension advisory councils that are supported by the public policy and government budget (IFAD 2009).

5.3.2 Issue of focus for IPoA

Among the issues agreed to be jointly pursued by both LDCs and donors to enhance agriculture, food and nutritional security is the need to reduce food price volatility and allow for free movement of food supplies between nations (see Table 5.6). Unpredictable food prices render planning by governments, the private sector and consumers rather difficult, and when there is a general movement upwards this makes things even worse in terms of fuelling inflation, a phenomenon witnessed since 2008 even before the onset of the global financial crisis. Historical evidence has generated the current wisdom that closing borders and restricting movement of food stocks across countries does not solve the underlying problem of food shortage but simply fuels smuggling. It is for this reason that countries are encouraged to build transparent commodity markets and allow for unrestricted movement of food supplies, without necessarily abdicating the government's responsibility to facilitate smooth operations by the private sector and step in to fill deficits where the private sector fails to deliver.

International investment in agriculture, and the need for all investors to conduct agricultural practices in accordance with national legislation, are amongst the issues agreed to be jointly pursued. Agricultural investment in countries in which the majority of the population depends upon food production would result in a substantial positive spillover effect to the majority. To the poor who depend on agriculture, improving the sector has a direct impact on their wellbeing by facilitating poverty reduction, income generation and an increase in food availability that leads to a reduction in hunger, job creation and wealth creation as well as the emergence of happiness and harmony in society. However, it is wise to note that such investments, especially from foreign investors, should be aligned to the respective country's legislation and laws so as to respect the sovereignty of the country.

The elimination of all forms of export subsidies and disciplines as an issue to be pursued tends to address the ever-growing discontent that has existed for many

Table 5.6 Agreed intervention areas for agriculture, food, nutritional security^a

Objective	Indicators proposed	Some of the interventions in East Africa
Joint action		
Pursue policy options to reduce price volatility, including improved information systems for stocks and production, greater transparency in commodity markets and free movement of food supplies	Agricultural Price Statistics, FAO STAT. On stocks and production, the above 'food production index of WDI' and 'Food supply data of FAO'	Famine Early Warning System Network (FEWS-Net); FtF project on Marketing Policy (SERA); AGRA Marketing Policy; FAO
Action by LDCs		
Strengthen institutions, including co-operatives, to boost smallholder farmer food production, agricultural productivity and sustainable agricultural practices;	Value of Agricultural Production, FAO STAT; The indicator will help measure the outcomes of the action	National Agricultural Advisory Services (NAADS) (Uganda/World Bank); National Agriculture and Livestock Extension Program (NALEP) (Kenya/Sida); AMSDP (Tanzania/AfDB+IFAD) Services
Provide safety nets to poor smallholder farmers;	Agricultural Price Statistics, FAO STAT; It must be noted that these prices do not truly reflect the support the farmers might be receiving. For example, there could be guaranteed price support schemes or state-funded subsidised inputs that may not be captured by these statistics	Tanzania implementing agricultural input subsidy programmes in selected clusters with a highest potential to respond to the intervention. State agency intervenes to stabilise both producer prices and consumer prices for cereals (for now maize)
Supply critical inputs such as locally adapted high-yielding varieties of seeds, fertilisers and other services;	Resources and Investment, FAO STAT; Most relevant here under resources would be 'Fertilisers'; 'Pesticide consumption'. Also note: both 'resources' and 'investment' are under the main heading 'Resources'	World Bank supporting a safety net for most vulnerable groups through income support (TASAFI ^b launched July 2012) in Tanzania Programmes to produce fertilisers started with Minjingu fertiliser factory currently supplying to Kenya and Tanzania markets Harmonisation of seed policies in EAC Partner States almost done Tanzania imports 75 per cent of improved seeds from, mostly, Kenya (S-S co-operation)

(continued)

Table 5.6 Agreed intervention areas for agriculture, food, nutritional security^a (continued)

Objective	Indicators proposed	Some of the interventions in East Africa
Implement irrigation schemes with a view to strengthening sustainable agriculture systems, increasing agricultural production and improving food security;	AquaSTAT, FAO STAT; Agricultural Irrigated Land, World Development Indicators; The two indicators provide information on irrigation	Tanzania target to increase area irrigated from less than 400,000 ha to 1 million ha by 2017. Japan, China and Korea investments in irrigated agriculture in East Africa (Dakawa, Tanzania), Uganda (north of Lake Kioga) and Kenya (Mwea irrigation schemes)
Encourage small farmers and pastoralists to change gradually from the production of low-value to high-value products, taking into account specialisation, favourable market and infrastructural development conditions and improved access to financial and risk management	Value of Agricultural Production, FAO STAT; Agricultural Land, World Development Indicators; The above FAO and World Bank database on agricultural production will provide country-level aggregate information. But this point seems to be more of micro-level interventions	Private-public partnership (PPP) approach to uplift technology uptake through contract farming with smallholder farmers. Tanzania is piloting the use of geographical clusters to optimise supply of infrastructure (roads, electricity, water, warehouses), technical advice, finance and markets
Action by development partners	Investment; FAOSTAT; The indicator will help measure investment flows to the agricultural sector	China, India, Korea and Japan have created special funds to support the development of the agricultural sector USAID is also funding heavily in policy studies

(continued)

Table 5.6 Agreed intervention areas for agriculture, food, nutritional security^a (continued)

Objective	Indicators proposed	Some of the interventions in East Africa
Deliver on commitments made to achieve global food security and sustainable agricultural development, and provide adequate and predictable resources through bilateral and multilateral channels, including the commitments set out in the L'Aquila initiative on global food security; Support efforts aimed at increasing agricultural production and productivity;	Food Production Index, World Development Indicators; Food supply data, FAO STAT; Food Hunger MAP, FAO STAT; The three indicators provide information on agricultural production as well as on food hunger	Donor Joint Assistance Strategy in place in Uganda and Tanzania; follow the Paris/Rome declarations on donor harmonisation. Still challenge with US which doesn't follow the system, and channel funds direct to civil society organisations and the private sector
Support efforts aimed at increasing agricultural production and productivity;	Investment, FAOSTAT; The indicator captures investment in the agricultural sector	Donor support in all countries (Tanzania, through SAGCOT for PPP; research funding by China, DFID, WB, Korea)
Provide resources to the relevant United Nations agencies to expand and enhance food assistance and safety net programmes to address hunger and malnutrition, based on needs	Food Hunger Map, FAOSTAT; This provides information on the location of food hunger	WFP buying from Tanzania almost 200,000 tons of maize per year

^a Template based on paper prepared by ODI for the Commonwealth Secretariat in preparation for the LDC IV Monitor project meeting in Dhaka, Bangladesh (7–9 September 2012).

^b Tanzania Social Action Fund, phase II. To implement 'small cash transfer' programme based on experiences of Ethiopia and Bangladesh to support most vulnerable rural households

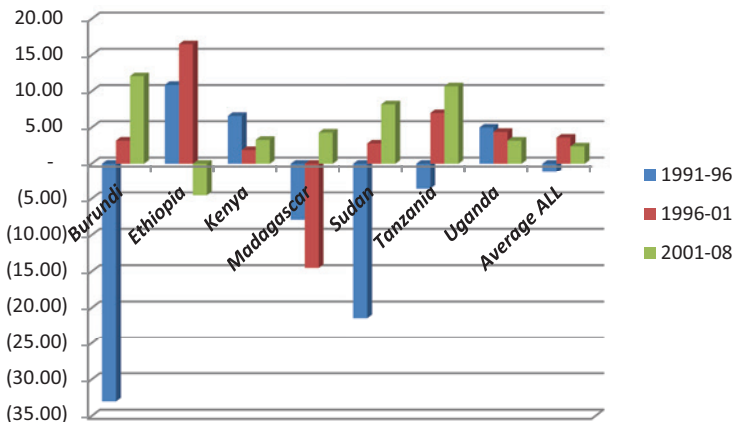
years. The LDCs view agricultural subsidies as one of the factors that make their commodities non-competitive in the global market. As developed countries provide subsidies to their farmers and traders, their goods tend to become cheaper than those produced in the LDCs. Elimination of such would thus imply that a ‘level playing field’ would be created that would enable traders and farmers from both the developed countries and the LDCs to compete.

5.3.3 Anecdotal evidence of impact of support in agricultural research in East Africa

One of the key pillars of CAADP is to increase investment in research, extension, education and training as a way of enhancing agricultural production and productivity on the continent (FARA 2006). As a follow-up to the 2003 Maputo Declaration, the CAADP Ministerial Council for Science and Technology resolved in 2006 that African countries should strive to allocate at least 1 per cent of their GDP to research and development. Looking at the cluster of time periods 1991–96, 1996–2001 and 2001–08, it can be seen that some countries (Tanzania, Sudan, Madagascar, Burundi) made some efforts to increase expenditure on R&D relative to previous time periods (Figure 5.2).

However, if the measure of intensity of investment in R&D is used, which is a proportion of expenditure on agricultural R&D to the total budget, it is seen that Burundi managed to invest an average of 1.8 per cent and Uganda 1.2 per cent (Figure 5.3). Some countries, such as Tanzania, invested about 0.5 per cent, while Sudan invested only 0.3 per cent of its GDP to R&D (ASARECA et al. 2011). Uganda seems to have made the highest leap towards meeting the benchmark ratio, having improved from an average of 0.5 in 1991 to about 1.2 per cent in 2008. These achievements were due, amongst other reasons, to an increase in donor funding

Figure 5.2 Average percentage of increase in public expenditure on research and development, 1991–2008



Source: ASARECA et al. (2011), Table 1A

and government loans as well as growth in government funding to the National Agricultural Research Organisation (Uganda) (NARO) after 2005.

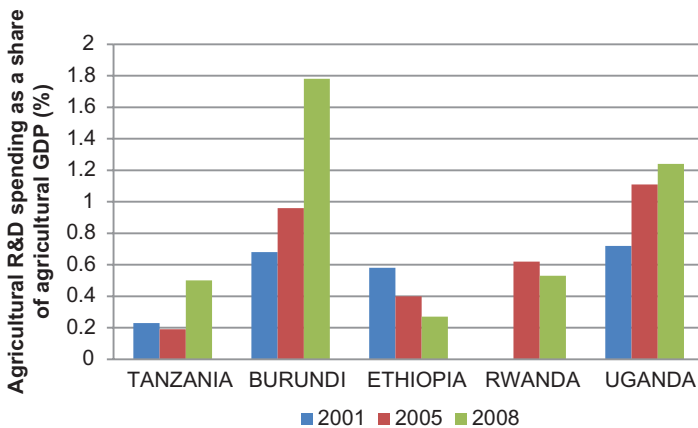
Another useful benchmark worth using in monitoring the commitment to R&D relates to the deployment of skilled manpower to manage the NARS. The region has only one-third of the number of researchers in the whole of Sub-Saharan Africa. Most of the countries have been recording a gradual increase in the stock of researchers, with the exception of Burundi, whose number has decreased from 130 to 98 between the periods 1991–95 and 2001–05; out of these 98 researchers, only two of them, who are employed in the principal agricultural research institute (ISABU), hold PhDs (Curtis 2013).

Ethiopia has the highest number of researchers amongst the East Africa LDC countries. However, Ethiopia’s agricultural research staffing is viewed as amongst the least qualified in Africa in terms of postgraduate degree (ASTI 2010, Flaherty et al. 2010b). It will be interesting to see if these positive changes in investment in human resource manpower will be translated into enhanced productivity of different commodities.

In Uganda, investments in public agricultural R&D quadrupled during 2000–08, primarily as a result of increased donor funding and development bank loans, along with growth in government funding to NARO after 2005. Human resource capacity began to rebound in the mid-2000s after a period of falling staffing levels due to losses at NARO in response to low salaries and a freeze in hiring new staff.

However, in 2009, the East African Agricultural Productivity Programme was conceived by the governments of Ethiopia, Tanzania, Uganda and Kenya (not an LDC), in partnership with ASARECA and the World Bank.¹⁴ The sole aim of this project is to establish Regional Centres of Excellence (RCoEs) for agricultural research in commodities identified as being of sub-regional importance for food

Figure 5.3 Intensity of agricultural R&D spending by country for 2001, 2005 and 2008



Source: ASARECA et al. (2011)

security. In this case, Tanzania became the centre for rice, Uganda for cassava and Ethiopia for wheat.¹⁵

5.3.4 Suggested indicators for monitoring investment in agricultural research

Information for measuring investment in the agricultural sector and its contribution to GDP and livelihoods is easily captured and reported, and includes the proportion of a country's budget devoted to agriculture (Abuja Declaration for Africa set it at 10 per cent; IPoA set the growth rate of the sector at 7 per cent), recommended use of fertiliser per hectare (New Partnership for Africa's Development (NEPAD)'s target is 50 kg/ha by 2020, from the current level of less than 10 kg/ha (Tanzania: 9 kg/ha)). In order to monitor the changes in agricultural productivity, LDC IV Monitor will have to use a set of commodities and identify their respective baseline position (2011) for progressive monitoring of changes over time as a result of the investments to be made in the sector, and in R&D in particular. This will include measuring process and input indicators that contribute to changes in productivity. For example, it will be useful to monitor not only the investments in human skills (number of researchers and extension workers) but also the number of facilities such as laboratories, which are key to meeting sanitary and phytosanitary standards (SPS) requirements for enhancing trade among countries. Relative agricultural prices between LDCs can also be considered as good measures of food accessibility. To understand the changes in market access on agriculture, the proportion of agricultural sales and exports to the total production can be evaluated to understand changes in the volume and value of agricultural exports amongst the LDCs (see Table 5.7 for a description of the benchmark indicators).

Mechanisation in agriculture needs also to be monitored as it depicts the potentiality that lies in the agricultural sector that facilitates food and export demands of a country. To monitor, indicators such as amount of fertiliser used, ratio of total area irrigated, rate of improved seed variety and number of tractor-hours used may be considered.

Table 5.7 Number of skilled manpower for research in East Africa LDCs^a

Country	1991–95	1996–2000	2001–05	2008
Burundi	130	61	69	98
Eritrea	Na	69	90	122
Ethiopia	425	610	1,028	1,318
Madagascar	189	204	209	212
Sudan	539	678	913	1,020
Tanzania	526	523	639	674
Uganda	238	257	240	299
Sub-total	2,047	2,402	3,188	3,743
Sub-Saharan Africa total	9,001	9,369	10,404	12,102

^a Excluding Kenya as a non-LDC.

Source: ASARECA et al. (2011), Table 1B

Overall, it would be important to focus on a thorough analysis of the capacity and capabilities of the agricultural research systems in the LDCs, to understand the transfer and generation of technology in agriculture and then to assess the intermediate and long-term impacts of such initiatives.

Some of the preliminary benchmark indicators for the East African countries could be based on information such as commitments made to agriculture and to agricultural research in particular (Table 5.8). The targeting of donor funds to the sector could also be a useful indicator to measure the commitment by the international community to support productivity enhancement. For example, according to OECD (2009), the share of Development Assistance Committee (DAC) aid earmarked for agriculture in Africa declined from 17 per cent in the late 1980s to about 6 per cent in the mid-2000s, although it started to improve again in 2007. The main donors were USA (22 per cent), Japan (20 per cent), France (11 per cent) and EU institutions (11 per cent) (Hearn 2010).

5.4 Some preliminary results on productivity changes

There is no shortage of anecdotal examples of success stories in increased productivity and the application of value addition with respect to both crops and livestock in the region. As a result of reinforcing the partnership between government and the private sector in supporting smallholder farmers, a pilot programme in Kilombero, Tanzania,

Table 5.8 Description of the benchmark indicators

Level of indicator	Indicator	Responsible	Source of data
International	Resource committed to agricultural research Reforms in the international commodity trade system	Development partners	UN system and other multilaterals
National macro-economic	Proportion of budget to agriculture sector to the total national budget	Governments	Budget books
Sector level	Proportion of allocated budget to research and development Proportion of agricultural spending allocated to science and technology	Ministries responsible for agriculture/livestock/fisheries	Ministry budget expenditure tracking reports
Manpower	Number of skilled manpower (researchers, extension workers)	As above	
Systems	Effective national research systems (and extension system)	Government and ministries	Government
Commodity	Yield measures: weight per unit area; per unit livestock; returns per manhour; profitability measures	Farm level surveys; institutions	Government

Table 5.9 Some of the preliminary benchmark indicators for the East African countries

	Tanzania	Uganda	Rwanda	Burundi	Malawi	Ethiopia	Average	Sub-Saharan Africa
International commitments								
Resource (USD million) committed to agricultural research	n/a	n/a	n/a	n/a	n/a	n/a	0.2 per cent of GNP ^a	0.2 per cent of GNP ^a
National macro economy								
Food inflation rate (2012)	Above 10 per cent	Below 10 per cent	Below 10 per cent	Above 10 per cent	Below 10 per cent	Below 10 per cent	Above 10 per cent	Above 10 per cent
Proportion of agriculture sector budget, national (2011/12) ^b	6.8 per cent	5 per cent	6.3 per cent	10.9 per cent	12.6 per cent	8.8 per cent	6 per cent	5 per cent
Sector level								
Proportion of budget allocated to research and development (2011/12)	0.48 per cent of GDP	1.10 per cent of GDP	n/a	n/a	1.70 per cent of GDP	0.24 per cent of GDP	Above 1 per cent of GDP	Above 1 per cent of GDP
Manpower: number of skilled manpower (researchers, extension workers) per million agricultural labourers (2008) ^c	42	28	27 ^d	32	n/a	43	Poor	70

Note: 'n/a: not applicable.'

^a Based on calculations for all LDCs of about USD 0.791 billion per country over the eight-year period or about USD 99 million per country per year.

^b Respective countries' national budgets.

^c ASARECA (2011).

^d 2007 figures

managed to raise paddy yields from less than 2 tons per hectare to about 8 tons per hectare in peasant farmers' plots, compared to 5 tons per hectare obtained in large-scale commercial farms. There are also success stories documented by ASARECA from supported programmes in Ethiopia (fodder productivity and feedlot management for improved milk production), Madagascar and Uganda (cassava disease control and processing of cassava), Tanzania (handling of beef and dairy products) and Sudan (sorghum productivity and processing of flour).

One of the underlying global phenomena, which seems to have undermined potential successes in increasing agricultural profitability, and by extension frustrated efforts by smallholder farmers to invest in fertilisers application, has been the global economic crisis, which has invariably affected prices of fertiliser and the fuel cost of transport. In Tanzania, the prices of fertilisers have tripled between the 2008–09 and 2011–12 seasons from an average of TZS 25,000 to TZS 70,000 per 50 kg bag, while the retail farm-gate prices for maize remained stuck at between TZS 35,000 and 45,000 per 100 kg bag. Meanwhile, the consumer prices in cities doubled, mainly attributed to rising transport costs and increased demand for cereals in the horn of Africa where some food was being taken from Tanzania. Some of the East Africa countries (e.g. Rwanda and Burundi) have used less fertiliser in the past five years, although they registered stable or increased yields per hectare (see Table 5.9). However, attributed to good and favourable weather conditions over time, the region has been experiencing reasonably positive cereal yields and livestock production (see Tables 5.10 and 5.11) during the same period; this is also due to the continuing efforts made by the governments and donor community. Malawi, Ethiopia and Uganda seem to have

Table 5.10 Cereal yield (kg/ha)

	2005	2006	2007	2008	2009	2010	2011
Tanzania	1,100	1,339	1,449	1,325	1,110	1,647	1,361
Uganda	1,532	1,523	1,525	1,538	2,063	1,997	2,099
Burundi	1,328	1,298	1,371	1,318	1,319	1,322	1,326
Rwanda	1,184	1,118	1,018	1,422	1,653	1,683	1,950
Ethiopia	1,362	1,652	1,392	1,279	1,748	1,930	1,761
Malawi	778	1,445	2,467	1,599	2,124	1,907	2,094

Source: World Bank data 2012 from <http://data.worldbank.org/indicator/AG.YLD.CREL.KG>

Table 5.11 Fertiliser consumption (kg/ha)

	2005	2006	2007	2008	2009
Tanzania	5.9	5.5	5.3	5.5	8.7
Uganda	1.0	1.3	1.2	3.0	2.1
Burundi	36	33	19	22	16
Rwanda	30	34	74	83	11
Ethiopia	10.8	11.1	16.0	7.2	17.7
Malawi	32.5	40.5	41.7	31.8	28.5

Note: 'n/a: not applicable.'

Source: World Bank data 2012 from <http://data.worldbank.org/indicator/AG.YLD.CREL.KG>

Table 5.12 Livestock production index 2005–10

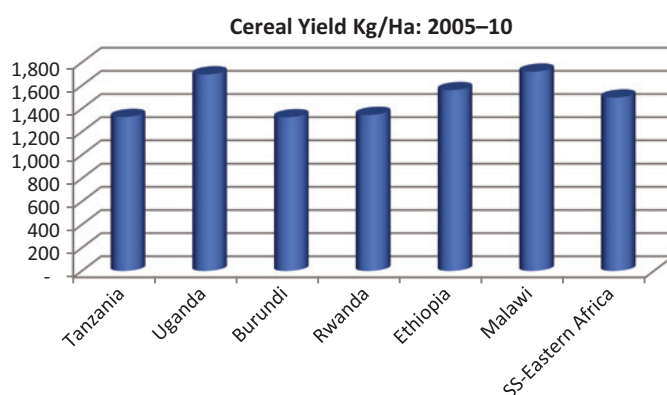
	2005	2006	2007	2008	2009	2010
Tanzania	101.4	103.8	103.9	106.4	109.0	111.3
Uganda	100.8	101.3	105.3	107.6	111.7	114.5
Burundi	101.7	114.7	110.4	119.1	109.9	115.8
Rwanda	96.8	108.9	117.6	121.4	123	135.6
Ethiopia	96.7	105.2	108.6	120.2	115.1	118.8
Malawi	95.3	107.1	123.8	144.1	159.5	159.1

Source: FAO (2013).

performed above the average of the selected group of East Africa countries (Figure 5.4) in improving cereal yields per hectare as a result of almost doubling fertiliser use per unit area. Nevertheless, it would appear that despite the improvements in productivity, all the countries in East Africa have suffered from food price-induced inflation rates, which hovered on double-digit ranges for most of 2011 and 2012, thus undermining the impact from gains made in GDP growth¹⁶ as it failed to translate to improved livelihoods among the region's citizens.

5.5 Conclusion

There has been, in most recent years, some marked increase in donor support to improve agricultural production through yield-enhancing interventions and the application of sustainable management approaches for the stock of natural resources in the region. There has also been an awakening by LDC governments to the fact that the success in reducing both food and income poverty will have to come from productivity improvements along the commodity value chains in the agricultural sector. Consequently, a number of programmes and projects, both national and multi-in coverage, have been mooted and implemented. This marks significant improvements towards the implementation of the set IPoA goals by both the developed and the developing countries.

Figure 5.4 Average cereal yield in kg/ha in selected East African countries

Source: World Bank data 2012 from <http://data.worldbank.org/indicator/AG.YLD.CREL.KG>

However, there is room for improvement in the approach used by most donors in supporting African countries. It is observed that most of the interventions to support agricultural productivity and rural development in the region are undertaken as stand-alone projects by development partners without seeking synergy to achieve a harmonised intervention.¹⁷ This 'lone ranger' approach to donor support has persisted despite an agreed code of conduct as stipulated in the Paris and Rome declarations on harmonising donor support. There has also been some positive development under CAADP for African countries to prepare investment plans that complement each other, with countries such as Tanzania (URT 2011), Malawi, Ethiopia and Rwanda complying by the end of 2012. That notwithstanding, there seems to be little progress in implementing common agricultural development strategies and investments in research, including developing and strengthening centres of excellence to be shared among the East African states. Each country has therefore proceeded to develop and use its own infrastructural resources in the absence of a system to pool scarce resources from either internal sources or donors. This is an obvious weak link in the expected South–South co-operation for development management. However, emerging Africa's home-grown initiatives such as AGRA offer some hope of cross-fertilisation of ideas and practical experiences in applied research for promoting a green revolution in Africa through support and promotion of use of improved seed, proper soil health management, water management, value addition and marketing; and in ensuring that African governments adopt conducive policies that link research with extension and promote sustainable utilisation of land, forest and water resources.

It is observed that although the US government, through its FtF initiative, has committed a significant amount of funds to support the agriculture sector in Tanzania, for example, the channel of disbursement, unlike other donors, gives preference to US entities to manage programmes, which is likely to dilute the intended impact based on ownership of processes and consequences by recipients. This is due to the fact that the benefit of 'learning by doing' is hijacked by donor-based business interests that clinch contracts to manage 'development programmes' in Africa outside the already established public and private sector systems. This approach is not very different from that pursued in the 1970s and 1980s, when development aid was packaged in technical assistance of foreign experts embedded in ministries and departments, which resulted in minimal transfer of skills.¹⁸

Among the proposed indicators for monitoring agricultural productivity are changes in yields from crops, livestock, fisheries and forestry products, as a consequence of: (i) investment levels in the sector (such as public sector spending, percentage of budget allocation to the sector) and donor funding to improve research infrastructure, etc.; and (ii) improved human capital in terms of skilled manpower for research and extension, institutional frameworks for managing the agricultural sector and, in particular, NARS. Although this report looks critically at the support to NARS, it should not create the illusion that R&D alone can do what is ultimately needed for the sector to make a realistic contribution to improving the food security situation in Africa and other LDCs. Governments and donors will certainly have to pay attention

to other supply-side and demand-side facilitating factors, including infrastructure for transport, post-harvest handling (e.g. storage), marketing, electricity (for processing and cold storage), financing and conducive policies for domestic and international trading systems.

Notes

- 1 This chapter was written by Hoseana Bohela Lunogelo and Solomon Baregu from the Economic and Social Research Foundation (ESRF). ESRF is grateful for the generous support from the Commonwealth Secretariat, UNCTAD, CRDB Bank Plc Tanzania, and all the organisations involved in support of this work. Also highly appreciated are the contributions provided by both internal and external reviewers, specifically Ms Catherine Simonet of FERDI, Dr Ally Mbaye of CREA, Ms Lisa Borgatti from UNCTAD and Dr Rakesh Saksena from IRMA. It is from their thoughtful and in-depth review of this chapter that we have successfully accomplished the desired goal.
- 2 Described by the United Nations as ‘the poorest and weakest segment of the international community’ whose economic and social development presents a major challenge both for them and for their development partners.
- 3 When the concept of LDCs was first articulated in 1971, the list of LDCs comprised 25 countries, but has grown to the current list of 48 countries (and in 2011 to 49 after the creation of Republic of South Sudan). Since its listing as a group, only three countries have been able to graduate.
- 4 Effectively 49 when the newly independent Republic of South Sudan is included.
- 5 The newly created state of the Republic of South Sudan has applied for membership to the EAC.
- 6 President Kikwete, 5 September 2012, during his acceptance speech after being awarded the Leadership Award in Promoting Food Security in the region offered by the Food, Agriculture and Natural Resources Policy Analysis Network (FANRPAN).
- 7 Ibid.
- 8 Tanzania Association of Horticultural Growers.
- 9 World Vision and ADRA (2005), Rwanda Livelihood Security Program Development Assistance Programme (2005–2009). Baseline Survey Report by Agrisystems (EA) Ltd: Dr Lunogelo.
- 10 See: www.itezimbere.com/run-grow/3111/rwanda-receives-usd-80millions-rural-development/
- 11 See: www.acdi-cida.gc.ca/acdi-cida/contributions.nsf/Eng/BE3F0092D508B07985257A0F005FF0FF
- 12 According to Evans and Fischer (Biodiversity et al. 2012), several measures can be applied: economic yields, technical yields, experimental yields, modelled yields.
- 13 FANRPAN (2012), Annual High Level Stakeholder Conference and General Meeting, Dar es Salaam (3 September 2012).
- 14 The World Bank/IDA support was not less than USD 90 million.
- 15 See also: www.asareca.org/?q=content/eaapp
- 16 GDP grew at between 5 and 6.5 per cent per annum for most of the countries.
- 17 With the exception of the Lake Victoria Environmental Management Programme (LVEMP-II by the World Bank), the Lake Victoria Fisheries Management Plan (European Union) under the Lake Victoria Fisheries Organisation (LVFO) and regional food security monitoring and early warning system (funded by FAO, USAID and GIZ).
- 18 A similar fear has been expressed with respect to the approach used by Chinese companies working in Africa, which prefer bringing their own people in executing projects.

References

- AfDB (2011), *Appraisal Report, Water Supply and Sanitation Programme (WSSP), Uganda*.
- ASARECA (2012), *Impact Assessment of Completed Programmes in East and Central Africa countries supported by ASARECA*, prepared by Cardno Emerging Markets, December 2012.

- ASARECA, ASTI and IFPRI. (2011), *A Benchmark of Agricultural Research Investment and Capacity Trends across ASARECA Countries*, prepared by Nienke Beintema for ASARECA, ASTI and IFPRI.
- ASTI (2010), *Ethiopia: Recent Developments in Agricultural Research*, Country note, 2010.
- Biodiversity, CGIAR Consortium, FAO, IFAD, IFPRI, IICA, OECD, UNCTAD, UN High Level Task Force on the Food Security Crisis, WFP, World Bank and WTO (2012), *Sustainable Agricultural Productivity Growth and Bridging the Gap for Small Family Farms*, Interagency Report to the Mexican G20 Presidency. Contributions by Biodiversity, CGIAR Consortium, FAO, IFPRI, JICA, OECD, UNCTAD, UN High Level Task Force on the Food Security Crisis, WFP, World Bank and WTO. Final Draft, 27 April and Final Report, 20 June.
- Curtis, M (2013), *Improving African Agriculture Spending: Budget Analysis of Burundi, Ghana, Zambia, Kenya and Sierra Leone*, Curtis research, April 2013.
- FANRPAN (2012), 'Annual High Level Stakeholder Conference and General Meeting', Dar es Salaam.
- FAO (2013), Material available at: www.fao.org/worldfoodsituation/
- FARA (2006), *Framework for African Agricultural Productivity/Cadre pour la productivité agricole en Afrique*, Forum for Agricultural Research in Africa, Accra.
- Flaherty, K and D Lwezaura (2010), *Tanzania: Recent Developments in Agricultural Research*, ASTI Country Note, International Food Policy Research Institute and Department of Research and Development.
- Flaherty, K, D Kitone and N Beintema (2010a), *Uganda: Recent Developments in Agricultural Research*, ASTI Country Note, International Food Policy Research Institute and National Agricultural Research Organisation.
- Flaherty, K, F Kelemework and K Kelemu (2010b), *Ethiopia: Recent Developments in Agricultural Research*, ASTI Country Note, International Food Policy Research Institute and Ethiopian Institute of Agricultural Research.
- Government of Canada (online), Material available at: www.acdi-cida.gc.ca/acdi-cida/contributions.nsf/Eng/BE3F0092D508B07985257A0F005FF0FF (accessed 25 September 2013).
- Hearn, B, V Koc, J Piesse and C Thirtle (2010), *A Preliminary Analysis of European Assistance to Agriculture in sub-Saharan Africa*, Imperial College, London, May.
- IFAD (2009), *Country Programme Evaluation: Ethiopia*, Report No. 2045-ET.
- IFAD (2011), *Country Programme Evaluation: Republic of Rwanda*, Report No. 2434-RW.
- Itezimbere (online), Material available at: www.itezimbere.com/run-grow/3111/rwanda-receives-usd-80millions-rural-development/ (accessed 25th September 2013).
- MAFSC (2012), Agriculture Sector Development Statistics Database, Dar es Salaam.
- OECD (2009), 'Measuring Aid to Agriculture', available at: www.oecd.org/dac/stat/agriculture.
- Stads, GJ and L Ndimurirwo (2010), *Burundi: Recent Developments in Agricultural Research*, ASTI Country Note, International Food Policy Research Institute and Burundi Institute of Agronomic Sciences.
- UN (2001), 'Report to the third UN conference on the least developed countries', 14–20 May 2001, Brussels, Belgium.

- UNCTAD (1990), 'Paris declaration and programme of action for the LDCs in the 1990s', Paris, 3–14 September 1990 (internet edition: ref. UNCTAD/RDP/58).
- UNCTAD (2011), *The Least Developed Countries Report 2011: The Potential of South–South Cooperation for Inclusive and Sustainable Development*, United Nations, New York
- United Republic of Tanzania (URT) (2011), *Tanzania Agriculture and Food Security Investment Plan (TAFSIP)*, Ministry of Food Security and Cooperatives (MAFSC), prepared as part of CAADP Implementation to be coordinated under the Agricultural Sector Development Programme (ASDP).
- Wen Jiabao, W (2012), 'Deepen result-oriented cooperation and promote common development', a keynote speech at the opening ceremony of the Fourth Conference of Chinese and African Entrepreneurs by Chinese Premier Wen Jiabao, July 18, 2012, Beijing (Xinhua News Agency).
- World Bank (2012), Material available at: <http://data.worldbank.org/indicator/AG.YLD.CREL.KG> (accessed 28 August 2013).
- World Vision and ADRA (2005), 'Rwanda Livelihood Security Program Development Assistance Programme (2005–2009)', Baseline Survey Report by Agrisystems (EA) Ltd.