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AGRICULTURE, ECONOMIC GROWTH AND POVERTY REDUCTION

Mats Hårsmar

Agriculture, Economic Growth and Poverty Reduction

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Working Paper, April 2022

to

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Foreword by EBA

How to achieve poverty reduction, including support through development cooperation, has long been discussed and debated. A consensus has emerged around the centrality of economic growth, with scholars weighting differently the role of redistribution. However, the character of growth will also determine whether growth is "pro-poor". Thus, the way economic growth is achieved decides the extent to which it can reduce poverty.

Over centuries, a main development model has been for nations to start with growth in the agricultural sector. Subsequent economic transformation has later led to the expansion of other sectors, such as manufacturing and services. This "agriculture-first" model has been followed by all of today's rich countries.

But things have changed with increased globalisation: decreasing transport and information costs, increased automation, trade and shifting investment patterns. Can today's poor countries still rely on agricultural growth as a step in their development processes? And is growth in agricultural sectors still important to poverty reduction?

This paper investigates such issues, while discussing the agriculture-first hypothesis and how it is treated in current academic literature. The author concludes that agriculture still seems to be the major path for poverty reduction in poor countries. At the same time, agricultural sector development has, since long, had a fairly hidden role in Swedish development cooperation. It is therefore relevant to reinvigorate the discussion on the role of the agricultural sector in Swedish development cooperation.

We hope this working paper will be of interest to policy and decision makers in the Swedish aid system, in particular when formulating and operationalising cooperation strategies with partner countries, as well as to anyone interested in the role of agriculture in economic development.

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Stockholm, April 2022

Jan Pettersson, Managing Director

Sammanfattning

Ekonomhistoriker är i allmänhet klara över den centrala roll som jordbruk har spelat och spelar för ekonomisk tillväxt, som ett första steg för en nations ekonomiska utveckling. Denna hypotes, 'först jordbruksutveckling', har varit ett nyckeltema för ekonomiskt tänkande i århundraden. Men nutidens villkor för ekonomisk tillväxt och för nationers utveckling har förändrats. Handel, transport, teknologisk utveckling har tillsammans med förändrade internationella regler för handel och investeringar, både öppnat för och tvingat fram nya former för ekonomisk integration på regional och global nivå.

Ekonomisk tillväxt är ett nödvändigt, men inte tillräckligt villkor för fattigdomsminskning. Dagens rika länder har generellt sett passerat ett tidigt stadium av jordbruksutveckling, vilket har möjliggjort efterföljande tillväxt i tillverkningsindustri och tjänstesektorer. Men det är inte uppenbart att samma möjligheter finns för dagens låginkomstländer. Trots det finns starka indikationer på att tillväxt baserad på jordbrukssektorn leder till starkare fattigdomsminskningar än tillväxt i andra sektorer i låginkomstländer. Frågan är därför om tillväxt i jordbrukssektorn förblir den bästa vägen för att hållbart minska fattigdom i dessa länder?

Denna studie sammanfattar den akademiska kritiken mot ”jordbruksutveckling först”-hypotesen och den debatt som följt i dess spår. Dessutom beskrivs och diskuteras den huvudsakliga alternativa hypotesen för hur fattigdomsminskande ekonomisk tillväxt kan skapas i låginkomstländer – genom en aktiv industripolitik. Det visar sig att flertalet låginkomstländer fortsatt ställer upp ökad produktivitet inom jordbruket som en viktig väg till ekonomisk utveckling. Och ur de akademiska diskussionerna växer en samsyn fram kring att ”jordbruksutveckling först” fortfarande är den giltiga hypotesen. En mängd olika forskningsmetoder har använts för att testa hypotesen, och i huvudsak lett fram till samstämmiga resultat.

Med ett särskilt fokus på Afrika söder om Sahara, där flertalet låginkomstländer finns, kan följande slutsatser dras:

- Även om alla frågor ännu inte är utredda i detalj och utmaningar kvarstår så är jordbruk centralt för ekonomisk tillväxt i låginkomstländer i Afrika söder om Sahara och sektorn har avsevärd potential att kunna växa där.

Som Diao and Thurlow (2012) uttrycker det: ”Jordbruk kan inte utelämnas ur den nuvarande utvecklingsmodellen.”…”Att därför tillskriva en mer aktiv roll för jordbruket i Afrikas utvecklingsprocess är motiverat ur ett tillväxtperspektiv.” (Ibid, p. 401, författarens översättning).

- Odling av stapelgrödor erbjuder den mer fattigdomsminskande vägen, även om exportgrödor producerade av småodlare också har viss potential. Boskapsuppfödning är också viktigt. Orsaken är att dessa aktiviteter har betydligt större multiplikatoreffekter än vad odling av exportgrödor har. De är med andra ord mer effektiva för att generera ekonomisk tillväxt. Dessutom har de närmast genomgående högre fattigdomselasticiteter, vilket innebär att de är bättre på att minska fattigdomen.
- Enligt flertalet observatörer är den fattigdomsminskande potentialen i jordbruksutveckling i Afrika söder om Sahara låginkomstländer så stark att offentligt stöd till jordbrukssektorn med stor sannolikhet är mer kostnadseffektivt än offentligt stöd till tillväxt i andra sektorer.
- Givet den rådande demografiska strukturen i många afrikanska länder, och den begränsade tillgången till alternativ produktiv sysselsättning, så bör produktiviteten i jordbruket i första hand ökas genom tekniker som sparar på land, och alltså höjer avkastningen i jordbruket.

Studien fortsätter med att beskriva karaktären på jordbrukssektorer i Afrika söder om Sahara, med dess dominerande inslag av småodlare, vilka i stor utsträckning är inriktade mot självförsörjning, med stora inslag av inkomst-diversifiering. Mot bakgrund av hög variation i agro-ekologiska förutsättningar, i hög grad näringsfattiga jordar och brist på vatten så varierar förutsättningarna för odling starkt mellan och inom länder. Lösningar behöver vara lokalt anpassade och utformade.

Produktivitet ökar i afrikanskt jordbruk, om än från en låg nivå. Den är fortfarande väldigt låg i jämförelse med nivåer på andra håll av världen. Men trots de huvudsakligen negativa bilderna av tillväxtmöjligheter för jordbruket i Afrika söder om Sahara så visar historiska fakta att tillväxt har skett tidigare. En tidig ’grön revolution’ med högavkastande majssorter spridda över södra och östra Afrika startade på 1960-talet. Den kvästes dock när ekonomiska reformer började genomföras på 1980-talet. Höga tillväxttal noterades under början av 2000-talet. Exemplen på innovation inom afrikanskt jordbruk är också talrika. Dock har inte det nödvändiga

stödet från stater blivit verklighet i tillräcklig utsträckning. Svagheter och sårbarhet hos stater och regeringar i Afrika söder om Sahara tycks vara en avgörande begränsande faktor.

Till särdragen i att stödja tillväxten av småjordbruk i Afrika söder om Sahara hör också frågan om hur en övergång från det informella till det formella ska kunna ske. Det har observerats att afrikanska bönder i många situationer investerar i relationer, snarare än i ökad jordbruksproduktion. Orsakerna bakom ett sådant beteende är omstridda: beror det på föregripande riskhanterings-strategier, eller handlar det om något som är mer integrerat i kultur och normer? Oavsett vilket tycks behovet av sociala trygghetssystem, annat än att enbart förlita sig på relationer, vara viktigt för att investeringar i småskaligt jordbruk ska komma till stånd.

Summary

Researchers in the tradition of economic history are generally clear on the key role of agriculture in economic growth, as a first element in the economic development of nations. This "agriculture-first" hypothesis has been a core theme in economic thinking over centuries. However, current preconditions for economic growth and for national economic development have changed. Trade, transportation, and technological progress, together with shifting international rules for trade and investment, have both opened for, and forced new ways of economic integration at regional and global levels.

Economic growth is a necessary, but not sufficient condition for poverty reduction. Today's rich countries have generally passed through an early phase of agricultural growth, which has enabled subsequent growth in their manufacturing and service sectors. It is, however, not obvious that the same options exist or are ideal for today's low-income countries. Still, strong indications are that growth in the agricultural sector in low-income countries leads to stronger reductions in poverty than growth in any other economic sector. Thus, the question is whether growth in the agricultural sector remains the best option to sustainably reduce poverty in low-income countries?

This paper summarizes the academic critique against the 'agriculture-first' hypothesis and the debate that has ensued. Furthermore, the main alternative hypothesis for how economic, poverty-reducing, growth ought to be stimulated in low-income countries – the industrial policies path – is described and discussed. It turns out that most low-income countries still continue to pursue increased agricultural productivity as a major area for their economic development. And from the academic debates, consensus emerges around the continued validity of the agriculture-first hypothesis. A set of various research methods have been used in testing the thesis and arrived at similar conclusions. With a particular focus on sub-Saharan Africa (SSA), where most current low-income countries are found, the following points may be made:

- Even though all issues are not fully settled in detail and challenges remain, agriculture is central to economic growth in low-income SSA countries, and the sector has considerable growth potential there.

In the words of Diao and Thurlow (2012): "Agriculture cannot be excluded from the current development model."…"Thus, assigning a more active role to agriculture in Africa's development process is justified from a growth perspective." (Ibid, p. 401).

- Cultivation of staple crops presents the more poverty reducing path, even though export crops grown by small-holders also may have some potential. Livestock breeding is also important. The reason is that these activities have much higher multiplier effects than export crops do, which implies that they are more effective at generating economic growth. In addition, in almost all the cases they also have higher poverty elasticities, meaning that they are more effective at reducing poverty.
- According to most observers, the poverty reducing potential of agriculture growth in SSA low-income countries is so strong that public support to agriculture is highly likely also to be more cost-effective than public support to non-agricultural growth.
- Given the prevailing demographic structure in many SSA countries, and the limited access to alternative productive employment, agricultural productivity ought to be raised mainly through land saving technologies and raised yields.

The paper continues to describe the character of agricultural sectors in SSA, with its dominance of small-holder, largely subsistence farming, with high degrees of income diversification. Given high variation in agro-ecologic conditions, often poor soil quality and water scarcity, general conditions for farming varies a lot between countries and regions. Solutions need to be locally specific.

Productivity in SSA agriculture is increasing, albeit from a very low level. It remains very low in comparison with other regions in the world. But despite generally negative perceptions of growth opportunities for SSA agriculture, historical records show that growth has occurred. An early 'green revolution' with high yielding maize diffused over southern and eastern Africa started in the 1960s but was nipped in the bud with economic reforms in the 1980s. High growth records were also achieved early in the 21st century. Examples of agricultural innovations are also common. However, needed government support has not materialised to the extent required. The weakness and fragility of states and governments in SSA seem to be a key limiting factor.

To the specificities of supporting growth of small-holder agriculture in SSA also comes the issue of how to move from the informal to the formal. It has been observed that peasants in many situations invest in relations, rather than in increased agricultural production. The reasons behind such behaviour are contested: is it an ex-ante risk behaviour or something that is more ingrained in culture and norms? Regardless of which, the need for social protection systems other than relying on relations seems important for investments in small-holder agriculture to occur.

Introduction

For decades, the role of agriculture in economic growth and poverty reduction has been widely discussed. Conclusions from such debates have vast implications for Swedish development cooperation. Still, the role of agriculture is surprisingly downplayed in Swedish policy and strategy documents. Interventions in the sector are underreported, according to a forthcoming EBA report. This has been a prime motivation for this paper.

When incomes rise, households tend to spend lower shares of their incomes on buying food. They also tend to ask for more diversified diets as their budgets increase. Translated into larger-scale processes, this implies that economic growth and increasing incomes are accompanied by the cultivation of more non-staple crops in agriculture, and growth of agribusiness and processed food as shares of food production. The share of agriculture in national economies also tends to decrease as national economies grow.

Even though such correlations are common to patterns of national development, it is not evident that they are predictive for the current situation in low-income countries with widespread poverty. This paper will dwell on issues about the role of agriculture in socio-economic development and poverty reduction in low-income countries. Is agriculture important for economic growth as well as for poverty reduction, in such settings? Are specific forms of agricultural development more poverty reducing than others? May public support to agricultural growth be a cost-effective way to poverty reduction?

The issue of the agricultural sector's role in poverty reduction cannot be separated from its role in relation to economic growth in low-income countries (LIC). This implies that issues related to overall economic growth in LICs, as well as relations between economic growth and poverty reduction need to be considered simultaneously. Each of these issues have generated vast research literatures, which cannot be covered in full. Instead, the objective of this paper is to capture some major theoretical and historical lines that may inform general conclusions, rather than provide detailed answers to the questions.

There is a dominant theory that puts agriculture as the first link in a chain when socio-economic development starts and evolves in LICs. In order to understand this 'agriculture-first' theory we need to look back at where these ideas came from, and how they have been shaped.

Historical perspectives on agriculture and economic growth

Researchers in the economic history tradition are generally clear on the key role of agriculture in economic growth (Thorbecke and Ouyang, 2016; Austin 2016). The issue may be placed in wider discussion on the economic development of nations. This thinking, first laid out by Adam Smith followed by subsequent variations, can be described with reference to the hierarchy of human needs. This 'natural' development model (Arrighi, 2007) imply that the evolution of national economies is understood as following well defined steps. It starts with growth in food production (agriculture, primary sector) followed by clothing and housing (manufacturing industries) continuing to develop more cultural dimensions (service sector and higher technological industry). National economic growth, it is argued, has broadly followed such a sequence – with international trade evolving gradually as economies grow stronger. The start of the process is clearly held to be development of the agricultural sector.

Against this perspective stood what Smith called an 'unnatural' or 'retrograde' growth path. Through this, mainly European countries introduced manufacturing with the support of foreign, instead of domestic, trade (Smith, Vol 1, p 405f). Earnings from foreign trade was seen by Smith as "precarious and uncertain", since merchants were not necessarily citizens of any country, and could well carry on their trade and move their capital elsewhere. Essential for enlarging the wealth of a *nation* was, according to Smith, to ensure and realise capital through the cultivation and improvement of a country's own lands. He strongly advised countries to follow the 'natural' development path, instead of the 'unnatural' one.

However, assumptions that development takes place within nation-states, that it follows a linear evolution over time and that a state should be at the core of the process were questioned early on. The 'unnatural', border-crossing, growth path was, from different perspectives, in essence promoted both by David Ricardo and Karl Marx (Ricardo, 1817, Arrighi, 2007:76). Linearity and the centrality of states has also been questioned e.g. by Schumpeter (1954) who argued that economic growth is spurred by capitalism's tendency to both destroy the social frameworks in which it is embedded and also create the conditions for the emergence of new frameworks with higher growth potential. Entrepreneurs produce

innovations that lead to this 'creative destruction'. Especially profit-oriented innovations tend to cluster in time, which creates major shifts in the economy between prosperity and depression, creating business waves.

Despite this, subsequent studies of economic growth and development have still mainly taken a nation-focused perspective. The widely used distinction between 'external' and 'internal' explanatory factors, widespread use of cross-country analyses, frameworks built on 'stages of growth' or the 'two-gap' theory are all indications of how widespread these assumptions have been during the history of development theories. Nations are the legal entities that set frameworks for markets and transactions. There are roles, specifically notable in times of crises, for nation states to serve as the confidence basis in economic systems. And nation states may in many ways intervene more directly in the economy.

Late development (dis-)advantages

Alexander Gerschenkron found it advantageous for countries not to be the first ones to develop, or more specifically not to be the first to industrialize (Gerschenkron, 1962, Amsden 1992). Advantages for such 'late development' include possibilities for countries to use and benefit from already developed technology. Countries may also adapt to already existing competitive challenges and this way better know what it takes to enter world markets. Furthermore, the position as a late developer may motivate political leaders in various ways to avoid being left behind. Working within the assumption that development is an endeavour for the nation state, Gerschenkron saw an expanded market for manufactures, dependent on rising productivity of agricultural labour as a key objective. Furthermore, the more a country lacked such markets for manufactured products, the more it had to substitute for them through deliberate industrialization. The more 'backward' the economy, the more organized such strives for industrialization must be, and coordination by private actors have to give room for state interventions and guidance.

There are variations of this 'late development' argument. Such variations focus on differences between countries in levels of technological evolution and use the image of 'flying geese' as a model for national development within regions. When a leading nation moves up the technological ladder with subsequently raised labour costs, others may take over the used technologies and the production of commodities. This mode of shifting production over to less advanced countries portrays a pattern similar to how geese fly (Akamatsu, 1961).

Current preconditions for economic growth are different, and again challenge the concept of nationally confined economic development. Trade, transportation, and technical progress has enabled globalisation of a kind that enable not only production that is geographically separated from consumption, but also a disconnect of various stages of production from each other. By organising distinct elements of production within global value chains, the links in the chain, such as research and development, design or marketing, may be physically distant from e.g. assembling (Baldwin, 2016, Gereffi et al. 2005).

It is the information and communication technology (ICT) revolution that has enabled such disconnection of various production stages. Seen in a wider perspective, this evolution opens for other development models than the ordinary 'natural' model, where agricultural development precedes development of industries or the services sectors. Transnational companies may choose techniques that combine productive factors in ways that are optimal for different set of endowments – for richer as well as for poorer countries. Introduction of more advanced technologies in poorer countries becomes possible in shorter time than what would have been possible through gradual evolution of domestic markets (Milanovic, 2019).

Theoretically, this could open for other sectors than agriculture to serve as engines of economic growth. It is no longer evident that the 'natural' model, a model that historically has dominated, is the only possible model. At the same time, more binding rules for free trade, agreed at the WTO, circumscribes countries' space for protecting their economic sectors. A consequence is that today's low-income countries hardly can apply the protective approaches that rich countries used during their early phases of economic transformation (Chang, 2002). Still, current development and poverty reducing strategies in LICs to a large extent focus on increased agricultural productivity.[1] We will therefore dwell on how the 'agriculture-first' thesis has been discussed during more recent times.

[1] The Creation of the Comprehensive Africa Agriculture Development Program (CAADP) and the Maputo declaration of 2003 was the beginning of a continent-wide drive for larger investments in agriculture in sub-Saharan Africa, reinforced by the Malabo declaration of 2014. Besides this, many African countries emphasise agriculture in their national development plans.

The current debate

The current debate on the role of agriculture for poverty reduction relates also to a wider and earlier discussion about support to specific economic sectors in order to spur economic growth in low-income countries.[2] Is such 'un-balanced growth' a viable development strategy?[3] In most LICs agriculture constitutes the largest sector in terms of employment as well as economic activity. The largest shares of headcount poverty incidences are found in rural areas. So, should not economic growth start in this sector where most of those living in poverty are active?

The most visible academic combatants in this debate have been economists, agricultural economists and economic historians. The backdrop is an earlier view of agriculture as a mainly passive, traditional and low-productivity economic sector that provide food and labour to other sectors of the economy. This view has been challenged starting with experiences from the mainly Asian "green revolution" in the 1970s (Diao et al. 2012). But how far has the perspective changed and what is a reasonable position?

The larger number of researchers argue that the agricultural sector is key for development.[4] Some of them are working at the World Bank – an organisation that both in reports and concrete country strategies have stressed the importance of agriculture for poverty reduction (World Bank, 2008). However, this position has been thoroughly questioned. Would the most cost-effective way of promoting economic growth and poverty reduction in sub-Saharan Africa (SSA) actually be to support agriculture in general and peasant agriculture in particular?

The primary argument of the first group is that the poverty elasticity of economic growth is substantially higher within the agricultural sector as compared to other economic sectors. In other words, growth within agriculture reduces poverty more than the same level of growth within

[2] This is continuation of a discussion led since the start of development economics about 'balanced' versus 'unbalanced' growth. What is referred to here is the specific question whether focus ought to be on the agricultural sector or on wider, non-sector specific growth.
[3] This discussion goes back to development economists such as Rosenstein-Rodan (1943), Nurkse (1953), Hirschmann (1958), but is referred to in a narrower sense, without some of the theoretical assumptions made earlier.
[4] Examples include Peter Timmer, Peter Hazell, Luc Christiaensen, Kathlene Beegle, Channing Arndt and others.

other economic activities do. In support of the argument that agriculture is key to economic growth and development they furthermore provide a wide set of historical examples:

> "…whether cause or effect, agricultural productivity has risen substantially in all successfully developing countries." (Timmer. 2016:74)

Timmer has previously also argued that all successful countries pass through a phase of agricultural growth, which serves as an engine for their economic growth (Timmer, 1988). Particularly this latter statement has been criticised by Dercon and Gollin (D&G) (2014). Their critical review starts by analysing a macro-economic literature promoting the agriculture-first thesis – a literature that was initiated by a much-cited article by Johnston and Mellor (1961). The agriculture-first thesis has later emerged in a literature where Computable General Equilibrium (CGE) modelling has become central.[5] D&G finds the basic theory of this literature plausible, however highly sensitive to the various assumptions made and to shifts in such assumptions.

In brief, the agriculture-first hypothesis states that increased productivity in agriculture will lead to higher and more stable rural income, which will raise demand for off-farm products and increase savings. Increased savings will in turn enable investments in rural industries, which gradually will evolve. Another effect of increased agricultural productivity is that food prices will be kept low, which lowers labour costs in the emerging industries, providing for competitiveness and for growing domestic markets.

These broad processes of economic growth will also have effects on the levels of poverty. Poverty reductions come through three distinct channels: *incomes* may rise both for farmers and agricultural wage labourers as agricultural productivity increases and agricultural production grows; Decreasing food *prices* benefit everyone, except possibly net food producers (depending on whether crops are tradeable or not). Low food prices raise competitiveness of production in other economic sectors. Thirdly, when agriculture expands the need for agricultural inputs (see, fertilizer, machinery etc.) as well as new consumption goods, such as

[5] Computable General Equilibrium is a kind of econometric modelling that use vast amounts of data about societies to predict how an economy would react to e.g. changes in policies. The underlying data is usually structured in social accounting matrixes (SAM).

processed food, also expand, thereby creating employment opportunities. This is called back- and forward *linkages* from agriculture (Beegle and Christiaensen, 2019).

The weaknesses of this hypothesis, according to D&G, is that it has emerged from (contested) historical experiences in Europe and Japan; from an assumption about closed economies and – especially for CGE models – that relatively small changes in assumptions will lead to diverging results. In brief, results based on such methods are not *robust* enough. It is also not clear that they apply to other historical or geographical settings.

The critics also question another type of studies, where researchers with support of empirical data try to estimate the effects of agriculture related public investments. Both singular and multiple equations have been used in these empirically based studies. Some of the most known studies concern analyses of China's and India's approaches to poverty reduction (e.g. Gulati and Fan, 2007; Lei, 2007). The critique is mainly that while effects of investments are measured within districts, states or other geographical units, the actual effects may 'leak' out over borders, while effects of outside investments may 'leak' in. Hence, unexpected interaction with other investments or factors may occur. It is methodologically difficult to isolate the effects of public investments in specific areas, they argue. Furthermore, these kinds of studies have a tendency to disregard costs of the investments in relation to costs of alternative measures (D&G, 2014:12f).

A variation of the same methodological approach is applied in studies that estimate the 'poverty elasticity' of different economic sectors. Such elasticity measures to what extent economic growth in various sectors lead to reductions in poverty incidence.[6] Growth in the agricultural sector leads, according to these studies, to at least twice or three times as fast reduction in poverty as growth in other sectors. Some studies find substantially higher agricultural poverty elasticity in specific countries. Growth in agriculture benefits poor households more than it benefits richer households (Ligon och Sadoulet, 2007).

[6] Pioneering studies of this kind were undertaken by Gurav Datt and Martin Ravallion (1996, 2002). Similar studies have been conducted for individual countries, e.g. China (Ravallion and Chen, 2007); a wider set of countries (Ligon och Sadoulet, 2007) and for SSA (Christiaensen and Demery, 2007).

So, what is the reaction by the critics? Their argument is that knowledge still is missing about how much it would cost to achieve poverty reduction through support to other sectors, while support to the agricultural sector may be very costly:

> "…the sheer size of the agricultural sector factors into cost considerations for development strategies just as it does on the benefit side. Because the agriculture sector is so large, it may prove relatively difficult and expensive to generate growth in the sector. With a small manufacturing sector, it may be relatively easy – and perhaps also relatively inexpensive – to generate a given amount of growth through well-placed public investment." (Dearcon and Gollin, 2014:15).

How costly it would be to incite growth in the agricultural sector depends on the measures applied. The costs wouldn't be very high if increased productivity could be achieved through widespread introduction of new techniques (such as improved seeds), through changed incentive structures or similar. However, higher costs would be linked to broad investments in infrastructure, such as roads, bridges, irrigation and the like. Furthermore, the critics do actually not put in question findings about the more effective poverty reduction that would be achieved through agricultural growth:[7]

> " Agriculture has clear linkages to the rest of the economy, and agricultural growth has beneficial economy-wide effects. But the evidence is less clear on the social welfare benefits of public investments in agriculture compared to other sectors." …
>
> …"Taken together, the literature suggests that public investments in agriculture may well have a high rate of return (even if most studies remain quiet about the cost of these interventions) and therefore may add to a country's GDP." (Dercon and Gollin, 2014: 21f.).

[7] The discussion includes scrutiny of what answers micro-economic studies may provide, including RCT-driven knowledge mappings that try to find out 'what works' regardless of economic sector. However, the critique against such studies is unanimous from the positions referred to above: micro- or RCT-approaches may not provide policymakers with advice as to what development policy strategy to pursue, since their results seldom are aggregated to a strategic level.

What the critique boils down to is that reliable methods and data are lacking for assessing whether agricultural growth is the most cost-efficient approach to poverty reduction, as compared to growth in other sectors or general economic growth. In particular, D&G question whether the promotion of agricultural growth always and in all settings is the most cost-efficient approach to poverty reduction, not least given the vast heterogeneity of conditions in sub-Saharan Africa (Ibid, p 34). It is, according to them, not clear that government or aid supported investments in the sector provides the most cost-efficient path to poverty reduction.

At this point, the proponents and the critics of the agriculture-first hypothesis converge around a joint conclusion about what differ between them: the way various scientific methods' reliability and usefulness is perceived. Are approaches within economic history useful for analysis of current situations, or not?

> "Nothing in the historical literature convinces Dearcon and Gollin that the case has been made … in dismissing the historical record of successful countries (or arguing that the historical interpretation is subject to challenge, which of course it is, but then that is the relevant debate), Dercon and Gollin have basically thrown out the only effective methodology that analysts have if they are to offer workable insights to policy makers." (Timmer, 2016:77).

The ultimate purpose of the analyses is to provide advice for policy makers. A choice is needed whether to act on a more general knowledge, which needs to be interpreted into specific national contexts, or to not act on anything less than information of a more precise content. The latter seems very hard to come by. Additionally, the kind of critique directed at studies of the agricultural sector and its growth and poverty impact may as well be directed at studies of other sectors and the economy in general.

D&G point to a lack of rigorous research on development strategies and the effectiveness of various policy strategies. As their focus is SSA, they especially underline the vast differences between African countries. There is no such thing as an 'African agriculture', they argue. Variations are large between, as well as within, countries, hence multiple strategies in support of agriculture will be needed. National strategies need to be flexible enough to cater for subregions that are open to trade, as well as other areas where e.g., transport problems make it relevant to treat them as closed

economies.[8] In the end, they do not refute investments in agriculture. However, they argue that clear categorisations have to be done between, as well as within countries, while issues of cost-effectiveness need to be asked continuously.

> "What seems clear is that many countries will need multiple agricultural strategies aimed at different region and socioeconomic classes of farmers. We disagree with narratives suggesting that a single agricultural strategy (e.g., smallholder production of staple foods, or large-farm production of soya) can make sense for entire countries, much less for an entire continent." (Dearcon and Gollin, 2014:29).

Such a conclusion is not far from what proponents of the agriculture-first thesis would draw. The interpretation of historical processes and national contexts make part also of their analyses. But since macro-economic analysis, planning and decision occur at the national level, nations are usually the analytical unit in their studies. Sub-national differences tend to be less pronounced, and with that also the need for differences and nuances in strategies for various parts of countries. One research project made a particular effort to analyse growth and poverty in SSA based on specific national preconditions and differences instead of cross-country comparisons (Arndt et al., 2016). It turned out that such an approach points to the centrality of the agricultural sector in most of the countries, and hence support the agriculture-first hypothesis.

At this general level we may tentatively conclude that there exists somewhat of a consensus – albeit qualified – around the importance of agriculture for economic growth of a kind that also reduces poverty (Christiaensen and Martin, 2018). However, such a conclusion is based on studies and results mentioned above that deal specifically with the agriculture-first hypothesis. Before making inferences, we ought to dwell also on alternative hypotheses, to the extent they exist. And to make justice to this alternative field, we need to make a rather lengthy detour from the agriculture-first hypothesis. We will, however, return to the core issue of agriculture and poverty reduction in due time.

[8] In their argument for diversified approaches, they however disregard from more radical alternatives such as regarding trade liberalisation as an alternative to agricultural development (Tombe, 2012).

Alternative to the agriculture-first thesis

What alternative paths are there for LIC governments other than supporting the agricultural sector? Evidently, with macro-economic balance as a precondition, commodity-based export strategies are pursued in many countries. Openness to the outside world is important, since growth strategies relying only on domestic demand from small markets have more limited prospects (World Bank, 2008). However, strategies based on export of commodities without domestic processing have had limited effects on poverty reduction due to relatively few jobs created, limited linkages to the wider economy and exposure to global price volatility (Dorosh and Thurlow, 2018; Newfarmer et al., 2016; Pegg, 2006).[9] Even though the East Asian 'tiger' economies successfully used export-led strategies, few see early trade openness as a major pathway for today's low-income countries (Newfarmer et al. 2018).

With the gaze still focused on sub-Saharan Africa, the major alternative pathway lies instead with the practice of *industrial policies*. During recent years, considerable shifts in the 'conventional wisdom' among economists imply that industrial policy is now back in focus. Market imperfections and -failures stand in the way for structural transformations of economies. Hence, key roles in stimulating economic growth especially for *information*, *learning* and *economic geography* provide strong theoretical arguments for industrial policies (Page and Tarp, 2017). Asymmetric information in for instance credit markets limits or even hinders necessary investments. Learning within and among firms and institutions make for dynamic creation of increasing returns in production. Collective action problems can be dealt with through agglomeration of firms. All of this calls for responsible and clever market interventions (Ibid; Best, 2018).

Another argument in support of industrial policies is provided by Joseph Stiglitz: "Not having an industrial policy – leaving it to the market, structured as it is by special interests – is itself a special-interest agenda" (Stiglitz, 2018: 24). Countries will have to somehow decide their future accumulation of capabilities, and hence their future patterns of production and trade. Without having either implicit or explicit industrial policies they accept "the current international division of intellectual and physical labour, and with that the current distribution of learning opportunities" (Cimoli et al. 2009:3)

[9] As convincingly argued by Jerven (2015), this should not be seen as support for the 'resource curse' hypothesis in SSA.

Industrial policies, as discussed here, are not necessarily aimed at promoting manufacturing industries as such or only. The concept should be understood more widely as policies aimed at influencing the sectoral allocation and/or the choice of techniques. This implies that it may consist of a broad range of policy instruments, ranging from exchange rate policies, fiscal policies, education and skills training, innovation and technology policies and many others. When it comes to the issue of early protection, the argument is one of 'infant economy' rather than the previously tested 'infant industry' (Stiglitz, 2017; Chang, 2002). This goes beyond any 'picking of winners' and asks the question whether the economy as a whole is evolving. During their early development phases all the currently rich countries applied tariff rates of around 15–30 percent on manufactured products (Bairoch 1993).[10] Such protection behind tariffs has been made impossible today through WTO rules, but other types of industrial policies are still possible to pursue (Chang, 2002; Cimoli et al. 2009; Stiglitz 2017). The role of the state becomes one where coordination and dialogue with the private sector is central. In such processes, caution is needed so that strategic coordination between the public and the private do not lead to elite capture or corruption:

> "To avoid capture by special interests there must be openness, transparency, and a deeper understanding of the rationale for industrial policies." (Stiglitz, 2017:24).

This approach of balancing coordination and capture has been labelled 'embedded autonomy' (Evans, 1995). Using South Korea's experiences as example, the public institutions that design industrial policies ought to be embedded in private sector networks to understand what change is feasible, while at the same time be autonomous enough to cater for the wider common good. The latter implies making regulations that at critical times harm at least some private interests.

Put differently, those Latin American countries that in the 1970s failed in their 'import substitution' and 'infant industry' policies did so because they failed to create the competitive pressure from international markets. The role of that outside competition would have been to weed out inertia, inefficiencies, and rent-seeking. At the other extreme, during the 'Washington consensus'-era of the 1980s and 90s numerous countries undertook too early and too wide liberalisations and deregulations. They

[10] Exceptions included the UK with even higher 55 percent tariff rates on manufactures during the early 19th century, the US, with up to 50 percent during the late 19th century and Russia with over 80 percent during the early 20th century.

failed instead to create the needed space for building capabilities and for 'infant learning'. Many of those latter examples were also found in Latin America. Neither approaches led to success. Balance between the two extremes is needed (Cimoli et al. 2009).

Based on an analysis of some 500 years (sic!) of economic policy, Reinert (2009) even argues that the core of capitalism is about runners-up copying or 'emulating' leaders. Analogous to Schumpeter, he describes this as a continuous, double, movement of innovations that seek oligopolies and rents, and an ensuing emulation of such innovations to wipe out rents while catching up. All countries that have moved from being poor to being wealthy have passed through a period of emulation, of infant economy protection, when the asymmetry in technology and knowledge between themselves and the wealthier nations have been reduced. Such emulation is only possible under some form of trade protection. However, this is not to deny the merits of free trade. *Symmetrical* free trade between countries at equal level of development is beneficial to all. The key question is at what point to shift from protection to openness.[11]

Central to industrial policies – in our broadly defined sense – is the dynamic creation of increasing returns to scale in production [12] (Best, 2018:126, Stiglitz and Greenwald, 2014). Traditionally, this phenomenon has been almost equated with promotion of increased manufacturing, since this manufacturing sector has been prominent in bringing technological development. Manufacturing is still important because it entails learning opportunities.[13] However, during recent times the scope has widened substantially to include other activities in the wider knowledge economy. There are nowadays also a set of other economic activities that build on, and further develop, various advanced

[11] Reinert also criticise Ricardian trade theory for being too simplistic and wrong. The basic assumption in the theory of comparative advantages is that labour hours in widely different economic activities are equally valid and comparable. This assumption leaves out all qualitative aspects of production. What is lost within this theory is summarized as 'novelty' (through innovation), 'diversity', 'scale' (increasing returns in production) and 'synergy' – factors that together explain why more knowledge intense economic activities are more valuable than others. Such a technological hierarchy of economic activities is what explains why – contrary to predictions of comparative advantage theory – countries may specialize in being either rich or poor, depending on what kind of economic activities they specialize in.

[12] This is contradictory to the central assumption in neoclassic theory about law of diminishing returns to scale in production, and something that may occur due to technological improvements.

[13] Manufactured products may at times also face low price elasticities of demand, implying that demand diminishes slower than the price increases.

technologies and hence provide opportunities for learning. The central process is learning and the ultimate objective for promoting economic growth and prosperity is to create learning societies (Stiglitz and Greenwald, 2014; Hausmann et al., 2014; Cimoli et al., 2009; Reinert, 2008). Learning is at the heart of the dynamic build-up of increasing returns in production; however, learning cannot be restricted to learning by individuals. It should as well include the coordination of key actors, the build-up of enterprises and of organisational capabilities. All this call for a simultaneous co-evolution of several factors.

Several attempts have been made at capturing such wider sets of factors needed to promote enhanced growth (Cimoli et al., 2009). In one of those attempts, building on a rich empirical material, Best (2018) summarises growth enhancing processes as the result of a 'capability triad'. His approach comprises enhanced skills, shifts in the business model and enhanced production capabilities. When these three factors evolve in a coordinated way, they contribute to economic growth. Others refer also to further additional factors such as policies and a cultural domain of prevailing norms and customs (Freeman, 2008). With such wider sets of factors needing coordination, notions about *national systems for innovation and production* comes into the picture. Coordination is needed between vast sets of actors if distinct innovations shall be realised. According to this school of thought, for economic growth to occur more widely, coordination is also needed between different kinds of activities and organisations. If parallels may be made to the history of ideas on economic development, the latter come close to the 'big push' theory that claim many economic activities should start along a broad front (Rosenstein-Rodan, 1943; Nurkse, 1953).

There is a certain hierarchy among technologies that prevail in an economy. At the top, we find the more dynamic and knowledge-intense technologies, e.g. today's information and communication technologies. Technologies require specific infrastructures, networks and skills to function, but they also serve as source to, and reproduces, technological skills. Hence, these technologies determine the advantages and disadvantages of countries (Cimoli et al., 2009). Successful catching up by countries has mainly been characterised by catching up in the most dynamic technological sector. The need for policies to intervene and drive such processes tend to be larger, the further away from the technological frontier a country is situated (Amsden, 1989)[14].

[14] This would apply to cases where the distance between allocative efficiency and innovative efficiency is the largest, that is, in cases where the frontier of the most dynamic technology is the furthest away, and hence the opportunities for learning, innovation and catching up are the greatest (see Dosi et al. 1990).

Historically, catching up has hardly been possible without an emerging manufacturing sector. In SSA, however, manufacturing employment and real value added has declined for an extended period over several decades (Rodrik, 2016). De-industrialisation is a common pattern for economies world-wide, with exception for a set of Asian economies. A debate on *premature de-industrialisation* was started with the article by Rodrik, who showed that today's low- and middle-income countries experience declining industrial GDP-shares at lower levels of per capita income than today's high-income countries once did. This finding has been partly questioned, based on studies of a larger number of African countries and inclusion of data from informal sectors (Mensah, 2020): Overall, findings are that the level of industrialization, rather than declined, has remained at the same level in SSA since the 1970s. There are differences between regions, with East Africa industrialising and Southern Africa de-industrialising, while real value added in manufacturing has increased on the continent as a whole. Still, prospects for the future of manufacturing don't look very bright, despite investments from China and elsewhere. Comparatively high labour, energy and transport costs in SSA countries are among hindering factors (Brautigam and Tang, 2014).

Instead, current industrial policies in SSA increasingly target economic activities that have been labelled 'industries without smokestacks'. In such activities and sectors, some brighter prospects may be emerging. The main reason is that these 'industries' contain substantive elements of advanced technologies, which in turn allow for learning and innovation. In particular tourism, ICT, certain services, even food processing and horticulture are arguably beginning to play roles similar to what manufacturing did in East Asia (Newfarmer et al., 2018).

This is where we come back to issues related to the role of agriculture, economic growth and poverty reduction. When industrial policies are discussed in the SSA context, food- and agro-processing together with horticulture are among the very first economic activities mentioned. What typically characterises structural transformation in an economy is when the share of the agricultural sector declines with economic growth, while the share of agro-processing tends to increase. Food consumption tends to shift from staple crops to vegetables, meat, fruit and also food products that make more use of services. If relevant infrastructure is available countries may also shift into higher-value agricultural products for export (Fukase and Martin, 2018).

It is common among proponents of industrial policy as a strategy for low-income countries to propose raising productivity in the agricultural sector as a first step (Stiglitz, 2017:27, World Bank, 2008; ACET, 2017 etc.). The idea is that labour released from agriculture would move to other more productive sectors. The current situation in SSA partly displays this pattern. A certain level of structural transformation has been noted since around the year 2000, as labour has moved out of agriculture into other sectors (McMillan and Harttgen, 2017; Newfarmer et al. 2018). This transformation has contributed to economic growth (N'dede Hourizene and Wilson, 2017; Jayne et al. 2018; Ssozi et al. 2018; Busse et al. 2019). It has, however, also been accompanied by decreasing productivity in a number of non-agricultural sectors (Diao et al. 2017). The number of people moving into urban areas, into informal manufacturing and services is so large as to put a downward pressure on productivity in these activities. Such structural transformation may be described as premature, as it is not accompanied by within-sector productivity growth in those sectors the labour force moves to. There has simply been too few of those higher productivity jobs that would create poverty reducing economic growth.[15]

The SSA structural transformation has been described more in detail by McMillan and Harttgen (2017). They found the decline in agricultural labour shares 2000–2010 to display the following pattern:

- The share of agricultural employment was falling faster in countries that started with a higher share of the labour force engaged in agriculture at the outset;
- In countries with higher population growth rates, the share of the labour force is falling faster in agriculture, and this correlation is strongest for rural males;
- In countries where the rise in commodity prices coincided with a relatively higher quality of governance, the female share of the agricultural labour force fell more rapidly;
- Countries that have achieved at least one of the Comprehensive African Agriculture Development Program (CAADP) targets have experienced more rapid declines in the agricultural employment share;

[15] One possibility is that SSA may be plagued by what is called the 'Vanek-Reinert effect'. When low-income economies open up and start to integrate with economies at much more advanced technological levels, the first to suffer would be the most advanced economic activity in the least advanced nation (Reinert, 2009:92). The premature de-industrialisation discussed above may be due to industries in low-income countries having had relatively high fixed costs in production and insufficient competitive capacity.

- Rural schooling is correlated with small declines in agricultural employment shares in the subsequent period.

Especially the first and the fourth points indicate that when agriculture is promoted in countries with high shares of agricultural employment, structural transformation is likely to happen. This, in turn, implies that agricultural growth is likely to induce broader economic growth and poverty reduction. Even if slowly, agricultural productivity is increasing in SSA, which enables rising agricultural wages, increased demand for manufactured products and potential for further structural transformation of a kind that would also reduce poverty. Opportunities for industrial policies are created through this.

Caution should be given to the capacity of SSA states to pursue industrial policies. An ample number of fragile or failing states would arguably not have enough potential (Gisselquist, 2017; Evans, 1995). Still, a conclusion is that the industrial policy path does not exclude or deny the agriculture-first hypothesis. Most of the industrial policy proponents tend to question the thesis of unbalanced growth. If agricultural growth is to result in effective poverty reduction, they argue, it would need to be accompanied by growth in other economic sectors, including within-sector productivity growth in non-agricultural sectors. This is a call for balanced growth, but still calling for the essential productivity growth in the agricultural sector.

Furthermore, recent findings re-confirm the poverty reducing effects of agricultural growth in LICs, and benefits particularly for the poorest in society. They also point to important interlinkages between growth in different economic sectors (Ivanic and Martin, 2018; Christiaensen and Martin, 2018).

Research findings need to be placed in context and carefully embedded in local realities. Given that the need for poverty reduction today is especially pronounced in SSA countries, we will in the remaining parts of the paper dwell on what the role of agricultural development has been on this sub-continent, and what conditions are for the promotion of further agricultural growth on the sub-continent. An understanding of the current situation would benefit from a brief historical review; hence we start there.

Agriculture's role in sub-Saharan Africa economic growth

SSA is the sub-continent with the largest shares both of low-income countries, of widespread rural poverty, and of agriculture as large shares of the economies. Over the centuries, economic activities have been heavily focused on agriculture. Utilising an affluence of land, while suffering from a relative scarcity of labour and capital, the general direction was to maximise production per worker, rather than to increase land yield. Both cultivation and cattle breeding were practiced in extensive ways, often cultivating with slash-and-burn techniques. To the extent it occurred, raised productivity or improved food security, came more through the introduction of new, higher-yielding crops than through irrigation or mechanisation (Austin, 2016:213). Relatively easy access to land, in combination with hindrances in the form of e.g., long and expensive transports, promoted subsistence agriculture in many places.

Colonial powers made efforts to introduce new agricultural systems, including cash crop cultivation. Increased population pressure has gradually led to increasing land scarcity and cultivation of increasingly marginal lands. However, the dominant form of agriculture is still small holding with varying, but high, shares of subsistence farming. Peasant agriculture is still widely prevailing. According to one estimate the size of around 80 percent of farms cultivated are under two hectares with 60 percent under one hectare (Lowder et al. 2016; Masters et al. 2013). A general picture based on countries with access to reasonable statistics, the average size of farms has decreased since 1960 and are likely to keep decreasing (Ibid.). However, in certain SSA countries an opposite trend of increasing farm sizes has been noted during the early 2010s (Andersson Djurfeldt et al. 2018). Cultivating techniques used are to a large extent rudimentary and productivity low in international comparison. However, productivity is still increasing, and in particular use of improved seeds and fertilizer is on the rise.

Some conceptual clarification is motivated at this stage. Agricultural productivity should be understood as separate from yield, which is production per area. Yield may increase even in situations where productivity decreases, since productivity is a relationship between production and all input factors. Further, agricultural labour productivity (production per unit of labour) may be unbundled into production

per area (yield) times the cultivated area per unit of labour (Morell, 1997).[16] In current SSA, with a huge young generation facing limited work opportunities combined with potential limitations in land availability, a major part of an increase in productivity would ideally to come through increased yield rather than through less labour units being used per cultivated area. Hence, intensified cultivation through increased use of manure and fertiliser, crop rotation, improved seed varieties and similar changes would be more important as long as non-farm employment remain limited.

A common characteristic of rural households in SSA is income diversification. Estimates are that between 30–45 percent of farm household cash incomes come from non-farm sources (Andersson Djurfeldt et al. 2018; Haggblade et al. 2010). Cash incomes are often needed for expenditures on health or education and more seldom on agricultural inputs. A recent study from Kenya concluded that non-farm incomes had no impact on the probability to invest in fertilizer use (Wambugu et al. 2018).

Agriculture's dependence on nature for production makes it a distinct economic sector. Fundamental prerequisites for increased production are fertile soils and the availability of water. Both of these present challenges in many parts of SSA. African soils are inherently low fertile since they are very old and have not been rejuvenated by volcanic material. Furthermore, poor soil management and lack of inputs at affordable prices have led to soil erosion and declining productivity. The way smallholders farm their lands often result in further deterioration of soil nutrient balances (Bationo, 2009). In much of SSA, the overriding constraint to crop cultivation is probably lack of soil moisture. Only 14 percent of cultivated soils are estimated to be free from moisture stress (Ibid). This situation is expected to become more unpredictable due to the emerging effects from climate change (Magnusson et al., 2012). With only three to six percent of arable land equipped with irrigation in SSA, the vast majority of cultivation is fully rainfed (FAOStat, 3-year average 2015–17, Wiggins and Lankford, 2019).

Use of fertilizer is very low in sub-Saharan Africa, with an average of 15,6 kg of nutrients per hectare during 2019. The comparable global average is 121 kg/ha (FAOStat). When fertilizers are used by SSA smallholders, they are often used on single crops or single fields, and in

[16] This can be expressed as Y/L = Y/A x A/L, where Y represents production, A represents area and L labour.

amounts much lower than what is recommended. Furthermore, the wide diversity of soil conditions in SSA imply major difficulties in finding optimal combinations of nutrients for each location, for each farm, or at times even for each field. It is generally better to combine input of nutrients with input of organic material – only one of the two is seldom enough, since they perform different tasks in enriching the soil (Vanlauwe and Giller, 2006). The most cited reasons behind the low fertilizer use are interrelated:

- Due to the very varied agro-climatic conditions and to current farming methods the returns to using fertilizer are low;
- Farmers, extension agents and retailers lack proper information about fertilizer and how to use them optimally, while access to various blends of fertilizer often is limited;
- Fertilizers are costly since they mainly are imported, sold in large units and costly to transport to the farm fields;
- Governments shift their policies and their input subsidies irregularly, creating uncertainty and low incentives for investments (Bationo, 2009).

An implication of these agro-ecological preconditions is that any attempt at promoting agriculture in order to enhance economic growth or reduce poverty needs to consider the specifics of crop cultivation in SSA. Policies and development strategies need to start from the physical realities of soils and water and the limits that these impose.

Institutional foundations of the sector

To understand current conditions for SSA agriculture, an historic perspective is important. During the colonial era, despite the total domination of small-holders, the focus on export crops increased in many countries. An important contributing factor was the need to finance the colonial administration, often through levies on the export of raw materials or crops. There was, in addition, an increasing demand for such goods on the home markets of the imperial powers (Austin, 2016).

During colonial times, tax revenues were usually modest and colonial administrations remained small – as had also prior state formations been. Hence, the possibilities to stimulate other economic sectors, through industrial policies, infrastructure investments and wider social services,

remained very limited. What the young independent nations inherited from colonial powers, however, were effective instruments for taxing the agricultural sector: the export marketing boards. These boards held legal monopolies over the export of crops, and they also controlled agricultural prices. With the power of these tools in the hands of governments, producers were paid substantially below world market prices. The differences between these two price levels were withheld by the states (Ibid, p 220).

Differences in the rate of growth emerged between various independent African countries. Among those countries lucky enough to avoid armed conflicts and civil wars a pattern was discernible. Those who taxed agriculture heavily – in order to promote industrialisation – saw lower rates of growth than those who imposed lower tax burdens on the sector. For instance, the Ivory Coast and Kenya grew faster than Ghana and Tanzania. When the former two tried to diversify their economies around agricultural exports, they were even somewhat more successful with industrialisation than the latter (Austin, Frankema and Jerven, 2017).

Up until today, agriculture remains key to a majority of African economies. In general, and despite opportunities presented by globalisation, practice has shown the difficulties of replacing agricultural development in processes of national economic development. Reasons behind this include food production's key role in upholding human life, in combination with limitations to the extent food imports may replace domestic food production. The following is a description of current conditions in a SSA country that has shown more progress towards increased manufacturing and service sector growth than many other sub-Saharan African countries. Despite this evolution, the continued dominance of agriculture seems evident:

> "Ethiopia's food system is crucial to the country's pursuit of sustainable economic development. The country's smallholder-dominated agriculture sector contributes a third of gross domestic product, provides livelihoods for three-quarters of the population and is the country's major foreign exchange earner. Agriculture is also an essential source of inputs for Ethiopia's growing manufacturing and services sectors…"(Woolfrey et al., 2021: 11).

The authors go on to describe how Ethiopia's food system is evolving from local subsistence farming towards a 'transitional', market-oriented system with longer value chains due to population growth, urbanisation and improved infrastructure. The food system is still highly informal in both production, trade and retail, while contributing to structural change.

> "Ethiopia is also witnessing the emergence of modern food marketing methods, technologies and systems, reflected in the increased use of mobile phones, the establishment of a commodity exchange, a growing (but still small) modern food service sector and increasing differentiation in food retail markets. Growth and transformation are also occurring in food trading and transport, processing, distribution and retail, with such activities becoming increasingly important sources of employment and livelihoods." (Ibid.)

This transformation occurs against the backdrop of changing diets, with less of starchy staples and more of meat, dairy, fruits and vegetables. Particularly in urban areas, Ethiopians are eating more processed foods and eating outside of the home more often.

Much has changed in SSA from the days of independence up until now. A rapid population growth has reversed the production factor relations, leading to a current deficit in land rather than in labour. This is aggravated by the fact that many lands are barren and nutrient-poor with cultivation extending onto more marginal lands. The labour force is better educated with most people able to read and write. What used to be comparative advantages at independence may not necessarily be the same today. Relevant technologies and factor combinations most likely have changed. More importantly, the possibilities to link up with outside production systems and value chains are much greater today. Still, much of agriculture in SSA is conducted in ways very similar to what prevailed 60 years ago. Agriculture is still the dominant economic sector in most SSA countries.

The agricultural growth records

To see how the agriculture sector has fared in sub-Saharan Africa, it is thus relevant to place it within the perspective of wider economic growth. Representing a widely spread perspective, Thorbecke and Ouyang (2016) describe the period 1960–2000 – except for a few early years when SSA outgrew the rest of the developing world – as decades of economic

stagnation. During this period, other LICs and MICs generally grew much faster on average, while SSA lagged behind with an annual per capita GDP growth of 0,3 percent comparison, South Asian economies grew with 2,9 percent per capita, and East Asia and the Pacific with 5,5 percent on average. During 2000–2013 annual per capita growth in SSA increased to 2,6 percent on average (Ibid.) However, since 2014, GDP per capita in SSA has again been zero or negative, with a low of -4,5 percent in 2020 (World Bank data).

Thorbecke and Ouyang (T&O) explain the decades of weak growth mainly by weak or failing governance and policies. A vast group of earlier studies had failed to explain an 'African dummy' variable, implying that there would be some unknown factors making economic growth in Africa different from other parts of the world.[17] However, T&O claim to have captured this difference (building on Ndulu et al., 2008 and McMillan and Harttgen, 2014). They point at extensive government regulations and rent-seeking policies, including redistribution towards ethnical or political support groups away from more productive uses. Another way of describing this is the lack, or low level, of structural changes in African economies. There were very little movements out of agriculture into activities with higher productivity, only to low productivity, often informal, services (de Janvry and Sadoulet, 2010). According to T&O, around two thirds of the growth differences with comparable countries can be explained this way. The remaining third has to do with countries being land-locked and a few other factors, they argue.

Explanations such as those proposed by T&O and a long range of other economists trying to explain low growth with cross-country regressions have been heavily criticised (Jerven, 2015.) First, African countries have experienced periods of rapid growth both following independence during the 1950s, 60s and 70s, as well as at the turn of the 21st century. Secondly, structural factors, such as ethnical differences, dysfunctional institutions or other Africa-specific factors or even semi-consistent factors such as governance patterns – cannot explain these *shifts* in growth since such factors are not shifting themselves. Thirdly, growth patterns are not straightforward to explain with factors that themselves are the effects of low growth. To this latter category of factors, Jerven ascribed 'bad' governance, since the capacities of many African states were severely hampered by the structural adjustment reforms that followed as a response

[17] A dummy variable is used in statistical regressions to capture unknown influencing factors. The "African dummy" was introduced since African countries differed from countries elsewhere in the world in terms of factors correlating with economic growth.

to the preceding period of very low, or negative, growth. Perhaps the strongest critique by Jerven (2011; 2015) concerns the unreliability of statistical data in most sub-Saharan African countries. Much of the informal economy has not been counted, estimations of activities in several formal sectors have been very uncertain, base years for calculations of the gross national product been lying many years back, hence not well reflecting current economic structures. All this implies that our knowledge about what actual growth has taken place on the continent is highly uncertain.

The lack of reliable data concerns not least the agricultural sector. Since much of agriculture in SSA is subsistence oriented, it forms a large part of the informal economy. This implies that our joint knowledge about the sector, its growth since independence and its current status, is limited.

There were, arguably, also a host of both internal and external factors that might have affected the overall rate of economic growth during the mid-1970s to the early 1990s – decades when most of the negative growth occurred. World oil prices skyrocketed with the two oil shocks 1974 and 1979, leading to a global economic downturn. Specifically, in Africa unsustainable foreign debts were dragging economies down, lowering savings and investments. At the same time, agricultural marketing boards, pan-territorial pricing policies, and malfunctioning agricultural cooperatives took a heavy toll on public finances, contributing to the negative African growth story during these decades. Heavy pressure primarily from the Bretton Woods institutions on governments to stabilize, deregulate and liberalize their economies led to drastically changed development paths. One such consequence concerned the dominating agricultural sector. Due to the economic reforms, a previous process of increased maize yields in Eastern and Southern Africa came to a halt, due to lack of government support. Resources for research, development and extension services dried up (Havnevik et al., 2007).

Early African 'green revolution'

There is actually a mainly forgotten story to be told about this. Already in 1960 a 'green revolution' started in South Rhodesia (today's Zimbabwe). This was already five years before the Asian green revolution started. Commercial farmers began to use hybrid maize that had been developed at the Harare research station during the period 1930–1950. Especially the 'SR-52' maize variety was introduced widely in the country as well as in neighbouring North Rhodesia (Zambia) and Nyasaland (Malawi), raising

yields and production. An even more widespread maize revolution came in a second stage when smallholders started to adopt hybrid maize and fertilizer during the period 1980–86 (Eicher, 1994). Improved maize varieties were also adopted and rapidly spread in other states in Eastern and Southern Africa (Byerlee and Eicher, 1997). One of those countries was Tanzania, where, however, fertilizer subsidies were removed soon thereafter. This led to fertilizer prices increasing drastically in relation to maize prices, which in turn reduced the real return from maize cultivation with 80 percent. In addition, the simultaneous liberalisation of the maize market led to previously unseen seasonal price variations, with the lowest prices emerging immediately after the main harvest and the highest prices occurring immediately before the next harvest. The increase in price variations made it extremely difficult for smallholders to plan their cultivation from one season to the next, as they had previously done. Hence, taken together such reforms nipped the emerging maize revolution in the bud, in Tanzania and Zimbabwe as well as elsewhere in eastern and southern Africa (Havnevik et al. 2007).

Rapid growth in the new millennium

As to the wider process of economic growth on the subcontinent, during the first decade of the century, 2000–2010, there is agreement that sub-Saharan Africa experienced rather rapid per capita economic growth. The levels reached 2,6 percent annually on average – up from the previous minus 0,9 percent during the 1990s. During the second decade of the 21st century (2010–2020) per capita growth fell back to 0,23 percent annually, due to negative growth from 2015 onwards. Also, the share of people living in poverty fell during this period. The poverty incidence, as measured by the 1,90 USD/day headcount poverty threshold (2011 prices), fell from 57 percent in 2000 to 47,5 percent in 2010 and further to 40 percent in 2018 (WDI). Possible explanations for the 2000–2014 period of high growth are multiple. Jerven points to the increased share of trade in total GDP as a major factor. While sub-Saharan Africa as a whole doubled its GDP from 1990 to 2010, the share of trade in this GDP went from 50 to 75 percent during the same period. Hence, growth was to a large extent based on external trade (Jerven 2015:91).

Thorbecke and Ouyang on their part, explain this growth with improvements in governance, improved treatment of the agricultural sector, an emerging consumption ('middle') class and increased flows of foreign direct investments. For instance, the relative rate of agricultural

assistance (RRA) [18] is a composite measure of how serious market distorting policies are. It includes taxes, exchange rates, subsidies etc. and compares how agriculture is treated in comparison with other sectors of the economy. It takes on values between -1 and 1, with negative values indicating more distortions to agriculture than to other sectors. [19] In SSA, distortions measured by RRA has decreased from lower than -0,4 in the 1980s, to between -0,15 and -0,05 around 2010 (Janssen and Swinnen, 2016).

For the 2000–2010 period McMillan and Harttgen (2014) found that SSA countries with initially larger agricultural sectors experienced more rapid growth in industry- and service sector employment. The pace of this structural transformation implied that two percent of the labour force left agriculture for industry and eight percent left for the services sector.[20]

The first decade of the new century was also a time of increased support to, and investments in, agriculture. Following the Maputo agreement in 2003, African governments have attempted at allocating at least ten percent of public spending to agriculture, with the objective of achieving a six percent annual growth in the sector. Certain countries, especially in Western and Central Africa, increased their investments in agriculture, whereas countries in Eastern and Southern Africa on average decreased these expenditures somewhat (de Pinto and Ulimwengu, 2017: 190).

The SSA-wide economic growth spurt stagnated around 2014/15, following stagnating global demand and prices for raw materials. With an annual average GDP growth around two percent the average per capita growth for the sub-continent has stayed negative since then (World Bank National accounts data). There was obviously a limit as to how much of the growth that improved governance could explain.

Still, there are current opportunities for agricultural expansion. Food demand has been growing rapidly in SSA, driven by population growth and urbanisation. As people move into urban areas the demand for meat and dairy, fruits, and vegetables increase together with the demand for processed and prepared food. Demand for unprocessed staple crops have also increased rapidly. Food import has increased, with the total import bill increasing from 12 billion USD annually in the 1995–97 period to

[18] Often referred to in the reverse: "the relative rate of assistance" to agriculture, expressed as negative numbers.

[19] For description of the measure, see Anderson (2009), annex A.

[20] This estimate is based on Demographic and Health Survey (DHS) data from 24 African countries (McMillan & Harttgen, 2014).

43 billion USD annually in the 2018–20 period (FAOStat online). Cereal imports constitute a third of this increase. The dependence on imported cereals increased from ten percent in 1994–96 to 23 percent in the 2014–16 period (Christiaensen and Vandercasteelen, 2019). The effects of the war in Ukraine are thus expected to be dramatic for many countries. On average, the value of exports of other agricultural goods, such as coffee, cocoa, vegetables and cut flowers, have kept pace with growing import bills – except in a number of smaller, non-resource-rich countries that run large trade deficits. How the war in Ukraine will impact on this remains at the time of writing to be seen.

Hence, there is a growing demand for staple crops where domestic producers might see opportunities to compete, while at the same time export-oriented agriculture is thriving. In sum, opportunities exist for expansion of agricultural production and markets in sub-Saharan Africa.

How to stimulate poverty-reducing agricultural growth?

To seize such opportunities a number of conditions need to be filled. A wide literature shows that important prerequisites for general economic growth are macroeconomic stability implying such things as low inflation, flexible exchange rates and manageable fiscal deficits (Antoine et al. 2017). This applies also to growth in agricultural sectors, as do a set of basic development factors such as education, investments in infrastructure, improved gender equality, lower fertility rates and many others (Beegle and Chistiansen, 2019).

However, in focus here are more agriculture specific considerations. Diao et al. (2012) built a typology of African countries – landlocked, coastal, mineral-rich, less favourable agroecology – and combined this with countries respective shares of agriculture in GDP and shares of rural poverty. Based on this, they arrived at a selection of ten countries that are representative of low-income countries in SSA. Conditions for poverty reducing agricultural growth were studied in detail in these ten counties.[21] Their primary finding was that staple food crops in most cases had much

[21] The ten in-depth case studies all used dynamic computable general equilibrium (DCGE) models – a method criticised by Dearcon and Gollin (2014) for not being robust enough. However, during recent yeas a number of other studies, using various methods, have led to similar conclusions as Diao et al. See for instance Shimeles et al. (2018), Christaensen and Martin (2018), Dorosh and Thurlow (2018).

stronger linkages to other parts of the economies than export crops. Hence, the multiplier effects on economic growth and on poverty reduction were in general stronger when staple food crops were promoted as compared to the promotion of export agriculture with crops such as horticulture, cut flowers, or fruits or vegetables.[22] Some exceptions exist, though, in cases where small-holder farmers are involved in the production of export crops, such as tobacco in Malawi or cotton in Zambia or West Africa (Ibid, p 403f). Following staple crops, it is often productivity growth in livestock breeding that has the second highest multiplier effects on poverty reduction (Christaensen and Vandercasteleen, 2019).

In line with the balanced growth argument of the industrial policy studies, there is a need to promote agricultural growth in tandem with non-agricultural growth (Beegle and Bundervoet, 2019, Diao et al., 2012). Down-stream non-agricultural processing of products need to be promoted, as well as up-stream agricultural input markets. Opportunities need to be diversified for a majority of farmers, with the growth of rural food industries and others. Various agricultural sub-sectors and crops need to be developed, however, with the focus on pro-poorness as the highest priority. Sub-sectors with highest linkages to the rest of the economy should be promoted. In line with the argument about the primacy of staple crops, this would usually imply that larger sub-sectors should be targeted even though small niche markets may have potential for rapid growth. But large share of production as such is no guarantee for success, also the market potential of specific crops needs to be considered. To make all this happen, Diao et al. (2012) found that most of the cases they studied would need substantively higher government spending on agriculture if stated objectives in terms of growth and poverty reduction are to be reached (Ibid, 405ff).

In addition to such a long list of ought-to-dos it is relevant also to mention some of what has been, and is, done. The successful introduction of new rice varieties, NERICA, especially bred for West African agroecological conditions, is one example of the potential of agricultural innovation (Hårsmar, 2006). Efforts of soil conservation in the Sahel area, leading to

[22] A relevant issue is whether growth in the agricultural sector causes wider economic growth, or the other way around? This has been investigated by Ogundari (2021). In a study of 35 SSA countries during 1981–2010 he found changes in agricultural total factor productivity (TFP) to cause of economic growth over the short run. Over the long run, a two-directed causation was found between agriculture and economic growth. However, no support was found for economic growth to cause agricultural growth in the short run.

a 'regreening' of some 50,000 km^2 of barren lands, followed by production with yields often above general averages (CILSS, 2016:70; Reij et al., 2009) is another. How pro-poor technologies can be introduced, and institutions changed, is illustrated through in-depth studies in the Soroti district in Uganda (Friis-Hansen, 2013). A wider literature provides many more examples of how peasant agriculture evolves and develops through innovation (see for instance Muchie et al. 2003; Sanginga et al. 2009; Juma, 2011).

There is an ongoing debate as to what scale of agricultural production is the most productive, and hence what category of farmers to promote. Increased small-holder productivity is particularly effective at reducing poverty (Mellor and Malik, 2017, Christiaensen et al., 2011, Ivanic and Martin, 2018). On average, productivity in small-holder farms has shown to be higher than in large agricultural estates (Coulson, 2015; Christiaensen and Vandercasteleen, 2019). However, a recent rise of medium-scale farming in SSA, with farm sizes between five to 100 hectares, has somewhat shifted the debate and given renewed energy to discussions about scale (Jayne et al. 2016). Andersson-Djurfeldt et al. (2018) point to several types of critique against the smallholder model: new technology and procurement systems making larger farms more productive; poor fit of an Asian-inspired model in SSA; global value chains causing accumulation among the better-offs and increased marginalization of the poor and major gender-based productivity gaps. They find in their sample rising polarization but also increased dynamism over a fifteen-year period. Increased farm sizes, rising grain production, crop diversification and increased market orientation is combined with negative changes such as stagnation of yields and increased gendered inequalities of various kinds. Still, they keep their focus on the smallholder sector and its key role, arguing that structural transformation in SSA will be different from what occurred on other continents. Based on their findings they conclude that "…livelihoods increasingly straddle the farm and non-farm sectors as well as urban and rural spaces." (Ibid, p. 238). Even though urbanisation may be strong, links with rural areas are upheld.

In sum, the general messages seem clear. Since a set of various methods have been used in recent studies, and arrived at similar conclusions, the following points may be made:

- Even though all issues are not fully settled in detail and challenges remain, agriculture is central to economic growth in low-income SSA countries, and the sector has considerable growth potential there.

In the words of Diao and Thurlow (2012): "Agriculture cannot be excluded from the current development model."…"Thus, assigning a more active role to agriculture in Africa's development process is justified from a growth perspective." (Ibid, p. 401).

- Cultivation of staple crops presents the more poverty reducing path, even though export crops grown by small-holders also may have some potential. Livestock breeding is also important. The reason is that these activities have much higher multiplier effects than export crops do, which implies that they are more effective at generating economic growth. In addition, in almost all the cases they also have higher poverty elasticities, meaning that they are more effective at reducing poverty.
- According to most observers, the poverty reducing potential of agriculture growth in SSA low-income countries is so strong that public support to agriculture is highly likely also to be more cost-effective than public support to non-agricultural growth.
- Given the prevailing demographic structure in many SSA countries, and the limited access to alternative productive employment, agricultural productivity ought to be raised mainly through land saving technologies and raised yields.

Specificities of supporting African agriculture

What forms should support to the agricultural sector take? Would economic-political reforms that transform incentives and motivate actors within the sector to increase production and productivity be most relevant? Or would more direct programmatic interventions supporting infrastructure, and direct subsidies of production be more effective?

Both may be needed, however in the right sequence and combination. Agriculture differs from other sectors in several ways. It is dependent on the weather seasons and on natural land as a production factor, and it faces high levels of risk both in production and marketing. Agriculture is furthermore heavily dependent on 'public goods' and joint standards. Without continuous plant breeding, crop harvests may be wiped out by plant deceases or pests. Control and regulation (phytosanitary rules, food quality standards, animal breeding regulations etc) are required for markets to function properly. It may be particularly important to pursue market shaping activities in phases when peasants increasingly move onto cash crops and market activities.

It is not necessary for the government to cater for all this, but if a government does not do it, some other form of collective solution is needed. Cooperatives have previously played important roles within the agricultural sector on the African continent and elsewhere. However, they have mainly been abandoned due to mismanagement and inefficiencies.

Promoting agricultural growth adds up to a demanding order for any government. For governments in SSA it may be even more so, given widespread state fragility and weaknesses in revenue generating capacities on the sub-continent (Bak et al. 2021, Guisselquist, 2017). There may also be specific political and administrative complications linked to the complex issues of land access. In most SSA countries these matters are regulated through co-existing formal legal and customary tenure systems.

Low agricultural productivity in SSA as compared to agriculture in other parts of the world constitutes a perennial challenge. Given the large share of small-holder or peasant agriculture in SSA, the challenge is particularly focused on this group. Why are so many cultivators in many African countries continuing to produce food with cultivation techniques and farming systems that have been used for centuries, while there are other technical options readily available? Several answers have been proposed, starting with malfunctioning financial, input and product markets, disadvantageous conditions for entering value-chains or restrictive domestic incentives or international trade policies.

However, beyond these factors there are two other possible reasons why SSA small-holders are either held back or holding back from investing in more productive techniques and cultivation methods. First, Elbers et al. (2007) point to the disadvantageous effects on economic growth when facing conditions of high risk. Based on long term panel data from rural households in Zimbabwe, they find levels of capital accumulation (mainly cattle in this case) and levels of welfare to be almost 50 percent lower, when cultivating under risk, as compared to situations of no risk. Risk makes economic growth very volatile, and it also reduces overall growth substantively. Interestingly, two thirds of the growth reduction effect is due to ex-ante risk, that is people's anticipations of future risk, rather than to dealing with the shocks that actually occur. "(M)uch of the expected impact is internalized as different investment decisions." (Ibid, 2007: 16). The effect from the Zimbabwean sample may be large since opportunities for non-farm income diversification were limited there. But high risk may be a largely underestimated factor.

A second kind of argument is proposed by Hydén et al. (2020), claiming that peasant agriculture in SSA largely is characterised as being part of a 'Natural Societies', rather than 'Agrarian Societies' or 'Industrial Societies'. In Natural Societies, peasants tend to diversify their income to increase security, to align their production with environmental conservation and to reduce their dependence on volatile market exchanges. Furthermore, peasants do not work harder or longer than what they need to obtain a locally acceptable standard of consumption. They are autonomous enough from states and markets to shape their own livelihoods and interact with nature. This is a distinct difference from Agrarian Societies, where social stratification between classes of landowners and classes of impoverished tenants or sharecroppers lead to more pronounced dependence on market production.

In his collaboration with researchers from the Kyoto ecological anthropology School, and in reference to Natural Societies, Hydén revives his thesis of 'uncaptured peasants' living in an 'economy of affection'. Peasants from most parts of rural SSA were never forced by other social classes to raise productivity on their lands. Instead, they continue to share wealth with relatives and friends and forego potentially higher production and income. The logic of reciprocity overrides other concerns. Face-to-face transactions are key, whom you know is more important than what you know, and a helping hand today implies a promise of returns tomorrow (Ibid, p 60, 106ff).

Hydén (1980) first introduced his thesis of the economy of affection and the uncaptured peasantry some forty years ago and have been met with criticism over the years. What is new is that the concept is now placed in a wider setting, where cases of 'Natural Societies' are as well identified in other historical and geographical settings, outside of current East Africa.

These two explanations of low productivity in peasant agriculture – the economy under risk and the economy of affection – differ fundamentally in their basic assumptions about peasants' behaviour and what norms that guide their behaviour. The economy under risk approach assumes optimisation strategies based on production goals: as much production as possible, given a certain level of risk avoidance. Risk avoidance is seen as an internalised factor and investment- and other production decisions are assumed to be taken by each production unit in isolation – primarily by the individual household head.

The economy of affection approach rather assumes an optimisation strategy based on social balance. Relations within the collective unit (family, village) are at the centre. Essential objectives are to share consumption with other members in the unit, and to undertake multiple other investment to uphold these relations. Shared consumption is a matter of ensuring everyone's chance to survive and is an integral part of the production system. Furthermore, from the perspective of traditional worldviews, it may be argued that also ecological balance is sought, with various forms of fallow and low technology cultivation systems practiced.[23]

Without judging the two approaches, one may conclude that both arrive at an implicit policy recommendation. To stimulate increased economic activities, it would be beneficial to promote social protection systems other than those that are already practiced. The prevailing investments in social relations as insurance mechanism implies foregone economic opportunities. With access to other protection system, these investments in relations would become less necessary, freeing up resources.

Another conclusion is that a key challenge for the promotion of increased productivity in SSA peasant agriculture is to bridge the divide between prevailing informal norms and the more formalised economy. Worldviews in peasant communities differ from mainstream economic worldviews, and these differences matter for investment and production decisions. What such insights implies for development cooperation merits further study, preferably starting with what Mortimer and Adams (2001) refer to as the "systematic understanding of indigenous adaptive capabilities".

[23] Somewhat contrary to prevailing beliefs, fallow cultivation can be shown to be effective, given prevailing ecological conditions in tropical and subtropical areas. Similarly, combining transhumant cattle breeding with sedentary agriculture provide necessary flexibility in semi-arid areas (Hydén et al. 2020).

Conclusions

We have in this paper dwelled on the issue of linkages between agriculture, economic growth and poverty reduction. The historical roots of, and current debates over, the 'agriculture-first' hypothesis have been described and analysed. A pronounced alternative hypothesis for poverty-reducing economic strategies in low-income countries, industrialisation policies, has been described and analysed. Based on this, we conclude that there is a wide consensus among researchers that economic growth emerging from the agricultural sector is especially important for the reduction of poverty. The combination of findings emerging from studies that apply various methodologies provides further support to the agriculture-first thesis. The critique against this thesis mainly concerns the reliability of the various methods used in reaching this conclusion. Even proponents of the major alternative to the agriculture-first hypothesis agree that increased productivity in the agricultural sector is a prerequisite for wider economic growth and poverty reduction.

We continued with a description of historical experiences and current conditions in sub-Saharan Africa – the subcontinent where low-income countries as well as rural poverty are most widespread. This showed that growth of the agricultural sector has happened before and is possible in the future also in low-income countries on this sub-continent. Indications of these opportunities are the rapidly increasing food import bills of many African countries as urbanisation continues and food habits change with them.

Given these conclusions, it is highly surprising that Swedish development cooperation, with its overall objective of poverty reduction, is vague, incoherent and un-strategic when it comes to supporting agricultural growth in low-income countries. Mappings of Swedish support to agricultural development in partner countries show first decreasing, then dispersing trends over the last decades. Even though some of the support has been hidden under other categorisations (and hence disguised), the potential for poverty reduction through this sector has not been properly explored or realised.

Government support to agriculture – and development cooperation with it – should target a relatively vast set of crops and markets. Market opportunities of each crop ought to be considered, as well as linkages between agricultural subsectors and the rest of the economy. What also matters is the size and the growth potential of a sub-sector, as well as the

potential for adding value in its relevant value chains. The key concern should be to put poverty reduction at the centre of agricultural growth, and the above-mentioned factors are important in that respect. Although productivity increases in crop cultivation is key – with education, extension, research & development and irrigation as necessary components – it is equally important to make investments outside agriculture, for instance in rural road infrastructure and in markets and market institutions.

This may be easier said than done. Weak capacities and often malfunctioning state and government structures and policies have been described as major obstacles to success. Ambitions for government support to the sector have been high since the Maputo agreement 2003, however results on the ground more sobering.

Challenges are even more pronounced since all this should be done with specific attention paid to agro-ecological diversity, soil compositions, social embeddedness and other specificities of agriculture in sub-Saharan countries. Indications are that introduction of social protection schemes might be a key element in laying a foundation for increased productivity in SSA peasant agriculture.

The continued emergence of research reports describing the African agricultural potential (with this study yet another one) may be an indication of the continued low productivity agriculture on the sub-continent. Why the potential is not realised merits further study. There is certainly more to the story.

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