

The Critical Role of Agriculture in Industrialization: Some Conceptual and Practical Experiences

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Outline of the Presentation

- Introduction: what and why
- How to make successful industrialization happen: some conceptual issues
- Practical experiences elsewhere
- Some policy recommendation for Tanzania.

Introduction

- Tanzania is currently emphasizing the development of industry as a way to radically reduce poverty and achieve middle income status by 2025.
 - In general (in national accounts) the industrial sector refers to three subsectors of mining, manufacturing and construction.
 - But the process of industrialization refers to the development of the manufacturing sector.
 - It is the process in which a country transforms itself from a primarily agricultural society into one based on the manufacturing of goods and services (structural transformation).

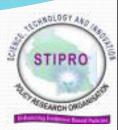


Introduction cont...



- Industrialization is a right strategy given the role the manufacturing sector plays in a national economy:
- First, it ensures sustainable growth of the country (a necessary condition for poverty alleviation).
 - A reason it is now part of the SDGs
 - The price of manufactured goods tends to be higher and more stable than that of commodities, and therefore stable and sustainable growth.
 - Bulk of world export (about 70% in 2010) is on manufactured goods

Introduction Cont...



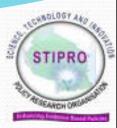
- Second, is employment generation:
 - It is income which has the greatest implications for poverty than all other aspects; especially if it is inclusive.
 - According to (World Bank, 2001), other indicators of well-being, such as average levels of education and health, also tend to improve along with income poverty.
- Third, it enhances skills and knowledge in a society.
 - Poverty eradication is a process of capability building, especially innovation capabilities.

 Enabling industrialization requires a carefully thought out strategy. UNDLOGY

- There are number of issues that need to be considered
- This presentation largely refers to the role that agriculture plays.
 - Experience from history indicates that there is a very close connection between development in the agricultural sector and the process of industrialization.
 - Experience elsewhere indicate rapid increase in agricultural productivity during the onset of industrialization is crucial.

- On set of industrialization (structural transformation) is triggered when agriculture realizes enough surplus in the form of food, materials, income and servings;
 - Availability of all these incentivizes the investments in the manufacturing sector, especially when policy environment is right.
 - Capital and workers begin to move out of agriculture to meet the demands of a growing industrial sector.
- Falling prices of the agricultural produce as a result of productivity increase, and increased prices for the manufactured goods further facilitate the process.

- The example of Japan between 1885 and 1915 is telling:
 - Adoption of policies to boost agricultural productivity, including investments in S&T led to rapid increase in agricultural productivity.
 - Savings for industrial development were mobilized through taxation of agricultural produce.
 - And as a result of attractive investment environment put in place, some landowners invested largely in ruralbased industry such as textiles and food processing (Johnston 1951; Tsakok, 2011).

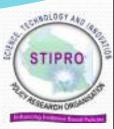


- As allocation of resources to the industrial sector continued, domestic agriculture continued to decline in terms of share in output and employment.
- Policies of this type have been implemented in many of the countries that have recently industrialized (Sonobe and Otsuka 2001, Acemoglou and Guerrieri, 2008)
- However, looking into the details, there are two schools of thoughts and practical evidence on how agriculture exactly plays part in industrialization: Pre-requisite thesis and concurrence thesis

- Pre-requisite: agriculture grows first, and then industrial development follows – a short time lag.
- Concurrence: the growth of the two sectors happens concurrently, benefiting from each other through backward and forward linkages.
- Many studies on structural transformation indicate that prerequisite was used by most of the now developed countries of the West.
- But newly industrialized indicate use of concurrence ; and it is also what is being proposed for poor countries that are currently embarking on the path towards industrialization.
- Going forward from the experience; it is neither agriculture nor industry, but concurrently.

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Practical issues and experiences

- The concept of agro-industrial complexes used by many countries could be useful here:
- A complex consists of farming units and industrial firms specializing in agroprocessing and storage, as well as the ones supplying agriculture and processing industry with the means of production and inputs.
 - To be useful for poverty alleviation, the complexes needs to be set up close to agricultural production in the rural areas

Practical issues and experiences cont..



- Through focusing on agro-industrial complex development, Denmark was able to develop international competitiveness of its milk and meat processing.
 - This Danish a gro-industrial complexes also led into vast innovations in machinery and equipment for milk and meat processing (Edquist & Hommen, 2008).
 - which has fostered Danish strongholds within these technological fields internationally.

Practical issues and experiences cont..



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- In general it seems structural transformation has to start with the development of the agroindustry:
 - Basically focusing on the agro-processing
 - Studies shows that the contribution of agroindustry to total manufacturing is 61 percent in agriculture based countries, 42 percent in countries in transformation and 37 percent in urbanized developing countries (GAIF, 2008).

Practical issues and experiences cont..

 The demand pull created by an agro-industrial complex stimulates businesses well beyond the closest link between the two sectors, but a whole range of ancillary services and supporting activities in the secondary and tertiary sectors of the economy. WROLDGY.

- Because of perish ability and bulky characteristics of agricultural products, many agro-processing plants tend to be located close to their major sources of raw materials.
- Consequently, their immediate socio-economic impacts tend to be exerted in rural areas, radically alleviating rural poverty.

Some concluding remarks

- STIPRO BURGANCH ONCOUNTS
- Given the presented theoretical and empirical evidence, we argue that the direct connection between the agricultural and industrial sectors (in the form of agro-industrial complexes is inevitable for successful industrialization, structural transformation and poverty alleviation.
 - Following the concurrence thesis, the focus should neither be on agriculture nor industry, but on agroindustrial complexes.

Recommendations

- Tanzania can kick start the process of industrialization by starting with development of agro-industrial complexes.
 - Something like SAGCOT, but to what extent it is an agro industrial complex?
- Use the concept of agro-industrial innovation systems, rather than that of the individual sectors to build innovation capability and increase productivity in both sectors.
- The concept of innovation systems rests on the premise that innovation can best be spurred by the interactive linkage and learning among important systems actors.
- For the concept of agro-industrial innovation system focus is on the complex, rather than on individual sectors.

Recommendations cont..



- Identify a number of commodities to develop a agroindustrial complexes that Tanzania has a comparative advantage (market potential, both local and export).
- The trick is to look at the trade balance. For instance the case of edible oil for Tanzania where the local demand is big, and about 75% of it being imported.
- Another is meat, milk and leather products.
 - Learn from own market before exporting
- Create effective linkage between farmers and processors
- Make sure that small holder farmers and SMEs become part of the complex - for effective poverty alleviation

Recommendations cont..



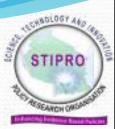
- Deepen knowledge economy around the chosen agro industrial complexes, including R&D system, input supply for farmers, and machinery for the agro-processors, finance for both farms and firms, and related services.
 - -Inputs (fertilizers, pesticides) to be locally made take advantage of the emerging gas industry.
 - -R&D for agriculture to be connected with agro-processers as well to enhance learning between farmers and agroprocessors .

research indicate that farmers get best advice from their buyers than from R&D organizations (various STIPRO research).

Recommendations cont..



- Markets for the processed goods needs to be ensured- both local and export.
 - Promote export for the agro-industry, e.g. through EPZ.
 - Indirectly also ensuring markets for the farm produce.
- Find a way to protect local industry from cheap imports.
- Ensure periodic review of innovative activities and productivity increase in the complexes, and continuously adjust policies and measures.



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