
Agricultural Exports and Food Insecurity in Sub-Saharan Africa: A Qualitative Configurational Analysis

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Abstract

Export of agricultural products is increasingly seen as one of the few viable instruments to solve the problem of food insecurity in developing countries. Using the configurative comparative method to study 17 countries in sub-Saharan Africa, this article argues that increasing agricultural export is only beneficial for certain types of developing countries. Before agricultural exports are encouraged, food availability, agricultural Labour productivity, the share of agriculture in total GDP, the amount of staple food imports, and the share of investment goods in total imports should be considered.

Keywords: Agricultural trade, food insecurity, Sub-Saharan Africa, Configurational comparative analysis.

JEL CODES: Q11, Q18, D12

1. Introduction

More than 870 million people throughout the developing world do not have access to adequate food, and that number is on the Rise. FAO (2009), an Undernutrition affects the lives of these people in many ways most notably the pain associated with daily hunger. Worse lack of nutrition can lead to physical and mental retardation and increase susceptibility to disease. Furthermore these conditions undermine a person's ability to work and to take advantage of development opportunities. Hunger is thus both a cause and an impact of extreme poverty, making the eradication of hunger an important step towards alleviating poverty as well as inequality. (FAO 2003). In this age of aid fatigue trade particularly agricultural exports is increasingly seen as one of the few viable tools to reduce hunger and poverty in developing world.

The rationale behind the theory of agricultural exports as a strategy to reduce hunger is the theory of comparative advantage of David Ricardo 1971 [1817] and the successful export led economic growth strategy of Asian tigers. By contrast the article argues that agricultural exports are equally likely to increase hunger in developing nation or at least to the benefit of certain types of developing countries. The report focuses on how export in agricultural affect food insecurity through its impact on the income of the poor and its impact on food supplies. To examines these relationships in sub Saharan Africa from an empirical perspective.

It is divided into four parts; Section 2nd explains the theoretical arguments as to why agricultural exports may have different effects in different contexts. In short we can expect that these exports will improve food security at a level where food supplies are high as well as agriculture is not important to the economy as a whole but not in the opposite context. As the main assumption of this study is that agricultural exports are conducive to food security under certain conditions so we

apply the allocation comparison method to empirical testing. Section 3rd explains this approach and section 4th includes a comparative study of the impact of agricultural exports on food insecurity in 17 countries in sub Saharan Africa.

2. Theory

The study was based on the Amartya Sen (1981) Approach to food insecurity which was caused by the lack of access to food. Exports may affect food supplies and the right to food in contrasting economic contexts .Table 1 shows that in 2007 26% per cent of children under the age of five in the developing countries as a whole were underweight down from 31% in 1990.

Table 1: Percentage of children under five who are underweight, by developing region, 1990 and 2007

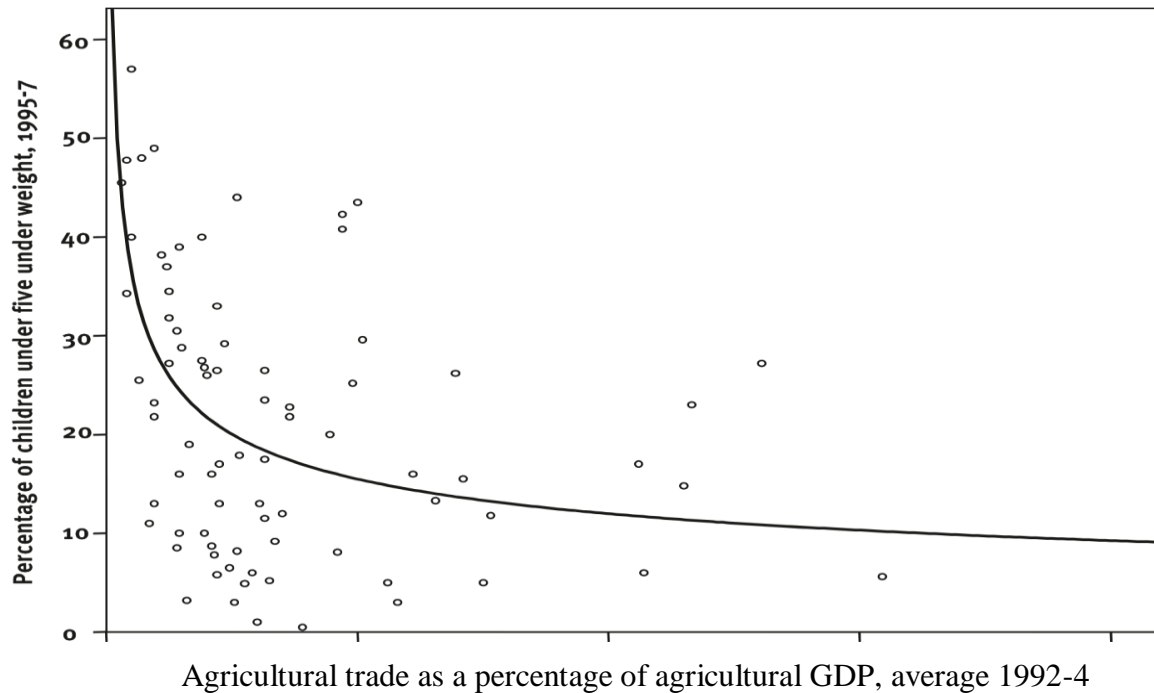
Region	1990	2007
Developing regions	31	26
Sub-Saharan Africa	31	28
North Africa	11	7
South-East Asia	37	25
South Asia	54	48
Latin America and Caribbean	11	6

Source: UN (2009: 4).

However the level of food insecurity varies widely across regions, North Africa as well as Latin America and the Caribbean are approaching levels in the developed nations but the situation is much tougher in sub Saharan region. South East Asia and in particular South Asia, While progress was made in all regions from 1990 to 2007, the decline in malnourished children under five years of age in South East Asia was significant but the rate of decline was slow in sub Saharan region and South Asia. The study focused on sub Saharan Africa for three reasons, the first is the seriousness of the problem of food insecurity in the region,

Second many Governments in the region are boosting agricultural exports to address the menace, the third reason is the approach because sub Saharan Africa compared to South Asia where the problem is more serious has more countries and can therefore generalize the results more. FAO (2005) 83 found that countries with large agricultural trade generally had a lower prevalence of underweight. Among the population Figure 1 illustrates this and. figure 1 shows that there is a negative correlation between the degree of agricultural trade as measured by exports plus imports as a percentage of GDP in agriculture and the percentage of malnourished children under five years of age. However as FAO has acknowledged the relationship is not very strong.

Figure 1: FAO analysis of trade openness and underweight children



Source: Adapted from FAO (2005:83).

This weak relationship is the result of misunderstanding and of several intervention factors that are not taken into account in this dualistic association. The misconception is that by employing trade openness as measured by exports and imports, the study has failed to capture the fact that the impact of agricultural exports on food security is contrary to the impact of agricultural imports as they have the opposite impact on agricultural imports on food supplies. As a result countries with high levels of agricultural export and low levels of agricultural imports are likely to face higher levels of food insecurity than nations with high agricultural export rates and high levels of food import. The lack of intervention involves who earns income from agricultural export and whether foreign exchange is used to stimulate pro poor economic growth. The purpose of this paper is to overcome these challenges by analyzing the impact of agricultural exports as well as food imports separately and by investigating the conditions under which these exports might lead to improved food security. In doing so the study looked at how agricultural exports affect food security in different income and food supply situations as well as some additional related conditions.

Let's start by discussing the income aspects of this equation Agricultural exports have the potential to reduce food insecurity by rising the wages of the poor either directly, through the production and marketing of cash export crops or indirectly by increasing the income of the poor through their impact on economic growth. In general when agricultural output levels the choice of high value crops and worker productivity are limited by low demand access to international markets can increase the direct income of smallholder farmers and thus their right to food. However agricultural export markets are likely to be dominated by wealthy farmers holding large amounts of assets as these farmers have larger surpluses that can be brought to the market Smallholder farmers in most developing countries diversify their production to make ends meet out of "Safety first " concerns even if they specialize in producing and engaging in trade and may expect higher levels of productivity. Messer and DeRose 1998, In addition wealthy farmers generally have higher levels of education access to infrastructure and market information and are better able to secure higher

cost for their products Eskola 2005 years Seshamani 1999. If agricultural exports mainly increase the income of large farms overall capital intensive as well as Labour wide we may not see how much trickle down effects will be generated by increased employment of agricultural workers. As a result increased export opportunities may not significantly increase the income of smallholder or agricultural workers.

The situation has also been mixed in terms of the ability of agricultural exports to indirectly improve the incomes of the poor through general economic growth. The main reasons for increasing agricultural exports in low income nations is that they need foreign exchange in order to boost investment commodities that help stimulate economic growth. The experience of Tigers in South Asia has raised hopes that economic growth will follow when market for agricultural output produced in low income nations extend beyond national borders .These countries have achieved economic success in part because their "developmental states " ensure that export earnings are used for poor growth and to protect the emerging industries they have given as a result of the cold war and the growth that the West hopes to achieve. Let the Tigers stand on their side. These two situations are largely lacking in today's sub Saharan African region the basic argument behind the view that international trade will ease food insecurity as well as poverty is Adam Smith's argument that "If a country can offer us cheaper goods than ourselves it is best to buy them from them with some goods." Our own industrial products are used in a way that we have some advantages Smith 1776 , David Ricardo 1971 [1817] later perfected the theory by proposing the concept of "comparative advantage " which he believed was beneficial to two trading partners even if one of the trading partners could produce something cheaper compared to other .As long as each trading partner can produce something that is cheaper than another it specializes in and exports products that have a comparative cost advantage.

According to this view of international trade there is a comparative advantage, if one country produces two products at a cost lower than that of another while the relative savings of one product are greater than the relative savings of another country. Other newer version of this hypothesis the so called "Hexel Olin method" argues that if each country specializes in the production and export of goods that require large quantities of goods free trade will decrease the real per capita income difference between trading countries the number of factors with relatively good national resources. Lancaster 1957 Both the original version and the detailed version of the Comparative Advantage Act mean that most emerging countries especially the least developed countries should specialize in the production and export of agricultural output and other basic products. in order to rise to a higher level of economic development According to Winters 2000 Hertel ET 2006 and McCulloch ET 2001 agricultural exports are an important tool for economic growth as well poverty reduction. In developing countries and the FAO Department of Economic and Social Affairs 2001 believes that access to agricultural exports is larger and richer markets for agricultural output in underdeveloped countries, are conducive to growth as well as development.

The World Bank 2004 also believes that the large amount of agricultural subsidies provided by OECD state to their farmers undermines the ability of farmers in developing countries to participate in global agricultural trade and reduces their income as well as profit streams and their capability to escape poverty. 'Others are skeptical of the gain of free trade for low income nations see for example the United States dollar and Karay 2001 years Frankel and Romer 1999 Bouet ET 2007 years UNCTAD 2004 Skarstein 2007 347. It is worth quoting in detail when criticizing the theory of comparative advantage.

The theory is a variant of the static efficiency story which does not focus on dynamic factors that are critical to economic development such as long term technological change as well as productivity growth. In addition because the demand income elasticity of industrial products is higher than that of agricultural products there is a positive feedback mechanism from the international as well as domestic demand for industrial production to the Vernon Kaldor "law " of productivity growth. Empirical evidence suggests that poor nations do not have a comparative advantage in agricultural products and that they are at an absolute disadvantage in terms of trade in agricultural and industrial products.

Further liberalization of agricultural trade would therefore undermine rather than aid the poorest nations. This means that in the long run low income nations should shift to the production and export of manufactured goods as i agricultural output are affected by deteriorating terms of trade in world markets forcing countries dependent on agricultural export to export more manufactured goods in order to import the equal amount of manufactured goods. ii Countries specializing in the production and export of industrial goods have higher rates of technological change and Labour productivity growth in all sectors Skallstein (2007).

The problem is that in the early stages of industrialization in low and middle income countries they could not export too many products except for agricultural products. The crucial question then is whether agricultural exports are a stepping stone to industrialization and manufacturing or whether low income countries will fall into an agriculture dominated economy with declining conditions, Trade and low productivity growth. In order to avoid "agricultural economic trap" it is important to use agricultural exports to obtain foreign exchange investment industrialization and job creation. This means that the hunger reduction effect of the agricultural exports incline among other things on the way foreign exchange is used, As a result countries with a relatively high share of their foreign exchange are spending on goods investment commodities that are conducive to economic growth and their performance in food security will be higher than in countries that use a higher share of consumer goods.

Another major condition affecting the way in which agricultural exports impact hunger is related to the impact of agricultural exports on food supply Brigham (2004) High food supplies help reduce hunger for at least two, The first and most obvious reason is that a country must have enough food to adequately feed its population in the case of absolute food shortages some people necessarily lack the right to adequate food. The second reason is that because of the inelastic nature of food production high food supplies usually make food prices lower and Vis a Vis Kalecki (1971). Barriers to increasing food production in emerging countries vary but shortages of land irrigation fertilizers modern technology as well as infrastructure are the most common. In this context it is not only natural time constraints that impede the expansion of food output but also systemic resource shortages, Even if they so wish most emerging country government do not have the economic means to reduce prices through market intervention von Braun and De Haen (1983).

The use of scarce agricultural resources for the production of cash crops rather than food in the domestic market might have the effect of a reduction in food supplies and a reduction in the terms of trade between donations and food which results in food insecurity. Of course imported food can offset this decline in food supplies. Under the Comparative Advantage Act countries can specialize in the types of agricultural output for which they have a productive advantage and import food for the domestic market Similarly income from the use of these exports has become important furthermore to being used to import pro-growth investment commodities are they also used to import food or are they "wasted " on luxury goods as well as weapons. In addition can food

insecurity poor be affordable for the eventual import of food if imported food is made up of wine cheese and smoked salmon it does not aid the poor another aspect which will not be discussed further in this article relates to the impact of subsidized food on local food producers. If heavily subsidized food such as corn from the United States is imported and poured into the domestic market local producers might not be capable to compete while this situation will benefit net food buyers at least in the short term it will increase the country's dependence on the food imports.

In the long run this can be harmful if cheap foreign food at the end dries up such as the winter and spring of 2008 when corn produced in the United States was diverted to the biofuel industry making imported food. various in developing nations much more expensive compared to locally produced food In short we see that the link between agricultural exports and food insecurity in the developing world is not simple and we often believe that When we consider comprehensively the impact of agricultural exports on the right to food and food supply we see that it may have a positive and negative impact on food insecurity in the developing world depending on the broader economic context. This is the first and main assumption of this article.

On the basis of the above theoretical discussions the seven conditions under which agricultural exports have a positive or negative impact on food security are of particular importance. These are the distribution of agricultural export earnings the level of food supply in the country the number of staple foods imported and the amount of investment commodities and last but not least the share of agriculture in GDP as well as the productivity of agricultural Labour. Before proceeding with the actual analysis I will quickly summarize why these are vital for understanding the impact that agricultural exports might have on food insecurity based on the theoretical discussions above. The impact of the distribution of agricultural export earnings on food insecurity is important as to produce the best results it should go mainly to smallholder farmers who are the ones struggling with food insecurity rather than wealthy farmers Food supply affects the link between agricultural exports and food insecurity as it affects the terms of trade between the Endowment Fund and Food. Where food supplies are relatively high reducing food supplies after switching from food crops to cash crops might not raise food prices as they do in countries with inadequate food supplies.

Agricultural Labour productivity affects this relationship as it reflects the general level of income in the agricultural sector and the scale of the agricultural yield available for export .The share of agriculture in GDP is an vital condition for various reasons nations with a relatively low proportion of agriculture in GDP have gone further in the process of technological change as well as productivity growth and are likely to go further in terms of infrastructure development and urbanization As a result depending on the distribution of income. The general population of these countries enjoys a higher income thus improving their food rights they are less dependent on domestically grown food. Moreover what is happening in the agricultural part is less vital to the economy and the wellbeing of the people and the capability to access food rely more on condition in the industrial and service sectors.

The number of staple foods imported is important as it indicates that the extent to which cash crops replace staple foods is offset by imports. The share of investment commodities in total imports affect the link between agricultural export as well as food insecurity as it suggest how much export earnings are used to stimulate economic growth in imports. This review takes us to the second and third assumptions of this study which indicate how agricultural export interacts with other conditions to produce high and low food insecurity. The second theory suggests when agricultural exports will improve food security I will examine empirically the two assumptions regarding the conditional link between the degree of agricultural exports as well as food insecurity. In doing so

I have also tested the main assumption that agricultural exports account for a high proportion of total agricultural production and may lead to high or low food insecurity relying on the circumstances. The test was carried out through a cross country configuration analysis of 17 nations in sub Saharan region. However before we proceed with the actual analysis the next part describes the methods that are applied.

3. Method

The above analysis of the theoretical framework for the interpretation of food insecurity means that agricultural exports will have different effects in contrasting contexts. To test this hypothesis I used the configuration qualitative method of the data processing program "Fuzzy set qualitative comparison analysis " fsQCA help in a sample of 17 nation in sub Saharan region. The program applies Boolean minimization truth table to test the causal complexity of variable multiple interaction forms and is particularly suitable for solving this problem in medium samples which makes it suitable for this research.

One of the advantages of this approach is that these conditions are considered specific configurations or causal variables of the condition while the methods based on correlation and regression analysis focus on variables and measure the impact of a variable regardless of the values of other variables. Letnes (2008), by using the configuration comparison method we are looking for causal complexity and stinginess. We want complexity because we measure how different groups of conditions causal variables affect the impact of agricultural exports on food security. This runs counter to the key assumptions statistical framework under which a given variable is suggested to have the similar incremental impact on the result regardless of the value of other related variables .But accepting complexity is not the same as refusing to be stingy .Since the aim of this research is not to carry descriptions but to determine the law of cause and effect we seek to achieve the simplest causal constellations through Boolean minimization of truth table Rihoux and Ragin (2009) and Letnes (2008).

4. Analysis

In this part we will analyses the conditional link between agricultural exports and food security by analyzing the two assumptions described at the end of section 2nd with an aim of testing these two assumptions the conditions were implemented as follow. Food insecurity Percentage of underweight children under five years of age FAO (2009) a food supply daily dietary energy supply per person thousands of calories IBID agricultural exports value of agricultural exports WTO (2009) accounts for agricultural domestic students Percentage of gross value of production World Bank (2009) Value of imports of staple foods FAO 99b as a percentage of the value of agricultural exports WTO (2009). Import of investment goods share of total imports categorized as investment good IBID essential of agriculture in the economy as a whole agricultural gross domestic product as a percentage of GDP World Bank (2009) years .Agricultural Labour productivity per capita agricultural gross domestic product IBID I have not been capable to find a comparable indicator of the distribution of agricultural export earnings among sub Saharan African countries which implies that this situation will make it comparable and not included in the analysis.

In analyzing the pattern of food insecurity in fsQCA I first identified the results of the negative forms of food insecurity and investigated whether and under what condition agricultural exports could lead to low food insecurity, The consistency level is set to more than 0.85 which is relatively strict This results in the solution proposed in table 4 The countries named are those that have

reached or exceeded 0.5 members in a causal correction .More countries are part of these combinations although members score less than 0.5 .In addition in more than one causal combination members of countries can score 0.5 or higher Solution mean is 0.76 which means that 76% of food insecurity changes are caused by all configurations in the solution a relatively high proportion. The consistency of the solution is also 0.76 reflecting a 76% certainty in the solution.

Table 3: Calibration from original to fuzzy conditions

		Calibration			
Original condition	Fully in	Neither in nor out	Fully out	Fuzzy condition	
Underw	35	20	12	underwfz	
Agrgdp	40	25	10	agrgdpfz	
Agrexp	60	25	10	agrexpz	
Gdpwor	1000	400	200	gdpworfz	
Des	2500	2250	2000	desfz	
Staple%	30	10	0	stapercfz	
Invimp	3	1.9	0.8	invimpfz	

Table 4: Causal paths to low food insecurity for SSA countries

Causal combination Raw Unique Consistency Countries coverage

AGREXPfz*DESfz	0.545767	0.104119	0.800336	Gabon, Ghana, Namibia, Côte d'Ivoire, Uganda
AGREXPfz*INVIMPfz*agrgdpfz	0.457666	0.001144	0.779727	Gabon, Namibia, Zambia, Botswana
AGREXPfz*GDPWORfz*agrgdpfz	0.435927	0.010298	0.824675	Gabon, Namibia, Cameroon, Côte d'Ivoire, Botswana
AGREXPfz*STAPERcfz*agrgdpfz	0.351259	0.064073	0.956386	Senegal, Botswana

Solution consistency: 0.763490, solution coverage: 0.760870.

Notes: Model: ~underwfz = f (stapercfz, desfz, invimpfz, gdpworfz, agrexpz, agrgdpfz); frequency cutoff: 1, consistency cutoff: 0.852941; assumptions:AGREXPfz (present),

GDPWORFZ (present), agrgdpfz (absent), STAPERCFZ (present), DESFZ (present), INVIMPFZ (present).

As can be seen from table 4 high agricultural exports as opposed to total agricultural production are a necessary condition for low food insecurity as it is part of causal constellation. It is vital to note however that this is not an adequate condition as it does not lead to results alone This means that high farm exports reduce food insecurity only under certain conditions rather than in the absence of these conditions. Rather a large proportion of agricultural production in exports is conducive to food security when the following conditions are met i high levels of food supply or II the relatively low share of agriculture in GDP the industrial sector is more important to the economy and the large share of investment commodities in total imports and iii .The share of agriculture in GDP is relatively low the industrial part is more important to the economy agricultural Labour productivity is high the share of agriculture in GDP is relatively low the industrial sector is more important to the economy and a large proportion of agricultural export earnings are spent on imported staple foods .

This means that we can identify four ways to address low food insecurity All of these approaches involve the export of a relatively larger part of the country's agricultural production but this alone will not produce the desired results as the result depends on the existence of one or more additional conditions .The analysis indicate that in the context of high levels of food supply or where agriculture account for a low proportion of GDP and agricultural Labour productivity is high or high a high proportion of agricultural production facilitates the import of food security staple foods in comparison with the value of agricultural exports that is the high share of investment commodities in total import. This proofs my second assumption and means that before a country is on an export led path to improved food security it must make sure that all other conditions in the first second third or four contexts exist in one or more contexts.

Next we will examine the third assumption that under certain conditions a large part of agricultural production in a country of export is harmful to food security The results of this test will indicate whether and when agricultural exports may cause serious food insecurity Table 5 indicate that solution mean is 0 88 solution consistency is 0 88 slightly higher than the first hypothetical solution and there are insufficient or necessary conditions to address the high level of food insecurity The results shown in table 5 further indicate that we have found a high level of food insecurity in the following cases i low value of imports of staple foods relative to agricultural exports less import of investment commodities and high proportion of agriculture in GDP ii Low food supply low agricultural Labour productivity and a high proportion of agriculture in GDP Iii Low imports of staple foods low agricultural Labour productivity and a high portion of agriculture in GDP compared to the value of agricultural exports iv Low imports of staple foods low food supplies and less agricultural Labour output per worker compared to the value of agricultural exports v Low imports of staple foods high food supplies and investment commodities in total imports.

Table 5: Causal paths to high food insecurity for SSA countries

Causal combination	Raw coverage	Unique coverage	Consistency	Countries
desfz*gdpworfz*AGRGPfZ	0.618908	0.211501	0.888112	Ethiopia, Malawi, Gambia, Tanzania
stapercfz*invimpfz*AGRGPfZ	0.522417	0.096491	0.927336	Central African Rep., Togo, Benin, Uganda
AGREXPfZ*stapercfz*gdpworfz*AGRGPfZ	0.362573	0.026316	0.851259	Malawi, Ghana, Kenya, Uganda
AGREXPfZ *stapercfz*desfz*gdpworfz	0.316764	0.014620	0.837629	Malawi, Kenya, Zambia
AGREXPfZ*stapercfz*invimpfz*DESfZ	0.234893	0.028265	0.782467	Côte d'Ivoire, Uganda

Notes: Model: $underwfz = f(agrepfz, stapercfz, desfz, invimpfz, gdpworfz, agrgdpfz)$; frequency cutoff: 1, consistency cutoff: 0.810526; assumptions: AGREXPfZ (present), gdpworfz (absent), AGRGPfZ (present), stapercfz (absent), desfz (absent), invimpfz (absent).

A low share of the amount High agricultural exports are only three of the five causal constellations that contribute to high levels of food insecurity in contrast to the low level of food insecurity in which high agricultural exports are a necessary condition 7 Low staple food imports are however among the five constellations that lead to a high level of grain insecurity As well as in all constellations with high agricultural exports there are also parts of four constellations. This highlights the need to replace the loss of food supplies resulting from the production of cash crops with the import of affordable food. When considering the test results of both models at the same time we see that the high share of agricultural exports is the only condition in the constellation that leads to high as well as low food insecurity except for one exception, I will return to Other conditions result in the presence of a result which in the absence of the opposite result High agricultural Labour productivity high imports of staple foods and a high portion of investment commodities in total imports are only section of the constellation that leads to low levels of food insecurity without which food insecurity is part of the causal road to high imports. The low share of agriculture in total gross domestic product GDP has played a degree of impact except the causal structures that cause food insecurity and the presence of agriculture can only result in high levels of food insecurity.

So far the existence and lack of conditions have been expected High food supply is the variable an exception to this rule While the lack of a high food supply is part of a causal pathway to achieving high levels of food insecurity its presence is part of a constellation that causes low food insecurity as expected but it has also produced the opposite result .The reason for this "exception " may be that the poor do not have access to this claim because of high prices a theory that is enhanced by

a constellation with high agricultural export and low imports of staple foods. But this may also bias a result of the fact that agricultural export earnings are mainly used for consumer goods because investment commodities are also low and that the impact of economic growth in agricultural export is low, if so despite the high level of food supplies high levels of food insecurity may be linked to lower incomes.

5. Conclusion

This study shows that under different conditions the impact of agricultural export from sub Saharan region on domestic food security is different, under certain conditions increased agricultural exports could lead to better food security but would also worsen food security in other contexts. Important background conditions are food supply levels of agricultural Labour output the share of agriculture in total gross domestic product the volume of imports of staple foods and the portion of investment commodities in total imports. Research has further indicated that high levels of agricultural exports are a necessary but not sufficient condition for low food insecurity .While severe food insecurity has also been caused in some cases high levels of agricultural exports are neither a necessary nor sufficient condition for high levels of food insecurity.

If agricultural exports are widespread combined with high food supplies per se or a lower share of agriculture in total GDP combined with high agricultural Labour productivity or high imports of staple foods or a high share of investment commodities. Total imports low results of food insecurity. The high portion of agricultural export compared to overall agricultural production mixed with the opposite value of one or more of these conditions low food supply high portion of agriculture in GDP low agricultural Labour productivity low staple food imports and low share of investment commodities in total import we find high levels of food insecurity With one exception we found a high degree of food supply in a constellation leading to high levels of food insecurity.

The policy implication of these results is that before the governments of sub Saharan African countries decide to encourage agricultural exports to boost food security and economic growth. The availability of the food situation agricultural Labour output per worker and the essential of agriculture in the economy in other words the degree of industrialization should be studied .To ensure that the increase in cash crop production and exports does not lead to increased food insecurity for the population.

Moreover if the conditions for increasing the production and export of cash crops are appropriate it must ensure that foreign revenues are used to import staple foods to maintain an affordable food supply and to invest in commodities. which can stimulate poor economic growth If existing conditions are low agricultural Labour output per worker, low food supplies and low industrialization this is not the right time to boost agricultural exports Instead the state should boost agricultural labor productivity through chosen agricultural extension policies Increasing agricultural Labour productivity can increase the income of the agricultural population increase the food supply and become the basis for further industrialization. Since I can't find data on countries that have obtained comparable income from agricultural exports in the research the next step will be a case study of whether smallholder farmers can use agricultural exports if so if they can derive better livelihoods from these exports than for subsistence and/or products produced for local markets. In addition there is a need to increase the sample of nations in Latin America and South and South east Asia to see if there are also causal ways to address high food and low food insecurity in these regions.

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