Evaluation of The Necessary of Agriculture Public Expenditure for Poverty Reduction and Food Security in Benin

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16 August 2010

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[18,Mai 2010]

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Abstract

Benin is predominantly an agricultural country which accounted for 39% of GDP with 70% economically active population in the agricultural sector, that year. Small, independent farmers produce 90% of agricultural output, but only about 17% of the total area is cultivated, much of it in the form of collective farms since 1975. Benin with subtropical climate have enough water resources and land facilities to growth and be one power agriculture country but the sector is plagued may many problem such as lack of infrastructure, poor utilization of rural credit, and inefficient and insufficient use of fertilizer, insecticides, and seeds. Those problems have a big effect on agriculture income and rural household income and the high poverty rate.This is contract between resources potentiality and poor living condition. However the manly source of those problems maybe the lack on public expenditure in this sector.

The purpose of this research is to evaluate how the low public expenditure has impact on the agriculture growth and poverty rate.

To evaluate that, we first made a theory approach of the impact of agriculture growth and poverty reduction by presentation the model of model elaborate by KAWALI and son in 2006 to evaluate the contribution of public expenditure to achieve MDG b agriculture grows. The application of this model on Benin agriculture show Benin need the annual Agriculture expenditure required for 2004-2015 is 356 Million USD(8,1% agriculture growth per year) with the conservative scenario beside 301 Million USD (7,1% agriculture growth per year) with optimistic scenario.

However the analysis of agriculture public expenditure in Benin is very low(lower than 10% of the GDP) and the public expenditure general is lower than 25% of GDP (lower than 25% that is recommend by best practice) and the high rate is in military not in growthing sector. This lack of sufficient public agriculture expenditure is felt at upriver and backing of the agriculture sector. This is justifying by the agriculture production surplus management problem in this year. This is du to inability of crops stocking, crops conservation system lack and crops distribution system lack due to (infrastructure lack) and insufficient investment lack. The importance of public expenditure is become more and more a crucial problem and news policies should be elaborated and focus in major parties of public expenditure in economic growth sector that is agriculture in Benin because with climate change negative effect the situation will be more degradation and rural poor population will be increase faster.

Keys words: Agriculture- Public Expenditure-Poverty Reduction-Benin

JEL：Q14

Introduction

The agricultural sector in Benin represents 70% of the workforce and contributes at 39% of the country Gross Domestic Product (GDP). It provides 90% of export earnings and participates in 15% of state revenue. As a result, it occupies a prominent place in the economy household income source. It is now mainly focused on export crops (cassava, bean, yam, sorghum, maize, millet and rice) and especially the main export crop cotton. The country is also a leading cotton producer in Africa and giving income to 2 million of the population. From 1990 to 2003, the "white gold" has contributed to over 14% of GDP. Still, for three years, the industry is experiencing some difficulties mainly because of disorganization and the decrease in cotton prices in international markets. Benin is also producing oil palm, cashew and limited supply of coffee, cashew, pineapple, cocoa, groundnuts and Shea nuts. The cultures of pineapple and cashew nuts are respectively 110 000 tons and over 40 000 tones in the crop year 2004-2005 and some familiar emergence alongside cotton. The palm oil production also increase from 130 000 tones of oil in 1994 to around 280 000 tones in 2005. These levels of production are largely insufficient to satisfy a national and regional market with high demand. While relatively developed animal husbandry, practiced mainly in the north, is still insufficient to meet demand, flocks of cattle, sheep (3.4 million goats and sheep) and pigs (297 000 animals) cover only 60% of the needs and the sector is subject to strong competition from imports of frozen products from the European Union. The tree is widespread, particularly along the coast where a natural coconut 2 to 5 km wide, is exploited. Logging, it is uncommon (mahogany, iroko, and samba).A reforestation policy (casuarinas, teak, etc.) Was initiated several years ago. Fishing, practiced for three quarters of freshwater is mainly artisanal and sustains approximately 300 000 people. Annual production varies from 7 000 to 10 000 tones for marine fisheries and 30 000 to 40 000 tones for inland fisheries. It represents only 2% of GDP and provides only half of domestic demand.

The benign has great potentiality of production but fails to achieve food self-sufficiency when a large proportion of arable land is still not under cultivation, incomes and productivity are low and the labor force n ' is only partially recovered, which makes it very uncompetitive agricultural products. Most operators have very little use of inputs and engage in mining practices that emphasize natural resource degradation .The same sector is characterized by the predominance of small farms, which are subjected to financial difficulties, technology and the vagaries of climate and their not very competitive because of high input costs remain and low mechanization.

To mitigate climate change effect, some agricultural technique such as water resources saving by news irrigation techniques is proving to master the production. Irrigation in Benin remains embryonic and is a very small fringe producers.

However, the country has significant hydro-agricultural resources distributed throughout the national territory. Irrigable lands are generally estimated at 322 000 ha of which 117 000 ha of floodplain and 205 000 ha of lowlands. Only 9.6% of the lowlands lands are formally identified and less than 1% has been arranged. In total, some 12 258 hectares (less than 4% of irrigable land readily available to the country) are equipped for irrigation.

Moreover, the evolution of irrigation in Benin between 1994 and 2002 concerned 835 acres of lowlands, over 300 hectares under almost exclusively private initiatives. The areas actually

operating under full control irrigation water for 1999/2000 amounted to 563 acres of formal stores (6% of land equipped with formal boundaries) and about 1 300 ha of informal perimeters (80 % of land equipped perimeters informal). Regarding the 563 ha, it is the four rice growing Malanville Koussin-Lélégo, and Chi-Dévé Ahomadegbé that cover a total area of 858 ha were rehabilitated between 1985 and 1999. As for accommodations with partial control of water, 960 ha are exploited, 75% of developed land.
The abandonment of developed areas due to poor technical and financial management of facilities, control of non-technical routes of production under irrigation, degradation of components of irrigation systems and soil depletion.
Regarding the technique of irrigation, surface irrigation is practiced on 46% of the total, followed by sprinkler irrigation on 42% of the total area. The large schemes (high than 100 ha) constitute the majority of irrigation in total control. In formal boundaries in total control (9 349 ha), the elevation of water is needed for 98.5% of equipped area. In urban and peri-urban vegetable growers use a variety of exhaust systems manually. Irrigation Perimeters in the informal and partial control are not taken into account in this classification because they are not yet characterized.

The food security situation is not very positive at Benin. According to FAO figures relating to monitoring the progress of the objectives of the World Food Summit, 16% of the population suffering from undernourishment in 1999-2001. This is basically the same since 1990-92. This rate is similar to that in West Africa but lower than that of Sub-Saharan Africa that exceeds 30%. Nevertheless, several reports agree in saying that there is no acute problem of security food Benin: global production, energy, fat and protein, without a deficit to be significant compared to basic nutritional needs. The issue of food security is not structural. However there are severe food insecurity in certain families and certain risk groups it is particularly small farmers in the south, fish populations, and low income groups in urban areas. On the other hand, there are wide regional disparities in the distribution of food available, the 1986 study (FAO) had highlighted the structural deficit (in grains) in 19 municipalities, while 30 are regular surplus, which indicated the importance of storage, transport and regulation of prices for a better distribution. A more recent study indicates the DANA 18 municipalities in which the risk of food insecurity and nutrition is a major or moderate. Moreover, according to the results of the second survey on the living conditions of rural households, at least 33% of households are unable to meet minimum food needs despite the predominance of food expenditure (70%) in overall spending. Finally, given the population growth and especially the urban population growth, maintaining the rate of self-sufficiency today require an enormous effort to intensify, particularly cereals and tubers at the base diets.
In terms of nutrition, food insecurity is manifested by qualitative and quantitative deficiencies. According to the most recent survey (2001), forms of malnutrition especially relevant to young children, of which 30% have stunted growth and 23% would hit underweight. The energy deficiency concerns over 15% of adults, and protein deficiency is most common in areas where the staple food is cassava. Vitamin A deficiency, anemia and disorders due to iodine deficiency are the most serious consequences of poor nutrition and / or unbalanced.

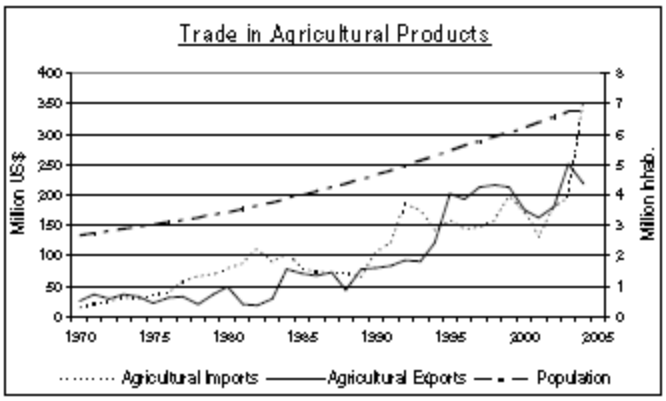
However, analysis of agricultural trade balance in Benin revealed that during the past 30 years,

agricultural imports have risen sharply from U.S. $ 15 million in 1970 to over 352 million U.S. dollars in 2004. This increase has accelerated during the period 2001 and 2004 when agricultural imports have tripled (see Graph1). Cereal imports remain important in domestic supply.

Regarding exports, they have also increased in recent years, reaching a peak of 250 million U.S. dollars in 2003.

From 1970 to 2004, the country's agricultural trade balance is in deficit and surplus alternately. In 2004, the deficit reached U.S. $ 133.1 million. Exports are dominated by products of the cotton sector. In recent years, the CFA franc devaluation occurred in January 1994, the volatility of cotton prices in the international market, the uncontrolled expansion of culture and fertility decline in some areas (a result of monoculture) have alerted the government and the diversification of production for export or import substitution has become a strategic priority. The cultures of pineapple and cashew have thus emerged alongside cotton and palm oil (the traditional cash crop in Benin). Concerning the cultivation of palm oil, thanks to measures to upgrade the industry, she has picked up and production has increased from 130 000 tones in 1994 to 220 000 tones in 2002.

Fig1: Trade Agriculture Product Variation



Beninese agriculture has large potential that can be maximized to increase the economic growth but it is limited by the industrial development lack (Agriculture Mechanization insufficient), climatic factors, technologic transfer and non enough public expenditure. No enough public expenditure may be the most critical problems as with his resolution could help to achieve other challenge such as food security and poverty reducing.

The objective of this study is to mount why public agriculture expenditure is very important for economic growth and poverty reduction and should increase.

II-Methodology and DATA

II-1.Theory Approach

The importance of the agricultural sector in reducing poverty and serving as an engine of growth was demonstrated throughout the Green Revolution in Asia, particularly in India and

China. Africa cannot bypass this development pathway, as the bulk of the African population lives in rural areas.[2] Recent evidence from the International Food Policy Research Institute (IFPRI) showed that promoting higher agricultural growth will be key in reducing poverty, promoting overall economic growth and achieving the first MDG goal of halving the number of poor people (Diao et al., 2007).

There are a range of instruments that governments and donors can use to promote the required Agricultural growth in Africa. Among them, government spending is one of the most direct and effective methods, yet agricultural spending in Africa remains very low when compared with that in other developing regions. For example, Africa still spends only 4-5 percent of its total national budget on agriculture, compared with 8-14 percent in Asia. During the Green Revolution period in Asia, this share was even larger (upwards of 15 percent). Agricultural expenditure as a percentage of agricultural GDP is a more appropriate measure of a government's support for agriculture, as it measures agricultural spending relative to the size of the sector. However, even by this measure, African countries spend only 4-5 percent compared to 8.5-11 percent in Asia (Fan et al., 2008).

The importance of increasing government spending for agriculture has been recognized by African leaders as a fundamental pre-requisite for achieving a 6 percent annual growth rate in agricultural GDP, a goal that has been adopted by NEPAD through the Comprehensive Africa Agriculture Development Program (CAADP). This is evident in the Maputo Declaration, wherein African leaders called for a 10 percent budget allocation to agriculture by 2008, as part of their commitment to the MDG1 and CAADP goals. These well-intentioned efforts have generated debate in the international development community regarding the level and utilization of resources, especially given that agriculture is a neglected sector, with problems that may be exacerbated by drought, insecurity and unfavorable policies towards farmers. The objective of this paper is to develop a simple approach for estimating the financial resources required to achieve the MDG1 through agricultural growth. This is accomplished by first calculating the required agricultural growth rates using elasticities of poverty reduction with respect to agricultural growth. The calculated required growth rates are then used to estimate the necessary financial resources, using growth with respect to expenditure elasticity. Because growth in the non-agricultural sector will also contribute to poverty reduction, either directly or indirectly through growth linkages with agriculture, the additional poverty reduction effects from this sector are also considered in the analysis.

Many differences approach had made to evaluate the required resources need to mitigate MDG in Africa and in some Africa country: see table1.

Table1. Different approaches for analyzing required resources to meet the MDG1

	Author	Method used	Estimates
1	Zedillo Report	Simulation based on investment required to achieve 6 percent growth	$20 billion per year
2	Devarajan (2002)	Estimates required aid by calculating the average growth rate to reach MDG1 using a two gap growth model which depends upon level of investment and incremental input output ratio (ICOR)	$54-62 billion per year
3	Hunger Model (UN)	Unit cost method	No estimates provided
4	UN Reports (2005)	Unit cost method	a) Ghana, $80 per capita in 2006; b) Tanzania, $96 per capita in 2006; c) Uganda, $92 per capita in 2006
5	Rosegrant et al. (2005)	Unit cost method	$238 billion from 1997-2025
6	Besley and Burgess (2003)	Estimates growth rate required to reach MDG1	5.6 percent
7	Hanmer and Naschold (2001)	Estimates growth rate required to reach MDG1 under pro-poor policies	2.4 percent
8	UNDP (2003)	Estimates at country level of growth required to meet MDG1	a) Cameroon, 7 percent; b) Malawi, 6 percent; c) Tanzania, 5 percent; d) Uganda, 5 percent
9	Kakwani and Son (2006)	Estimates required aid and growth at the country level to reach the MDG1	Growth rate varies at 1.5, 5.4 and 2.4 percent for pro-poor, anti-poor and neutral distributions, respectively

Source: IFPRI, 2008

Although the different methodologies utilized to date yield varied estimates, all of the studies reviewed above suggest that the current level of resources needs to be significantly increased to reach the MDG1. Two primary methods for costing the MDGs emerge from these prior reports: unit costs and growth-poverty elasticities. However, there is no consistent analytical basis for the unit cost method.

Moreover, estimating costs at the unit level is more difficult for the MDG1 compared to the health or education MDGs. While a number of growth poverty elasticities have been estimated, these studies tend to be limited by data availability and the required parameters. Also, most of the calculations assume that the poor benefit equally from growth, ignoring the fact that the majority of the poor in Africa live in rural areas, where the agricultural sector plays a central role in lifting them out of poverty. Based upon recent evidence of the relative contribution of agriculture to poverty reduction, especially in Africa, the present study estimates the level of resources required by each country in the agricultural sector in order to achieve the MDG1.

Since there is no 'one size fits all' in meeting the MDG and other development goals, needs assessments can only be properly made at the country level.

To estimate required agricultural growth rates, we begin by decomposing a typical growth elasticity of poverty into the effects of agricultural and non-agriculture growth, and an interaction term that captures the indirect effect of agricultural growth on poverty through its linkage or multiplier effect with nonagricultural growth. This can be represented for each country (and region) as:

$$\frac{dP}{P} = \left(\frac{dP}{P}\frac{Y_{ag}}{dY_{ag}}\right)\frac{dY_{ag}}{Y_{ag}}s_{ag} + \left(\frac{dP}{P}\frac{Y_{ng}}{dY_{ng}}\right)\frac{dY_{ng}}{Y_{ng}}s_{ng} + \left\{\left(\frac{dP}{P}\frac{Y_{ng}}{dY_{ng}}\right)\left(\frac{dY_{ng}}{Y_{ng}}\frac{Y_{ag}}{dY_{ag}}\right)\frac{dY_{ag}}{Y_{ag}}s_{ag}\right\} \quad (1)$$

where for each country and SSA region,

P = poverty rate

Y_{ag} = agricultural GDP

Y_{ng} = non-agricultural GDP

s_{ag} = share of agriculture in GDP

s_{ng} = share of non-agriculture in GDP.

Equation (1) can be rewritten as:

$$\dot{P} = \left\{\varepsilon_{ag} * g_{ag}\right\} * s_{ag} + \left\{\varepsilon_{ng} * g_{ng}\right\} * s_{ng} + \left\{\left(\varepsilon_{ng} * \phi_{ng,ag}\right) * g_{ag}\right\} * s_{ag} \quad (2)$$

where for each country and SSA region,

$\dot{P}$ = change in poverty for each year

ε_{ag} = elasticity of poverty reduction with respect to (w.r.t.) agricultural GDP growth

ε_{ng} = elasticity of poverty reduction w.r.t. non-agricultural GDP growth

g_{ag} = agricultural GDP growth rate

g_{ng} = non-agricultural GDP growth rate

$\phi_{ng,ag}$ = multiplier effect or linkage between agricultural GDP growth and non-agricultural GDP growth.

Equation (2), therefore, represents the contributions of agricultural and non-agricultural growth on poverty reduction, weighted by their respective shares in total GDP. The first and second terms measure the direct and independent effects of agricultural and non-agricultural growth on poverty reduction. The third term measures an indirect effect whereby additional reductions in poverty, which result from non-agricultural growth, are solely generated by the multiplier effect or linkage with agricultural growth. Partitioning the expected reduction in poverty among each of the terms in equation (2) and solving for the required agricultural growth rate (as the unknown) yields the following equation:

$$g_{ag} = \left\{\dot{P} - \dot{P}_{ng}\right\} \Big/ \left\{\varepsilon_{ag} * s_{ag} + \left(\varepsilon_{ng} * \phi_{ng,ag}\right) * s_{ag}\right\}$$

Where *ng P*& = the rate of poverty reduction stemming from a given non-agricultural growth rate, which is calculated from the second term in equation (2), i.e. *ng ng ng ng P*& = $\varepsilon * g * s$.

Equation (3) represents the agricultural growth rate that is required to reduce poverty annually from its own direct effect. The difference between the annual rates of poverty reduction needed to achieve the MDG1 and that resulting from non-agricultural growth alone represents the rate of change that will need to come directly from agricultural growth and indirectly from the additional growth in non-agriculture stimulated by the agricultural growth (via the multiplier effect).

To determine the level of public expenditure needed for agriculture to grow at the rates calculated in equation (3), we use recent expenditure elasticities of growth, which measure the rate at which a change in agricultural expenditure will lead to a change in the rate of agricultural growth[7]. Once the required agricultural growth rates are known, the corresponding annual changes in expenditure needed to achieve these growth rates can be calculated as:

$$\dot{E}_{ag} = g_{ag} \Big/ \delta_{ag} \qquad (4)$$

where

$\dot{E}_{ag}$ = the annual growth rate in agricultural expenditures, or $\frac{dE_{ag}}{E_{ag}}$

δ_{ag} = elasticity of agricultural growth w.r.t. agricultural expenditure growth, or $\frac{dY_{ag}}{dE_{ag}}\frac{E_{ag}}{Y_{ag}}$.

From equation (4), the annual agricultural expenditures required between 2005 and 2015 can be easily calculated from the baseline data on actual agricultural expenditures in 2004.

The Poverty Reduction Strategy Papers (PRSPs) are supposed to provide a framework for calculating the additional amount of resources required, but very few countries have done so to date. Furthermore, the studies that include relevant costing calculations often lack a consistent and integrated analytical framework.

To evaluate that in Benin we will use the same approach.

II-2.Data, Parameter and resources

Data on agricultural and non-agricultural growth, population growth and poverty rate and agricultural expenditures over time are needed to quantify the required agricultural spending. The data on agricultural expenditures are primarily obtained from the International Monetary Funds' Government Finance Statistics yearbooks, supplemented from the statistical

appendices of the country reports from the IMF and PRSP reports.

Table2. Poverty and growth in Africa

Typology	Country	Most Recent Poverty Rates (various years)	MDG Target Poverty Rate by 2015	Annual GDP Growth Rates		Agricultural Share in GDP	Annual Agricultural Growth Rates		Non-Agricultural Growth Rates	
				1990-2004	*2000-2004*	*2004*	*1990-2004*	*2000-2004*	*1990-2004*	*2000-2004*
Share of Ag GDP in total GDP>10 percent<35 percent	Burkina Faso [2,4,6]	46.4	28.1	4.2	5.2	31	3.8	5.1	4.4	5.3
	Chad [2]	81.8	40.4	4.0	14.1	21	3.0	0.7	4.3	19.8
	Cote d'Ivoire [2]	33.6	16.2	2.1	-0.6	27	2.7	0.5	1.9	-1.1
	Gambia [2]	57.6	32.0	3.4	3.8	26	3.7	-0.2	3.3	5.3
	Guinea [2,5]	64.0	34.8	4.0	2.9	22	4.5	4.5	3.9	2.5
	Kenya [2]	55.4	24.4	2.3	2.7	25	2.4	1.9	2.2	3.0
	Lesotho [2]	68.0	24.5	3.3	3.1	15	1.6	-1.8	3.6	4.1
	Madagascar [2]	80.7	35.0	2.1	0.9	32	1.8	1.3	2.3	0.7
	Malawi [2,4]	65.3	27.0	3.1	2.9	34	6.8	1.8	1.6	3.5
	Mauritania [2]	46.3	28.3	4.7	4.7	15	2.8	-0.2	5.2	5.8
	Mozambique [2,4]	54.1	37.2	7.2	8.8	27	5.0	8.9	8.2	8.8
	Namibia [1]	33.9	18.0	4.0	4.7	10	3.1	1.2	4.1	5.1
	Senegal [2]	53.9	29.0	3.6	4.4	18	2.6	0.0	3.9	5.5
	Swaziland [1,3]	8.5	5.9	3.0	2.3	8	0.7	-0.3	3.3	2.6
	Zambia [2]	67.0	34.9	1.6	4.4	15	3.2	1.3	1.4	5.0
	Zimbabwe [1]	58.3	16.7	-0.2	-5.9	17	1.4	-9.0	-0.5	-5.2
Share of Ag GDP in total GDP>35 percent	Benin [2]	28.5	13.2	4.9	4.5	42	5.7	5.7	4.4	3.7
	Burundi [2]	68.0	18.2	-1.1	2.7	54	-0.2	1.9	-2.1	3.7
	Cameroon [2]	40.2	26.7	2.9	4.5	38	5.7	6.0	1.6	3.6
	Central African Republic [1]	81.5	25.9	1.6	-2.0	64	3.9	3.0	-1.2	-8.9
	Ethiopia [2]	44.2	25.6	4.3	3.6	38	1.9	0.9	6.4	5.4
	Ghana [2]	35.0	26.0	4.3	4.9	41	3.7	5.0	4.8	4.8
	Guinea-Bissau [5]	84.2	26.7	0.4	-1.2	59	3.1	3.3	-2.2	-6.4
	Mali [2]	63.8	34.0	5.0	6.3	35	2.8	5.1	6.5	7.0
	Niger [2,4]	74.5	31.5	2.8	4.1	40	3.2	5.1	2.6	3.4
	Nigeria [1]	67.6	36.4	2.9	5.4	36	3.8	5.3	2.5	5.5
	Rwanda [2]	60.3	25.6	2.7	5.2	44	4.7	4.7	1.3	5.6
	Tanzania [2]	35.7	19.3	4.0	6.8	42	3.6	4.9	4.3	8.3
	Togo [5]	63.3	28.8	3.1	2.6	37	3.2	2.7	3.1	2.5
	Uganda [2]	37.7	28.0	6.7	5.8	35	3.9	3.9	8.9	7.0
	SSA	44.0	22.3	2.9	3.9	32	3.4	3.6	2.8	4.0

SOURCE: IFPRI, 2008

Table3. Reaching MDG1 under different scenarios

Typology	Country/Region	More Conservative (Growth Rates for Agricultural and Non-agricultural, 1990-2004)	More Optimistic (Growth Rates for Agricultural and Non-agricultural, 2000-2004)	Six Percent Agricultural and Non-agricultural Growth from 1990 to 2004	Six Percent Agricultural and Non-agricultural Growth from 2000 to 2004
	Burkina Faso				Y
	Chad				
	Cote dIvoire				
	Gambia				
	Guinea				
	Kenya				
	Lesotho				
	Madagascar				
	Malawi				
	Mauritania				Y
	Mozambique	Y	Y	Y	Y
	Namibia				
	Senegal				
	Swaziland				
	Zambia				
	Zimbabwe				
Share of Ag GDP in total GDP>35 percent	Benin				
	Burundi				
	Cameroon	Y	Y	Y	Y
	Central African Republic				
	Ethiopia			Y	Y
	Ghana	Y	Y	Y	Y
	Guinea-Bissau				
	Mali				Y
	Niger				
	Nigeria				Y
	Rwanda				Y
	Tanzania				
	Togo				
	Uganda	Y	Y	Y	Y
	SSA				

Source: Based on author's calculations.
Y- indicates 'Yes, will achieve the MDG1,' and a blank cell indicates failure to achieve the MDG1.

Source: IFPRI, 2008

Table4. Government spending for agriculture in Africa

Typology	Country	Total Government Expenditure (international dollars, millions)	Agricultural Expenditure (international dollars, millions)	Agricultural Expenditure Share of Ag GDP	Agricultural Expenditure Share of Total Expenditure
		2004	*2004*	*2004*	*2004*
Share of Ag GDP in total GDP>10 percent<35 percent	Burkina Faso	3,162	493	1.6	15.6
	Chad	1,820	177	6.4	9.7
	Cote dIvoire	3,690	228	3.7	6.2
	Gambia	790	67	8.9	8.5
	Guinea	2,830	397	16.9	14
	Kenya	9,120	339	3.6	3.7
	Lesotho	2,010	159	26.5	7.9
	Madagascar	17,250	1,232	34.6	7.1
	Malawi	3,196	76	5.9	2.4
	Mauritania	1,810	100	11.2	5.5
	Mozambique	5,356	216	4.2	4.0
	Namibia	4,650	238	21.7	5.1
	Senegal	3,930	121	4.3	3.1
	Swaziland	1,650	38	8.3	2.3
	Zambia	2,491	72	4.1	2.9
	Zimbabwe	11,023	678	19.1	6.2
Share of Ag GDP in total GDP>35 percent	Benin	1,650	65	2.4	3.9
	Burundi	150	1.4	0.1	0.9
	Cameroon	5,800	223	1.4	3.9
	Central African Republic	520	14	0.6	2.7
	Ethiopia	23,520	1,996	5.2	8.5
	Ghana	15,340	127	0.8	0.8
	Guinea-Bissau	420	2.2	0.3	0.5
	Mali	2,590	435	9.0	16.8
	Niger	1,700	16	0.4	0.9
	Nigeria	48,142	1,415	4.1	2.9
	Rwanda	2,430	14	0.3	0.6
	Tanzania	1,860	42	0.5	2.3
	Togo	2,471	28	1.6	1.1
	Uganda	9,125	516	3.5	5.7
	SSA	190,494	9,789	4.6	5.1

Source: Government Finance Statistics (GFS) of the International Monetary Fund (IMF), supplemented by statistical appendix and PRSPs. The definition of agricultural expenditure is the standard definition used by the IMF in the GFS Manual, 2001.

III-Result and discussion

The application of this model shows that:

By table5 analysis, the annual Agriculture expenditure required for 2004-2015 is 356 Million USD(8,1% agriculture growth per year) with the conservative scenario beside 301 Million USD (7,1% agriculture growth per year) with optimistic scenario.

Howether the public expenditure in agriculture sector still very lower than 10% of the total

GDP (table6, fig2) and the agriculture growth analysis from 2000 to 2008 also still low than 7,6. Is mean that we still far away to achieve MDG1 challenges by the agriculture growth even if we have enough natural resources potentiality this is the contrast.

If we analysis the general the public finance data we realize that the mean of the public expenditure is 23%of the GDP. So the public expenditure of country is already very low, from that we can know why the total economic growth is low。This analysis prove that public expenditure in not significant pour improve the growth because it is prove that to growth the economic we should invest in public major sector of the country and this can help to produce more and export more to make benefice, But if we look the ration import/export of Benin the inflation is very high.

In 2009, Benin has allocated 47 billion CFA francs (or 1.4% of GDP in 2009) for agriculture development in the government's new vision to stimulate the Economic growth by Agricultural Sector (Prsa) which is mean "make Benin agricultural powerful country in 2015".So in 2009 maize and rice production are estimated at 1,100,000 and 110,000 tones respectively. During the cotton season 2009-2010, the total area sown for this culture at national level is 2,040,191 hectares against 1,740,209 hectares during the 2008-2009 campaign for food producing. We observe 3.8% of growing mainly due to some crops production such as rice, maize. But cotton crops, yams and vegetables are growth has decrease. Livestock production also has increase at 3.8%. According to the statistics one million 200 000 tones corn will be harvested2009-2010. 350 000 tones more than national demand .ONAS, the public agency for agriculture production reserves management strategic has 20 000 tones storage capacity. Hence the questions is how they will management the production surplus. This situation prove that government spending did not yet sufficient to manage the production agriculture surplus who can contribute to mitigate some extreme condition such as climate change impact on production (food insecurity)and this can increase the poverty rate.

Table5. Agricultural growth and expenditure required to meet the MDG1

Typology	Country	Assumed Annual Non-Agricultural Growth Rates, 2004 - 2015 (percent)	Required Annual Agriculture Growth Rates to Achieve MDG1 (percent)	Required Agricultural Expenditure Growth Rates to Achieve MDG1 (percent)	Annual Agriculture Expenditure Required, 2004 - 2015 (international dollars, million)	Assumed Annual Non-Agricultural Growth Rates, 2004 - 2015 (percent)	Required Annual Agriculture Growth Rates to Achieve MDG1 (percent)	Required Agricultural Expenditure Growth Rates to Achieve MDG1 (percent)	Annual Agriculture Expenditure Required, 2004 - 2015, (international dollars, million)
		More Conservative Scenarios				*More Optimistic Scenario*			
Share of Ag GDP in total GDP>10 percent<35 percent	Burkina Faso	4.4	6.2	20.2	284	5.3	5.5	17.9	246
	Chad	4.3	9.9	32.0	1,356	6.0	8.1	26.4	953
	Cote d'Ivoire	2.0	10.2	33.2	1,768	4.0	8.9	28.9	1,344
	Gambia	3.3	8.9	29.0	426	5.3	7.2	23.5	301
	Guinea	3.9	8.2	26.7	3,621	4.0	7.4	24.1	3,068
	Kenya	2.2	11.3	36.7	4,318	4.0	10.0	32.5	3,313
	Lesotho	3.6	12.1	39.2	1,918	4.1	10.0	32.4	1,253
	Madagascar	2.4	10.9	35.5	*11,789*	4.0	10.2	33.0	*10,091*
	Malawi	1.7	10.4	33.8	1,175	4.0	6.8	22.0	556
	Mauritania	5.2	6.1	19.7	356	5.8	4.5	14.7	259
	Mozambique	6.0	3.6	11.6	463	6.0	3.0	9.7	413
	Namibia	4.1	10.1	32.7	1,912	5.1	8.1	26.1	1,262
	Senegal	3.9	8.6	27.9	714	5.5	6.6	21.5	478
	Swaziland	3.3	6.9	22.5	161	4.0	6.3	20.5	142
	Zambia	1.8	11.2	36.3	665	5.0	7.7	24.9	324
	Zimbabwe	1.1	18.0	58.6	*28,345*	4.0	15.5	50.5	*17,458*
Share of Ag GDP in total GDP>35 percent	Benin	4.4	8.5	26.7	356	4.0	7.6	24.0	301
	Burundi	1.2	10.9	34.1	12	4.0	10.5	32.9	11
	Cameroon	1.8	5.7	18.0	708	4.0	3.8	11.9	486
	Central African Republic	1.7	9.2	29.0	88	4.0	8.4	26.5	75
	Ethiopia	6.0	4.8	15.1	3,012	5.4	4.4	13.7	2,770
	Ghana	4.8	3.2	10.2	251	4.8	3.0	9.5	240
	Guinea-Bissau	2.4	10.3	32.4	17	4.0	10.2	32.0	17
	Mali	6.0	6.2	19.6	1,266	6.0	5.7	17.9	1,133
	Niger	2.7	10.5	33.0	131	4.0	10.0	31.5	5,154
	Nigeria	2.5	7.7	25.1	7,751	5.5	5.7	18.6	63
	Rwanda	4.4	7.6	24.0	268	5.6	8.1	25.6	307
	Tanzania	4.3	6.5	20.3	156	6.0	5.0	15.8	118
	Togo	3.1	9.6	30.2	312	4.0	9.1	28.6	281
	Uganda	6.0	3.5	11.1	954	6.0	3.2	10.0	891
	SSA	2.8	8.5	23.5	39,106	4.0	7.5	20.7	32,794

Source: RESAKSS, 2009

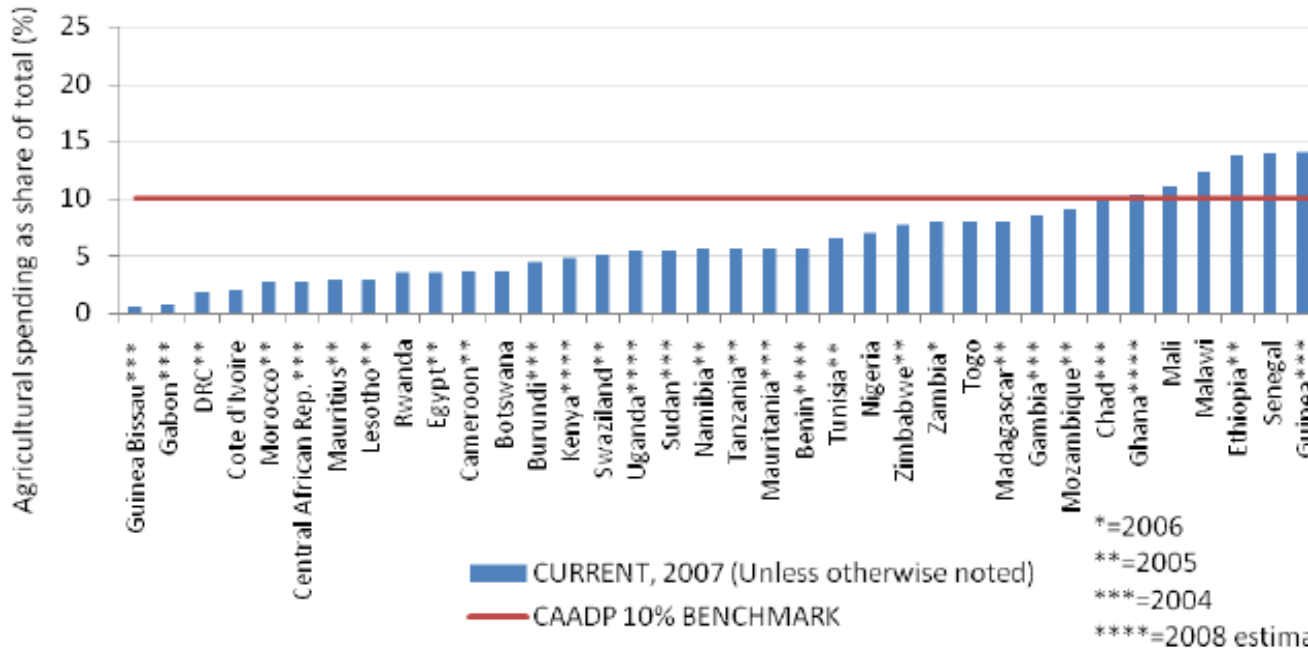
Table6. Level of Agricultural Investment as a Share of Total Expenditure, 2007 (unless otherwise noted)

At least 10 percent	5 percent to less than 10 percent	Less than 5 percent
Burkina Faso[2]	Benin[1]	Botswana
Ethiopia[3]	Chad[4]	Burundi[4]
Ghana[1]	Madagascar[3]	Cameroon[3]
Guinea[4]	Mauritania[4]	Central African Republic[4]
Malawi	Mozambique[3]	Congo, Dem. Rep.[3]
Mali	Namibia[3]	Cote d'Ivoire
Niger[2]	Nigeria	Egypt[3]
Senegal	Sudan[4]	Gabon[4]
	Swaziland[3]	Guinea Bissau[4]
	Tanzania[3]	Kenya[1]
	The Gambia[4]	Lesotho[3]
	Togo	Mauritius[3]
	Tunisia[3]	Morocco[3]
	Uganda[1]	Rwanda
	Zambia[2]	
	Zimbabwe[3]	

Sources: Calculated using data from International Monetary Fund's Government Finance Statistics (various issues). NEPAD/AU/FAO/World Bank 2006 budgetary tracking surveys, which also adopted the COFOG standards of measure. From preliminary in-country surveys by ReSAKSS nodes with in-country network partners (Zambia, Nigeria), and in some cases as part of broader Public Expenditure Review studies under taken in collaboration with the World Bank and national government agencies (e.g. Uganda, Malawi). For Nigeria, 2006 figure are preliminary estimates based on the Federal budget. Rwanda figures from Diao, X., et al. 2007 (IFPRI).
Notes: 1. Estimate for 2008; 2. 2006; 3. 2005; 4. 2004.

Source: RESAKSS, 2009

Figure2. Agricultural Expenditures and the CAADP 10% Target, 2007



Sources: Calculated using data from International Monetary Fund's Government Finance Statistics (various issues). NEPAD/AU/FAO/World Bank 2006 budgetary tracking surveys, which also adopted the COFOG standards of measure. From preliminary in-country surveys by ReSAKSS nodes with in-country network partners (Zambia, Nigeria), and in some cases as broader Public Expenditure Review studies under taken in collaboration with the World Bank and national government agenc (e.g. Uganda, Malawi). For Nigeria, 2006 figure are preliminary estimates based on the Federal budget. Rwanda figures from X., et al. 2007 (IFPRI).

Source: RESASKS, 2009

Table7: Agriculture growth rate in Benin

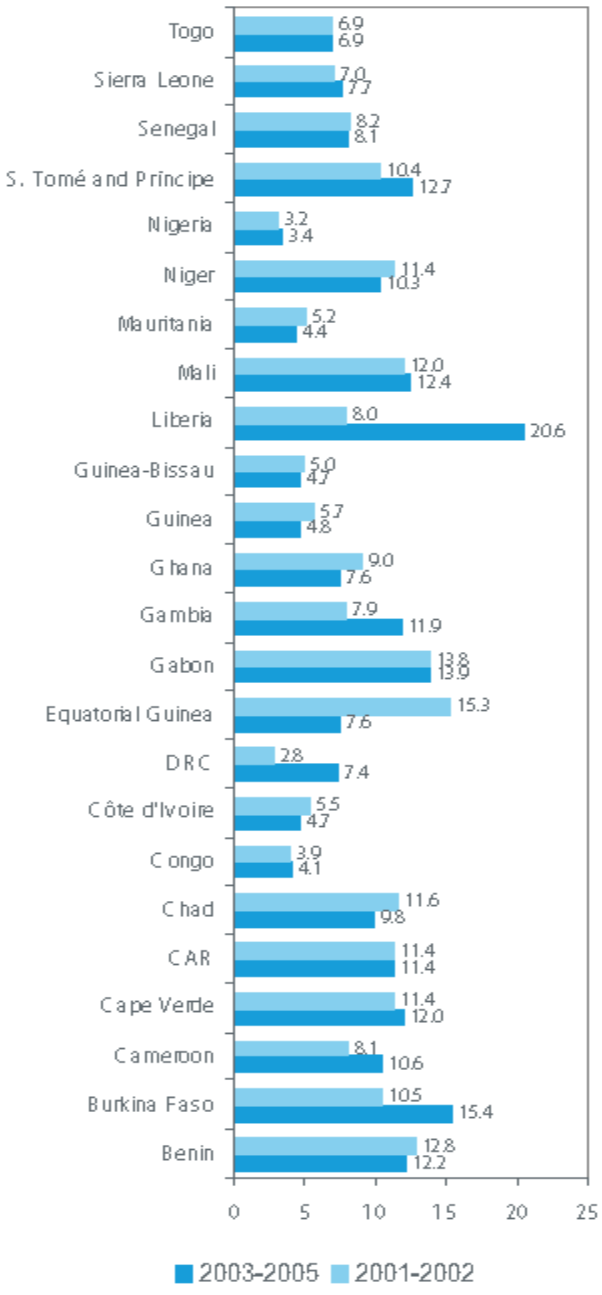
	2000	2001	2002	2003	2004	2005	2006	2007	2008
Annual Growth Rates (%)									
Agriculture	4.5	6.4	2.5	2.2	6.3	-0.8	5.6	4.2	3.9

Source: African Statistical Yearbook 2009

Table 8- Public Finances, 2007-2010 (percentage of GDP)

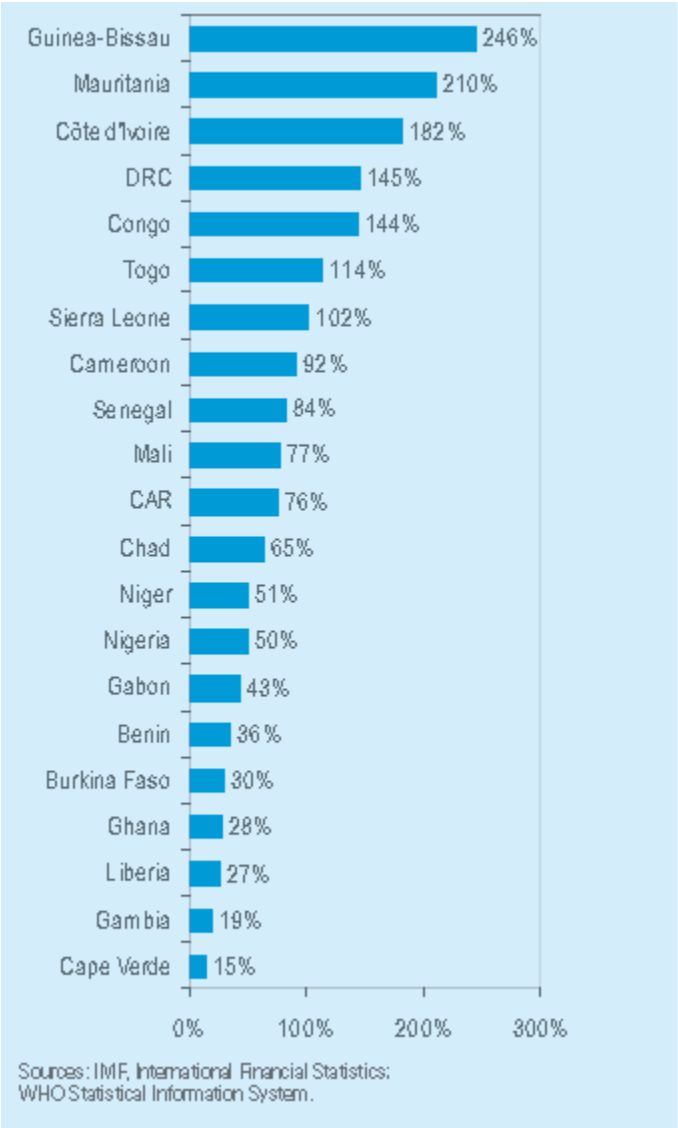
	2007			2008 (e)			2009 (p	
	Total revenue and grants	Total expenditure and net lending	Overall balance	Total revenue and grants	Total expenditure and net lending	Overall balance	Total revenue and grants	To expenditu and lendi
Algeria	39.3	34.5	4.8	39.1	32.3	6.8	28.9	4
Angola	45.1	34.0	11.2	47.2	36.4	10.8	36.8	4
Benin	24.0	22.2	1.9	22.2	22.7	-0.5	21.3	2
Botswana**	40.7	34.2	6.5	37.5	37.7	-0.3	31.0	3
Burkina Faso	20.1	25.8	-5.7	19.9	26.3	-6.4	18.5	2
Burundi	35.9	38.8	-3.0	31.1	40.0	-8.9	69.3	3
Cameroon	19.9	15.6	4.4	21.7	15.7	5.9	18.8	1
Cape Verde	28.5	29.3	-0.8	28.3	29.5	-1.2	28.2	3
Central Afr. Rep.	14.3	12.7	1.5	13.8	13.3	0.5	13.2	1

Figure3. Health share of total government expenditure (%)



Source: WHO Statistical Information System.

Figure4. Military expenditure as % of health expenditure, 2005



IVConclusion.

Beninese agriculture has enormous potentiality but public expenditures is very low (low than 10%of Total GDP and very lower than 25% that is recommande) to increase performance of this sector that is key sector of Benin economic growth .However agriculture sector growth is not optimal in Benin to contribute to poor population those income is manly from this sector to ameliorate their living condition and to fight poverty. Sufficient public expenditure lack in Benin felt in all sectors but more in the agricultural sector. This is a case this year when the agriculture

production was redundant in one hand and other hand have inability of crops stocking, crops conservation system lack and crops distribution system lack due to (infrastructure lack) and insufficient investment lack .The agricultural sector public expenditure compare to those of other sectors prove that agriculture public expenditure is less as is he news vision is to make Benin become power agriculture country. With climate change negative effect this situation may increase. Therefore is very urgent to define new policies in a sustainable development vision and goals by using agricultural sectors to boost other sectors in step are almost primitive in order to ensure rural population better living conditions especially most vulnerable to poverty.

V-Recommendation

- Allocate a much higher level public resource to agriculture than is presently the case in most countries in the Africa region in view of the needs of agriculture in these economies. Judging from the successes of some Asian countries and a few African countries, particularly with regard to the quantum of allocation of resources to the agricultural sector, national governments should make available a minimum of 25% of the national budget for agricultural and rural development program.

- Ensure that these expenditures are of high quality in terms of structure and utilization, that they serve to alleviate the problem of operators in the sector, particularly the small-scale operators, and that they encourage greater flow of private investment to the sector.

- Consider selective subsidy which is limited in space and time. This option is not inherently undesirable if it is provided within the framework of a clear and coherent national policy that identifies unambiguously why the subsidy is necessary, what is being subsidized, and who the expected beneficiaries are. The net benefits derived from this policy option also need to be determined.

- Reduce direct subsidies to agriculture and utilize the resources in areas that indirectly support agriculture, such as the provision of infrastructural facilities and private investments.

- Maintain a low rate of taxation of agriculture and avoid taxation through price manipulations.

- Ensure that credit is not only available to all who are directly and indirectly involved in agriculture (farmers and other economic agents handling upstream and downstream functions) but is also accessible particularly to the small-scale farmers. Availability of and accessibility to credit were found to be so central to the growth and development of agriculture that governments in the Africa region.

- Endeavour to ensure that the real exchange rate of the national currency is stable and maintained at an historical level that has helped the economy to achieve an acceptable rate of growth. African countries should recognise that a liberalised exchange rate policy has always benefited agriculture.

- Create more awareness by anticipating the trends, so that countries can begin to review their policies to ensure that their economies and the agricultural sector benefit from these changes, as the post-Uruguay international trading arrangements.

- Examine the conditionalities of each deficit financing through borrowing. It should be noted that where debts have been contracted to promote agricultural growth and development, the outcome has often been disappointing and agriculture has been taxed at a level much higher than the level of public (domestic and foreign) resources transferred to the sector.

- Continue to put in place mechanisms (policies) that will allow market forces to determine the prices of agricultural products and inputs rather than try to interfere with the workings of the market. Support should be given through investments and other interventions that remove structural and institutional constraints, which hinder private enterprise (e.g. provision of market information, transportation and other services).

- Provide assistance, particularly, in technology development and transfer involving problem-oriented research and user participation with a focus on the rural economy;

- Pay greater and urgent attention should be given to human resource development and institutional strengthening for policy analysis, programme planning, identification, preparation, appraisal, prioritisation monitoring (including data generation and use), transfer and use of technology;

- Increase the provision of resources, with private sector participation for planning, preparation, establishment and management of selected physical infrastructure (e.g., dams, roads, and irrigation, processing plants). This strategy will stimulate interest and quicken the response of the private sector to appeals to increase their investments in, and commitment to, the development of the agricultural sector.

- Decentralise the development of agriculture and the rural sector in terms of administrative, financial and development activities. This approach will allow for participatory planning (prioritisation of needs, appropriateness of resource allocation), programming, resource mobilisation, implementation, monitoring and evaluation of agricultural development. It will also allow for sharpening the focus on developing the capacities of stakeholders at the grassroots level and empowering them to make appropriate decisions on all aspects of their vocation.
-

- Increasing agricultural research capacity is seen as an important factor in building food security and economic stability Benin. Furthermore, new and better-targeted technologies are essential to this process, and a well-developed and well-supported agricultural research system is a prerequisite not only for the design of these technologies but also for their dissemination and adoption. But despite the mass of evidence pointing to agricultural development as a priority, growth in agricultural research and development (R&D) investments in SSA has stagnated over the past two decades while funding has become increasingly scarce, irregular, and donor-dependent. This has often been combined with poor Science & Technology policies and inefficient and ineffective research management. Institutional reforms and sound S&T policies are needed to improve the efficiency and effectiveness of agricultural research in Benin. Donor-supported projects have helped to build capacity in many countries, but these advances will quickly be eroded with the withdrawal of donor funding if other sources are not consolidated and further developed.
- Investe to increase the agriculture machine. Only one tractors per 100 sq. km of arable land. Government should help farmers to get more facilities by providing credit to help farmers to get the agriculture machines.

V.**References:**

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Annexe1: List of Tables

Annexe2: List of Figure