

**Food Security and Agricultural Development in Sub-Saharan Africa:
Building a Case for More Support**

BACKGROUND DOCUMENT

FINAL REPORT

Jean-Marc Boussard, Benoit Daviron, Françoise Gérard, Tancrède Voituriez

CIRAD for FAO, 2005

DISCLAIMER

The designations employed and presentation of material in this publication do not imply the expression of any opinion whatsoever on the part of the Food and Agriculture Organization of the United Nations concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries.

The views expressed in this document are those of the authors, and do not necessarily reflect those of FAO, NEPAD or the Government of France. They are not intended to serve as an official policy statement. Their intention is to enhance understanding and spark debate on key policy issues.

EXECUTIVE SUMMARY

I. Food insecurity in sub-Saharan Africa: a chronic widespread condition, whose prominent cause is low income at household level.

1. Almost 33% of African population, or 200 million people, are malnourished, which is the highest prevalence in the world. The number of malnourished has almost doubled since the late Sixties, increasing roughly at the same rate as population growth, indicating few successful strategies in poverty alleviation and food security improvement. Food crises emerge when shocks such as drought, flood, pest, economic downturn or conflicts occur and affect this chronically insecure population. Annually, around 30 million Africans are affected.

2. The analysis of average food availability among a representative set of African countries confirms this preoccupying situation and emphasizes the high degree of heterogeneity among countries. In one third of African countries the average intake of daily calorie availability is below the recommended level of 2100 kcal (Ethiopia, Kenya, Rwanda, and Tanzania in East Africa; and Angola, Madagascar, Mozambique, and Zambia in Southern Africa; Sierra Leone in West Africa). In a few countries (DR Congo, Burundi, Eritrea, and Somalia) the mean availability is below 1800 kcal which is considered the minimum intake level. In some countries (Botswana, Burundi, Congo DC, Gambia, Liberia, Madagascar, Senegal, Sierra Leone, Somalia, Tanzania, and Zambia), the situation has been deteriorating over the last 10 years while in others (Ghana, Nigeria, and Malawi) aggregate figures exhibit an improving trend –. Less than 50% of sub-Saharan African countries show figures under 30% for the prevalence of malnutrition and only three of them under the 10% level (Gabon, Nigeria, and Namibia). Some countries, despite economic growth and sufficient aggregate availability, display increasing malnutrition, as measured by the prevalence of stunted growth in children. Such is the case in Mali.

3. Average food availability is calculated by adding domestic production, imports, food aid and subtracting exports. Statistical analysis of several countries shows the marginal impact of exports. Inadequate average food availability is consequently the result of insufficient domestic production and imports.

4. When analyzing the time series on domestic production and external trade, the striking fact is the absence of adequate recourse to imports to allow adequate food availability when domestic production is insufficient. Poverty statistics as well as national income trends, measured by GDP, indicate that the food insecurity problem is related to “access”: food insecure households do not have the means to pay the price for imports in order to access to adequate supply of food. In a world where adequate food supply is globally available, trade should indeed provide deficit countries with the volume of food required to feed their population properly. Increased income should generate a high response in food demand among food insecure households. If it is not the case while no bottleneck restricts access to international trade, the problem relies on the lack of solvent demand due to insufficient income.

II Low labour productivity and non solvent demand as primary roots of insufficient income

5. Looking for chronic widespread food insecurity causes raises hence the tricky issue of understanding why household income of a large share of the population is so low. Factors constraining economic growth and job opportunities especially among low income households need to be examined.

6. At national level, income is defined as the sum of household incomes, including remittances. Among poor households, income is generated by selling goods produced at home and/or by selling labour. If income is not sufficient to meet the basic needs of the population, either by selling goods and/or labour selling, or both, are insufficiently met. Selling goods may earn insufficient income because products are not competitively priced. Then causes are directly related to **low labour productivity**. But the level of sales may also be insufficient due to the **lack of solvent demand**, directly related to low income. The lack of solvent demand explains the lack of economic growth and job opportunities. Production factors, such as labour, may then be under utilized.

7. Root causes of low labour productivity may be listed as follows: The **lack of public goods** in Africa is today pointed out/to as a main cause of insufficient pro-poor growth. Public investment in soil and water management allows rural populations to cope with droughts and floods as well as to improve yields. Already in the Sixties the level of transport in Africa was far lower than in Asia, partly because of too low a population density. The fact that this situation still holds, despite the huge amount devoted to development aid between the Sixties and the beginning of the Eighties may be attributed to wrong projects definition, poorly conceived planning systems, lack of coordination between ministries and donors, lack of coordination between public and private investment. Since the beginning of the Eighties, it may be attributed to the enormous cut in public expenditure due to the decreasing of aid combined with macro-economic stabilization policies.

8. The **low level of capital endowment** per capita is largely explained by the risks faced by farmers as well as by traders and processors. Farmers face both yield and output price instability. Output price instability not only affects income flows but also ex post returns on potential investment in farming as well as in marketing and processing facilities. Actors react to the uncertainty induced by market instability by reducing their level of investment both in physical and human capital. This impact is particularly visible among poor farmers who are highly risk-averse and do not access credit to ease consumption and investment difficulties. The low level of public goods provision, such as irrigation facilities, extension services and roads, further decreases the profitability of private investment and diverts private actors from the agricultural sector.

9. Counter intuitively, decline in the measured capital stock per worker in Africa is not the primary source of the decrease in output per worker in Sub-Saharan Africa from 1980 to 2000. It is not so much the limited growth of capital per worker during the last twenty years than its inadequacy to Africa production constraints (land available per worker, weather conditions, market institutions) that hampers productivity growth. **Inadequate technical agendas** in agriculture, with for example the very low level of inputs used, can be partly explained by limited access to (physical) markets for agricultural inputs and outputs as well as for non agricultural goods, and partly by the

lack of adequate public research on African agriculture and the lack of efficient agricultural services (extension, credit).

10. The **lack of scale effect**, mainly in agro-processing and marketing activities is directly related to the isolation due to the absence of good-quality roads. Then actors are facing a very thin market with very high transaction costs. This considerably reduces the benefits of trade and discourages economic activities.

11. Risk considerations explain also the **lack of specialization**, one main strategy to cope with output prices and yields uncertainty being to diversify production activities.

12. Symmetrically, roots causes of insufficient solvent demand may be listed as follows. Considering **local household demand**, the lack of income among a large share of population explains the lack of solvent demand. This is directly related to low labour productivity and to the lack of job opportunities. For the richest consumers, imported goods are often preferred for consumption. Moreover, exports subsidies as well as food aid have a negative impact on agricultural output prices and divert part of the local demand to foreign supply. Negative financial transfers, due to the burden of the debt repayment also affect the national income and thus solvent demand. Considering **public demand**, as already underlined, the drastic cut in public expenditures since the mid-Eighties explains a sharp drop. The **lack of foreign demand** is explained by high transaction costs, isolating local markets from the rest of the world, low competitiveness of local goods, due to low productivity, and foreign markets protection, through tariffs and non-tariff barriers.

13. Low productivity and low demand are indeed linked by a circular relationship. Early development theorists used to wonder why income growth in economically backward areas was trapped. Starting with the demand size of the problem, the most documented determinants are transport facilities, which Adam Smith singled out for special emphasis. Reductions in transport costs do enlarge the market in the economic as well as the geographical sense. But reductions in any cost of production tend to have the same effect. So the size of the market is determined by the general level of productivity and by the level of domestic factors used. Capacity to buy means capacity to produce. In its turn, the level of productivity depends largely on the use of capital in production. But the use of capital is inhibited, to start with, by the small size of the market. What is the way out this circle?

III. Using policy as a way out of the circle linking low productivity and the small size of the market

14. The root causes identified of chronic food insecurity can be turned into priority objectives. Priority objectives for policy makers whose country has been facing chronic food insecurity should be, first, to improve productivity, and second, to boost demand for food-insecure-household products and/or labour. The first objective is widespread and consensual among policy advisers and academics, with the exception of the external (foreign) demand for labour. The second one is far more neglected, if not ignored. When applied to the rural sector, it goes beyond agricultural policy per se and involves clearcut choices in terms of growth and development policies. **Refocusing on demand growth, both local and external, is a top priority development policies that enhance food security.**

15. The review of policy measures actually implemented in African countries highlights the vanishing of agricultural policies in their OECD or post independence acceptance. With the exception of some subsidies on inputs (a few Southern African countries, cotton in some West African countries), remaining minimum price guarantee schemes (maize in some African countries), VAT exemptions, limited import tariffs (although far below the banded rate) and scattered public investment in rural areas, the scope of public intervention is narrow. This narrowness, when confronted with the breadth and depth of the causes chronic food insecurity in Africa, points to the scandalously limited policy response brought today by African countries to African populations. **A start in budget reallocation toward rural populations is urgent to overcome the unaddressed causes of food insecurity.**

16. It is worth recalling first that available policy measures are much more numerous than the ones still in use in Africa. Policy measures restricted to the rural sector include: border measures (fixed tariffs, variable tariffs, quotas, both on imports and exports); domestic support (minimum price, output subsidies, input subsidies, consumption subsidies, direct transfers, stabilisation); indirect taxes (VAT exemptions); investment funding and incentives (subsidies); interest rate subsidies; provision of agricultural services in remote areas (credit, irrigation, storage facilities). Successful food security strategies in places such as Indonesia, Europe or Central America in previous decades demonstrate that there is no orthodox, one-size-fits-all policy package. The larger the choice of measures available, the higher the probability to apply Tinbergen's efficiency rule, according to which one policy measure must be targeted at only one objective – following the popular idea that “you cannot hit two birds with one stone”. We have seen that root causes of food insecurity provide a large scope of policy objectives. **Significant widening and flexibility in the choice of available policy measures is urgent to overcome the unaddressed causes of food insecurity.**

17. International or regional commitments of African countries do not bring convincing explanation of the narrowness of public intervention targeted at food insecurity in Africa today. The room for ambitious agricultural policies at WTO is wide, with total exemption of tariff and support reduction being granted to least developed countries (most of them are to be found in SSA) while developing countries enjoy a special and differential treatment rehabilitating some of the pre PAS instruments (like input subsidies as long as they are targeted at the poorest). Examination of bilateral agreements (like EPA following Cotonou Partnership Agreements between EU and ACP countries) and regional agreements (such as UEMOA), reveals no significant constraints on any kind of domestic support, since the primary constraint relates to external tariffs. The most stringent constraints seem to stem from the conditions imposed by donors and international financial institutions (IMF, WB) and other aid agencies adopting the same agenda. **Upgrading in a coherent framework the set of rights and obligations of the governments of food-insecure countries towards the international community – and specifically toward the Bretton Woods institutions and other aid agencies - is urgent to overcome the unaddressed causes of food insecurity.**

18. Economists dealing with political economy have tried to show the losses and more generally, the dysfunctions and failures associated with the use of some specific policy instruments. Regarding African countries, two major inputs in the political economy analysis of agricultural policy must be considered :

- A first “bunch” of researches has been focused on agricultural policy instrument giving access to a limited amount of specific free or subsidized goods or services (inputs, credit, extension...) or limited access to a particular market (a foreign market,

for example). This limitation in quantity gives rise to subsidies and people will compete to get these subsidies and devote resources to such competition. Depending on the allocation method used, the kind of resource provided will differ. When allocation of trade licenses is decided by government officials, different kind of expenses will be realized to influence the decision: trip to the capital, office rent in the same capital, lobbyist services and of course directly money, i.e. bribe. Therefore, waste of resources is a primary problem. Increasing inequality can be a second one. Corruption the last one.

- The second “bunch” of political economic analyses aims at explaining the apparent preference of African government for input or credit subsidies and projects instead of higher price for agricultural commodities. According to such analyses the role of pressure groups actuation can be important but the search of power by the state elite is the main issue. The first objective of governments is to secure political control over their rural population. By using project instead of higher prices, government can exercise discretionary power, they can choose regions, groups or even individual to be the beneficiary, they can also choose in staffing the project. By choosing some specific groups they get their support and weaken any opposition by dividing the rural world.

19. These two “bunches” have provided sound contributions for the writing of obituary notices of 60's and 70's agricultural policies. Yet, before leaving them out completely, one should be reminded that low farm gate prices were at the same time stable and predictable – i.e. stabilised. Ample evidence shows that agricultural supply responds to price stability just as much as to mean price level. As a consequence, providing stable prices to farmers is just as important for production as high prices. A trade-off was expected to occur between low and stable agricultural prices, allowing for productivity gains in agriculture through risk-free investment in capital goods, along with productivity gains in labour intensive activities in all sectors thanks to moderate wages increases allowed for by moderate food prices. This subtle trade-off did work in some places like Europe or Indonesia. It completely collapsed in most of African countries because too narrow a place was given to market forces between farm gate and consumer plate.

20. The policies maintained during the 60's and 70's are rightly criticized, especially in view of their poor outcomes. Yet this does not mean they were without any merit or justification. One should consider the rationale behind them. Relatively low farm gate price while international prices are high means profits for marketing boards and similar agencies. Economists who developed the concept, intended such profits to be spent on increased investments and long-term development devices that the market usually fails to secure, and **which by necessity must be funded by the State**. One may question the choice to have them funded by poor farmers rather than by richer people. But the central question is **why were these profits not spent on development by the States** responsible for it?

21. A second part of explanation derives from the lessons learnt from economic literature. Although controversy continues, academics tend now to promote budget-funded, targeted policy instruments to consumer-funded, price instruments, the latter suffering from poor targeting and distortive (inefficiency) effects. On efficiency grounds, the “modern” food policy relies heavily - theoretically at least - on freeing market prices, which means close-to-zero tariffs, decoupled support (compensation and insurance transfers), along with investment policy in public goods provision such as research, infrastructure, education, health and the enforcement of the rule of law so as to make market institutions properly work and even

“work for the poor”. **When no such a budget is made available, the case for agricultural policy vanishes.**

22. How best to use an agricultural budget in an accountable manner cannot be defined in terms of policy measures at this stage. This can only be dealt with on a country-by-country basis, with extensive participation of local stakeholders throughout the policy-making process. A framework for action has been set here, whereby a step-by-step definition of agricultural policies could make them both legitimate inside and outside the country, at all levels of negotiations, within and among ministries. The initial step is to identify the characteristics of food insecurity on a country-by-country basis, followed by the identification of its root causes . This in turn will provide economic grounds for policy action, as long as such causes relate either to market failures or government failures as described above. Checking for country commitment and possible perverse effects of such policy, because of subsidy-seeking or any counterproductive effect current knowledge helps prevent, leaves room for the final design of sound agricultural policies embedded in demand-led growth which secures food.

CONTENTS

Chapter 1: Food security and Sub-Saharan Africa, an introduction	12
1.1 Did food insecurity worsen in SSA recently?	13
1.2 Food insecurity in Africa: Ten stylised facts	18
1.2.1. Food availability at national level	19
1.2.2. Food availability at household level.....	21
1.3 Explaining food insecurity by access	25
1.4 How can the problem be tackled?	28
Chapter 2: Does food aid foster or impede economic development?	31
2.1 The theoretical impact of food aid	31
2.3.1 Food price effect.....	32
2.3.2 Income effect.....	33
2.3.3 Substitution effect	33
2.3.4 Factors price effect	34
2.3.5 Risk management effect	34
2.2 Empirical evidence	35
2.4.1 General findings	36
2.4.2 Targeting of food aid is essential	36
2.4.3 The development impact of food aid is ambiguous	36
2.4.4 Food aid as a subsidy for building infrastructure.....	36
2.4.5 The cost of food aid for recipient countries is not clear.....	37
2.3 In conclusion	37
Chapter 3: Why did Development Policies go Wrong?	38
3.1 Development dilemmas	38
3.1.1 Encouraging industry or agriculture?	38
3.1.2 Encouraging export or domestic market oriented production?	39
3.1.3 - Small or large (subsistence or commercial) farms?	40
3.1.4 Intensive or extensive farming?	42
3.1.5 The need for an evolutionary policy	43
3.2 A quick historical sketch of ideas on development.....	44
3.2.1 The socialist “industry-based” approach to development	45
3.2.2 Early theories of development based on agriculture	46
3.2.2.1 <i>The colonial pact</i>	46
3.2.2.2 <i>The post colonial auto-centred theory of development</i>	49
3.2.3 - Import substitution policy and “development projects”	49
3.2.4 - The “liberal” approach	50
3.2.5 – Conclusion.....	52
Chapter 4: Why has Agriculture been neglected so Far?	54
4.1 The political bias against agriculture	54
4.2 The budget bias against agriculture.....	55
4.3 The market bias against agriculture	58
Chapter 5: Selected Success Stories from International Experience.....	63
5.1 Europe and the « Marshall plan » (1947-51).....	63
5.1.2 The Plan.....	64
5.1.3 The case of Japan	65
5.2 The South East Asian Experience	66
5.2.1 Development strategy, trade policy and the role of the state	66
5.2.2 The key role of agricultural policies: public goods provision and markets regulation	67

5.2.3 Development lessons from the East Asian Miracle	69
5.3 Latin American experience	70
5.3.1 Agricultural performance before and after reform.....	71
5.3.2 Summary findings from experience in Latin and Central America	76
Chapter 6: Channelling food security through labour productivity and solvent demand growth	80
6.1 - The central role of capital per worker.....	80
6.1.1 - Capital per worker in economic growth.....	80
6.1.2 The case for agriculture : what is agricultural capital ?	82
6.2 – Labour productivity growth is not enough : the case for rising the extent of the market	84
6.3 The policy way out of the circle linking low productivity and the small size of the market.....	87
Conclusion.....	90
References	94
Annexe	100

FIGURES

Figure 1-1: Reported Cases of Food Emergency in Africa.....	14
Figure 1-2: Evolution of a Food Insecurity Indicator in Various Regions of the World	15
Figure 1-3: Sub Saharan Africa per Capita Food Production vs Food Aid Flows.....	16
Figure 1-4: Long Run Evolution of Cereal Availability, Africa South of Sahara.	17
Figure 1-5: Availability in selected countries	20
Figure 1-6: Availability in selected countries (cont'd)	20
Figure 1-7: Food availability, trade and food aid in Ghana	22
Figure 1-8: The link between food insecurity and poverty	26
Figure 1-9: Food vulnerability and income sources, Senegal (2003)	
Figure 3-1: Percentage of active population in agriculture plotted against GNP per capita for 133 countries in 1990 (each point represents a country).....	44
Figure 3-2 : Various estimates of real commodity prices index evolution since the end of 19 th century.....	46
Figure 4-1: Agricultural public expenditures, share of agricultural GDP (percent)	57
Figure 4.2 : Tomatoes retail price index in large American cities, as compared to new car retail price index.....	60
Figure 5-1: One Century of European Growth.....	65
Figure 5-2: Major agricultural production in Indonesia.....	69
Figure 6.1 : Historical relation between output per worker and capital par worker	81
Figure 6-2 : Productivity of cereals in Mali (1980-2001)	85
Figure 6-3 : Price of cereals deflated by the import price index (1985=100)	86

BOXES

Box 1-1: The case of Burkina Faso	23
Box 1-2: Ten stylised facts on Africa food insecurity	28
Box 3-1: Examples of opposite policy orientations in the UK, France and Germany	39
Box 3-2 : Complementarity between food and export crops : the case of cotton in West Africa	40
Box 3-3: Historical development of post-harvest networks in Europe	42
Box 3-4: Robert Malthus and modern economists views on the price of labour	47
Box 4-1 : Types of Food and Nutrition Policies during the pre-structural adjustment period.	55
Box 4-2 : Rural public goods provision contributes to growth	58
Box 4-3 : Agricultural Market Instability in Sub-Saharan Africa.....	61
Box 5-1 : Successes in Africa Agriculture	78

TABLES

Table 1-1: Share of foreign supply in food availability and total food availability per capita, 1990-2002 and 2000-2002	25
Table 1-2: Income shares by real per capital income quintile (all India).....	27
Table 2-1: Potential impact of food aid on food product and factor markets	35
Table 2-2: Observed impact of food aid.....	35
Table 4-1 : Composition of total public expenditure (percent).....	57
Table 5-1: Summary of Policy Regimes in Central American Countries, circa 1994	72
Table 5.1 Summary of Policy Regimes in Central American Countries, circa 1994 - con't....	73
Table 5-2: Characterisation of Policy Regimes by Period, 1960-1995.....	74
Table 5-3: The Brazilian national program to support family farms (PRONAF).....	75
Table 5-4: The development of a capital-intensive production model in Mato Grosso (Brazil)	75
Table 5-5 : Food security channels, countries experiences	77

Chapter 1: An Introduction to Food Security and Sub-Saharan Africa

Presently, food security stands is a source of growing concern to African governments. There is evidence that food insecurity has been increasing recently in Sub-Saharan Africa (SSA). FAO estimates of the number of undernourished in SSA show an increase from 165.5 million in 1990-92 to 198.4 million in 1999-2001¹. Although the proportion of undernourished remained about constant during this period, the increase in the absolute number reflects the fact that the supply of domestic or imported food is not sufficient to cope with demographic expansion.

It is also generally acknowledged that the problem is particularly acute in rural areas of the region. For instance, the final statement of the World Food Summit organised by the FAO in 2002 concludes: *“the goal of halving the number of hungry requires that the most food insecure and impoverished countries promote the alleviation of rural poverty, especially through sustained growth of agricultural production, particularly in sub-Saharan Africa”*². The thesis underpinning this statement is that development of agriculture can contribute both to increase the supply of food and constitute the main source for generating the income required to ensure access to food by the greater proportion of food insecure people.

It is a lesson of history that most political regimes founded their legitimacy on their ability to secure food³. It is not surprising in this context that, even without speaking of human dignity and charity, food security be at the front rank of the preoccupation of the political class. This is one of the reasons that NEPAD⁴, supported by the Johannesburg summit on sustainable development in 2002, places emphasis on agricultural development and the eradication of rural poverty. Indeed, NEPAD envisages a kind of Marshall Plan for Africa, in the hope of repeating the outstanding success of the help the United States provided to Europe in the aftermath of the Second World War in a similar situation of food shortage and pervasive poverty)..

¹ (FAO, 2003).

² (FAO, 2002, paragraph 7)

³ For instance, historians note that relatively strong local powers existed in the Sahelian regions of SSA long before the colonization, while such institutions are much less frequently encountered in the equatorial regions, and relate this situation with the necessity of a collective management of granaries in arid climates (Illid, 1995; Dun and Mc Shaw, 2001). Even in the Bible, the story of Joseph can be interpreted as a pamphlet by the King of Egypt, claiming political authority over the Middle East on the ground of his ability (probably unique at time) to avoid the consequences of droughts and diseases through public stocking .

⁴ New Partnership for African Development. This initiative was launched by several African leaders (the Presidents of Algeria, Egypt, Nigeria, Senegal, and South Africa) at the Lusaka conference in 2001, to finance African development in general. The fact that agriculture is one of the components of the NEPAD programme is significant.

At the same time, there are many powerful reasons why food security and agriculture have been neglected altogether, and why they could consequently be mutually supportive, should appropriate agricultural policies be designed:

- (i) agricultural projects are difficult to implement, and have lower ex–post rates of return than projects in other sectors;
- (ii) there are serious problems of absorptive capacity in many countries, especially in the agricultural sector;
- (iii) due to slow disbursement in agriculture and poor performance of the sector, the ministries of finance have been less and less inclined to fund agricultural projects;
- (iv) conflicts have attracted priority attention and expenditures in a large number of SSA countries;
- (v) food insecurity is often not perceived by leaders as a priority problem, as experience has shown that in many cases trade and emergency food aid can cope with any serious problem of food shortage;
- (vi) food security is a complex concept, difficult to measurement, and therefore an awkward basis for policy design, implementation and monitoring;
- (vii) agriculture is not seen as a dynamic sector carrying much potential for future development of a “modern” country; and
- (viii) the political economy in many SSA countries tends to induce an anti-rural and anti-agriculture bias in policies and programs.

There are therefore considerable obstacles to assigning high priority to reducing food insecurity, especially by boosting the agricultural sector. In the eyes of many African leaders, other sectors of the economy seem to have greater development potential and capacity to generate wealth, including the capacity to generate the financial resources required to import food. The question here is whether this impression is true and whether the income generated really goes to the food insecure. Also, food aid is usually felt to be a relatively easily to mobilise and cheap source of food in case of emergency, while donor countries – and their public opinions – are more easily prone to provide emergency food aid than longer term development aid. The question there is whether this is the most effective way to use limited financial resources and whether this approach is conducive to development.

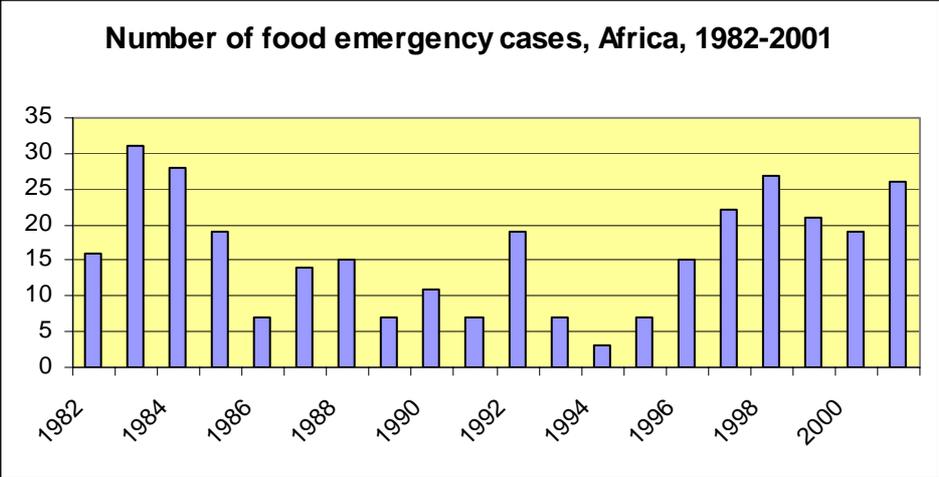
These two options can translate into perfectly contrasted development strategies and policies: vigorous measures to improve agriculture situation on the one hand, or neglect of agriculture and reliance on other ways to achieve some form of food security on the other. The purpose of this study is to determine which is the best policy in the range that exists between these two policy options. The first questions to be answered are, “What is food security?” and, “To what extent has food insecurity increased in SSA recently?”

1.1 Has food insecurity worsened in SSA recently?

The FAO provided a clear and widely (although not necessarily universally) accepted definition of food security: “Food security exists when all people, at all times, have physical and economic access to sufficient, safe and nutritious food for a healthy and active life (World Food Summit Plan of Action, para. 1). This involves four conditions: (i) adequacy of food supply or availability; (ii) stability of supply, without fluctuations or shortages from season to season or from year to year; (iii) accessibility to food or affordability; and (iv) quality and safety of food.”

Unfortunately, such a definition cannot easily be translated into only one simple statistical indicator, the evolution of which would provide an unambiguous answer to the above question. Existing measurements, derived from guidelines by international organisations⁵ are at best indices based on proxies, with emphasis put on one or another of the four aspects just described. Besides, these indices are not available over sufficiently long periods, to allow for an adequate assessment of evolution patterns. This limits the possibility of giving a detailed and long-term picture of the evolution of food security in SSA. Yet it is possible to examine a set of indicators that permit an overall diagnostic. These indicators are provided in figures 1 to 4.

Figure 1-1: Reported Cases of Food Emergency in Africa

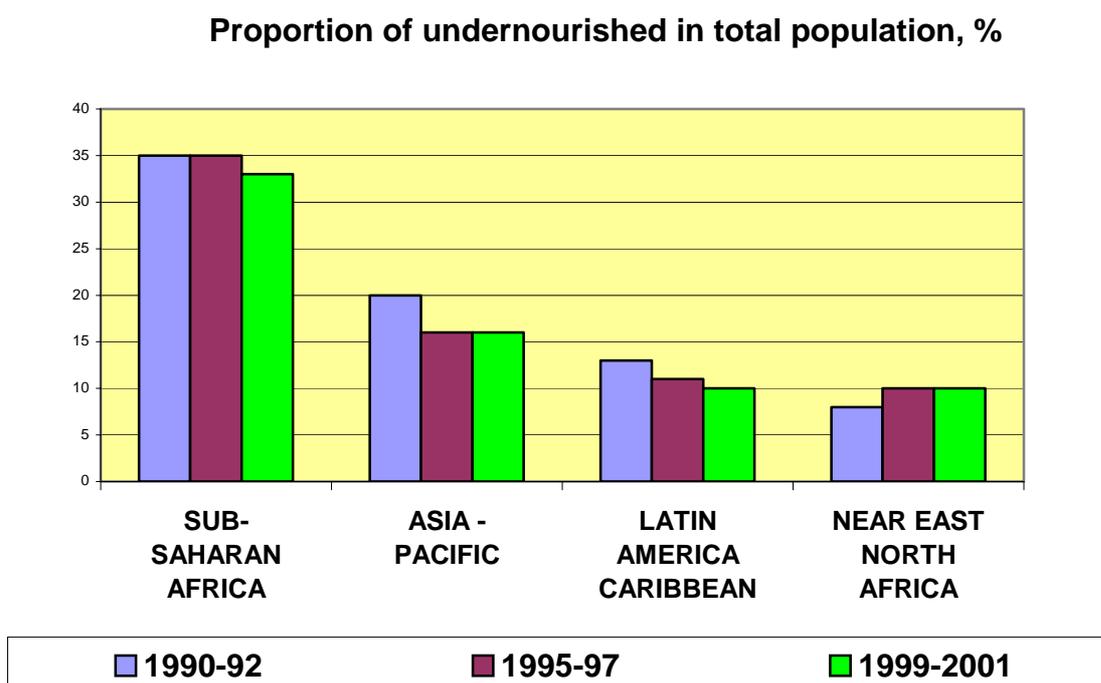


Sources: Parris T., *et al.* ; The number of cases is reported from the International Disaster Database, Louvain University, Belgium.

Figure 1-1 shows that in Africa the number of emergency cases reported by the “Centre of Research for the Epidemiology of Disaster” is not very different in the 2000’s from what it was in the 1980’s. However, after a significant decline during the early 1990’s, the number of reported food shortage cases recently increased again. Such an indicator refers to the point (ii) above, regarding temporary food shortages. More significant, perhaps, is the information provided by figure 1-2.

⁵ See, for instance FAO: *The state of food insecurity in the World*, Rome, various dates from 1999 to 2003. Another more detailed technical reference is: Riely, Frank, Nancy Mock *et al.*, 1999. See Shapouri and Rosen S., 2004 defining the interesting notion of “food gap”).

Figure 1-2: Evolution of a Food Insecurity Indicator in Various Regions of the World

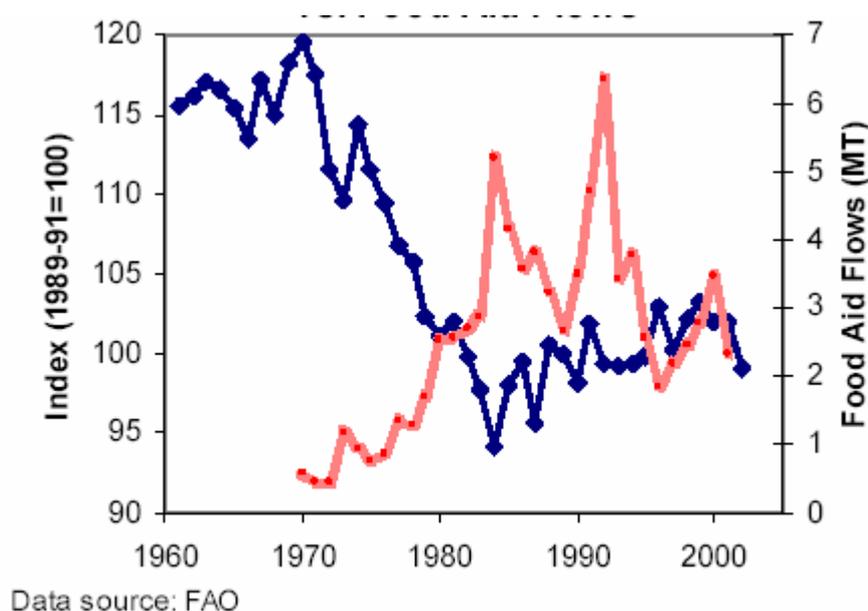


Sources : FAO, 2003, P. 31-40.

Figure 1-2 helps compare the situation in Africa with other developing countries. The food insecurity indicator is here the proportion of “malnourished” people, according to FAO standards, in the total population. Thus, it concerns a different aspect of food security: the permanent lack of access to food for significant segments of the population. At first glance, it seems to confirm the preceding remark, according to which the level of food security did not change very significantly during the last 15 years – although a slight improvement is perceptible. Such a conclusion might be misleading because these figures are in *relative* terms and reflect the *proportion* of peoples suffering food shortage. But constant proportion of a growing basis means a parallel growth in the *absolute number* of people involved. Indeed, this constancy of relative figures indicates a growth of the problem at the same rate as the population – which, in SSA, is quite significant, at a rate of about 3% per year.

But the real and sad lesson to be derived from this figure is that, in Africa South of Sahara, the situation is worse than elsewhere by a magnitude of 1 to 2.

Figure 1-3: Sub Saharan Africa per Capita Food Production vs Food Aid Flows



Source : Awudu, Barrett, and Hazell, 2004

Is that a consequence of insufficient production? Or of insufficient food aid? Figure 1-3, derived from an IFPRI study⁶, tends to show that while there has been modest recovery over the past fifteen years, overall food production in Sub-Saharan Africa remains almost 20 percent below the early 1970s levels in per capita terms. Over the same period that food production per capita declined, food aid flows into Sub-Saharan Africa increased nearly fivefold. Food aid flows then became extremely volatile, but have remained in the 2.0-4.0 million metric tons per year range for the past decade.

Again, one must not be blurred with illusive figures⁷. Since food aid is measured as a total volume, while the production curve corresponds to a per capita index, one should be cautious in interpreting figure 1-3. Indeed, in view of the demographic increase, the aid flow per capita may have decreased significantly in the last few years together with modest food production per capita recovery.

Figure 1-4, based on FAOSTAT data⁸ pictures the absolute values, in kg, of per capita production, imports, and food aid. The striking fact here is the stability: There is a strict parallel between food consumption and domestic production. The parallel is less strict with food aid, which nevertheless occurs in general one year after a significant decrease in consumption imports, while, for unknown reasons, imports increase one or two years after food aid. In general, consumption, food aid and imports display a clear tendency to increase, albeit at a small rate (far less than 1 percent a year).

The most important thing shown by figure 1-4 is that the bulk of food consumption comes from domestic production. Imports account for only a small percentage of available food, and

⁶ Awudu, Barrett and Hazell, 2004

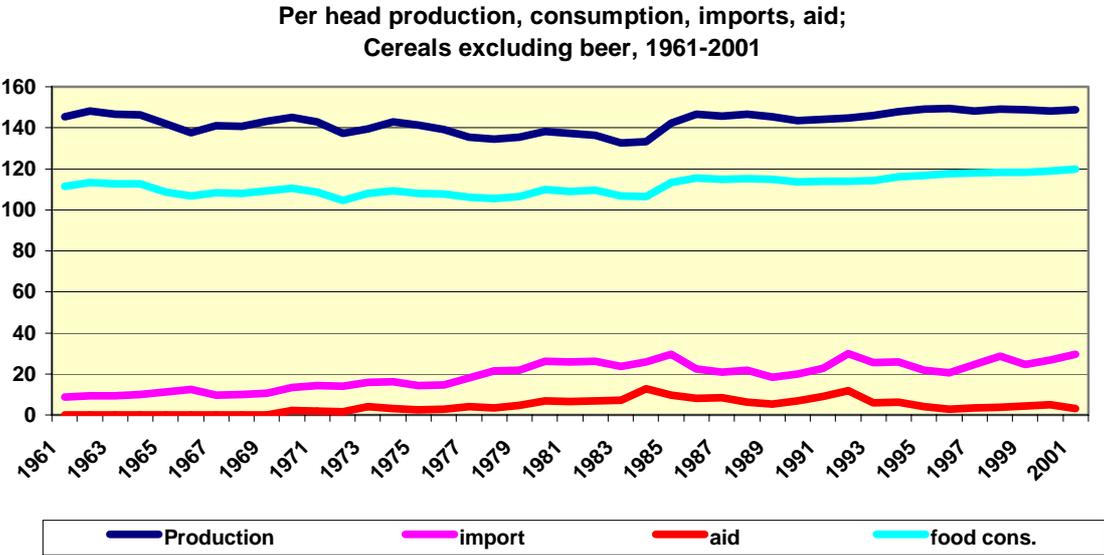
⁷ A tragedy of statistics is that only these figures which comfort common wisdom are available.

⁸ Notice that figure 1.4 concerns cereals only, while figure 1.3 is based on a "total food index". Yet, cereals are fairly representative of total food. Notice also production is larger than consumption. This is because a significant share of production is either used as stockfeed, or exported.

food aid for an even smaller percentage. Does this mean that imports and food aid are not important? The answer is two sided:

On one hand, neglecting imports and food aid would be a great mistake, because the important point here is not total, but marginal availability: a man might starve with a "normal" food consumption secured for eleven months, if at the same time he is totally deprived during the twelfth month. Indeed, in the present situation, food imports are obviously necessary in SSA as a whole. Similarly, it would be foolish to deny the importance of food aid when no imports and no domestic production are available. Indeed, in such cases, aid is a prerequisite for rapid recovery after the end of the catastrophe which triggered famine. This is the essence of the message conveyed by the above quoted IFPRI study (Awudu *et al.*), the conclusion of which is simple common sense.

Figure 1-4: Long-term Evolution of Cereal Availability, Africa South of Sahara.



Sources: FAOSTAT, 2004.

On the other hand, these figures also tell us something else: since the gap between needs and domestic production is not large, it should be possible to fill it at minimal cost. Doing something in this respect is the more tempting option as most starving peoples stay in rural areas, and are not capable of any activity other than agriculture, while, very often, they are unemployed, yet willing to work. Why then, should governments beg for humanitarian aid, or waste foreign currency reserves on food imports, when so many other more fruitful uses of aid and currencies are possible? Answers to this question must be made on a case-by-case basis, requiring careful attention to be paid to the different and contrasted situations African countries face today.

1.2 Food insecurity in Africa: Ten stylised facts

Almost 33% of Sub-Saharan Africans are malnourished, which is the highest prevalence in the world. In one-third of African countries the average daily calorie intake remains below the recommended level of 2100 kcal⁹ (Ethiopia, Kenya, Rwanda, and Tanzania in East Africa; Angola, Madagascar, Mozambique, and Zambia in Southern Africa; Sierra Leone in West Africa).

Maps provided by international organizations (FAO; UNDP, and World Bank) highlight strikingly different performance across subregions of Africa. Best performance can be found in North Africa, where less than 20% of the population is still malnourished and the average daily calorie intake per capita is far above requirements. West Africa performs also relatively well in terms of average calorie intake (above 2100 kcal per capita in most of the countries and above 2400 in some of them) but the share of malnourished (above 20% in most countries) and the prevalence of micro-nutrient deficiency are still worrying factors. The situation is worse in Central and Eastern Africa with the exception of a few countries. The daily energy supply is far from sufficient, and malnutrition and deficiencies affect more than 40% of the population. In a few countries (DR Congo, Burundi, Eritrea, Somalia) the mean availability per capita lies below 1800 kcal which is considered the minimum intake level. In several countries (Botswana, Burundi, Congo DC, Gambia, Liberia, Madagascar, Senegal, Sierra Leone, Somalia, Tanzania, and Zambia) the situation has been deteriorating over the last ten years, while in others (Ghana, Nigeria, and Malawi), aggregate figures exhibit a trend toward sustained recovery –. Less than 50% of sub-Saharan African countries display figures below the 30% level for the prevalence of malnutrition and among them, only three countries are below 10% (Gabon, Nigeria, and Namibia). Despite economic growth and sufficient aggregate availability of food some countries exhibit increasing malnutrition, as measured by the prevalence of stunted growth in children¹⁰. This is the case in Mali.

Stylised fact 1: Malnutrition, in its various forms, appears primarily as a chronic widespread condition in Africa.

Rampant food insecurity degenerates into food crisis when shocks such as droughts, floods, pests, locus invasion, economic downturns, and conflicts occur and hurt the chronically food insecure. Food crises are impressive and widely reported by the media. They affect approximately 30 million Africans on average per year while 200 million are chronically insecure.

Stylised fact 2: Food crisis, jeopardizing household livelihood, superimposes on chronic food insecurity for households close to the food insecurity (or “vulnerability”) line.

⁹ Energy requirements vary according to age, sex, and activity.

¹⁰ Daily kcal availability is not sufficient to define adequate nutrition. Micro-nutrient deficiencies –iodine, iron, vitamin A, Zinc- are also widespread and responsible for irreversible disabilities. Only two countries in Sub Saharan Africa counted less than 20% Children stunted: Congo and Gambia.

In order to bring more insight to food insecurity in selected countries representative of African diversity¹¹, international statistics have been used and homogenized in what follows. They are completed by household surveys, where available. The quality and coverage of data is highly heterogeneous across countries, especially when related to food production and consumption at household level. Surprisingly, and despite the renewed interest from international institutions in food security issues, panel data at household level are sparse, not to say absent, in most African food insecure - poor - countries¹², making far easier to study average domestic food availability than food access.

1.2.1. Food availability at national level

What is the food insecurity picture given by trends in average domestic food availability per capita over the last forty years, as well as by malnutrition changes at household level on the countries selected? In the following charts, national food availability is computed after conversion in kcal of the main aggregates available at FAO⁽¹³⁾. The official daily food availability supplied by FAO Stat is also given, the difference stemming from feed used, seeds and post harvest lost, as well as stocks variations, which are not considered in our computation.

Each case study country¹⁴ is presented so as to give a picture of differences and similarities in current level and trends in domestic food availability, expressed in calorie per capita, as well as the share of international supply in total food availability.

Stylised fact 3: Food availability is uneven across countries whose bulk is close to the food insecurity (“vulnerability”) line.

Assuming an average daily requirement of 2100 kcal per capita, the African situation is characterized by an uneven food deficit at national level, as shown by the countries selected in figures 1.5 and 1.7. Most of countries are close to the food-insecurity (vulnerability) line with slight recovery over the past ten years. Extreme situations are found in Ghana whose availability has been well above the food insecurity threshold for the past ten years, while at the opposite end of the spectrum in Ethiopia, availability is stationary around the critical values 1500-1800 kcal.

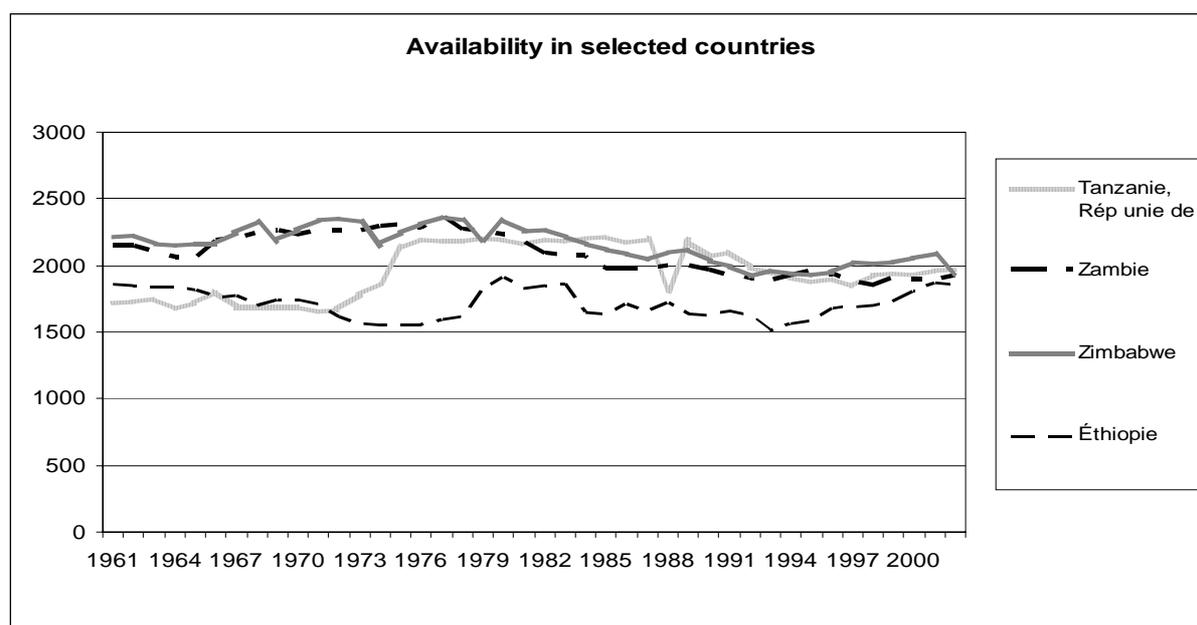
¹¹ Namely, Ghana, Malawi, Mali, Mozambique, Tanzania, Zambia, Zimbabwe, Ethiopia, Senegal, and Burkina Faso.

¹² For example, the Living Standard Measurement Study (LSMS) dataset of the World Bank includes only 5 African countries: South Africa, Morocco, Tanzania, Ghana and Ivory Coast (<http://www.worldbank.org/lsm/>).

¹³ Daily kcal availability is calculated as $(\text{production} + \text{imports} + \text{food aid} - \text{exports}) / \text{population} * 365$. The products considered are FAOSTAT aggregated categories, i.e. cereals, fruits, vegetables, roots and tuber. Because the precise kg calorie value of each product entering into one single category varies across products, weighted average of kcal have been used for each category, the weight being calculated as the product's share in sub-Saharan African consumption.

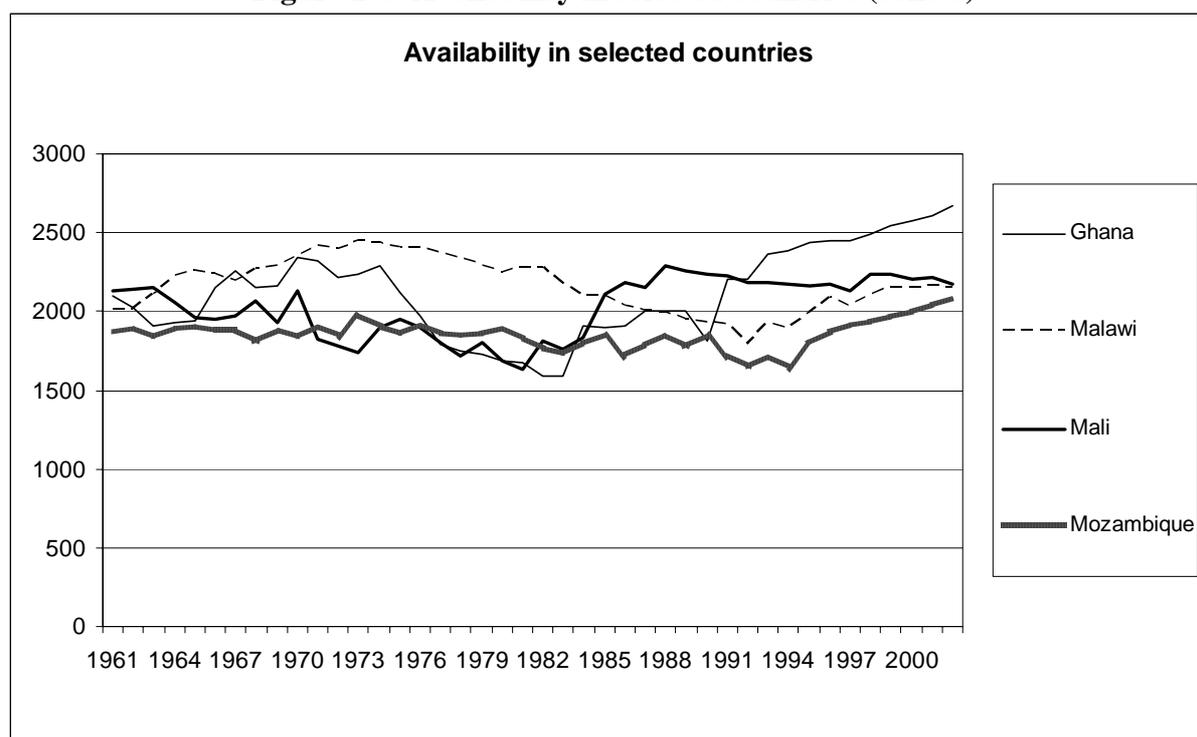
¹⁴ Except Ethiopia, for which data on population size before 1993 are lacking. However, recourse to the foreign supply of food (aid included) often represents more than 15% of total availability since the mid-Eighties.

Figure 1-5: Availability in selected countries



Mozambique (Figure 1-6) exhibits a slightly better pattern, with an improving trend since the end of the Nineties, making the country close to the food insecurity line today. In Zimbabwe and Zambia, levels of food availability have been deteriorating since the beginning of the 1980's. Available kcal per capita was around 2200 between the Sixties and the mid-Eighties, while it fell below 2000 in the nineties. The situation of Malawi deteriorated in the 1970's and 1980's but seems to have recovered since the mid-Nineties, going back to the 2200 level over the last couple of years

Figure 1-6: Availability in selected countries (cont'd)



In Tanzania, the situation improved in the early Seventies and deteriorated at the end of the Eighties. The food intake is now stationary but it hardly reaches 2000 kcal per capita. In Mali, the situation has improved since the mid-Eighties and seems to be stable, at around 2200 kcal per capita per day. In Ghana, available kcal per capita were around 2100 in the Sixties. It deteriorated sharply between the mid-Seventies and the mid-Eighties. Ghana promptly recovered in the beginning of the Nineties and has exceeded 2500 kcal ever since 1999.

Finally, the situation is worrying in all countries except in Ghana, Mali, Malawi and Mozambique, the only countries exhibiting the most promising trends. It is worth remembering, however, that figures 1 and 2 represent per capita kcal availability and account for the sharp increase in African population size over the last forty years.

1.2.2. Food availability at household level

Resuming aggregated food availability does not ensure that every household and individual enjoys sufficient access to food. In most countries studied, sub-regions in situations of excess supply of food coexist with deficit areas. Chronic food insecure households are spread across regions while food crises are transitory and region-specific. The situation is exacerbated in rural areas, scoring the higher share of malnourished population and stunted children, even if the quality and amount of available food in urban centres are also at worrying levels.

Stylised fact 4: Chronic food insecure households are widespread and scattered across regions while transitory food crisis are more often region-specific.

Food insecurity does not usually affect the whole population but specific social groups who do not own enough production factors such as land, labour, and capital to buy adequate food. In all countries, orphans, female-headed households, the disabled, and the very old are the most vulnerable groups, as and such, deserve specific attention and support. In some countries HIV has considerably worsened the vulnerability of populations. Given the high share of undernourished in most countries, however, food insecurity is not confined to this group nor to any particular region (see the case of Burkina Faso in Box 1).

In most countries, more than 30% of the population is undernourished. In countries such as Malawi and Mali, the figures are still perturbing despite adequate aggregate supply of food at national level. Only Ghana has succeeded in sharply reducing the number of undernourished over the last ten years. The mere fact that rising imports occur along with rising food production per capita and food security improvement illustrates the fact that there is no antagonism between food imports, increases in domestic food production, and food security (figure 1-7).

Stylised fact 5: Despite inadequate level of calorie intake among a large share of population, imports from foreign providers do not match the complementary food requirements. To put it in another way, the issue is not that there are too many imports, but the national production level being given, that imports are too low.

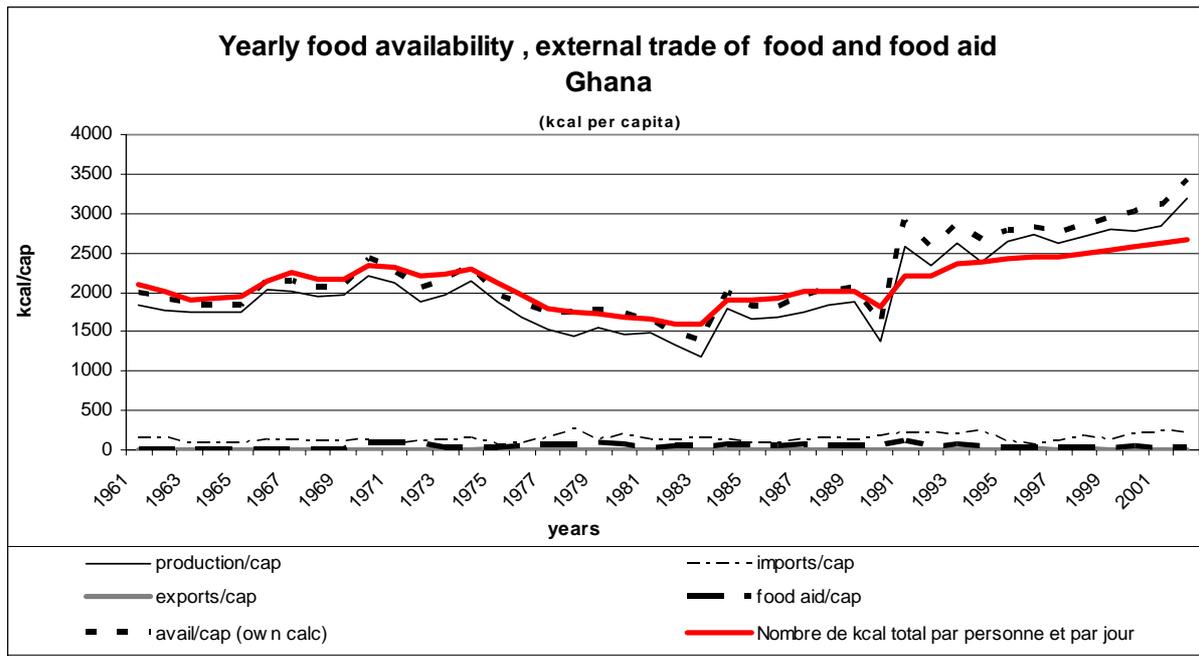
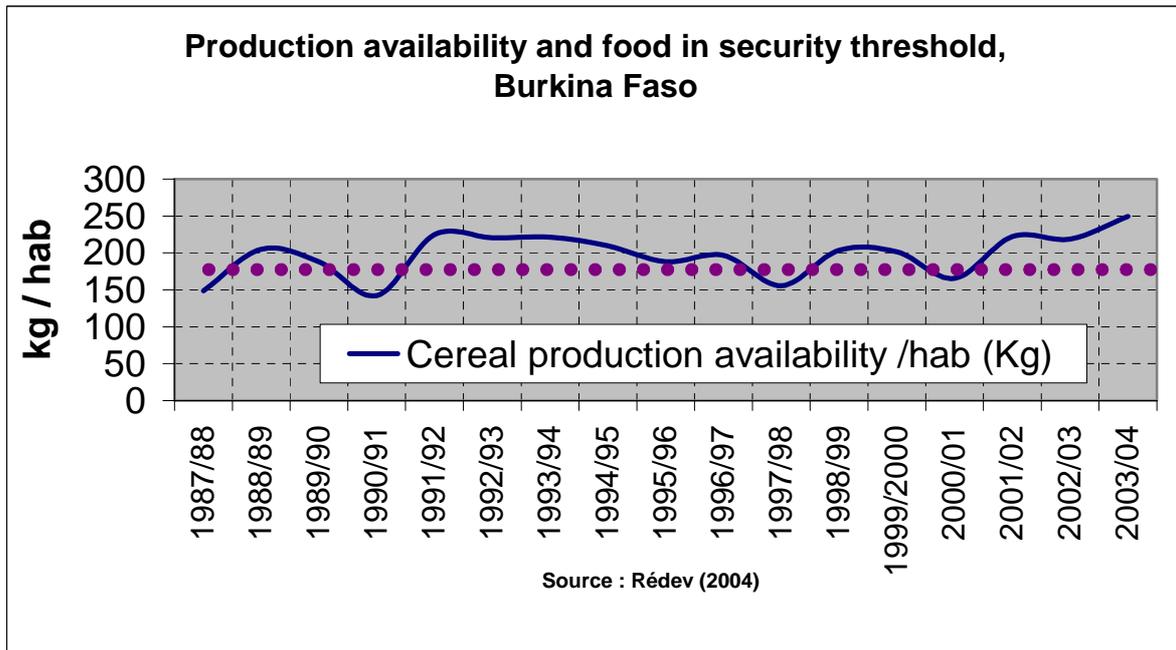


Figure 1-7: Food availability, trade and food aid in Ghana

In Malawi, Zambia, Zimbabwe, and Mali production is highly instable due to droughts and floods among other factors. In other countries, even when average daily availability appears relatively stable, it is worth remembering that the kcal aggregates presented here smooth the series and that crops production in tonnes are much more instable than the average aggregate. Most of the countries under study report high dependence on climate for agricultural performance and income. Most of the time, technical solutions exist to reduce this high dependence of yields on climatic disturbances but they require investments beyond the means of the population concerned.

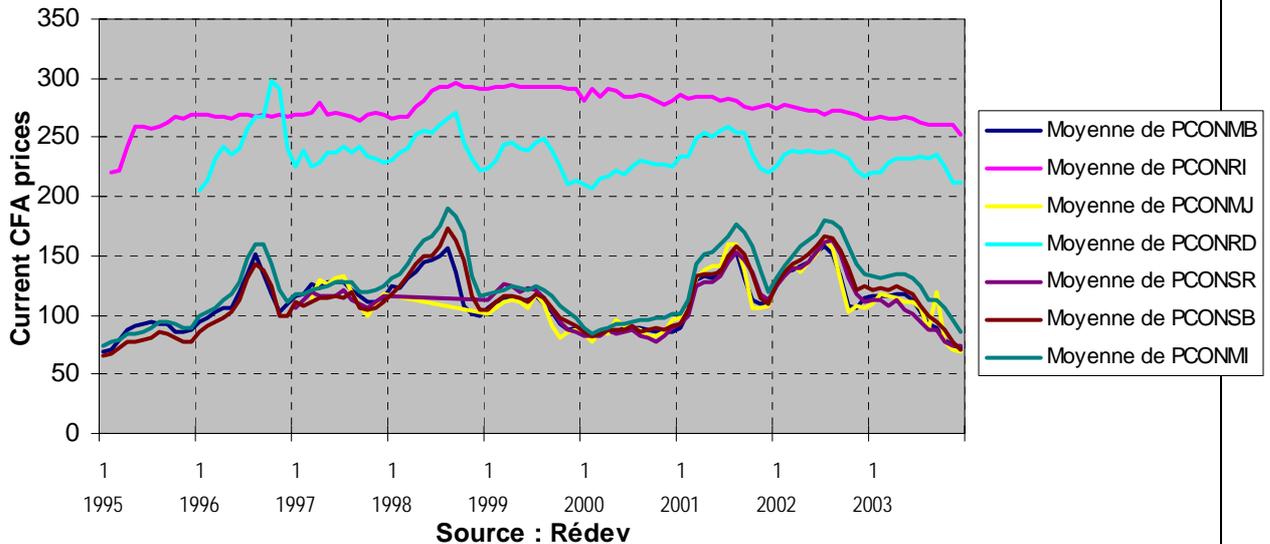
Stylised fact 6: Most countries report high dependence on climatic conditions and exhibit persistent instability in production levels

Box 1-1: The case of Burkina Faso



**Burkina Faso, Average monthly consumer price for main cereals, all markets
1995-2003**

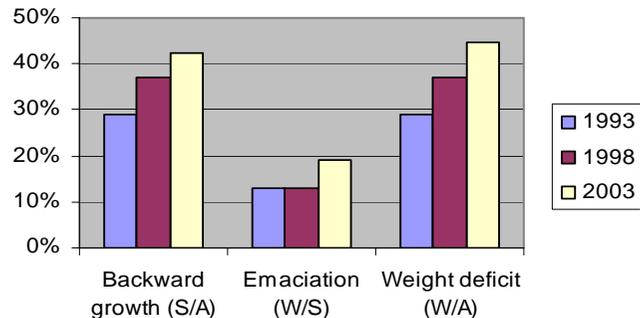
(source : SIM Sonagess)



Although fluctuating, availability of food in Burkina Faso is only insufficient on a temporary basis (figure 7). Cumulated inflation over the 1995-2003 period was 28,30%, so that the decline in the purchasing power of producers is striking (figure 8). Consumer prices in 2003 were 0.03 f.cfa/k.cal for maize (cheapest cereal), followed by millet (0.04 f.cfa/k.cal) then rice (0.07 f.cfa/k.cal). Meat was sold 5.70 f.cfa/k.cal which gives terms of trade for 1 k.cal of meat against 81k.cal of mil.

An optimisation model of food rations for an adult living in Ouagadougou (August 2004) enables us to simulate the minimum threshold of expenses to satisfy basic food requirements. For a food ration equivalent to 2 340 k.cal, budget simulated is 13 295 f.cfa per month, or 160 000 f.cfa per year. By comparison, the poverty line is set at 87 672 f.cfa/adult/year in Burkina Faso. This means that the poorest are food insecure, and that food insecurity is not restricted to the poorest. The following maps demonstrate that prevalence has risen over the last decade and is not restricted to a particular region.

Burkina Faso : Emaciation, backward growth and weight deficit among children 6-59 months (-2 ST and -3ST)



Source : EDS, 1992, 1998, 2003, Macro Int

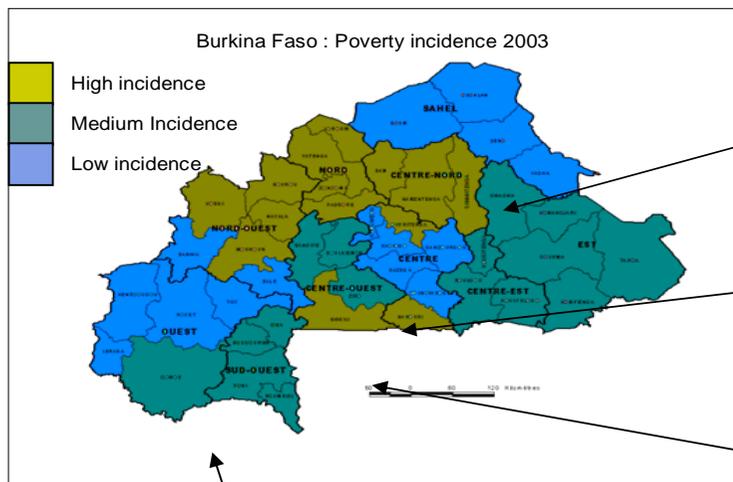
The **size-on-age** (S/A) indicator signals backward growth

The **weigh-on-size** (W/S) indicator reflects current nutrition situation. Children whose weigh-on-size are below - 2 SD of population median suffer from acute undernourishment, while those beyond - 3 SD suffer from acute and severe undernourishment.

The **weigh-on-age** (W/A) integrates into one single indicator the two indicators above.

Share of 5-year children considered as undernourished according to S/A, W/S and W/A (1993, 1998, 2003)

Size/Age (- 3ET) Backward growth Weight/Size (-3ET) Emaciation Weight/Age (-3ET) Weight deficit



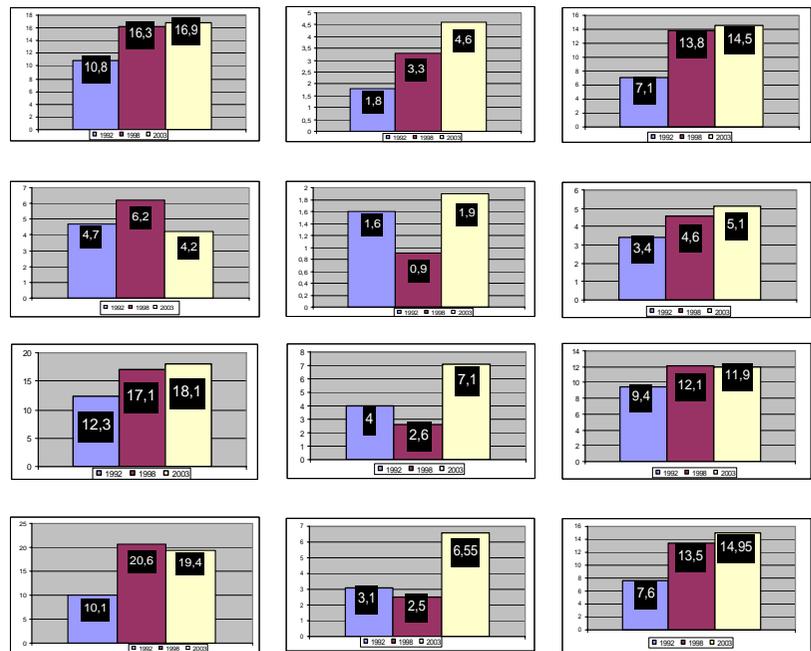
Source : La pauvreté au Burkina, INSD, 2003

Sahel
(Low incidence)

Ouagadougou
(Low incidence)

Centre-South
(High incidence)

West
(Medium incidence)



Source : EDS, 1992, 1998, 2003, Macro Int

The fact that, most of the time, food aid is a significant component of availability only when domestic production drops tends to show the efficiency of the provision of international food aid. However food aid may also have resulted in a drop in prices, discouraging farmers to harvest, and this is something that our aggregated data cannot show. This kind of phenomenon is mentioned in the case of Ethiopia. It is indeed a limitation related to the analysis of yearly aggregate data on food availability. Food aid seems to act as an adjustment variable, with higher volumes when domestic production drops. Conversely, the yearly approach does not help us to check whether it is the supply of food aid, because of the downward pressure on prices, which explains the drop in domestic production¹⁵.

Stylised fact 7: Foreign supply share in domestic availability is not a determinant of performance food secure countries

A variety of situations coexist, however relating to the share of foreign supply in food availability. In some countries such as Ghana, Malawi, and Mali imports as well as food aid are significant only during years characterized by record-low levels of production because of agro-climatic shocks. In others, such as Mozambique, where food security is improving, foreign supply plays a significant role in overall availability. In Zimbabwe, recourse to foreign supply is also important but the food security situation is worsening. The same low performances characterize Zambia and Tanzania, with a low level of foreign supply of food. Finally, foreign supply share in the domestic availability does not seem to be a determinant in the performances of countries regarding food security (table 1-1).

Table 1-1: Share of foreign supply in food availability and total food availability per capita, 1990-2002 and 2000-2002

	Share of foreign supply in food availability		Availability (calories per capita per day)	
	1990-2002	2000-2002	1990-2002	2000-2002
Ghana	8%	8%	2400	2619
Mali	5%	5%	2196	2200
Malawi	17%	7%	2024	2155
Mozambique	25%	17%	1855	2033
Tanzania	5%	8%	1954	1959
Zimbabwe	20%	21%	1984	2024
Zambia	17%	15%	1909	1904

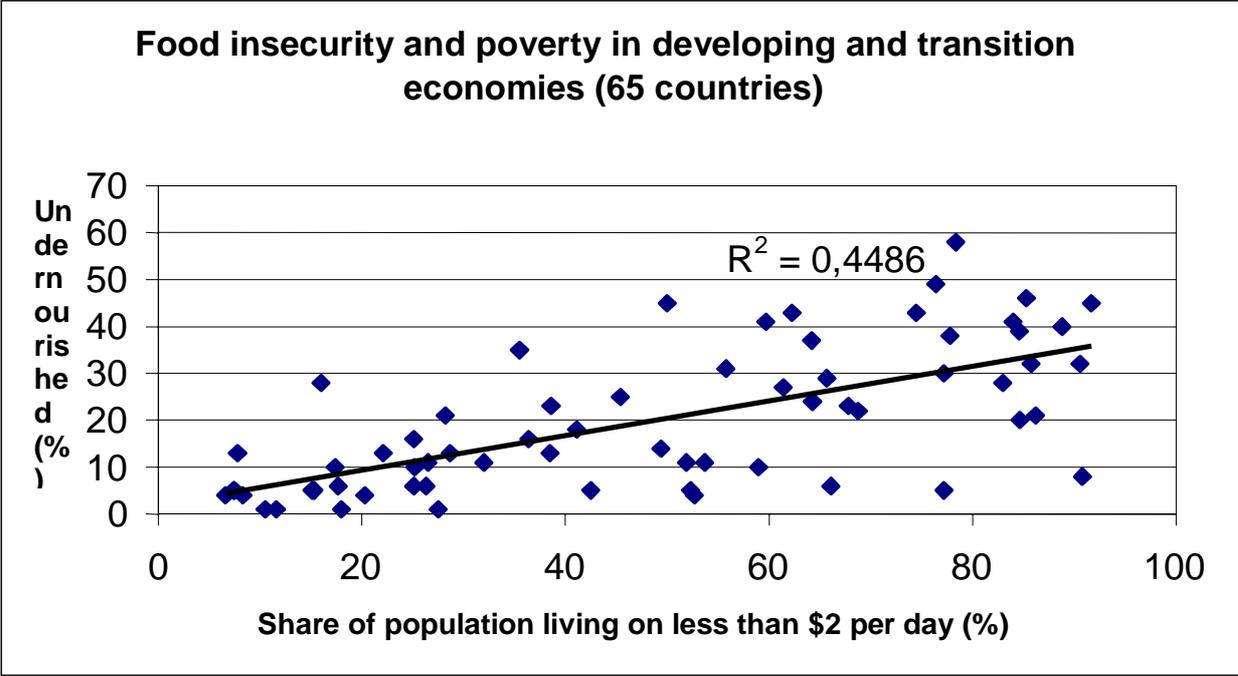
1.3 Explaining food insecurity by access

The figures presented up to now exhibit simultaneously the persistent lack of food available to the population, and the absence of significant foreign supply, except when climatic disturbance, war and violence significantly affect domestic food production. Because a large share of the population is still malnourished, the increase in the demand for food in the wake of income growth would be very high. This demand should be supplied either from

¹⁵ To overcome this limitation, we should look at monthly data, with a special attention at the pre-harvest period..

international markets or domestic production. As observed above, lack of food availability persists while neither imports nor domestic production increased. Hence, in the absence of ban or conflict or any element forbidding international trade flow, it must be related to the means to pay for food. The assumption is then that widespread poverty combined with low national income explains the chronic food insecurity in the region.

Figure 1-8: The link between food insecurity and poverty



Sources : Authors' calculation after FAO (2000), *The State of Food Insecurity in the World 2000*, Rome: FAO, Table 1; World Bank (2001), *Fighting poverty*, Washington, DC. Tableau 4.

Stylised fact 8: There is a correlation between chronic food insecurity and widespread poverty combined with low national income

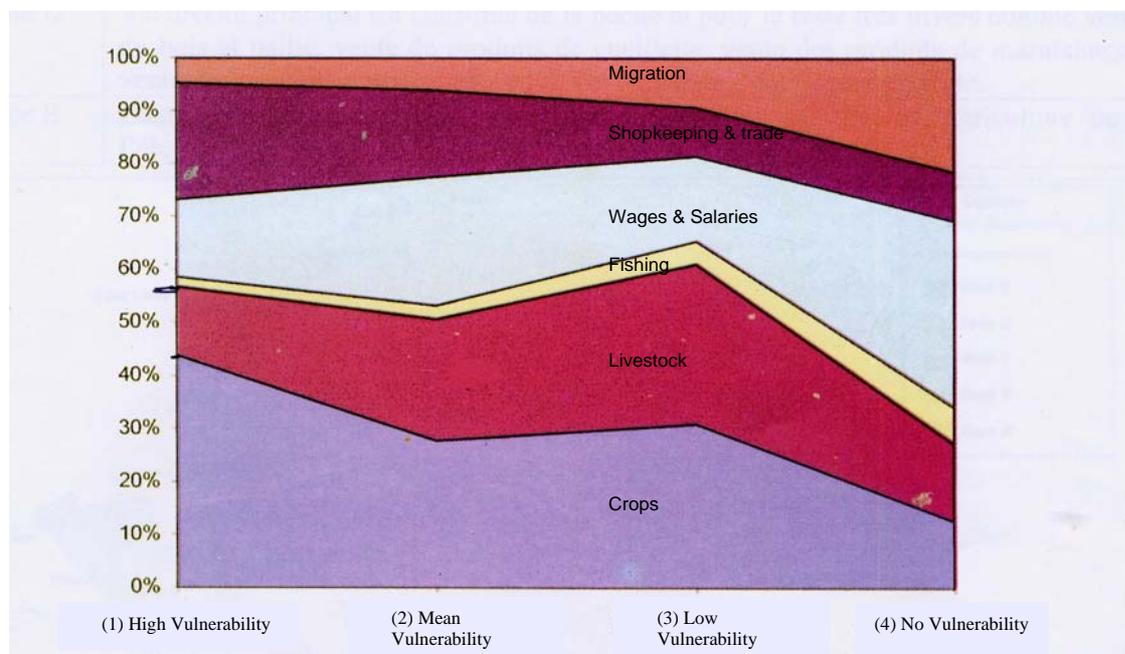
Stylised fact 9: Poverty statistics as well as national income trends, measured by GDP, indicate that the food insecurity problem is basically related to “access”: food insecure households have limited means to pay the price for imports and access to adequate supply of food. (In a world where adequate food supply is globally available, trade should theoretically provide deficit countries with the necessary volume of food to properly feed their population.)

Stylised fact 10: Household vulnerability is dependent upon income sources: the higher the share of agricultural income, the higher the vulnerability.

Poverty and food insecurity are indeed closely interlinked (figure 1-10). The case of Senegal exemplifies this point (figure 1-11). Vulnerability of rural households in Senegal depends significantly on income sources: the higher the share of agricultural income, the greater the vulnerability. The conclusions from this particular case can be broadened to other poor countries inside and outside Africa (Table 1-2 in the case of India). Firstly, because agricultural income is only a part of rural income, food security reduction requires a broad

policy response going beyond agricultural policy per se. In particular, improving the access of the most vulnerable to non-farm activities seems crucial. Secondly, because vulnerability is higher among households whose income depends on agriculture, agricultural policy did not perform with any degree of success in addressing food insecurity in SSA with a few and temporary exceptions¹⁶. Improving access to food through the generation of higher rural income is the issue at stake for food policy makers today.

Figure 1-9: Food vulnerability and income sources, Senegal (2003)



Source : WFP (2003)

Table 1-2: Income shares by real per capital income quintile (all India)

Quintile	Cultivation	Agricultural wage labour	Non farm labour	Non farm self employment	Non farm regular employment	Total non farm sources	Other sources	Real per capita income
Lowest	38.2	28.2	15.8	11.4	4.4	31.6	2	1146
Q2	38	21.3	14.7	16.8	7	38.5	2.3	2113
Q3	45.2	13.4	10.1	16.3	11.7	38.1	3.2	3141
Q4	50.1	7.5	6.1	14.6	18.6	39.3	3.2	4712
Highest	64.5	2.1	2	7.9	21.1	30.9	2.5	11226
Total	54.9	8	5.9	11.5	17.1	34.4	2.7	4468

Source : Lanjoui, Shariff (2002 : 17)

For the poorest quintile, casual non-farm wage income accounts for about 16 per cent of total income. This drops to around 15 per cent for the second quintile and continues to fall monotonically across quintiles to only 2 per cent for the top quintile. In contrast, regular non-farm wage income shares rise sharply with the income quintiles – from only about 4 per cent among the poorest quintile to as much as 21 per cent for the richest.

¹⁶ See Africa Success Story reviewed by IFPRI, [Successes in African Agriculture: Building for the Future](#), Pretoria, South Africa, December 1-3, 2003.

<http://www.ifpri.org/events/conferences/2003/120103/papers/papers.htm>

Box 1-2: Ten stylised facts on Africa food insecurity

Stylised fact 1: Malnutrition, in its various forms, appears primarily as a chronic widespread condition in Africa.

Stylised fact 2: Food crisis, jeopardizing household livelihood, superimposes on chronic food insecurity for a high share of households close to the food security (or “vulnerability”) line.

Stylised fact 3: Food availability is uneven across countries whose bulk is close to the food-security (“vulnerability”) line.

Stylised fact 4: Chronic food insecure households are widespread and scattered across regions while transitory food crisis are more often region specific.

Stylised fact 5: Despite inadequate level of calorie intake among a large share of population, imports from foreign providers do not match the complementary food requirements. To put it in another way, the issue is not that there are too much imports, but the national production level being given, that imports are too low.

Stylised fact 6: Most countries report high dependence on climate conditions and exhibit persistent instability in production level.

Stylised fact 7: Foreign supply share in total availability is not a determinant of food security countries performance.

Stylised fact 8: There is a correlation between chronic food insecurity and widespread poverty combined with low national income

Stylised fact 9: Poverty statistics as well as national income trends, measured by GDP, indicate that the food insecurity problem is basically related to “access”: food insecure households have limited means to pay the price for imports and access to adequate supply of food. (In a world where adequate food supply is globally available, trade should theoretically provide deficit countries with the necessary volume of food to properly feed their population.)

Stylised fact 10: Household vulnerability is dependent on income sources: the higher the share of agricultural income, the higher the vulnerability.

1.4 How can the problem be tackled?

When analyzing the time series on domestic production and external trade, the striking fact is the absence of sufficient recourse to imports to allow adequate food availability when domestic production is insufficient. Poverty statistics as well as national income trends, measured by GDP, indicate that the food insecurity problem is related to “access”: Food insecure households do not have the means to pay the price for imports in order to access an adequate supply of food. In a world where adequate food supply is globally available, trade should indeed provide deficit countries with the necessary volume of food to feed their populations adequately. An increase in income should generate a high response in food

demand among food insecure households. If this is not the case where no bottleneck restricts access to international trade, the problem is linked to the lack of solvent demand due to insufficient income.

What kind of policy would be involved to eradicate a continuously worsening food security situation in Africa? Lessons must be drawn from history before tackling this question. The first lesson examines the nature of intervention policies.

Intervention policies were common in Africa in the 1960's. They failed, as demonstrated by the remarkable stability of per head indicators noted on figure 1-4. Admittedly, there has been a large increase in production since the 1960's. But it was absorbed by parallel population growth, so that, in per capita terms, there was no substantial change, despite enormous sums spent at that time on developing agriculture. Actually, this failure, and the public deficit and macroeconomic imbalances it implied, is at the origin of the "structural adjustment" policies, initiated in the 1980's.

The core idea behind structural adjustment was that private interest would be the best engine of development. According to the famous statement coined by Adam Smith, "*It is not from the benevolence of the butcher, the brewer, or the baker that we expect our dinner, but from their regard to their own interest*". Therefore, the State should withdraw from direct production. Inefficient and corrupt parastatal companies should be privatized or dismantled. Taxes which deprived farmers from the benefit of their work should be reformed (yet, more effectively collected!). Trade policies had to be modified to allow world prices to be better reflected in domestic markets.

The impact of these policies cannot be traced in the trends depicted on figure 1-4. This is not to say that the impact has been negligible. On the contrary, many analysts are contending that it has been significant, and detrimental. Indeed, it has been noted many times that structural adjustment programmes have often impoverished various population segments (as will be shown below) Yet, as far as we the long-term trend in per capita cereal production and consumption is concerned, the least that can be said is that the outcome of structural adjustment programmes is not visible on the curves. And this, of course, is the tragedy, precisely because structural adjustment was meant to boost development and solve the recurrent food problem.

As a consequence, an increasing number of organisations and specialists feel that it is necessary to reconsider current policies in order to figure out new ways to support agriculture. It would be necessary to discover (or rediscover) methods that are likely to propel agricultural development forward and contribute to improved food security, while avoiding the pitfalls of the policies of the 60s' and 70's. This view is further supported by the evidence that food insecurity has a cost for development, whilst foregoing agricultural development can have considerable implications on general development opportunities and the dynamics of any given country.

In this context - and before trying to set up a new policy - it would be necessary first to understand the reasons for the failures mentioned above. This document attempts to deal with this question, and provide answers that can be widely accepted by policy makers in developing countries as well as by their cooperating partners.

Chapter 2: Does food aid foster or impede economic development?

Starting in the early 1960's, the controversy on the opportunity cost of food aid for food recipient countries remains unabated. While there is no doubt that targeted and temporary food aid does give a major positive contribution in emergency relief, some policy makers and development practitioners in the NGO community emphasize the increasing costs of food aid programmes over time.

Their main arguments can be summarized as follows: first, recipient countries incur budgetary costs for storage, transport and delivery of food aid funded by donors. Second, when poorly-targeted and used over long periods, in large quantities and in situations where there is no real food shortage in the country, food aid can exert a downward pressure on domestic food prices and act as a disincentive to produce and invest. And finally, excessive reliance on food aid may become politically unsustainable: Political legitimacy may erode with the decreasing credibility of the State as provider of the basic needs of its population and its perceived growing dependence and accountability towards donors rather than toward its own citizens. Evidence on which this position is based needs careful review in the specific conditions of SSA.

The question (Or “the issue”) must be tackled by reviewing the theoretical and empirical impacts of food aid. However, most of the time, short-term and even static impact of food aid are privileged in such analysis, while long-term, dynamic effects are scarcely addressed. In addition, numerous market failures encountered in food aid recipient countries further restrict the usefulness of standard micro-econometric approach of food aid impact on heterogeneous households. Thus, encompassing traditional approaches, our review underscores the idiosyncratic impact of food aid which makes the debate between pros and cons irrelevant. Hence is there no case for or against food aid: food aid is not the miracle remedy for development nor the main culprit for past performance in African countries. Learning to use food aid so as to no longer need it turns out to be the main issue food aid recipient countries should be tackling today.

2.1 The theoretical impact of food aid

Concerns over food aid's potentially disincentive effects on domestic agriculture have been discussed extensively in the development literature after the seminal contribution of Schultz (1960) over PL 480¹⁷. For the purpose of analyzing these effects, it is crucial to make a distinction among three main types of food aid:

- Program food aid, which is usually supplied as a resource transfer for balance of payment or budgetary support activities. This form of food aid is not targeted to specific groups and is sold on the open market and provided by donor countries either as a grant or as a loan;
- Project food aid, which aims at supporting specific poverty-alleviation and disaster-prevention activities. It is usually freely distributed to targeted beneficiary groups but may

¹⁷ Schultz, 1960. The P.L. 480 (also known as the Agricultural Trade Development and Assistance Act) was enacted in 1954 in line with the US Policy of using its agricultural productivity to enhance the food security of developing countries. It authorized the US government funding very long-term credit (30 years) for emergency food exports.

also be sold on the open market. It is often referred to as “monetized” food aid. It is usually provided on a grant basis;

- Emergency food aid, destined to victims of natural or man-made disasters. It is freely distributed to targeted beneficiary groups and usually provided on a grant basis¹⁸.

It is undisputed that food aid has contributed to saving innumerable lives and improving the nutritional status of large population groups in situations of emergency resulting from disaster. Food aid has also contributed to investment in rural areas by helping to finance important transport and productive infrastructure. It is also acknowledged, however, that food aid can impact on product and factor markets by affecting three key variables: food prices, factor prices and risk, whose food-aid-induced variations are determinants of food security and poverty positions¹⁹.

2.3.1 Food price effect

In some cases, food aid may exert downward pressure on food prices, with that pressure greatest in places where targeting is poor. This may occur when food aid delivery increases supply faster than it stimulates demand, thereby depressing the food prices paid to local producers and traders. This short-term negative effect has relatively more chances of occurring in case of programme or project food aid. This may then create disincentives for producers to invest in improved technologies or for marketing intermediaries to invest in storage and transport capacity, thus turning a short-term negative effect into a long-term one²⁰.

These negative impacts, however, affect those producers who are selling their products on the market – which may only be a small proportion of total producers. In case of subsistence farmers whose food products are not actually sold on local markets, price changes may not affect decisions or affect them in a counterintuitive way²¹. De Janvry and Sadoulet (2002), for instance, emphasise the high transaction costs faced by rural households in developing countries because of poor infrastructures (transport, communication) and low human capital. In such conditions, there exists for every household a price band within which the household has no incentive either to buy or sell²². This is true also for the production factors that the household may own (and particularly its own labour force). Within the price band, the producer does not respond to market prices, but to an “implicit” price clearing the supply and demand at household level. For example, households facing constraints for the marketing of food crops (limited number of market transactions because of high transaction costs) will not respond to a cash crop price increase as much as a household facing no transaction costs in a perfect market situation would have responded: this household is constrained by a minimum production level for its own consumption. Winters (2000) insists on the consequences of such a behaviour on the analysis of the impact of price changes on poverty. As long as households are constrained by market failures (credit access, for example) they are likely not to react to price changes, at least not as much as the classical profit maximising farmer’s behaviour

¹⁸ Intergovernmental working group for the elaboration of a set of voluntary guidelines to support the progressive realisation of the right for adequate food in the context of national food security, *Food Aid and the Right to Food – Draft information paper*, FAO, Rome June 2004.

¹⁹ Awudu, Barrett and Hazell, 2004.

²⁰ Awudu, Barrett and Hoddinott, 2004.

²¹ See the example in de Janvry et al., 1991.

²² Nigel Key et al., 2000

model would have predicted²³. Implications for food aid analysis are comparable. Price changes give limited information on households' possible switches between net buyer or net seller positions. Net impact on income and food security cannot be assessed until transaction costs have been taken into account. Now, transaction costs differ from farmer to farmer, and therefore, also, the implicit price they induce. Since the latter replace market prices in the economic calculus of constrained households, a given change in market price may result in quite different consequences according to the specific situation of each household. Transaction costs and price bands are idiosyncratic. Food aid price impacts are also idiosyncratic.

Yet, other effects of food aid may affect all households. They are briefly reviewed below²⁴ :

2.3.2 Income effect

Food being a normal good with an income elasticity of demand of less than one, each dollar of food aid received by beneficiaries in terms of food will induce an increased food demand of less than one dollar. Although the propensity to use additional income for consuming food is higher when income results from food distribution, shipments of food aid inevitably induces an increase in food demand the magnitude of which is lower than the amount of the aid. Consequently, as income elasticity of demand for food is highest among the poorest population groups, food aid distributed exclusively to poor recipients in an emergency situation generates minimal food market distortions relative to untargeted programme food aid sold on the open market²⁵.

2.3.3 Substitution effect

When the commodity imported as food is the same as the commodity locally produced or a substitute, the distributed food aid adds to the total supply of that good. As discussed in the previous section, in general the increase in demand induced by the income effect is less than the additional supply. So even well-targeted food aid distributions will tend to result in a fall in prices in non-emergency situations. The more poorly-targeted food aid is, the more severe the adverse price effects. In the case of substitute commodity, no direct supply effects are expected, only demand-side effects. It turns out that the cross-price effects of food aid are more ambiguous than the own-price effects. Food aid transfers tend to decrease the demand for substitute commodities, and to increase demand for complementary commodities.

The net cross-price effect of food aid in this case is therefore uncertain and depends on the relative magnitude of the (generally negative) substitution and (generally positive) income effects. Producers of complementary foods tend to benefit from food aid while the market prices of substitute foods can either rise or fall, depending on how income and substitution effects net out.

In the longer term, continuous programme or project food aid can also contribute to bringing changes to consumption patterns by generating demand for exotic food products (e.g. wheat bread and other wheat-based products in the Sahel).

²³ Löfgren et al. (1999) integrated a "transaction cost-constrained" household into a computable general equilibrium model. Simulations show that the household's response to price changes is nil.

²⁴ Gabre-Madhin, Barrett and Dorosh, 2003.

²⁵ Barrett, 2003.

2.3.4 Factors price effect

Households derive income both from selling products and labour. Economic textbooks assert that a fall in agricultural output price generates a less-than-proportionate fall in rural wage because of declining demand for wage workers²⁶. In the meantime, regular income transfers, whether in cash or kind, tend to induce increased demand for leisure and further reduce supply of labour leading significant diversion of labour from the market. Evidence shows that labour supply becomes more responsive to changes in income as people grow wealthier and that poorly-targeted food aid magnifies labour market disincentives by contributing to a withdrawal of labour supply away from market, with a negative consequence on wages. In particular, Food for Work programs (FFW), if poorly scheduled, can have an effect on the local labour market by attracting workers away from vital activities, especially if the wages offered under FFW are at or above prevailing market wage rates. As a consequence, there is a need to schedule these activities at times where there is a surplus of labour available.

Effects on capital markets are likely to be more positive. In situations of rural financial market failures, high interest rates and stringent seasonal liquidity constraints for smallholders, the income transfer generated by food aid enables cash-strapped recipients to obviate their binding liquidity constraint and undertake productive investments through the purchase of high-return inputs, as has been demonstrated in Kenya²⁷. Conditions are that the income transfer component of food aid is well-timed and well-targeted so as to obviate liquidity constraints effectively.

2.3.5 Risk management effect

Food insecurity is the consequence of cumulative risks faced by producers that contribute to low productivity, including climate, disease, pests, and civil unrest or war. Food aid can then act as a last resort insurance. How effective food aid is in helping smallholders manage their risk is the key question. Experience demonstrates that food aid targeting and timeliness has been of mixed effectiveness at best, providing therefore an unreliable insurance against shocks. According to Awudu, Barrett, and Hazell²⁸, much of food aid substitutes for informal social insurance flows, generating little net additional insurance coverage. The same authors underline the well-known moral hazard problem of people, having been assured of food aid having less incentive to take all reasonable precautions to avoid losses. This is also true for governments, with long-term development implications. As long as food aid in emergency situations can be taken for granted, incentive is reduced to undertake precautionary actions such as investment in irrigation, agricultural research and extension, and this has potentially damaging consequences on productivity and growth.

Overall possible impacts are summarized in table 2-1.

²⁶ Krugman et al. (2001).

²⁷ Bezuneh, Deaton and Norton, 1988.

²⁸ Awudu, Barrett and Hazell, 2004.

Table 2-1: Potential impact of food aid on food product and factor markets

Potential adverse impact	Potential favorable impact
Food price impact <ol style="list-style-type: none"> 1. Lowers local food prices to the detriment of farmers 2. Many shift preferences for imported foods 	Factor Price Impact <ol style="list-style-type: none"> 1. Stimulus to demand for complementary foods 2. Income effects on demand when food aid well targeted
Factor market effects <ol style="list-style-type: none"> 1. Labour market disincentive 	Factor market effects <ol style="list-style-type: none"> 1. Food-For-Work public goods and private inputs can help productivity and markets 2. Alleviate binding (temporary/seasonal) liquidity constraints
Risk management effects <ol style="list-style-type: none"> 1. May act as disincentive for recipient governments and farmers to care for agriculture 2. Moral hazard effects of free insurance 	Risk management effects <ol style="list-style-type: none"> 1. Smooths income variations and reduces costly risk mitigation

2.2 Empirical evidence

Are these theoretical impacts observed in reality? In this respect, empirical evidence is puzzling. To quote the above mentioned IFPRI report by Awudu et al., “there exists negligible empirical evidence to either refute or confirm the pervasive belief that food aid has significant disincentive effects on recipient food production at both micro and macro levels. Empirical evidence remains country specific, and to a few exceptions, no systematic finding emerges on the overall impact of food aid on food security, poverty alleviation and development”.

We use the analytical framework of table 2-6 to track the variables through which food aid effects are channeled. On the basis of country and cross-country analysis, we try to isolate some possible consensual effects although, as with any empirical study, results should be treated with care. The review of recent literature covered Ethiopia, Mozambique, Tanzania, India and Bangladesh, while cross-section analysis found generally applied to Sub-Saharan Africa. Results are summarized in table 2-2. Country references in the text are to be found in the table.

Table 2-2: Observed impact of food aid²⁹

Disincentive impact through	Negligible or positive impact through
Food price Sub-Saharan Africa. Awudu, Barrett and Hoddinott (2004) Ethiopia. Yamano, Jayne and Strauss (2000) Bangladesh. Dorosh, Shahabuddin, Aziz and Farid (2002)	Food price Sub-Saharan Africa. Barrett, Mohapatra and Snyder (1999) Sub-Saharan Africa. Awudu, Barrett and Hazell (2004) Mozambique (Maputo). Dorosh, del Ninno and Sahn (1995) Bangladesh. Del Ninno and Dorosh (1998) Ethiopia (Levinsohn, Mc Millan, 2004)
Factor market	Factor market Sub-Saharan Africa. Awudu, Barrett and Hoddinott (2004) Ethiopia. Hoddinott (2003), Holden, Barrett and Hagos (2003) Kenya. Bezuneh, Deaton and Norton (1988)
Risk management	Risk management Sub-Saharan Africa. Barrett and Heisey (2002) Ethiopia. Hoddinott (2003)

The empirical findings to be derived from our papers review are as follows.

²⁹ The reader might be surprised to find the same author on both columns of this table: it only demonstrates that the question is country specific and even household specific so as to allow an author to find different and sometimes opposite results according to situations.

2.4.1 General findings

The literature reviewed whose main references are given in table 2-7 highlights negative or negligible food price effects, positive or negligible factor price effects, and positive (short term) risk management effects of food aid. Discrepancies in results are striking, leading to different and sometimes opposite results occurring in the same country. Factor and risk effects are poorly documented, compared to agricultural output price. An important result – or at least intuition to be further clarified - is the potential of food aid to obviate liquidity constraints. Results in Sub-Saharan Africa underscore the importance of factors market failures (labour and capital, the latter being related to risk) in limiting productivity.

2.4.2 Targeting of food aid is essential

A second and more specific lesson relates to the relative efficiency of different types of aid. (Self)Targeting, timeliness and direct distribution (in kind or cash aid) seem to limit more than food-for-work the possible disincentive effects of food aid (Ethiopia, Bangladesh). While much of the literature on food-for-work³⁰ has found that self-targeting employment schemes are effective in reaching the poor, recent evaluations have found alternative explanations for the targeting of food aid: bureaucratic inertia and the history of past receipts of food aid seems to be one of the most important determinants. Moreover, direct payment of food-for-work appears to be best limited to programs with a short duration during the transition from relief to recovery. As a famine management program evolves from relief to recovery, cash wages are likely to become a more efficient and highly valued instrument for delivery of assistance, as commercial food supply to markets improves. But as the recovery progresses, the continued provision of a wage in kind does not appear justified because it increasingly becomes a less efficient mechanism for provision of welfare-enhancing aid (Ethiopia).

2.4.3 The development impact of food aid is ambiguous

Impact on development is difficult to analyse. Food aid can play a useful role in furthering development and poverty alleviation in situations in which the recipient country is generally following an appropriate development strategy. Otherwise, it can create dependency and sustain inappropriate policies (India)³¹. In India, it is the availability since the mid-1960s of high-yielding dwarf varieties of wheat and rice, rather than food aid and donor pressure, that largely explains the end of famine. Domestic economic policy, based on a strong political will at the highest level - probably linked somewhat to its political system based on democratic elections - had a substantial role in helping to stabilize food consumption, develop production and reduce food insecurity.

2.4.4 Food aid as a subsidy for building infrastructure

It has been contended that food aid could be used as a “capital accumulator”, through “food-for-work” programs, for building infrastructure (such as roads, irrigation schemes, etc.) at the cost of just feeding workers, while simultaneously not offending their dignity, since they are not provided “food for nothing”. Although the idea is seductive, it must be applied very carefully. First, there are cases where “food-for-work” was offered at harvest or ploughing time; at a time when the opportunity cost of labour is at its highest. In such cases, food for

³⁰ In particular, see: Barrett, Holden and Clay, 2004.

³¹ Srinivasan (2000).

work will depress agricultural and food production rather than increase it. More generally, it contributes to the idea that “the labour price is the cost of workers’ subsistence”. Now, we shall see below that this is the key of the “Malthusian trap” (see box 3.4, P. 47), which must be avoided at any rate.

2.4.5 The cost of food aid for recipient countries is not clear

The cost to recipient countries of food aid, if often neglected, is far from nil, yet it is neither clearly assessed nor stated. In order for imported food aid to reach target recipients, roads, harbours, trucks, even railways are necessary. Part of that cost is born by donors, e.g. WFP does fund extensions of ports and the building of bridges. But it requires sometimes heavy investments of which the beneficiary government often has to bear at least a part. Also, an administration must be set up to manage the food provided and protect it from being robbed by malevolent people. On the opposite and positive side, such infrastructures, equipment and institutional arrangements are at least in part those which would have to be put in place for the market to work properly, although the infrastructure put in place is usually more adapted to reduce the cost of transport and facilitate the flow of goods between import points (ports) and main consumption centers, rather than from the producing areas to the main consumption centres.

2.3 In conclusion

According to our review, food aid usually exerts downward pressure on food prices (although this one may be negligible), with that pressure greatest in places where targeting is poor, while enabling productivity gains through positive factor market effects. The South Asian experience in Bangladesh, Pakistan, and India demonstrates that, with appropriate government policies, rapid technological change in agriculture can enable countries to expand food production even in the face of substantial inflows of food aid and their expected attendant adverse producer price incentive effects. These policies are investments in rural infrastructure, assuring input supply to farmers, and maintaining remunerative producer prices. In Bangladesh, which reached record levels of grain production in 1999/2000 and 2000/2001, green revolution technology in the form of small-scale irrigation, expansion of improved seed and fertilizer use has contributed to the doubling of rice output and increases of wheat production several fold over the past two decades. In this period, the uses of food aid have evolved from the use of monetized food aid funds for public expenditures in the 1970s and early 1980s to reforms in the late 1980s and 1990s in order to improve targeting and reduce leakages³². This is not in contradiction with Awudu, Barrett, Hazell³³ when they conclude that “food aid’s apparent historical success³⁴ in stimulating food productivity in Africa suggests that the relatively unheralded factor market effects of food aid may trump the oft-repeated product market disincentive effects”, and that “the collapse of per capita food productivity in Sub-Saharan Africa over the decade to the mid-1980’s would have been still more severe without the sharp simultaneous increase in food aid flows to the region”. The key question is whether productivity gains have been even greater with sound agricultural policies targeted on farm support? This leads us to examine the various options found both in literature and history.

³² Dorosh, Shahabuddin, Aziz and Farid, 2002.

³³ Awudu, Barrett and Hazell, 2004.

³⁴ Apparently, in Ethiopia, Rwanda, and Kenya.

Chapter 3: Why did Development Policies go Wrong?

Because improving food security requires an increase of real income per caput, especially for the poorest, the only sustainable way of removing hunger is development. But what is development? How can it be nurtured? For long, this question has preoccupied economists, some with a theoretical (and sometime ideological) point of view, while others have been keen to empirically check, in a historical perspective, the validity of theoretical thinking. The next two chapters are devoted to an overview of research findings in this respect.

This chapter deals mainly with the basic facts and theory of development, illustrated with examples primarily derived from the 19th and 20th century economic history of developed countries which, at the beginning of the 19th century, were not in a better situation than Africa nowadays. Then, in chapter 4, their application to specific agricultural situations will be discussed.

First, let us consider the main choices a development policy maker is always confronted with.

3.1 Development dilemmas

Clearly, development is conceived today as consisting in developing demand-driven markets, which will stimulate and absorb production and create employment opportunities. Such a development can be oriented inward (developing domestic production for domestic markets) or outward- (developing domestic production for export). Although the two alternatives seem fairly opposite, they turn out to be just as difficult one as another to achieve. The problem is the same from the producer's point of view, because the ultimate destination of production – the domestic or the international markets – is immaterial³⁵. Yet, such an option still leaves open a number of sub options. They will be described below, before looking at how, historically, they have been used in the now developed countries.

3.1.1 Encouraging industry or agriculture?

Economic policies can be designed to encourage agriculture rather than industry, or the contrary. For instance, at the end of the 19th century, while Britain deliberately sacrificed its agriculture, France and Germany cared to make it a priority (Cf box 3.1). All three were rather successful. During the same period, the Uruguay economy was almost exclusively based on meat production: it was rather a failure (Jacobs, 1985). Even in the US, at the time of the Civil War, the contrast was striking between the South and the North. The North was industrialist and protectionist. The South was agriculture-oriented and liberal. Both were prosperous (on the surface at least, and if one forgets the situation of the slaves in the South, and of the urban proletariat in the North).

Such examples show that opposite policies can lead to success or failure, depending on specific conditions in the country. Indeed, the basic reasoning here – and the line of reasoning which will enter the mind of any economist - is based on the comparative advantage theory: if

³⁵ Of course, the export and domestic markets are not identical, and might require different commodities, at least in terms of quality norms. But at this stage of the analysis, assuming complete substitutability makes the central argument easier to understand.

a country is doing well in some segments of non agricultural production, the best course of action is certainly to develop this sector, while agriculture will release labour forces to expand it.

Box 3-1: Examples of opposite policy orientations in the UK, France and Germany

In the mid 19th century, the British government decided to abolish the “corn laws” which previously (since Cromwell in the 17th century) were protecting farmers against food imports. The corn laws had been the result of a decision to protect domestic agriculture from the vagaries of international markets, on the grounds that it was the pillar of the British economy. Their abolishment was a deliberate choice to sacrifice the agricultural sector in order to foster industrial development (already on a promising growth path, made possible in part by the relatively high productivity of the agricultural sector), now deemed the core of wealth and power. The existence of a highly competitive industrial sector, and the conviction that the international market supply was large enough to cover the gap between needs and domestic food production allowed that choice. It was a conspicuous success until World War I, allowing for a brilliant development of the British industrial base.

Conversely, a little later, in the 1880’s, Germany, followed by France, was confronted by a growing food deficit, decided to discourage agricultural imports in order to let domestic agriculture develop. This policy was very successful in Germany, enabling German agriculture to sustain the consequences of a very large reduction of manpower availability during World War I. The success was less obvious in France, which remained for a long time with a farm sector cluttered by many poor peasants. A possible (but not demonstrated) explanation of this situation is that France never cut the flow of agricultural imports from the colonies, which were promising food exporters at the time ³⁶.

Yet, one must be aware of the fact that, as we shall see below, the above stories are largely caricatured: indeed, Britain was never completely indifferent to agriculture, and France or Germany never gave a total priority to agriculture; quite the contrary. In fact, as we shall show below in greater detail (cf 3.15), although the question caused considerable discussion in government and university circles, it turns out that a "balanced" growth - a growth based on both industry and agriculture - is certainly the only possible solution to development. The above discussion should therefore be handled with care and at arm’s length. It can nevertheless be a guide for some specific decisions, at a given time and location.

If agriculture is considered a priority sector for development, three strategic questions arise about what type of agriculture.

3.1.2 Encouraging export or domestic market oriented production?

The first, and more important, is the choice between giving priority to export crops to production for domestic markets. It can be rightly contended that Africa has sufficient comparative advantages in the production of export commodities such as cotton, cocoa, oilseeds, etc. to develop these products, export them, and import in exchange staple food commodities (cheaply produced elsewhere). Although basically correct, this reasoning suffers from two flaws.

³⁶ These periods of history have been the subject of considerable research. The best synthesis probably can be found in Bairoch, 1995. See also Bairoch, 1993.

First, SSA is not the only possible producer of such commodities. There are strong competitors in other parts of the world, while demand of certain tropical commodities (coffee and cocoa in particular) is limited. In a highly competitive framework, it is not certain that competition would not end by a global disaster, the ruin of all participants in the same game. Indeed, in such a context, a determinant of the short run advantage is the existence of low wages relative to productivity of labour. If SSA has to compete with other regions with higher productivity of labour (improved technology), competition could induce wage levels that would be close to a minimal survival wage which would certainly not be beneficial in terms of reducing food insecurity and alleviating poverty.

Second, if a strong agriculture is developed for exports, it is probably also strong for producing domestic goods. In fact, during the last fifty years, experience of agricultural projects in Africa seems to demonstrate that there exists a synergy among different crops. For instance, in West Africa, food crops are notoriously benefiting from fertilisers used on cotton fields. Other similar examples of synergy exist. In this way, it is probably misleading to assume that export crops and domestic market crops are at opposite ends of the scale. They are in fact complementary³⁷.

Box 3-2 : Complementarity between food and export crops : the case of cotton in West Africa

Since independence, and until recently, cotton in West Africa was cultivated under the supervision of the CFDT (Compagnie Française pour le Développement des fibres Textiles) and its subsidiaries (the SODECOTON in Cameroon, for example). These companies supplied seeds, fertilisers, often ploughing (when necessary). They guaranteed purchasing of the harvest, retaining the advance payment made from the final payment. In addition, they offered advice and technical help.

Because the fertiliser doses were generous, food crops coming after cotton on the same soil in the following year benefited from nutrient reserves accumulated in the soil. Because the cotton price was known in advance with quasi certainty, peasants were able to make their own computations. As cotton represented a very safe speculation, they were even ready to take risks on non supported markets, especially for food crops, as, should food crop prices collapse, they were almost sure receipts from cotton would give them a minimum income. This provided decisive encouragement to grow commercial food crops, the price of which "could" reach very high as well as extremely low values. Thus, the effect of the price guarantee on cotton was spilling over on food crops, and indeed a condition of the development of the latter.

The CFDT itself was prudent in avoiding growing more cotton than it was possible to sell, thus implicitly stabilizing the cotton price paid to farmers at a relatively low but sure level. The main drawback of the system was that only some villages had access to cotton contracts, thus arousing jealousy from others. The CFDT system has been dismantled under pressures from the World Bank and IMF on the ground that it was not fair. It is clear that nobody really benefited from its disappearance, while many African peasants suffered from it.

3.1.3 - Small or large (subsistence or commercial) farms?

³⁷ Lele, Van de Walle and M. Gbetibouo, 1998.

The relative advantages and disadvantages of small (or “subsistence”) and large (or “commercial”) farms - at this stage, we shall not make any difference between these words - has been the subject of vast debate which could fill up libraries. This would certainly not have been the case if large farms had benefited from a significant and decisive advantage. However, it does not mean that some advantages for the large farm may not materialize in some circumstances.

The major source of confusion, here, arises from the confusion between “large farms “ and “capital intensive technology”. Obviously, certain pieces of equipment, such as tractors or combine harvesters, must be employed on a certain scale, which is “large” by African standards. However, a tractor, a combine harvester or even a pair of oxen, can be hired for a few hours or days on a small farm. The difficulty is that there are no harvesters or tractors to be rented in most rural areas in SSA. Thus, the reason for not employing tractors or combine harvesters in Africa is not because of the existence of small farms, but because of the lack of capital – actually one of the main constraints of SSA agriculture.

In many cases, this confusion was one of the reasons for the dismantling of “state farms” and other similar devices (along with the fact that they had often become a burden for the government budget) with the advent of the structural adjustment programs. Such farms were organised on the same pattern as similar enterprises in industrialized countries. For instance, in the 1970, Gabon developed Californian style “feed lots”. But the conditions were not the same as in California. In California, at the time manpower was scarce, while capital was relatively abundant. As a consequence, in Californian feed lots, the quantity of capital per worker was enormous. In Africa, capital is the scarcest resource. In such a context, using the same technique as in California to produce meat is just a squandering of resources.

At the same time, monitoring workers is extremely difficult on a large farm. Since their salaries are guaranteed, workers have no incentive to work properly, or to warn their supervisors if something goes wrong. For these reasons productivity of labour is often low on such farms, unless farm management exerts considerable power and authority over workers³⁸. In the absence of a dictatorial authority (and dictatorial authorities must not be encouraged for other reasons), the financial collapse of such a system becomes unavoidable³⁹.

On the other hand, if “small farms” are not in general less efficient than “large farms” as long as production is considered in the strictest sense of the word (In fact, they are often more efficient, labour is much more productively and carefully employed, because farmers “monitor themselves”), they suffer from the structural inability to come to market. A small farmer has no time nor means of transportation to bring harvest to remote markets. Indeed, an organisation of the agricultural sector based on family farms implies the existence of large “post harvest” networks to collect production, with roads, means of transportation, storage facilities, quality control system, etc. Some of these facilities must obviously be private (e.g. trucks) while others (such as roads) are of a public nature requiring the state to intervene.

³⁸ That was for example possible on large plantations at the time of slavery (and explains the undisputable “economic success” of the formula, see Hicks, 1969).

³⁹ For that reason, very large farms in Asia and in Medieval Europe evolved toward sharecropping. Indeed, with sharecropping contracts, workers are encouraged to work and “monitor themselves”, while landlords have incentive to provide not only land, but also capital goods. This type of contract is “inefficient” according to Alfred Marshall because the incentive is only partial. Since workers receive only a share of benefits, marginal productivity of labour does not exceed this reward, while landlords, too, invest less than what could be expected from the marginal productivity of capital. Yet, “a little” is better than “nothing”, and sharecropping could be considered at least as a transitory solution for mitigating labour supervision problems in the African setting.

Box 3-3: Historical development of post-harvest networks in Europe

In most European countries, the creation of such networks has been the task of local notabilities, often democratically elected, sometimes because they were rich enough to pay for the necessary investments. As mostly politicians, they were in some instances motivated by their own interest and profit, but more often by power.

For the cleverest of the poor, the process functioned as a “social elevator”: in many cases, being elected as president of a cooperative or to the council of a local community was the only chance for a peasant to become an “important person”. At the same time, this process could not come about without a minimum of public support. At the very least, local public executives had to be available to discuss the opportunity envisaged by public investment.

In some cases, because of disputes, lack of economic culture or other considerations, such public support was probably not “optimally” utilised. Yet, on the whole, the result is evident, and the effort of these innumerable people has not been lost for the community: in the absence of such institutions, efficient small family farming would not have emerged.

In any case, the provision of such facilities is a prerequisite for "subsistence farms" to be turned into "commercial farms". At the same time, such a transformation occurs very easily and often quickly when these facilities exist, as shown by innumerable examples: let us quote the transformation of "labourers" into commercial farmers in Europe during the 19th century, but also the evolution of many irrigation schemes⁴⁰, for instance the "Office du Niger" in Mali.

Thus, the key idea here is that “small” farming can very well be even more efficient than “large farming”, but under the condition of the existence of a complex network of pre- and post-harvest institutions linking farmers and markets.

3.1.4 Intensive or extensive farming?

Intensive farming is a set of production techniques which involves a large quantity of inputs (be it labour, capital or other inputs) per unit of land. Typical intensive farming techniques are those derived from the “Green Revolution”: heavy investments in irrigation, use of large quantities of fertiliser and high yield variety seeds. As a consequence, productivity is impressive, with often 10 tons or more of grain per hectare and per year over 3 crop cycles.

Such technology was developed in the context of India and other high population density countries in Asia. With something like 0.1 ha of arable available per final consumer, there was no choice but to increase yields in order to ensure a minimum level of self sufficiency. The situation is not the same in most parts of Africa, where land is generally not scarce (although this situation is rapidly changing in certain areas in view of high population growth). SSA yields in traditional agriculture remain very low and are the result of low-input agriculture.

⁴⁰ Irrigation is in general a public investment which in principle has nothing to do with the above mentioned facilities. Yet, since the peoples in charge of an irrigation scheme want it to succeed, they often provide it as a "complementary facility". One could ask whether the "complementary facilities" are not just as essential as water in explaining most irrigation project successes on record.

Technological choices do matter of course. And the question in SSA is the type of technological development that is best adapted to prevailing conditions, and the level and type of intensification that should be advocated in particular.

At present, with traditional tools, a SSA smallholder family can operate between from one to five hectares (depending on agro-climatic conditions). Beyond this, he (or she) would not have enough time to harvest and weed at the appropriate time. With a yield of 0.5 tons of grain per ha (from which 0.1 ton of seeds for next year are to be reserved), this is hardly sufficient to provide enough calories for a small family of 5-6 persons, not to mention selling any surplus. With a pair of oxen (and the accompanying set of tools), he or she could operate 5 to 15 hectares, which means more than tripling productivity of labour. With tractors, harvesters, and other devices, one person can operate 100 – 200 ha, anywhere in the world. This represents an additional productivity multiplied by a factor of ten. And, of course, increasing labour productivity is the only way for a farmer to generate a higher income. Improving the genetic material used, using more inputs (fertilisers and pesticides, or other means of plant protection) can also contribute to an increase in labour productivity, through intensification of agriculture and a simultaneous growth of land productivity (yield). To adopt this second approach, the farmer also needs working capital for the purchase of additional inputs. Thus, increasing the quantity of capital per hectare or per worker is essential to obtain higher labour productivity and greater income.

3.1.5 The need for an evolutionary policy

Development entails increasing the wealth of a nation as well as the average wealth of its inhabitants. As average income increases, the proportion of expenditure on food decreases. Relatively more is being spent on other items such as motorbikes, housing, entertainment, education, health, as well as other luxury goods. Similarly, the composition of food consumed changes: vegetables, fruit and meat increase, while traditional staple foods decrease. These changes are reflected at the macroeconomic and demographic level.

As industry develops in response to increased non-food demand, an increasing number of people move to the cities (and to non-agricultural activities). Figure 3-1 illustrates this point, showing the evolution of the proportion of the population working in agriculture as a function of per capita GNP. It is clear that there is a relation of inverse proportion between these variables: the wealthier the country, the less important the agricultural population. But because with a constant population, food demand is about the same, and even slightly increases, agricultural production must become more capital intensive to compensate for the loss of labour⁴¹.

Indeed, if, presently, most of the agricultural area is occupied by, say, one farmer over five hectares, assuming a change which will lower this ratio to one man over 100 ha means that the farm population must be divided by 20. Therefore, 80 percent of the population presently occupied by farming will have to change for another activity. Such statements often surprise

⁴¹ Unless capital is available for agriculture to accompany this change in economic and demographic structure, the country's food deficit will increase and it will have to rely increasingly on food imports.

(and hurt) people accustomed to think about agricultural policy. Yet, it is mere logic, and must be considered seriously, and is deserving of further comment⁴².

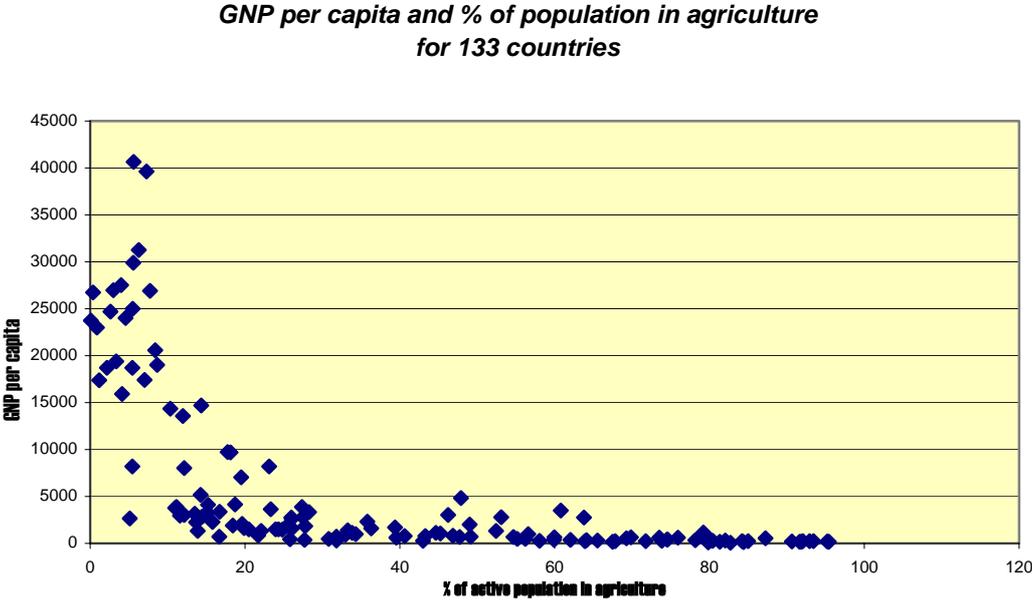


Figure 3-1: Percentage of active population in agriculture plotted against GNP per capita for 133 countries in 1990 (each point represents a country)

Sources: World Bank basic indicators

Under the best hypothesis, the people migrating to urban areas will be employed in industry or services, producing non-agricultural goods for domestic consumption or exports. The actual scenario just outlined is nothing other than the “normal” course of balanced development, which implies that sustainable growth in one sector requires concomitant growth in other sectors.

But there is another possible (and much worse) scenario: too rapid an expansion of "commercial farming" may result in an exaggerated pressure on land, the "rich" capital intensive farmers being in a position to maintain poor subsistence farmers in marginal areas, on the grounds that the latter "cannot make proper use of land" (which is true in the absence of capital). From Algeria to Zimbabwe, such a situation has not been uncommon in colonial Africa. Since the poor, in that case, quickly run out of land, they have no choice but unemployment and living in misery. They are a source of predatory and other illicit activities and of insecurity. This can be avoided if industries and services expand in tandem with the farming sector.

3.2 A quick historical sketch of ideas on development

Since the 1960’s, one can say that almost all development theories have been tried in Africa. Most of them have been disappointing. From this point of view, coming back to conspicuous

⁴² The point was very popular in the 50's and 60's, when the question was at stake in the United States and Europe. Nowadays, it is surprisingly absent from literature on the subject., Interested readers could consult John W. Mellor (Mellor, 1995) or Yoshio Niho (Niho, 1974) and Mazoyer and Roudart (Mazoyer and Roudart, 2005).

failures may not be necessary. Yet, learning from experience is useful if it can help to understand contemporary problems better. This is why the main development doctrines and their outcomes have been reviewed below.

3.2.1 The socialist “industry-based” approach to development

Since the most obvious sign of development is the existence of industry, early proponents of development policies argued that forced industrialisation was the only path to growth.

But how do you force industrialisation? Clearly, the idea was to have workers build machines, which would help building other machines, etc., until consumer goods were available in abundance. To ensure that food was available for the population during the industrialisation process, large state farms were established which would benefit from economies of scale. To achieve such an objective, countries adopting this strategy followed a command economy (central planning) approach to economic management. The USSR was the leader in this line of thought which was extremely popular in the 60’s.

This approach achieved some success⁴³ – first, in the USSR itself where there was rapid economic growth during the 1950’s and the 1960’s (until about 1980)⁴⁴ - but also conspicuous failures, as for instance in Madagascar, or in Tanzania. Especially in agriculture, economies of scale failed to materialize – probably mainly because of labour supervision problems and the stifling of individual initiative –, thus putting most state farms at disadvantage compared to peasant farmers. As noticed by Nobel prizewinner Amartya Sen, lack of incentive at all levels of the decision-making chain caused enormous difficulties each time unexpected situations occurred. Since in agriculture, unexpected situations are the rule rather than the exception, the failure of such a system is not surprising. At the same time, in most of the countries which followed that line⁴⁵, because peasant farming was not within the scope of the plan, it was denied any support. As a consequence, not only did small farms not continue to supply free markets with even modest production, but most of the time their production shrunk to a level only sufficient for subsistence of the household⁴⁶.

In contrast to “socialist approach to development” just described, alternative theories explicitly left room for the market. Yet, until at least the 1990’s, it was generally agreed that even in market economies, the State had a central role to play outside of the market, although there was considerable disagreement as to the best way for the State to intervene.

⁴³ Bairoch (1995) notices that, in the whole, a “planned” economy achieved slightly better results (in terms of growth) than a “market” economy in Third World countries during the period 1950-1980. He adds at the same time that this was more a matter of chance than of regime, as actual economies were never either pure ‘planned’ nor ‘market’ economies.

⁴⁴ It remains to be seen if this USSR success justifies the theory. In fact, Russia was already a relatively well-developed country in the 1920’s, so that it could perform a basic capital accumulation from its own resources. And, despite the advertised “planning system”, markets continued to play a role in the USSR which should not be underestimated, especially in agriculture. “Individual plots” – that is, in essence, peasant farming – were the sources of a very significant proportion of overall food production.

⁴⁵ Madagascar is a particular case in point.

⁴⁶ Curiously enough, such a scenario did not occur in USSR. One reason for that is that kolkhozian workers on “individual plots” were in fact indirectly supported by “large farms”, through a strange set of complementarities: The Kolkhozes were producing basic grain foodstuff, through capital intensive technology. A significant part of the kolkhozian grain production was more or less officially used by workers to sustain milk cows and other animal production which they had the right to raise on their “individual plots”. In principle, kolkhozian plots were intended to serve only family needs. In effect, most the corresponding production was sold on the “kolkhozian market”, which accounted for a significant share of the USSR agricultural production.

3.2.2 Early theories of development based on agriculture

3.2.2.1 The colonial pact

Another view was based on the fact that developing countries being mostly agricultural, they should base their development on agriculture. This idea was introduced very early and is at the root of the “Colonial Pact”. As a consequence of comparative advantage, the colony would specialize in agricultural export goods, while the colonizer would manufacture the industrial goods using its technological skill. Ironically, this doctrine is now current in many WTO circles, because it is strongly founded on the elementary Ricardian comparative advantage concept⁴⁷. Indeed, the development of most colonial countries actually began with a “commodity boom”. Because tropical countries were so obviously in a better position to produce cotton, cocoa, or rubber, it did not take a great economist to understand and seize such an opportunity. The many “Indian companies” of the 18th and 19th centuries did that, often with success, at least at the beginning.

Political reasons aside, a major weakness of this approach to development is the phenomenon described as the deterioration of the terms of trade.

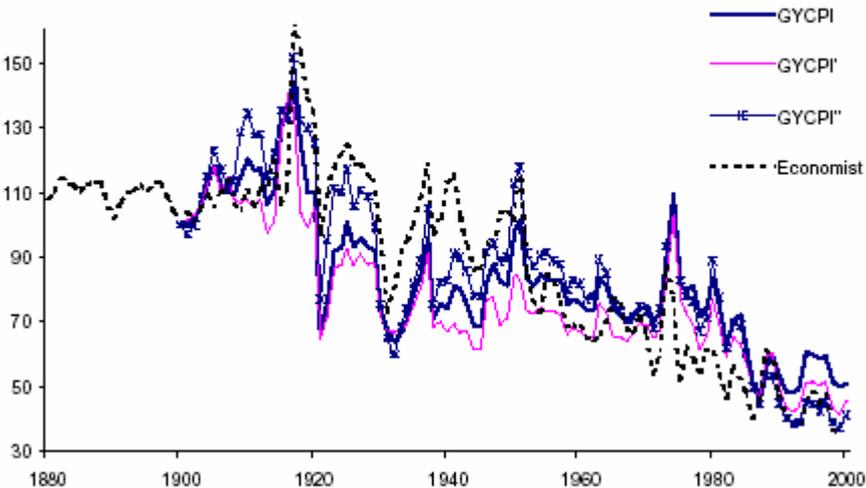


Figure 3-2 : Various estimates of real commodity prices index evolution since the end of 19th century

Sources :reproduced from Ocampo and Parra (2003)
 GCPI : Total index, weighted by the share of total exports represented by each product in 1977- 1979; three sub-indices are also derived: food products, non-food products and metals
 GYCPI' : Total index, weighted by the developing countries share of commodity exports in 1981. (The original index used weightings for 1977- 1979; since these weightings were unavailable, weightings for 1981 were substituted.)
 GYCPI'' : Total index, weighted by the share of world exports represented by commodities during the year in question.
 Economist : Source: Grilli and Yang (1988); The Economist and calculations based on United Nations data.

The word "terms of trade" refers to the ratio "export prices/import prices". Measuring it is not easy, because results may vary according to the weights given to each specific price in the indices calculation. Nevertheless, as shown on figure 3-2, whatever the method of calculation,

⁴⁷ David Ricardo (1772-1823) is one of the most famous economists in the history - somebody who, in economics, plays a role comparable to that of Galileo or Newton in physics. See Schumpeter (1954).

as time passes, it is a fact that the ratio of developing countries' export prices over import prices has been following a downward trend, compelling these countries to export increasing quantities of their products to be able to continue purchasing the same amount of imported goods.⁴⁸

Different interpretations of this evolution can be provided. One of them was given more than two hundred years ago by R. Malthus⁴⁹ who stated that if labour is to be sold onto a competitive market (which it is actually if commodities sold on competitive markets are produced only by unskilled labour in developing countries), then its price must just equate the level at which workers reproduce themselves – that is, the “starvation point”, below which workers die, and population becomes stable (box 3.2).

Box 3-4: Robert Malthus and modern economists views on the price of labour

Robert Malthus' view regarding wages was pessimistic: anything preventing the poor from dying – especially charitable help - was going to increase the evil of low salaries. The only possible way to increase wages was to let the population decrease. Then, labour would become scarce, and wages could increase again⁵⁰.

He was not entirely right: another possibility is employing the poor in creating new wealth, especially capital goods capable of raising the marginal productivity of labour, thus allowing for increased wages through growth and expansion. This is what the economists discovered progressively during the course of the 19th and 20th century. Human needs are insatiable, in such a way that it is always possible to find usefulness in employing additional workers to satisfy them. As a consequence, if markets were operating ideally, the wage rate should never fall below the subsistence level. If it does, from time to time (as was the case in Robert Malthus' England of the 1800's), it is a consequence of a bad organisation of the society, and of “market failures”, leading to situations where for various reasons, actual markets do not warrant an optimal use of production factors, one of which is labour.

Another interpretation⁵¹ is based on the technological change which occurred in agriculture and on the structure of international agricultural markets. Because of technological progress, productivity increases. In a competitive market, prices follow the production cost. Therefore, production costs must fall as productivity increases.

A third interpretation relies on the differences in income demand elasticity in developed (centre) and developing (periphery) countries. The elasticity of the demand for food and fibre with respect to income is lower in the centre than on the periphery. At the same time, it is higher on the periphery for industrial products imported from the centre. The consequence is that the process of growth, and hence of income expansion, raises import demand more in the periphery than at the centre, thus pushing up the prices of periphery imports *vis-à-vis* those of exports and lowering the terms of trade.

⁴⁸ Ocampo and Parra, 2003.

⁴⁹ Just like Ricardo, Thomas Robert Malthus (1766-1834) is a founding father of economics. Again, see Schumpeter(1954), p 480 ff.

⁵⁰ For that reason, he would have disagreed with food aid programs, claiming it would just prolong the ordeal of the poor, who would be better to dying as quickly as possible. Notice he was a priest, and practised charity to the poor in his parish for years. Such was the lesson he derived from this experience.

⁵¹ Based in part on the view of the “structuralist” economists (Prebisch, 1950).

Whichever of these explanations hold in general, it must be recognized that all possible reasons for an adverse evolution in the terms of trade are present in SSA nowadays. Productivity increases less in Africa than in other regions; Africa produces relatively more low income elasticity basic foodstuffs than any other region; and its only opportunity is to compensate other disadvantages by reduced remuneration of labour. It is therefore not likely that Africa (or any other country) can develop by selling agricultural goods only - which of course does not mean that selling agricultural products must be ruled out altogether.

3.2.2.2 The post colonial auto-centred theory of development

The main doctrinal change introduced in this respect by the post colonial era - mostly, in reaction to the above mentioned "colonial pact", and in view of the associated failures - was the idea that it was necessary to tax agriculture in order to pay for industrial development. The idea was not deprived of logic: some sort of industrial development was needed, but the main obstacle to industrial development was the lack of capital. Increasing the stock of capital is possible through savings. This implied foregoing the consumption of part of the benefits accrued from exporting agricultural commodities, and to importing capital goods from abroad (the socialist approach seen earlier amounted to saving the surplus of agricultural commodities produced and using it to pay for industrial development).

Since governments were not overly confident in the private individual willingness to save, they decided to "tax agriculture" in order to generate the required savings. In some cases, this was achieved through explicit taxation: for instance, in Ivory Coast, the government was buying cocoa at a low price, and the commodity was then resold to exporters at a higher price, the difference being used to fund public investment⁵². In other instances governments used "forced savings through inflation". Due to money creation, prices increased constantly and producers were paid apparently fair prices. But when, later on, they tried to use the corresponding money to buy consumer goods, they realised that prices had increased in the meantime, thus limiting their ability to consume. In that way, they were "forced to save"⁵³.

The major difficulty weakening this policy line is the inability of the State to invest the savings made in this way usefully. Indeed, it is similar to what has been noticed above regarding central planning: a bureaucracy can do a lot of things, but it cannot fulfil the role of an entrepreneur. Unfortunately, this is precisely what would have been necessary to ensure success of the forced savings policy. As a result, except in a few cases where charismatic leaders play a large role, state entrepreneurship mostly failed due to corruption, lack of accountability and mismanagement. Many state enterprises were asked by the state to perform non commercial (political, social and economic) functions with a cost that would put them in deficit (overstaffing, provision of subsidised goods or services, etc.). Indeed, most of these investments were miscalculated from the outset, because they were designed on industrialized country patterns, without regard to African specificity (especially, see above 3.1.3, or below, 6.3.2).

3.2.3 - Import substitution policy and "development projects".

The "import substitution policy" (see box 3.5) is a natural corollary of the structuralist view which emphasises the need for industrialization as a vehicle for development. If the diagnosis of the long-term evolution of the terms of trade was right, the development process could not rely on export-led growth based on primary products. If the planned autonomous growth is not feasible and if there are difficulties in being competitive on the world market and export, then the import side of the balance of trade has to be reduced to lead to at least balance, if not surplus, to fund imports for the means of production.

⁵² This kind of policy came under fire of the IMF and the World Bank, during the 80's and the 90's, on the ground that it was "robbing farmers of their labour".

⁵³ Obviously, such a trick can work for some time, but after a period, producers tend not to keep liquidities during inflationary periods.

But at the same time, this policy should aim at building up an autonomous industrial capacity able to produce those goods for which relative world prices were improving. This can be done by heavily protecting local industries capable of producing goods which are import substitutes. Thus, for instance, investment goods that are unlikely to be produced in the country are imported free of taxes, while food, which is assumed to be more easily produced locally, is subjected to a high tariff. Simultaneously, subsidies are provided to investments in the most promising import-substitute industries, such as, for example, low cost cars, or similar goods which are also heavily protected by tariffs on imports to allow these new industries to be competitive on the domestic market. To complement these policies, government also has to set up public utilities, such as roads, dams, research institutions, and so on. This type of strategy was widely adopted in Latin America (see box below) and India in the 70's and early 80's.

To some extent, this idea can be traced back very far in the past. It was the idea at the root of the policy set up for France by Minister Colbert during the 17th century (hence the name of "colbertism" given to this sort of action). In Africa, during the 50's and the 60's, this line of thought was very fashionable, although it is not absolutely clear that the philosophy was completely understood. Indeed, instead of setting up long run plans, with consideration of possible future evolutions, into which particular projects could have been progressively and consistently embedded, many African leaders were excessively preoccupied by the necessity of starting a large number of projects as soon as possible. It led to deep misunderstanding between project leaders and governments. Understandably, project leaders were preoccupied with the success of their projects, without taking care of other considerations, more so because most of them were expatriates. Governments were not able to coordinate. Thus, the whole economic policy was replaced by a set of "development projects", each of them being approved for its own merits, but with the whole not really being consistent.

It would certainly be wrong to be overly severe when assessing such policies. They possessed the main quality of being pragmatic, and (contrary to the political logics presented so far) almost completely deprived of ideology. At the same time, for different reasons, they had serious shortcomings. First, it would now be contrary to the rules of WTO, making its application in the modern world virtually impossible. It also requires very careful and efficient governance, as well as an irreproachable bureaucracy. For these reasons, and many others, international organizations preferred recommending a liberal approach in the 80's and the 90's.

3.2.4 - The "liberal" approach

The most "natural" policy is not to do anything. This is the *laissez faire* (let it be done) doctrine, the theory or practice of governmental abstention from interference in the workings of the market. This policy is recommended by the most liberal economists, on the ground that development is tantamount to all citizens' enrichment. Since everyone likes to become rich, people are expected to act in order to achieve this goal. If the law prohibits unsocial behaviours, such as robbing or crooking, the only way to reach this goal will be to "cooperate" with other citizens by responding to market signals. In that way, the

Box 3.5: The import-substitution strategy and its denouement

The thrust of the strategy was a change of development engine from the promotion of exports to the substitution of imports and from investment in primary products (agricultural raw materials, minerals and fuels) to investments in the development of the manufacturing sector. Industrialization required a number of conditions:

- (i) protecting infant industries from international competition;
- (ii) financial and fiscal support to these industries;
- (iii) the development of domestic infrastructure in the transport, communication and energy sectors;
- (iv) the enlargement of the domestic market so that it could absorb the manufacturing goods produced internally, to be achieved through suitable income distribution measures such as agrarian reform, social welfare and improved wages;
- (v) the contribution of direct and indirect foreign investment, and
- (vi) a strong and rational (i.e. planning-oriented) government of a new type, representing the aspirations of the emerging industry-related classes, as opposed to those of the traditional land-owning and intermediary bourgeoisie groups.

This policy package was very successful in creating an industrial base and pushing up growth rates throughout most of the Latin-American region in the post-war decades, until the late 1970s and early 1980s. This happened, however, in a macroeconomic climate of recurrent economic cycles, fiscal and monetary permissiveness, mounting inflation and overvalued exchange rates, which led to recurrent fiscal and balance of payment disequilibria. It is generally acknowledged today that, in the end, these disequilibria led to the exhaustion of the model's development potential, at least under its traditional form. This happened roughly in two phases.

First, in the 1970s, the macroeconomic disequilibria, which had been generally moderate up to then were exacerbated by the abandonment of convertibility by the United States and the consequent proliferation of flexible exchange regimes. This generated a relaxation of discipline in the international monetary system, exacerbated by the oil shocks, which led to international inflation. They were cushioned, however, by the undisturbed accumulation of a growing international debt in most countries in the region, facilitated by the enormous excess liquidity existing at the time in international capital markets, much of which found its way into Latin America in the form of international loans.

Second, in the 1980s, the disequilibria became unsustainable due to a combination of three factors: (i) the drying up of fresh capital inflows due to growing repayment difficulties; (ii) a big international increase in interest rates; and (iii) a long-lasting international recession, which resulted in a big fall in the prices of Latin American primary export products. These factors precipitated the so-called debt crisis (i.e. the inability to service the debt) which marked the end of the import substitution strategy and the opening of the structural adjustment era.

Source: FAO, 2000 Part I, p.30

government would have nothing special to do but prevent gain from unfair competition, and the best arrangement for growth would emerge from market. The reason for that is that the market is a unique and extremely efficient device for looking for new opportunities⁵⁴: if

⁵⁴ Among many others, see Hayek, 1979.

competition is warranted, no monopoly or unjustified benefit can stand for long, because if such a situation exists, surely somebody will discover that it is possible to make money by providing the same goods or services at a lower cost, thus destroying the monopolist's source of income and power. Technically, it can easily be proven that perfect competition ensures *marginal cost* equating price. The marginal cost is the cost of the last useful unit of any good or service produced. If a larger quantity is produced, its marginal cost will be higher, and not worth of being purchased at this cost. If a smaller quantity is produced, then at least one customer is ready to buy it at a price even greater than the cost. Thus, when marginal cost equates price, producers have no incentive to produce more, and consumers get the lowest price compatible with technology and other prices in the economy.

This economic theory – liberalism - became dominant in the 80's and underpinned the structural adjustment approach which, in most Sub-Saharan African countries, replaced prevailing policies. The first idea was that nothing could be done for development if the main macroeconomic equilibriums were not secured: thus, the balance of payments, government budget - but also the accounts of all parastatal companies and other “projects” – had to be balanced.

In such a policy context, of course, there is no need for the State to tell investors what to do. Since developing countries possess manpower in abundance and are deprived of capital, the marginal productivity of capital should be high in developing countries, and it was expected that investors would be attracted by such a high profitability and eager to invest. The role of the government is limited to the minimum: e.g. securing property rights, external and internal security and rule of law, and key infrastructure.

Unfortunately, it is now clear that the structural adjustment policy failed to trigger the investment and growth it was supposed to generate after what was expected to be a few difficult initial years necessary to absorb the heritage of the past and re-establish the basic equilibria. Agricultural markets, particularly in SSA, are far from being perfect. After close on two decades of active structural adjustment, results in SAA, as detailed in Chapter 1, have not been as hoped for, and the constraints facing SSA agriculture and food security call for additional support.

3.2.5 – Conclusion

The main conclusions of the review presented in this chapter can be summarized as follows:

- (i) There is no clear-cut recommendation on whether agricultural development should be export-led or export-orientated as a priority in order to satisfying local demand. The lesson from experience is that it depends on local conditions. Common sense, however, suggests that in larger countries, opportunities offered by local demand and the increasing share of population living in urban areas can act as an important source of growth for the agricultural sector. Smaller countries with limited domestic production for export will necessarily have a larger role to play in the development of the agricultural sector.. However, it is also apparent that there is a strong synergy between these two approaches.
- (ii) Capital accumulation is the key issue for development. It may originate from private or public sources, or be funded internally or from abroad. It is necessary to identify the specific types of investments to be funded publicly or privately, and to put in place policies that attract private investment;

- (iii) A sound food and agricultural policy should aim first, obviously, at feeding the nation (whether from local production or from imports), avoiding famines, generating employment for labour in rural areas and promote agro-based value-added activities.
- (iv) A sound agricultural policy should also manage the progressive movement of population and labour from agriculture and rural areas to other sectors and cities.
- (v) It may be necessary to "tax agriculture to finance development", insofar as agriculture is the main sector of the economy, and, therefore, the only possible source of fresh savings. Yet, this must be done with prudence, and only if the government is strong enough to make a proper use of the savings thus obtained. In any case, in view of the high interest rates practised in the countryside, fuelling agriculture with increased credit is certainly a feasible and promising way of increasing income and therefore, savings.

Suggestions on policies to make investment attractive in agriculture and agro-processing industries, and to handle inter-sectoral and rural-urban labour migration in such a way as to avoid shortages or overproduction, will be discussed in the next chapter. It will be seen that specific conditions in the agricultural sector justify well-designed and targeted public intervention to complement the market. But let us tackle first the question of the place of agriculture within the whole economy.

Chapter 4: Why has Agriculture been neglected so far?

Understanding why agriculture has been neglected so far in most development policies in Africa leads to the examination of three explanatory factors often found in debates and discussions on agriculture and development. The first one touches on the political economy of agriculture taxation, long documented after the seminal contributions of Krueger (1974) and Bates (1981, 1983). The second one refers to the budget bias against agriculture, put at the forefront of debate amongst agricultural ministers during the 2003 Maputo Conference. The decrease in agricultural public expenditure over the past decade tends to empty out agricultural policies of their sector-specific components in favour of infrastructure, health and education spendings. The third factor involves a review of market failures specific to agriculture, and an explanation given as to why, after the State, the market itself may be reluctant to invest in agriculture.

4.1 The political bias against agriculture

It has long been recognised that low-income agrarian economies tend to discriminate against food producers. However, as economies develop and agriculture shrinks relative to the rest of the economy, policies progressively tend to favour farmers. This was particularly true for the period between independences and the first wave of structural adjustment in the 1980's when most of African countries implemented policies which under-priced food through an overvalued exchange rate.

In examining the origins of cheap food policy and food subsidy programs, de Janvry and Subramanian (1993) see that most were started in response to economic and political pressure on the State:

(1) food price controls were introduced in India, Pakistan and Bangladesh to stem inflationary pressures associated with war scarcities and droughts,

(2) cheap-food policies also originated as a side-effect of the import-substitution industrialisation strategy pursued through strategic protectionism and overvaluation of the domestic currency, as occurred in much of Latin America during the 1950s and 1960s and in parts of Africa until the beginning of the structural adjustment program period. This policy has often been reinforced by access to food aid or concessional imports. Because food prices are a major determinant of the real wages of urban workers, cheap food policies have contributed to keeping industrial wages low. While selected commercial farmers succeeded in tapping institutional subsidies, mostly on export markets, smallholders were at a disadvantage, lacking access to (cheap) credit, (subsidised) irrigation, improved seeds and other inputs. Smallholders income tended to stagnate or decline.

(3) Food subsidy programs aimed at benefiting the entire population were instituted at a high cost to government budgets with the establishment of socialist or populist regimes, when the State was able to engage in redistributive measures as was the case in Egypt and Sri Lanka.

Box 4-1 : Types of Food and Nutrition Policies during the pre-structural adjustment period

1. Cheap food policy at no direct cost to government. Food prices may be depressed, either across the board or selectively, by imports at an overvalued exchange rate or through concessional aid, state monopoly procurement and sale, or export taxes and levies.
2. Untargeted food-subsidy schemes. Food prices are lowered by the introduction of a consumer subsidy. Producer prices may be at the same level or above consumer prices. Part of the demand may be fulfilled by imports subsidised by the State. Little or no restriction is placed on access to subsidised food, and coverage of the population is often fairly uniform.
3. Targeted interventions. Access to subsidised food or to nutritional supplements is restricted geographically, by means tests, or to segments of the population that are considered to be at high risk of malnourishment, such as school children, pregnant mothers, and babies. The benefits of cheap food to the poor can also be restricted by subsidising only those foods that, while nutritionally sound, are considered inferior by the rich.

Source : de Janvry and Subramanian (1993)

Reinforcing the economic and ideological arguments for cheap food policies and food subsidies, the electoral and pressure group politics provide some convincing argument in favour of their perpetuation in spite of poor economic achievements in the 1970s. Clientele-seeking in middle- and upper-income classes was a major motivation of cheap food policies through overvalued exchange rate in Latin America⁵⁵. In Africa, public procurement at below-market prices benefited to certain groups. Bates demonstrated that in many African countries, parastatal agencies may not have succeeded in handling more than 20 to 30 percent of marketed output⁵⁶. At the same time, state-sponsored agricultural development projects provided subsidies to large farmers in the form of subsidised irrigation, fertilisers, credit and other inputs. The targeting of benefits toward the clientele most relevant for political support did not include those groups most at risk nutritionally.

4.2 The budget bias against agriculture

After two decades of State withdrawal resulting from structural adjustment programmes, a consensus emerges on the important role the State has to play in creating the conditions to make markets work and, even furthermore, to make them work for the poor. As most economists, donors and policy advisers agree, one prerequisite is to provide such basic public goods as rural infrastructure, research and extension, education and health, without which efficiency gains cannot be reaped and income opportunities vanish. They are now at the core of World Bank PRSPs. Data show that Africa is still lagging behind Asia, and Latin America and the Caribbean (LAC) in terms of agricultural public expenditure (table 4-1 and figure 4-1).

⁵⁵ Lattimore and Schuh, 1976.

⁵⁶ Bates, 1981.

Figure 4-1: Agricultural public expenditures, share of agricultural GDP (percent)

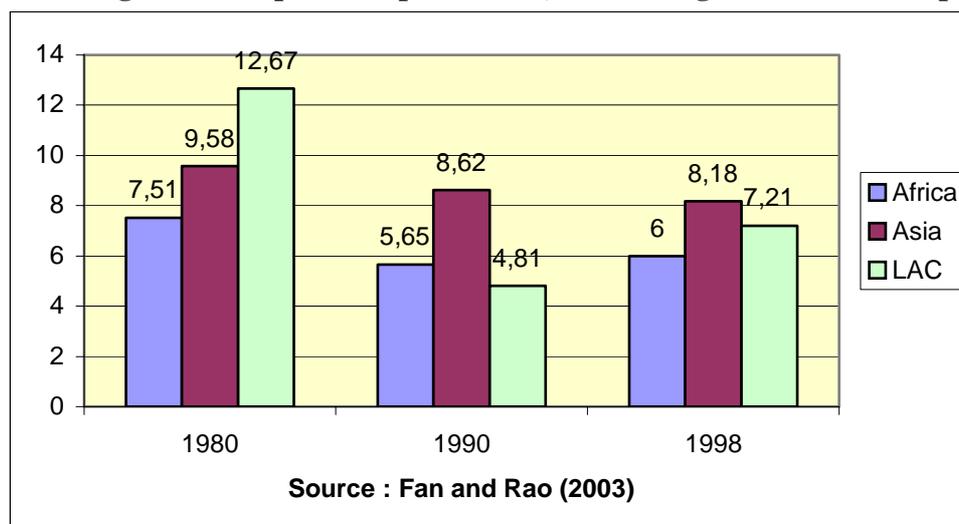


Table 4-1 : Composition of total public expenditure (percent)

	Afric		Asia		LAC	
	1990	1998	1990	1998	1990	1998
Agriculture	6	5	15	10	8	3
Education	12	16	14	20	16	19
Health	3	5	5	4	4	7
T&C	6	4	12	5	11	6
Social security	5	3	4	3	19	26
Defense	12	10	18	11	7	7
Other	55	57	33	47	35	32

Source : Fan and Rao (2003)

This situation is all the more dramatic since correlation – if not causation – is obvious between investments in public goods provision, factors productivity and growth. Returns on public investments in the key components described in table 4-1 above have been evaluated over the past five years. According to the World Bank, the evidence suggests that total factor productivity (TFP) in developing countries has grown at 1-2 percent per year-only slightly less than in industrialized countries and that research accounts for one-third to one-half of that growth. Studies have found a high rate of return on investments in research in developing countries (see Echeverría [1990], and Evenson and Rosegrant [1993], for a review of over 100 such studies). An overview of 289 studies on economic returns on agricultural research and extension, everywhere in the world, found median rates of return of 58 percent on extension investments, 49 percent on research investments, and 36 percent on investments in research and extension combined⁵⁷! Similarly, investment in education⁵⁸ and infrastructure⁵⁹ exhibits significant returns and has a positive impact on poverty. IFPRI studies in India and China suggest that investments in rural infrastructure, agricultural R&D and human capital are at least as productive in low-yield, rainfed areas as in high yield irrigated areas and that they have a much larger impact on poverty⁶⁰. Should agricultural policies be restricted to – and even be substituted by – infrastructure and R&D policies or is there still a room for

⁵⁷ Alston *et al* 2000.

⁵⁸ Duflo, 2001

⁵⁹ Fan and Hazell, 2001

⁶⁰ Fan, Hazell, Thorat, 2000 ; Fan, Hazell, Haque, 2000.

agricultural policies in their traditional, broader sense? Specific market failures, other than the inability of private firms to provide public goods in rural areas, should not make us forget that making the market work for the poor and insecure requires more than roads and research. It takes something much harder to provide: trust, and a secure environment.

Box 4-2 : Rural public goods provision contributes to growth

Public goods are essential elements of the environment in which economic agents operate. Because of their characteristics of low **excludability**⁶¹ and low **rivalry**⁶², public goods suffer from market failure. Typical examples of public goods of relevance to agriculture are the law, the rules and regulations established by public agencies, and the services provided the police, the judiciary system, and agricultural inspection agencies. These are typically provided by the government and paid for out of taxation as they potentially benefit all members of the community and 'free riding' makes it difficult to charge users directly for these services. However, for many agricultural services the degree of excludability or rivalry is often determined by the precise nature of the service and the conditions under which it is delivered. Thus similar services, such as extension advice, may be delivered by the private sector in some situations but can only be provided efficiently by the public sector in others⁶³.

The importance of public goods for agriculture has already been underlined (see 4.3.1).

The absence of such facilities lead to situations such as:

- difficult access to markets because of lack of roads, lack of market information and absence of quality standards (or their poor enforcement);
- limited adoption of improved technologies because of the lack of effective technology production and outreach facilities (research and extension networks);
- low productivity of labour because of insufficient access to education and health services.

The other economic advantage of the provision of public goods in rural areas is that it will increase job opportunities, thereby contributing to income generation.

In Africa, public resources allocated to the production of public goods for agriculture has seen its share in total government budget shrink. It is also lower than in other developing regions.

4.3 The market bias against agriculture

Macroeconomic reforms under SAPs and the withdrawal of the State from most productive and marketing activities tended to leave market signals to determine what a country should import or not. In this new context, reliance on food imports is not a problem *per se* as long as exports can finance imports and economic growth is sufficient to generate sufficient income for people to purchase their food. If exports do not generate enough to pay for the food import bill and the balance of payments situation deteriorates, the exchange rate adjusts downward (leading to an increase of the price of food in local currency) so as to equalise imports and

⁶¹ Low excludability means that it may be difficult to exclude people from 'free riding' and enjoying the benefits of goods and services even if they have not paid towards their provision. Producers would find it difficult to recoup the full costs of their provision and, from a economic efficiency viewpoint, would thus tend to under-produce such goods.

⁶² Low rivalry means that one person's consumption of the goods does not reduce its availability to others. As the cost to society of additional consumers enjoying the benefits of pure public goods is zero, economic efficiency requires their price to be set at zero. As a result it would not be profitable for the private sector to attempt to sell these goods.

⁶³ This paragraph and its footnotes are extracted from: Smith 2001.

exports values, while interest rates rise to equalise investments and savings. Therefore, the macro-economic implications will depend on the ability of the country to develop its exports to pay its import bill. This is where SSA country situations maybe unique (different) as compared to other countries. SSA export basis has been so poorly and inefficiently developed and diversified during the past that many countries rely today on a small number of non-diversified products, among which mineral and agricultural products are prominent. The downward slope and volatility of the terms –of trade often create situations where fluctuating food import bills have to be paid by fluctuating export receipts, with recurrent imbalances between the two⁶⁴.

Decreasing and instable terms of trade for countries specialising in agricultural production and exports epitomises the risk associated with agricultural activity, be it at the national (macro) level or at the household (micro) level.

Dominant economic thinking argues in favour of superiority of markets in efficiently allocating scarce resources among economic activities, and recommends reduction and re-focusing of government interventions. Numerous SSA countries have adopted this approach since the mid-Eighties, with the state disengaging from direct involvement in economic activities. Yet, experience shows that for reform of the role of government to translate into economic benefits, two major conditions must be met:

- essential public goods should be effectively provided;
- markets should exist or be developed (for each product or service), especially insurance markets covering price and yield risks.

As mentioned in the previous section, public goods provision is a key input for development. In numerous SSA countries, however, public good delivery has been far from adequate, particularly in rural areas where households are scattered over a large territory⁶⁵. But this is only one part of the picture. For a number of key goods and services, the market is missing (credit, insurance, and fertilizer in some places). High price instability combined with the absence of futures markets is generally the rule in SSA. It is generally analysed as a result of imperfect market information⁶⁶. Hence, the conditions for market efficiency are not met in most SSA countries because of agricultural particularities of space occupation (increasing the cost of infrastructure provision, among other public goods) and market instability. As a consequence, investment and growth are low, and poverty and food insecurity widespread.

Perhaps the market instability issue is worth emphasising, now that the lack of public goods provision in rural areas has been well documented, and the missing markets phenomenon is debated much less often. Agriculture is characterized indeed by two main specific sources of uncertainty, which divert market mechanisms from optimal allocation of resources:

i) - Yield uncertainty is generated by climatic or other hazards such as pests and diseases. This risk is normally “insurable”, because it can be calculated. Most of the time, the poor are not insured, because they cannot afford to pay for insurance and have to tackle it through other means (adapted technology, irrigation, storage, animal health monitoring, disease and pest prevention, etc.). Existing crop insurance schemes have generally not worked very well because of the cost of “moral hazard” associated with false accident reports and

⁶⁴ See Collier and Gunning, 1999.

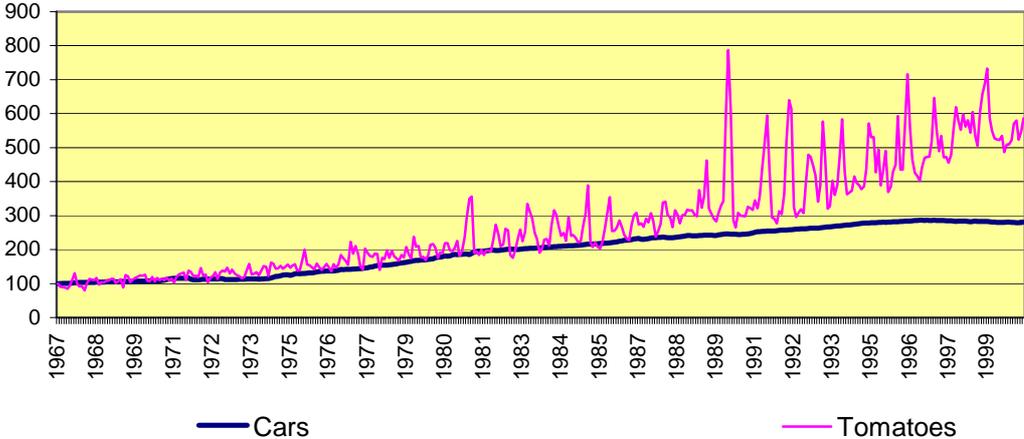
⁶⁵ Paarlberg, 2002.

⁶⁶ See for example Boussard, 1992 and Stiglitz, 2002.

other falsifications. To be sustainable, these schemes require a very powerful State capable of enforcing contracts.

ii - Price uncertainty, generated by the occurrence of local or international market shocks. Price fluctuations may sometimes be associated with exceptionally good physical conditions resulting in higher than expected production. This risk discussed above can also be calculated. Unfortunately, most of the time, price fluctuation is a consequence of complex “chaotic” mechanisms which are tied to the market itself (Boussard, 1996). As a consequence, the market forces risk cannot be removed through the mechanism of insurance because any attempt to do so would lead the insurer to bankruptcy. It can be alleviated by futures markets and other financial products but at significant cost (in any case, it is difficult for an individual poor farmer to get access to futures). This kind of risk is specific to agriculture, and due to the fact that consumers are not very sensitive to price changes in case of food. Figure 4.2 illustrates this statement: The price of tomatoes in the US is very volatile, while the price of cars is fairly constant. What is true for the tomatoes in the US is true also of any food commodity on African market.

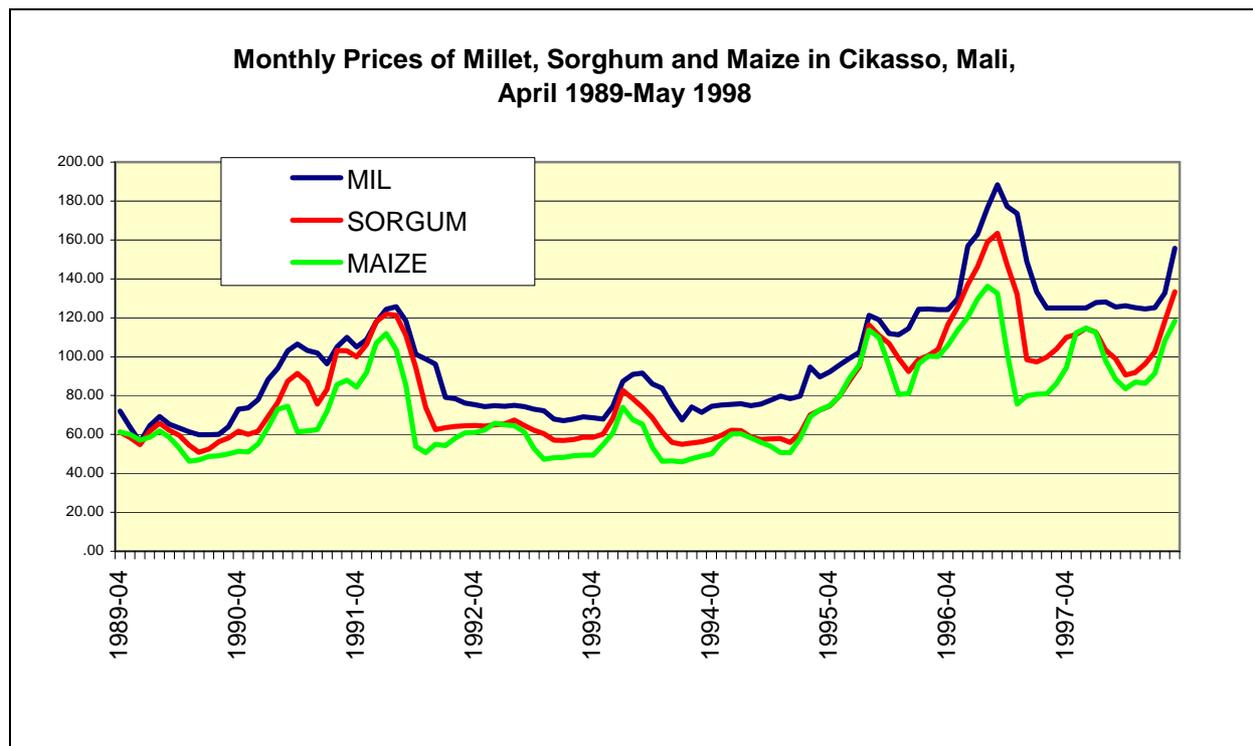
Figure 4.2 : Tomatoes retail price index in large American cities, compared to new car retail price index



Source : Economagic.com

The important thing concerning such instability is that it prevents investment, and thus, the substitution of capital with labour.

Box 4-3 : Agricultural Market Instability in Sub-Saharan Africa



Fluctuations in prices may discourage farmers from producing for the market. Conversely, a stabilization policy can boost production. In the late 70's, the Malawian government, facing a risk of shortage, decided to guarantee a relatively high price for maize⁶⁷. This decision was immediately followed by a burst of production, and at that point the Malawi government was obliged to sell at a loss on international markets. The maize price was then lowered, and its level left to the market to determine. Since then, Malawi has become a recurrent food aid recipient. What was wrong in the Malawi government policy at that time was probably to have promised a high guaranteed price whatever the production level. The guarantee should have been limited to a quantity slightly less than total predictable consumption, leaving the market to adjust marginal quantities.

The negative consequences are not worse on poor consumers and than on food security. Without market regulation they will pay higher prices for food and face unstable prices. The negative impact of price instability on the poorest is well known: as consumers they often spend more than half their expenditure in food making them very sensitive to any increase in prices. It was indeed the primary reason motivating trade restrictions by government by isolating their market from high prices fluctuations - and food price stabilization is indeed recommended as a method to fight against poverty⁶⁸.

Thus, price risk, even more than other technical risks, slows down any increase in production and the whole development process. The detrimental effects of this situation are magnified by other transaction costs. For example, transport costs are so high that the prices of grain inside a country can be twice the price at the port⁶⁹. In Burkina-Faso, high transaction costs explain why 85 percent of the cereal production was locally at the beginning of the Nineties.

⁶⁸ Timmer, 2000.

⁶⁹ Koester, 1986.

Indeed, yield and price variability cause large changes in income⁷⁰. Volatility of incomes is extremely detrimental to growth, because it induces coping strategies which impede investment and entrepreneurship. Risk also exacerbates income distribution as, when it remains uninsured, it hurts the poor while favouring the rich who are able to get into risky business and may obtain high returns from it. Credit becomes almost impossible in the presence of high income variability, because it is in the common interest of banks and debtors to avoid reimbursement failures. Thus, risk and uncertainty management is a critical part of farmers' decision-making, which in turn affects their land use and farming decisions. As a consequence, it is also a major determinant of global food supply. A study by Boussard and Gerard over a series of prices and quantities of 2800 agricultural commodities shows a difference of about 2 points in growth rates between the "stable" and "unstable" series⁷¹.

As a conclusion, all these three biases tend to discriminate against agriculture. Politicians were used to tax it, public spending focuses on education and defense while deregulated markets do not perform because of intrinsic market failures such as missing markets in insurance and credit. Does it all mean that agriculture is doomed to be the "black sheep" of development policies? History proves that markets and public intervention can be mutually supportive for agricultural growth-led food security enhancement led by agricultural growth. Instruments designed to secure farmers in their investment decisions stand at the forefront of all policy measures employed by all successful agricultural development endeavours as we shall see in chapter 5.

⁷⁰ Newberry and Stiglitz (1981) note that prices and yields instability could cancel each other out, because of their opposite effect on farmers' income. This is true if low prices are actually caused by high supply from the farmers under consideration. But low prices can be (and are most of the time!) caused by many other events.

⁷¹ Specifically, the average of growth of the most "unstable" series is about 4% a year, while it is 6% a year for the most stable. This difference is significant in terms of variance analysis, the main difficulty in the study being the definition of stability. See Boussard and Gérard,(1995).

Chapter 5: Selected Success Stories from International Experience

In this document, up till now, despite a few illustrative examples, food security and development problems have been dealt with from an almost purely theoretical point of view. To complement this theoretical perspective, this chapter reviews a few actual cases.

The first case presented is the Marshall Plan – the recovery program for Europe after the World War II, which has been highly successful. The second example is the Latin American experience. It has not been a complete success, as many Latin American countries continue to suffer from economic crises and are still considered developing countries. This example will allow us to examine the shortcoming of Latin American growth and the pitfalls into which these countries fell. The third and last case is the “Asian miracle”: Asia is famous for its very high growth rates. Japan, almost ruined after the Second World War, managed to turn itself rapidly into a major economic power. Korea followed almost the same path, and other Asian countries, although perhaps not reaching the same levels, performed well too, and are closed to entering the club of developed countries. The underlying question here is whether and how Africa could follow a similar growth pattern.

5.1 Europe and the “Marshall Plan” » (1947-51)

5.1.1 - Europe after the World War II.

At the end of World War II, most of Europe’s infrastructure (bridges, roads, factories and others) was destroyed or out of service. Agriculture, too, was in bad shape after a period of neglect as peasants had been enrolled as soldiers. In March 1946, according to an important American official, Europe was in need of “wheat in April, or coffins in June”⁷². US emergency aid came in abundance at that time, facilitated by the logistics which had been set up for the war. Boats and harbours hastily established for the transportation of warfare equipment were made available for civilian purposes and used for transport of food aid and equipment. Aid was distributed through a gigantic food rationing organization, which, in fact, had been set up in all belligerent countries at the very beginning of the war⁷³.

Yet, for the same reasons discussed earlier (see Chapter 2), aid was not considered to be a sustainable solution for feeding Europe, let alone eliminating poverty. Besides, an economic appraisal of the situation revealed that the deep roots of the crisis were not entirely war-related. Since the start of the 20th century, labour productivity in Europe had been lagging behind that of America. The main reason was slow capital accumulation. To increase the capital:worker ratio, the only solution was to save and invest. But even with a high saving rate, the efficiency of capital goods manufacturing was questionable due to the low productivity of workers. Capital goods had to be imported to increase productivity. Because gold and currency

⁷² Fiorello La Guardia, former mayor of New-York, quoted in Bossuat 1997, p. 52.

⁷³ “Tickets” were issued and distributed to households according to their composition, giving each of them an entitlement to acquire a certain quantity of food. Food merchants were not allowed to sell without tickets. The total amount of tickets distributed corresponded more or less to the national food availability. Although, obviously, the system nurtured “black market” and illegal parallel food trade, and at the same time was a heavy burden for administrative bodies, it was relatively efficient in guaranteeing the poorest a minimum access to food.

reserves had been largely squandered during the war, it was not possible to pay for these imports. The similarity with the some characteristics of the situation in Africa today is striking.

The Americans themselves urged European countries to take care of their problems, if possible on a regional basis, because, first, it was necessary to present a unified front against Communism, and, second, economies of scale were expected from a larger market, **submitted to similar and concerted** organisational rules. The Marshall Plan (from the name of Secretary of State General George Marshall, who solemnly made the offer on June 5th, 1947, in a famous discourse at Harvard) was the answer to these preoccupations.

5.1.2 The Plan

The plan had two sides: a financial side, whereby a considerable amount of financial resources was put at the disposal of governments; and an organizational side, as these sums were made available only if European governments were ready to follow the advice of the international organization – the OECE, now the OECD - in charge of administering the Plan. Among the requirements, the most important was that European governments set up coherent economic policies, with well-targeted priorities, and a careful allocation of the resource provided to purchase capital goods from the US. As can be seen from this brief description, the spirit of the Plan was far from pure liberalism and based on the uncontested belief that public policy could yield successful economic results. The main idea was to reap the benefits of harmonious synergy between State interventions and private enterprise initiatives.

At the same time, in most European countries, “economic plans” were elaborated, independently of, but complementary to, the Marshall Plan. They were designed to promote a State-supported economic recovery, but were only indicative plans. Ultimately, they left the market to determine prices, and quantities, as well as the success or failure of businesses. Planning Boards were established where private sector leaders, government officials and trade union executives could exchange ideas and projects, check the validity of their expectations, and solve conflicts. In these Boards, the State was the ultimate arbiter, as it controlled foreign trade through the ministry of finance. In this context, the Marshall Plan was a strategic instrument in the hands of the ministries of finance, since it allowed much greater purchases than what had been possible otherwise⁷⁴.

It is difficult to know where exactly the key for success lay. It has been argued that the amount of the transfers – about 1 percent of American GNP or 3 percent of European GNP – was too small to have exerted any significant influence⁷⁵. Other authors, by contrast, celebrated the Marshall Plan as a unique historical achievement. Having put in place the policies and institutions, the general mobilisation and will to succeed were also certainly important factors for which the Plan may have been a catalyst. What is certain is that European economies quickly and surprisingly recovered from the war. Production reached the pre-war level as early as in 1949, while the per capita income in Europe matched that of American in the early 70's, long after the end of the Marshall Plan. Figure 5.1 below shows clearly the boost of growth which followed the disaster of 1944-45. It shows that Switzerland,

⁷⁴ Yet, the discrepancy between the export capacity and the financial needs of European reconstruction must not be exaggerated: in France, for instance, in 1948, for 1954, the “plan” estimated an export capacity of \$10 billions, while the needs for imports was \$12 billion. The Marshall aid provided almost exactly the required \$2 billion shortfall, which gave the boost in the absence of which the whole system would probably have collapsed.

⁷⁵ See Bradford De Long and Eichengreen, 1991.

unaffected by the war, also benefited from the boost. The worst performer was Britain, for reasons still to be elucidated: while the British income per capita was the highest in 1945, it was the lowest in 1990.

Per Capita GNP, Selected European Countries, 1900-2001
Sources: Maddison, OECD, 2001

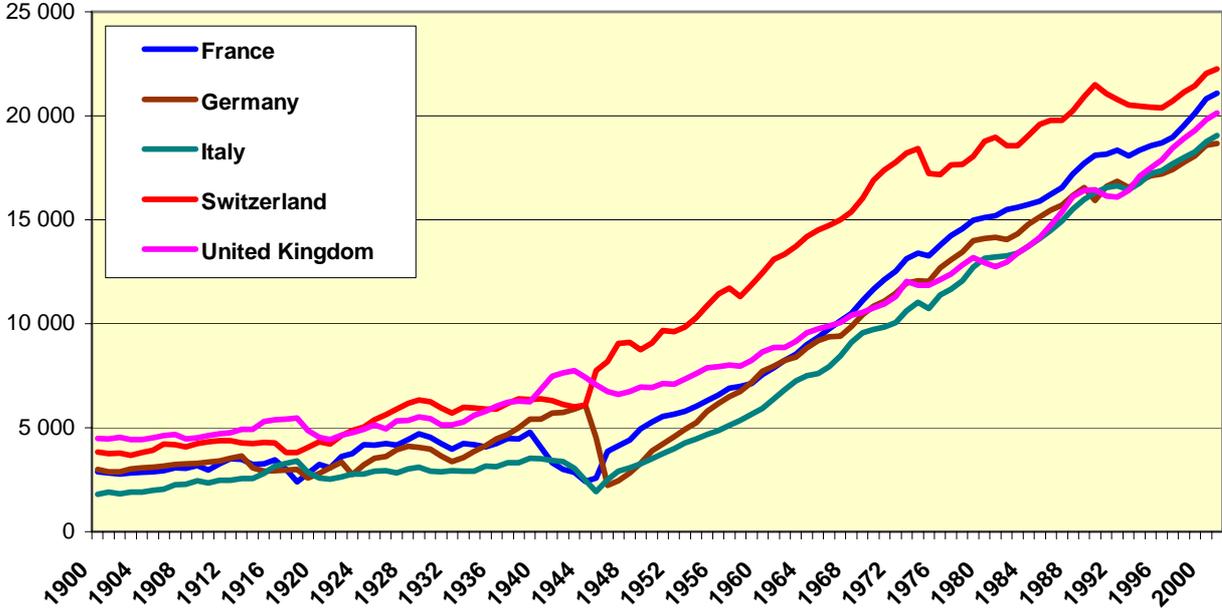


Figure 5-1: One Century of European Growth

5.1.3 The case of Japan

The Marshall Plan was restricted to Europe as the US Congress objected to extending it to Asia. Yet, the situation in Japan was quite similar to Europe. The Truman Administration found solutions to overcome the reluctance of the Congress. In fact, the Marshall Plan recipes were also applied to Japan, and for a longer period, since the Korean War, after 1952, urged the American to do everything to keep Japan clear of communism. The results were quite similar, if not better.

In Japan, government supervision of the economy was even stronger than in Europe. The famous MITI (the Ministry of Economy) not only set priorities and allocated foreign money to firms, but also provided “advice” regarding market shares of various companies. In so doing, it made some conspicuous errors – as for instance, attempts to prevent Honda from building cars, on the ground that this firm had to stick to its traditional activity, motorbikes. Errors of this size and nature are unavoidable for this kind of agency, after a few years of activity. They are easy to pinpoint. On the whole, however, the MITI was extremely successful, allowing Japanese firms to meet quality standards which resulted in their achieving the strong positions they still occupy today on the world market.

It is now almost unanimously admitted by economic historians that this achievement would not have been possible without the association of the MITI operations with American aid. Thus, in Japan as well as in Europe, intelligently spent foreign aid was extremely productive, leading to economic development despite adverse conditions. Another striking element is the

public intervention – private sector combination. Why should t a similar “virtuous circle” not begin in Africa, through the NEPAD process?

It is certainly difficult to answer such a question in a few words. According to some observers, an essential ingredient present in Europe and in Japan in 1945 was human capital. And perhaps today, insufficient human capital is one of the key constraints facing Africa. This would suggest giving highest priority to the development of knowledge and skills in the continent.

5.2 The South East Asian Experience

The quick and sustained economic growth exhibited by the Asian “Tiger” states – Hong-Kong, Singapore, South Korea, Taiwan – since the Sixties, followed a decade later by some ASEAN countries – Indonesia, Malaysia, Vietnam and Thailand – is an outstanding example of success not only with respect to economic development but also to poverty alleviation and food security improvements. In the late Sixties, these countries were importing growing quantities of food. Experts were very pessimistic about their ability to feed their increasing population in the near future. However, about 25 years later, most of them exhibit great progress in food security and poverty alleviation. Moreover, most of these countries have become self sufficient in staple food. Despite the diversity of these countries, common factors explaining these impressive performances can be identified.

5.2.1 Development strategy, trade policy and the role of the State

In most of these countries, governments played a key role in the development process: defining objectives to be attained and strategies to be applied through development plans, providing infrastructure, handling selected economic activities and encouraging private investment in others. In addition, whenever land distribution was too inequitable, land reforms were undertaken. Although government intervention was a common feature, policies were not all the same. They were in general carefully adapted to each specific case. It is possible though to identify a few general patterns.

At the beginning of the development process, emphasis was put on an import-substitution strategy. This was due to the necessity of meeting the basic needs of an increasing population in a situation where foreign exchange was lacking. Public expenditure was concentrated on investment in rural infrastructure such as roads, markets and irrigation; on the funding of extension services; and implementing mechanisms to stabilise agricultural prices to achieve the aim of boosting agricultural production to meet domestic food demand. During this phase, farmers were generally highly taxed, in order to finance a high level of public expenditure while maintaining a balanced budget. In Taiwan for example, this taxation was implemented through compulsory delivery to the government at prices about 20 percent lower than market prices. Land tax was also levied, with the double advantage of creating government revenue and an incentive for farmers to cultivate the best land. Simultaneously, the government stabilized the price of rice through public storage and rice procurements. By providing price stability and physical rural infrastructure, the policy compensated the agricultural sector for the bias generated by the taxes imposed and the overvaluation of the exchange rate. With fixed nominal exchanges rates, the overvaluation of the exchange rate – typically imposed for

lowering the cost of imports that constituted a large share of investment – indirectly taxed the agricultural sector⁷⁶.

During this period, development was mainly based on the industrial boom, concentrating on labour-intensive industries in line with the comparative advantage theory. In order to benefit from foreign technology while protecting the new industries from foreign competition, freeport areas, open to foreign investment and free from the domestic market protection were established. Availability of an educated labour force, macro-economic stability and sufficient provision of public goods created an attractive context for foreign investment. Because of productivity gains in agriculture, the former agricultural labour force was more and more able to engage in industrial production. National economies shifted from an agriculturally orientated economy to an industrially orientated economy.

In its second phase, as more and more rice needed to be imported to satisfy domestic demand⁷⁷, taxes imposed on the agricultural sector were reduced in order to boost production. By then, the growing industrial exports were sufficient to finance public expenditures without taxing agriculture. In South Korea, for example, the government concentrated on rural electrification, raising the proportion of electrified rural households from 40 percent of in 1972 to 90 percent in 1977 and maintained domestic rice prices above the international price. This policy was successful in raising production to a level sufficient to supply enough food and industrial goods to satisfy domestic demand. However, as production grew, the size of the market quickly became too small, and then trade policies were modified and the development model shifted to to an export orientated one.

Despite the diversity of the countries in the region, the common factors appear to be:

- A mix of market mechanisms and of government support to agriculture.
- The evolution from an initial hightaxation of the agricultural sector to progressive subsidisation.
- The emphasis on price stability and the development rural infrastructure.

5.2.2 The key role of agricultural policies: public goods provision and markets regulation

The development strategy adopted in most of these successful countries focussed on:

- Improving the functioning of agricultural markets, through the stabilisation of agricultural prices.
- Providing the necessary infrastructure, economic incentives and extension services to facilitate increase in agricultural labour productivity.

One important characteristic of government intervention in these countries is that it was limited to avoiding market failures and trying to accompany private economic activities rather than substituting them with public activities. The idea was to achieve relative stability in agricultural prices and to improve access of farmers to the market in order to increase economic opportunities generated by trade, while at the same time protecting the poor.

⁷⁶ See Ahmed and Delgado, 1993, or Collier and Gunning (199*).

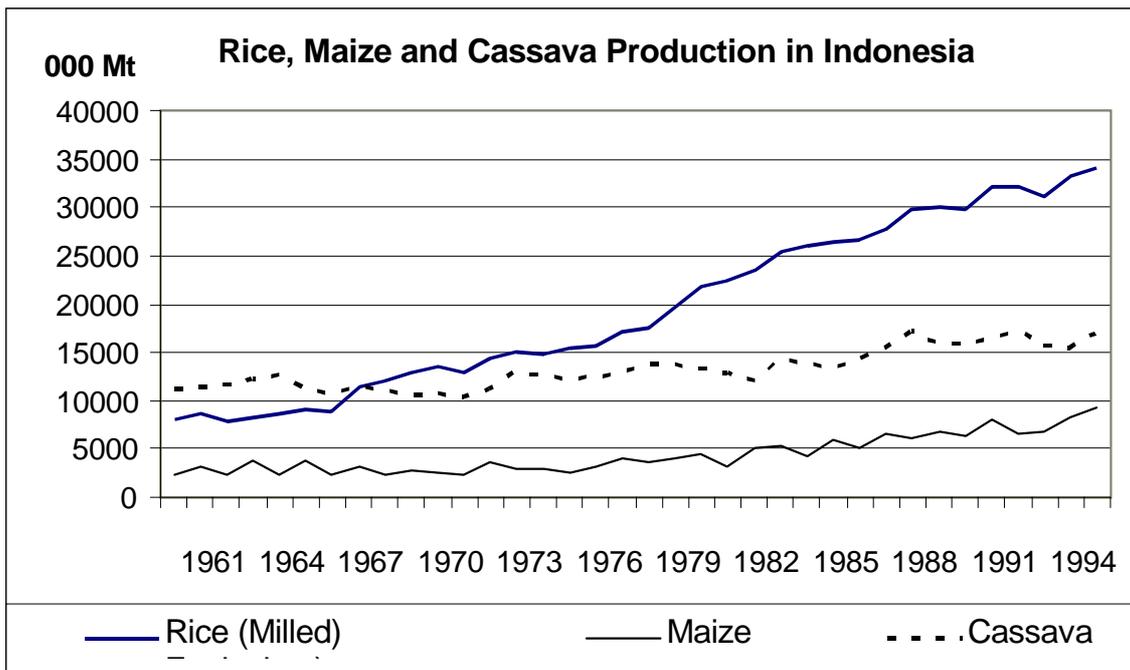
⁷⁷ For example in South Korea rice imports represented 2% of the domestic demand in 1962 and 18% in 1969 (Chaponnière, 1983).

Stabilisation of food prices in Asia has been based on public storage aimed at achieving a guaranteed floor price for producers and preventing sharp increases in food prices for consumers. This was true in case of rice in Taiwan and Thailand. In Thailand, the price of rice was never completely isolated from the world market, however. Until the 90s, imports and exports were subject to licensing. If the domestic price was low, export licences were auctioned to international traders, resulting in a price increase. If it was high, import licences were auctioned to bring down the price. In this way, the domestic price was neither completely stable, nor too far from international price. But it was much more stable than the world price for rice. This mechanism helped to make sound investments in mills and irrigation. The current Thai competitiveness in paddy production can largely be ascribed to this policy.

In other countries of the region, such as South Korea and Indonesia, import bans and direct subsidies were implemented in order to protect the domestic market in agricultural products and to maintain domestic prices above the world price. But this does not mean that the commodity chain was in the hands of public companies: private operators were collecting and storing grain. They were given the guarantee of a government rescue in the event that they could not operate on a commercial basis. As a result, public intervention in agricultural markets generally affected only a small volume of the production marketed and it complemented private activities, thus avoiding too large a fluctuation domestic market prices.

Finally, public investment, not only in infrastructure such as roads and irrigation facilities, but also in human capital, through extension services, played an important role in the success of the Green Revolution in Asia. Prices incentives were also at work to stimulate growth in rural areas. As rural income increased, it created demand for goods and services in rural areas, acting as a source of growth and increased employment. Because rural wages and employment increased, the impact on poverty alleviation was strong.

Figure 5.2 illustrates this success story in Indonesia. In the second half of the Seventies, the country had regularly been the world largest rice importer. During the world food crisis of 1973-1974, Indonesia found itself unable to buy enough rice on the world market. Government intervention was subsequently intensified and Indonesia promoted the adoption of high-yielding rice varieties, coupled with an increased use of fertilisers at subsidised prices, an expansion of the area under irrigation and the provision of a stable market environment, through the stabilisation of the rice price and promotion of extension services. Indonesia followed the classical Green Revolution pattern.



source : based on FAOSTAT

Figure 5-2: Major agricultural production in Indonesia

The agricultural policy followed in most of South-East Asian countries was based on public investment in infrastructure and human capital associated with price stabilisation and price incentives. It contributed to raising rural household productivity and income and increased national food supply. Far from discouraging private trade activities in agriculture, the market regulation policy succeeded in increasing trade. In following such a strategy, South-East Asian countries managed, within one generation, to escape from hunger and poverty, and to achieve national food security⁷⁸.

5.2.3 Development lessons from the East Asian Miracle

The East Asian miracle was based on a combination of factors: a high savings rate interacting with high levels of human capital in a stable market environment⁷⁹. Well-designed government intervention, which complemented markets rather than replacing them, played a key role in achieving a successful outcome.

The high saving rates in the region could be explained by cultural factors (Stiglitz, 1996). But the key determinant of success was that savings were efficiently used and the technological gap was quickly reduced. These countries, in line with the example of most developed countries, followed a mixed strategy in which government played an important role, correcting market failures and creating the conditions for an optimal operation of markets. Government investment in education as well as in physical and institutional infrastructures contributed to the increase in the return to private investment, thereby stimulating investment and promoting growth. This made the country attractive for foreign investors and facilitated rapid technological transfer.

⁷⁸ Timmer, 2000.

⁷⁹ See Stiglitz, 1996.

At this point, the problem of funding government expenditure needs to be raised. In Asian countries, infrastructure inherited from the colonial era⁸⁰ as well as massive foreign aid played an important role. For example, Taiwan and South Korea had relatively good agricultural infrastructure - roads, irrigation infrastructure and market facilities - and industrial equipment – textile and agri-business plants – before World War II. These countries were indeed already considered as remarkable production areas for food and tropical commodities as well as for industrial products. As in the case of the Marshall Plan in Europe, the context of Cold War in the 1950's was also a key factor of massive American aid. This aid was very efficiently used, initially, for post war reconstruction and later, as pre-war production levels were again reached, to promote further economic development. From the early 1950's to 1965, the US economic aid greatly contributed to post-war rehabilitation in Taiwan, helped offset budget deficits and financed around 30 percent of total imports. South Korea was also one of the major recipients of US aid after the partition of the country. Similarly, Japan provided massive aid during post war reconstruction and overtook the US as the region's largest commercial partner in the late 1960's⁸¹.

Finally, if the subsidy-seeking theory implies that government intervention systematically contributes to inefficient resource allocation, the East Asian experience shows that this is not always the case. On the contrary, well-designed and flexible government intervention can be highly adaptive to a changing context and contribute to quick economic growth. In these countries, the government role was confined to:

- Designing and implementing policies to ensure macro-economic stability; an essential condition for economic development as it reduces risk associated with economic activities.
- Making markets work more efficiently or creating markets when they did not exist. Capital markets were particularly weak in Asia and government created institutions to promote savings and encourage investment in specific sectors.
- Ensuring political stability and creating an atmosphere conducive to private domestic and foreign investment. Availability of public goods played a major role in industrial development. High returns on capital and well-educated manpower made these countries attractive to foreign investment, which increased the pace of development. The export-orientated industry was supported by an industrial policy which sometimes protected industries during their infancy.

5.3 The Latin American experience

Trade regimes in the region had a strong import-substitution and an anti-export bias from the 1960's to the 1980's which aimed at changing the development strategy from a primary product-based growth to growth based on the development of the manufacturing sector. This policy was supported by considerable investment in infrastructure (see 3.2.3). There was a sharp contrast between import-competing activities and export-orientated sectors – and this contrast broadly remains today. Imported goods were protected: for example even during the decade spanning 1985 to 1995, the average Nominal Protection Rate (NPR) was still 18.7 percent. By contrast, exported goods were taxed across the board: during the same period, the average NPR -7.7 percent. For some countries, there were significant policy-induced

⁸⁰ Taiwan was part of China until 1949 while Korea was colonized by Japan between 1910 and 1945.

⁸¹ Mao and Schive, 1995.

transfers of income out of the farming sector, even if some controversies remain over their net value. For the period 1985-1990, prior to the structural adjustment reforms, transfers out of agriculture amounted to between 12 and 23 percent of agricultural GDP in Argentina, the Dominican Republic, Ecuador and Uruguay. Brazil and Paraguay extracted only small amounts from agriculture. This reflected, in part the new political scene where power was progressively taken from the traditional land-owners by industry-related groups. Those input subsidies and non-price transfers that existed in favour of agriculture did not really compensate the negative transfers imposed on the sector. During the same years, Chile (which had reformed much earlier, in the mid-1970s) and Colombia were subsidizing their agriculture, from 5 percent to 8 percent of agricultural GDP. Among the support instruments utilised, marketing boards (public monopoly) for staples, import quotas and/or variable levies (price band) were widespread (Spoor, 2000). This approach was initially successful in developing an industrial base in the region.

In the aftermath of the second oil crisis of the late 1970s, however, the Latin American debt crisis erupted when interest rates rose sharply following a decade of vast borrowing of cheap capital, while international recession brought with it a drastic fall in prices of exports. The primary objective of trade liberalization programs in the 1980s was to reorientate the economy of Latin American countries towards those sectors where their traditional comparative advantage resided. It was not merely a question of eliminating explicit export taxes, but also of reducing the implicit taxation resulting from distorted relative prices that favoured imported goods and, indirectly, non-tradables.

Throughout most of the 1980s, price policies in many Latin American and Caribbean economies, including Argentina, Brazil, Columbia and, to a lesser degree, Mexico, remained unchanged. With the elimination of most of the direct marketing intervention instruments, intervention in agricultural markets was minimal by the late 1980s and early 1990s. In some cases, price controls were replaced by the more indirect price bands (e.g., Brazil, Chile, Colombia and El Salvador), which focused on dampening the effects of extreme world market price fluctuations on the domestic market, through the use of variable import tariffs (both negative and positive). Other countries retained the minimum price policies, but state agencies lost their capacity to buy market surpluses, so that minimum prices had only a token significance. Finally, the liberalization of input and output markets, deregulation and openness toward external markets was accompanied by a transition from traditional redistributive land reform policy to the establishment of land markets.

5.3.1 Agricultural performance before and after reform

While Latin America's GDP grew at high and sustained average rates of 5.9 percent in 1970-1975 and 5.5 percent in 1975-1980, the agricultural sector did reasonably well with growth rates of 3.4 percent and 3.6 percent respectively. Table 5.3 shows annual average rates of growth of agricultural value added at constant prices in Central America⁸². For all five countries, the most rapid rate of growth was during the years of most intense implementation of the import substitution strategy, 1970-74, or in the previous decade when such policies were being put into place.

⁸² Source : Weeks, 1998.

Table 5-1: Summary of Policy Regimes in Central American Countries, circa 1994⁸³

Policy Area	Costa Rica	El Salvador	Guatemala	Honduras	Nicaragua
Exchange Rate Pre-liberalisation	Fixed to US dollar	Fixed to US dollar, market segmented by type of transaction	Fixed to US dollar	Multiple exchange rates	Fixed to US dollar, (multiple rates), large 'black market' premium
Exchange Rate Post-liberalisation	Free, with some CB intervention	Free, with some CB intervention	Flexible, administered	Free, with some CB intervention	Flexible, administered (crawling peg)
Tariffs Pre-liberalisation	Rates to 100%, import surcharges, tariff exemptions	Tariff range 5- 35%, with 50% for certain products	Tariff range 0-40%, surcharge on imports	Tariff range 0- 120%, surcharge on imports	Tariff range 4- 253%
Tariffs Post-liberalisation	Large tariff reductions, harmonisation to CA Tariff System (0- 20%); special tariff rice	Large tariff reductions, harmonisation to CA Tariff System (0- 20%)	Harmonisation to CA Tariff System (0- 20%)	Tariff range 0- 40%, harmonisation to CA Tariff System (0- 20%)	Harmonisation to CA Tariff System (0- 20%)
Import Restrictions Pre-liberalisation	Deposits for imports, licences for basic grain	Permits for basic grain	Licences for basic grain, wheat, sugar, seeds, milk, fruits, agricultural inputs	Licences from central bank for all imports	Licences for all imports
Import Restrictions Post-liberalisation	Licences required for poultry & dairy products	Licences for sugar & molasses	Restrictions for cattle and processed meat	Licences for sugar & poultry	Restrictions on sugar imports
Export Restrictions/ Incentives Pre-liberalisation	Permits to export grain, seeds, sorghum; export taxes	Permits to export grain, export taxes	Permits for most agricultural exports (not coffee)	Permits for all exports, export taxes, 'temporary' export surcharge	Restrictions on foreign exchange retention by exporters, permits for most exports
Export Restrictions/ Incentives Post-liberalisation	Restriction on wood exports; export taxes on coffee based on world price (not charged in 1993-94)	Restrictions on exports to CA of cotton, sugar, coffee & wheat flour; export taxes eliminated	Elimination export licences; Export taxes of coffee & bananas (1 & 1.5% of value)	Licences required for sugar, edible oils & poultry; export taxes on coffee (non-processed, if world price above US\$70), bananas (US\$.50 per box), sugar (if world price above US\$15)	No licences, no export taxes

⁸³ 'Pre-liberalisation' refers to the situation just prior to the following dates: Costa Rica 1985, El Salvador 1990, Guatemala 1985, Honduras 1990, and Nicaragua 1990. CA: Central America; CB: Central Bank.

⁸³ Source: Weeks, 1998. Aspects of the previously dominant package included minimum price programmes, "buyer of last resort" policies, consumer subsidies and even large-scale procurement programmes. Radical reforms were only implemented in the 1990s. In Brazil, for example, the combination of various supportive policies for agriculture (e.g., minimum prices, subsidized credit and state procurement) remained in force until 1987, when the first reform programmes were implemented. In Colombia, such practices continued through the early 1990s. In Chile, *Comercializadora de Trigo S.A. (COTRISA)* continues to purchase grain.

Table 5.1 Summary of Policy Regimes in Central American Countries, circa 1994 - con't

Policy Area	Costa Rica	El Salvador	Guatemala	Honduras	Nicaragua
Post-liberalisation	Profit margin regulations for: rice, beans, white maize, molasses; price setting for sugar, coffee, bread flour, poultry	No price controls or guaranteed prices;	No price controls or guaranteed prices;	No price controls or guaranteed prices except for sugar & coffee (low quality);	No price controls or guaranteed prices;
State Marketing Pre-liberalisation	National Production Council (CNP) intervened in grains market (except rice) through domestic & external sales and purchases	Food Regulator Institute (IRA) intervened in grains market through domestic & external sales and purchases	Agricultural Marketing Institute (INDECA) intervened in grains market through domestic & external sales and purchases	Agricultural Marketing Institute (IHMA) intervened in grains market through domestic & external sales and purchases; State monopoly on grain imports	National Basic Food agency (ENABUS) active on grains market through domestic & external sales and purchases, owned 80% of storage facilities; state controlled 55% of all imports & 98% of all exports
Post-liberalisation	In beans & white corn (minor)	Marketing agency closed, state monopoly on trade in coffee & sugar eliminated, price band for yellow maize, rice & sorghum	No state participation in basic products trade, national price band for yellow maize, rice & sorghum	State supplier of basic products imports small amounts of rice, sugar, chicken, maize, price band for yellow maize, rice & sorghum	State role reduced to a minimum, price band for yellow maize, rice & sorghum

Note: 'Pre-liberalisation' refers to the situation just prior to the following dates: Costa Rica 1985, El Salvador 1990, Guatemala 1985, Honduras 1990, and Nicaragua 1990.

Table 5-2: Characterisation of Policy Regimes by Period, 1960-1995

Periods Country	1960-1969	1970-1979	1980-1984	1985-1989	1990-1995
Costa Rica	Shift towards import substitution	Import substitution interventions	Moderate liberalisation & deregulation	Liberalised (from 1983)	Liberalised
El Salvador	Shift towards import substitution	Import substitution interventions	Strong intervention	Moderate liberalisation & deregulation	Liberalised
Guatemala	Shift towards import substitution	Import substitution interventions	Moderate liberalisation & deregulation	Continued liberalisation & deregulation	Liberalised
Honduras	Minor import substitution policies	Mild Interventions (not part of regional import substitution)	No change	Little change	Major liberalisation & deregulation
Nicaragua	Shift towards import substitution	Import substitution interventions	Strong intervention	Moderate liberalisation & deregulation	Major liberalisation & deregulation
Comments	CACM officially begun in 1963	CACM at its peak in first half of decade (without Honduras); insurrection in Nicaragua 1977-79	Collapse of the CACM; war in El Salvador & Nicaragua	War continues in El Salvador & Nicaragua, ceases in both countries by end of decade	Government changes in Nicaragua (1990)

Source: Weeks, 1998. CACM stands for Central America Common Market.

The rural population of Latin America and the Caribbean was still nearly 43 percent of total population in the first half of the 1970s and around 35 percent a decade later. However, individual countries followed divergent economic evolutions. Spoor (2000) classified them according to their patterns of crisis and recovery: early, late or prolonged crisis during the 1980s, followed (though not always directly) by adjustment with swift or slow recovery. Chile, Colombia, Bolivia and Costa Rica experienced an early crisis with a swift recovery that was already evident in the 1985-1990 periods. Brazil and Mexico show a pattern of decline that culminated in a late crisis with slow recovery. In the case of Brazil, the GDP growth rate had already dropped to 0.9 percent in the first half of the 1980s, but this was moderated by a surprisingly good performance in agriculture with a 3.8 percent annual sectoral GDP growth. Finally, for various reasons (including political turmoil), Argentina and Peru underwent a prolonged crisis in the 1980s.

Striking examples of both positive and negative impacts of markets and trade liberalisation can be given by the case of Brazil. The so-called “conservative modernisation process” of Brazilian agriculture in the 1990s led to a large increase in production, but has also resulted in social exclusion and high environmental costs. The creation of the Ministry of Agrarian Development (MDA) in 1993 can be seen as a recognition of “family agriculture”, but the best way to support its development is still the subject of debate. Modernisation and competitiveness are two topics at the heart of this debate. An analysis of the distribution by the Brazilian national program to support family farms (PRONAF) of agricultural credits for family farmers from 1996 through 2001 (Tonneau, de Aquino and Teixeira, 2005) concludes

that the internal logic of the program and its implementation already contain the criteria that lead to the exclusion of the poorest family farmers (table 5.2.). The practical result is a “new inequitable modernisation process” in Brazil’s rural areas, which contributes towards even greater social exclusion and regional differences.

Table 5-3: The Brazilian national program to support family farms (PRONAF)

The Brazilian national program to support family farms (PRONAF) was implemented in 1994 to promote the productive capacity of the rural poor by providing credit to this population with no previous access to formal bank credit. This policy was aimed at reducing inequity and poverty in Brazilian society. It was a huge innovation since agriculture had traditionally been based on large landholdings. The first beneficiaries were small family farmers whose activity was based mainly on family labour, with a maximum annual income of 27500 real, at least 80% of which came from the property. The State commercial banks were responsible for the financial intermediation. Basically, the program relied on interest rate subsidies, which were necessary in the Brazilian macroeconomic context (Real Plan). Although the number of beneficiaries was significant, until 1998 the program favoured smallholders of southern Brazil, who had higher incomes and better market integration, because banks’ risk aversion still kept them from lending to the poorest. Demands and protests by several groups led to the program’s extension to populations with lower annual incomes, through larger interest rate subsidies. Despite the increasing number of contracts, the program has several drawbacks. Amongst them is its hugely increased cost, particularly through bank fees, including high administrative and bank spread cost, both paid by the government. Another is that for the poorest family farmers, the policy is finally the equivalent of a direct subsidy and has not succeeded in guaranteeing a long-term link with formal banks.

Source : Abramovay R., Piketty M.G. (2005). Politique de crédit du programme d’appui à l’agriculture familiale (Pronaf) : résultats et limites de l’expérience brésilienne dans les années 1990. Cahiers Agriculture 14(1) : 25-29.

Table 5-4: The development of a capital-intensive production model in Mato Grosso (Brazil)

The state of Mato Grosso has recently become the leading soybean producer in Brazil. The growth of related activities (crushing, trade in machinery and input products, transportation and storage, services) has also been spectacular. Among the factors explaining this boom, agricultural credit has played an original and very important role. At the same time as the State is transforming its intervention modes, the private sector is taking over functions no longer performed by the State. The agricultural financing system consists of a mix of public (principally for long-term investments) and private (productive expenses, such as seeds and other inputs) funds, together with the producers’ own funds. The risks linked to the development of this capital-intensive production model make this system weak and unstable. The expansion of large-scale soybean farming in this frontier region may thus make producers dependent on multinational firms and have a significant social and environmental impact. The Brazilian government has lost much of its ability to affect the Mato Grosso soybean industry, except as regards infrastructural investments.

Source : Bertrand J.P., Cadier Ch., Gasquès J.G. (2005). Le crédit : un des facteurs clés de l’expansion de la filière soja dans le Mato Grosso. Cahiers Agriculture 14(1) : 46-52.

5.3.2 Summary findings from experience in Latin and Central America

Four main points emerge from this discussion on the agricultural development experience in Latin America:

- First, the import-substitution industrialization (ISI) model, which was implemented throughout much of the region during the post-war period until the early 1980s, discriminated against agriculture through exchange rate overvaluation, export taxes, protection of the industrial sector and direct market interventions, but was very successful for a period in terms of overall growth. The overvaluation of the exchange rates brought a spur in imports during the 1970s but poor export performance. The agricultural sector did reasonably well in the 1970s and the first half of the 1980s despite price discrimination, benefiting from a general infrastructure development and a support package that included public investment, subsidized credit and agricultural services.
- Second, liberalisation reforms had a negative impact on sectoral performance as a consequence of the elimination of subsidies, credit and technological support services. Sectoral data suggest that at least in some instances, earlier public interventions in market-led modernization processes paid off (e.g., Chile and Costa Rica). In other cases, in which long-term public support was followed by a process of market liberalization and deregulation, recovery came only with the use of careful measures of "re-regulation" and risk-mitigating measures during periods of contraction (e.g., Bolivia, Brazil and Colombia, but also Chile).
- Third, the new development model for Latin America and the Caribbean, which was introduced with the structural adjustment of the 1980s and early 1990s is quite exclusionary⁸⁴, leaving the poor behind. The dynamics of economic growth are largely to be found within the sectors of commercial farmers who have been able to establish linkages with foreign, mostly trans-national, companies, thereby integrating themselves in domestic and international agribusiness complexes. The early optimism about the options for small-scale farmers and peasants to modernize through contract farming for agribusiness did not really translate into reality.
- Finally, there are indications that the gap (in levels of technology, productivity and income) between commercial and entrepreneurial farmers and the peasant sector, considered by some as "non-viable", has grown larger than ever. Policies directed toward modernizing the peasant sector and mitigating the human costs of economic adjustment are generally absent.

⁸⁴ M. Spoor (2000). *Two Decades of Adjustment and Agricultural Development in Latin America and the Caribbean*. Serie Reformas Economicas 56. Document prepared for the project "Growth, Employment and Equity: Latin America in the 1990s", financed by the Government of the Netherlands (HOL/97/6034), on which this section is based.

The historical examples given above provide information on the implicit objectives targeted by agricultural policies in order to sustain food security and income growth. Public goods provision, market stability, appropriate technical program development, agricultural services provision, activities to mobilize economies of scale, provision of off-farm job opportunities, and regional and/or international market integration do seem to form the key implicit objectives of the policy success stories reviewed (table 5-5).

Table 5-5 : Food security channels, countries experiences

Objective	Channelled effects	Impact	Country or region
Rural public good provision	Risk reduction Improved access to solvent demand	Growth in labour productivity and solvent demand	SE Asia (1970s, 80s) Europe, Japan (1950s)
Market stability	Specialisation, credit cost reduction, adoption of innovations	Growth in labour productivity	SE Asia (1970s, 80s) Europe (1960-90s) Latin America (1960s, 70s)
Technical itineraries development	adoption of innovations, intensification	Growth in labour productivity	SE Asia (1970s, 80s) Europe (1960-90s) Latin America (1960s, 70s)
Agricultural services provision	adoption of innovations, intensification	Growth in labour productivity	SE Asia (1970s, 80s) Europe (1960-90s) Latin America (1960s, 70s)
Scale effect	Unit cost reduction, diversification	Growth in labour productivity	SE Asia (1970s, 80s) Europe (1960-90s) Latin America (1960s, 70s)
Off farm job opportunities	Real income increase	Growth in solvent demand	SE Asia (1980s, 90s) Europe (1950-70s) Latin America (1980s, 90s)
Regional/international markets integration	Market extent growth	Growth in solvent demand	Europe (1960-90s) Latin America (1980s-)

Countries experiences demonstrate that contrary to the common knowledge reported in the previous chapter, agriculture *can be* a powerful engine of food security and growth. Provided that agricultural policies are targeted on explicit market failures, such as those listed in the first column of table 5-5 above, then agriculture can become an efficient engine for growth. This conclusion is similar to many other findings, and in line with the 2003 Pretoria Conference on past successes in African agriculture where market-failure-correction based policies based on correcting market failures have delivered outstanding outcomes.

Box 5-1 : Successes in Africa Agriculture

The 2003 Pretoria Conference on “Successes in African Agriculture” demonstrated, , that African perspectives are not necessarily bleak. The review of the case studies of African successes prepared for the conference isolated some “seeds of hope” on which African stakeholders could rely and that, whenever possible, could be replicated to shape the future. The summaries of these case studies are striking. The twelve success stories investigated differ widely in terms of instigators of change, points and level of intervention, levels of subsidy involved, nature of commodities (food or cash, export or for domestic market), regional diversity, duration and scale. The targeted market may varied from domestic or export, incentives varied from being granted on inputs to outputs, and from upstream to downstream activities. No explicit form of farm support emerges from the cases analysed. Even the question of subsidies is unclear: in some cases large public subsidies appear to be part of the conditions for success (in the case maize, cotton, dairy), in others not (cassava, horticulture, natural resource management). Overall prerequisites for success identified include: good governance; sustained funding for agricultural research and extension; soil and water conservation; replication of proven commodity-specific breeding and processing successes; marketing and information systems; vertical supply chains; regional cooperation in trade and agricultural technology⁸⁵. These results largely conform to the arguments developed in this report.

Overcoming market and government failure for agricultural productivity growth

Market failure	Overcoming market failure	Overcoming government failure
Public goods	Sustained funding for agricultural research and extension Transport, communication, storage (“market”) infrastructure provision	Good governance State development
Externality	Soil and water conservation	Good governance State development
Imperfect information	Marketing and information systems Vertical supply chains Regional cooperation in trade and agricultural technology	Good governance State development
Market power	Restoring competition and investment-incentive climate	Good governance State development
Incomplete market	Risk reduction	Good governance State development

Public intervention to correct market failures can sometimes make the situation worse, in case of government failure or poor governance. Good governance is a cross-cutting issue that has implications on all other prerequisites. There are many forms of governance depending on the issues at stake. Good governance means legitimate conciliation and negotiation structures within countries, upon which renewed partnerships can be built, which demonstrates transparency and accountability during implementation. In all cases, efficient and legitimate States are absolutely necessary for long term and sustainable growth and development.

⁸⁵ IFPRI 2020 Focus, 2004.

Direct transposition in Africa of past food policies from other countries is of course dubious and doomed to fail. What seems more promising is the better understanding of the channels through which food security can be achieved that such examples provide. Success experiences isolate two impact factors common to so diverse situations, namely labour productivity and solvent demand growth. Their relevance in the African context will be examined before some possible policy implications are discussed.

Chapter 6: Channelling food security through labour productivity and solvent demand growth

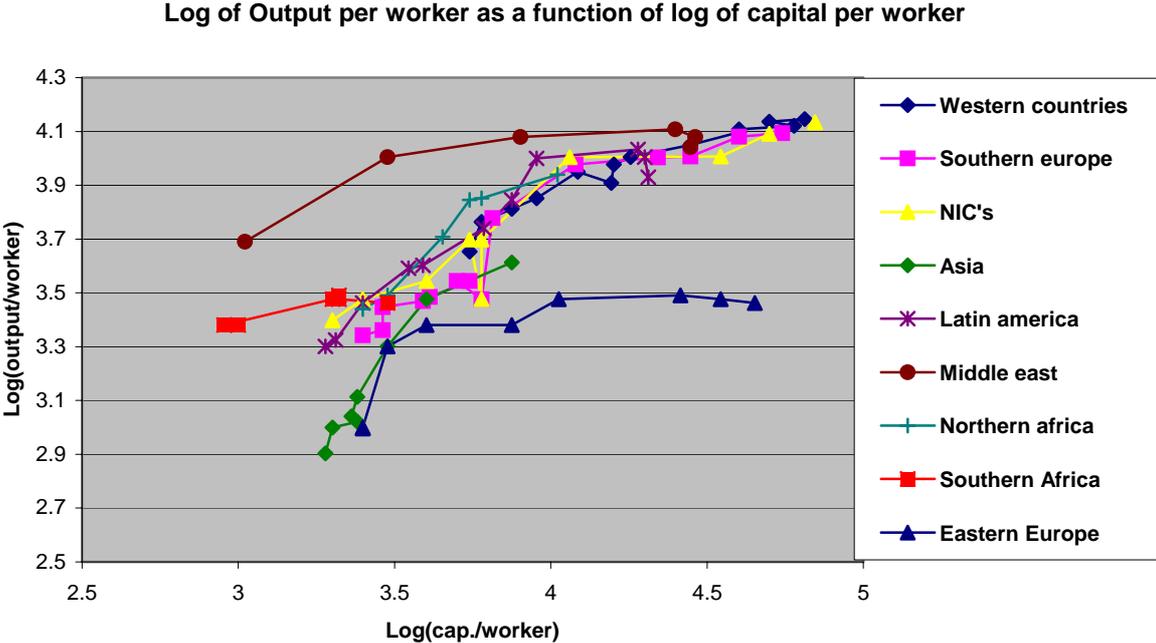
Among food insecure households, incomes are generated by directly selling goods produced at home or by selling labour. If incomes are insufficient to meet the basic needs of the population, income derived from either by selling goods or labour, or both, is insufficient. Selling goods selling may be insufficient because the products are not competitive. Then causes are directly related to low labour productivity. But the level of sales may also be insufficient due to the lack of national solvent demand, directly related to low income. The lack of solvent demand explains in turn the lack of economic growth and of job opportunities. Solvent demand growth is a key variable often discarded in food security analysis, partly because boosting national demand is no longer in the scope of public intervention in post Keynesian economies today. We have nonetheless provided some insight on the relevance of too low solvent demand in explaining food insecurity and derive feasible public intervention disciplines for food insecure African countries today.

6.1 - The central role of capital per worker

6.1.1 - Capital per worker in economic growth

It has been shown above that if, in order to obtain a reasonable level of food security, any permanent recourse to international charity is ruled out, then the only option is to make the agricultural sector competitive. But how does one make the agricultural sector competitive? Although it is not specific to agriculture, the first and essential point in this respect is the role of capital per worker, as shown on figure 6.1.

Figure 6.1 : Historical relation between output per worker and capital per worker⁸⁶



Sources : based on Baier, Dwyer and Tamura (2004)

Figure 6.1 has been drawn using records of total (agricultural and non agricultural) output per worker, in constant US \$, occurring during various decennia's between 1870 and 2000 (some series begin only in 1920 or in 1950, so that the number of points per series is not always the same). A clear tendency is perceptible, with an almost linear relation between the quantity of capital and the output per worker in logarithmic scale. There are a few exceptions: "Eastern Europe", with a far less than average performance, (which, to some extent, may be ascribable to the strange definition of capital in the national accounts of USSR and other "socialist" countries); the "Middle East", probably as a consequence of the petrol subsidy which makes the case not very significant; and "Asia", which started in a very bad situation, but recovered rapidly, which is a part of the famous "miracle".

For other country aggregates, there is no miracle: the relation between capital and growth is uniform, and valid for Southern Africa as well as for Western Europe. Southern Africa is notable in that it stands at the bottom of the drawing, with the smallest capital quantity per worker and the smallest output. Only Asia was in a significantly worse situation at the beginning of the 20th century, and (against all odds!) recovered quickly, while Africa is still standing in the "normal" but lower part of the distribution.

A warning must nevertheless be issued regarding this notion of capital per worker, in order not to misinterpret the above statements: capital is not an homogenous commodity, the quantity of which can be compared between Europe and SSA in a straightforward manner. It is a collection of various pieces of material which are useful (and deserve the name of capital)

⁸⁶ Here, "western countries" include US, Canada, and Northern Europe (UK, Sweden, France, etc.); "Southern Europe" is Cyprus, Greece, Italy, Spain, etc.; "Eastern Europe" corresponds to former socialist countries (Russia, Yugoslavia, etc.); "NIC's" are Japan, Korea, Singapore, etc.; "Asia" is India, Pakistan, Sri Lanka, Indonesia, etc.; "Middle East" is Iran, Iraq, Saudi Arabia, etc.; "Southern Africa" is quite similar to SSA; "Latin America" includes Argentina, Brazil, Honduras, Nicaragua, etc.; "Northern Africa" goes from Egypt to Morocco. See Baier *et al* (2002) for details.

only insofar they are adapted to a given situation, time and location. A computer given to a Stone Age hunter would not really increase his capital stock. For that reason, the authors of the study referenced above (Baier *et al.* 2002) rightly point out that the examination of the capital stock per worker is not sufficient to explain the observed wealth increase in developed countries over the last two centuries. What they call "human capital", and technical progress are just as important.

"Human capital" includes the ability to choose which proper specific capital item to build (or acquire) in a given situation and location. For instance, one can avoid using a tractor when a pair of oxen is more appropriate to the situation; conversely, replacing the pair of oxen with a tractor may be more appropriate in a different setting. Development is not simply a matter of gathering large quantities of capital, and applying them indeterminately. On the contrary, the major difficulty lies in the fine-tuning ways to make the best possible use of a scarce and protean resource. In the past, many African "projects" - especially agricultural projects - have neglected this important aspect of capital management, by capital-intensive techniques which were fully justified in wealthy countries facing land scarcity, but were perfect nonsense in a poor and relatively land abundant country like Africa (if only it were possible to speak of Africa as one country!). The consequences of this remark will now be examined in the context of agriculture.

6.1.2 The case for agriculture: what is agricultural capital ?

The quantities (be it output per worker, or capital per worker) shown in figure 4.1 are computed from a mix of agriculture and other sectors. The only specificity of agriculture here is that while industrial sectors generally are not technically flexible (producing a computer requires about the same mix of capital and manpower, whatever the production location and circumstances), agriculture on the other hand is extraordinarily malleable. One can produce rice with almost no capital (sewing rainfed rice and letting it grow requires only a small quantity of seeds, albeit with very poor labour productivity: - less than 0.2 ton/worker/year), or with almost no labour (The Texan rice grower can produce 500 tons per worker/year, using enormous combine harvesters, large quantities of fertilizer and pesticides, etc.).

This is one of the reasons why poor countries are agriculturally orientated oriented: agriculture is the only activity compatible with very low quantity of capital per worker. The other reason is to be found on the demand side: agriculture produces food, and food is the only significant consumption of the poor). At the same time, it is not possible to continue operating such capital extensive techniques in agriculture if one wants to escape low labour productivity and poverty. As shown above, development requires an increase of capital use both in agriculture and in other sectors.

However, it is not just any capital that is needed at any stage of agricultural (or economic) development.

a) The capital can be privately or publicly owned, depending on circumstances

First, it must be stressed that the capital in question here is not only the private farm-level capital, but also public and private capital that determines the environment within which farms operate.

Because agricultural activities need land, producers are disseminated throughout the countryside. For example, for agricultural producers to be able to supply food and other commodities to urban dwellers and buy inputs and equipment required for production as well as the goods they consume, markets, roads and other facilities are needed, and these require capital. A great part of this off-farm capital is of a public nature. They also need knowledge and a variety of services to be able to capture fully the potential of growth offered by agriculture.

Similarly, the lack of fertilizer is often held responsible for the low productivity of African farmers. For that reason, subsidising fertilizers has often been a policy recommendation, despite the drawback of input subsidies, as noted above. But another way of obtaining the same effect as a fertilizer subsidy is to provide a set of public facilities to the fertilizer commodity chain. Indeed, Jayne *et al* (2003) show that typically, 50% of the farm gate fertilizer cost in countries like Zambia, Kenya and Ethiopia is ascribable to domestic marketing costs, while only 10% accrues to retailers, importers and others. This means that the same effect as a fertilizer subsidy could be obtained by reducing domestic marketing costs through reducing port fees; coordinating the timing of fertilizer clearance from the port with up-country transport; reducing transport costs through port, rail, and road improvements; reducing high fuel taxes; and reducing the uncertainty associated with government input distribution programs that impose additional marketing costs on traders. According to Jaynes *et al.*, estimated reductions in the farm-gate price of fertilizer from implementing the full range of options identified in each country range from 11 to 18%. Price reductions of this magnitude, if passed along to farmers, would increase farmers' effective demand for fertilizer. Investments in selected publicly provided goods, often considered outside the scope of fertilizer marketing policy *per se*, strongly affect the costs of fertilizer, farmers' willingness to pay for it, and hence the performance of markets.

b) Capital must be released in small quantities in accordance with absorption capacities

A second consideration must be kept in mind: the quantity of capital at the disposal of agriculture must be released prudently

Among the many management defects often pointed out by analysts regarding agriculture in Sub Saharan Africa, inefficient low profitability projects often come to the forefront. It is true that many agricultural development projects have been poorly managed, resulting in bad performances, and, sometimes, sheer disasters. The main conclusion generally derived from these experiences is that African are not capable of managing a complex economy. But Jeffrey Sachs⁸⁷ remarked, "the idea that African failure is due to poor governance is one of the great myths of our time. They can't get out of the hole on their own", meaning that not only management recipes, but also real investments are inescapable.

Indeed, it must be stressed that the probability of failure for any investment is much larger for an isolated big project than for a cluster of small ones. This sort of consideration goes very far into fundamental economic theory. As noted above, in the presence of an abundant labour force and scarce capital, the marginal productivity of investment is very large: rates of return of 100% or more are not uncommon for such small pieces of investment as ox carts, or improved seeds. At the same time, as capital per capita increases, this marginal productivity decreases rapidly. When the levels of per capita capital stock reach levels of the same order of

⁸⁷ See Daphne Eviatar *Spend \$150 billion per year to cure world poverty. The New York Time magazine* November 7th, 2004 : 40-49.

magnitude they are in developed countries, there are no reasons for the rate of return be larger than in a developed country context. Actually, there are reasons for it to go lower, in the absence of infrastructures, market organisations, and other facilities.

In such a situation, one can understand why scarce capital instead of being invested in a few large, highly capital intensive projects, is better employed in many small projects designed to help poor, capital deprived peasants. If African leaders (and their expatriate advisors) can be reproached, it is for mobilising scarce foreign aid into gigantic projects. Who can resist the wide smile of a President coming to inaugurate a new dam, under the fire of dozens of press photographs? Yet, a dam doubling yields over 10000 ha can be much less efficient than a credit project increasing yields by only 15% over 100000 ha.

The only exception would be the occurrence of economies of scale in large projects. But one never could insist too much on the fact that there are practically no economies of scale in agriculture. This is visible, if not for other reasons, because if a technique is profitable over one hectare, it can be reproduced without change over millions of hectares. Thus agriculture is a "constant return to scale" activity, which can be undertaken indifferently in large or small farms without significant change in productivity. Actually, there are reasons for that small family farms are a little more productive, because in such a structure, the actors monitor themselves, as already noted, and choose the most efficient solutions, and constantly improve their methods. By contrast, large projects usually are very beneficial to a few, not necessarily competent⁸⁸, managers, leaving grassroots actors with no incentive to work (a good reason to call them "lazy").

On the contrary, as soon as the provision credit, transportation, output collecting or input delivering activities is involved, the existence of economies of scale is much more likely⁸⁹. This is a source of market failures, and a justification for state intervention. Indeed, State intervention here is required to provide a stable and friendly environment to farmers, allowing the the freedom to organise themselves in a way that best suits them, and making their own profitability computation in a familiar context. Even so, State intervention, in that case, must not replace traditional moneylenders and bush traders. On the contrary, for most of their activities, again, they are their own best monitoring officers. But they must be placed in the position of benefiting from the economies of scale brought about by collective action. Thus, they must discuss with authorities to determine the best public investments, such as roads, or market structures. At the same time, they must be prevented from benefiting from unjustified subsidies in such a way as to be rewarded only in proportion to their contribution to the collective effort.

6.2 – Labour productivity growth is not enough: the case for increasing the extent of the market

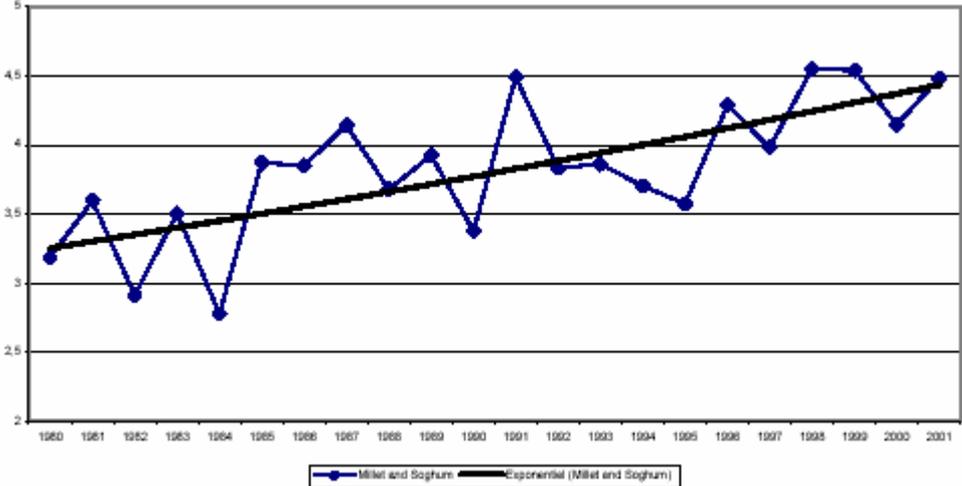
⁸⁸ For instance, René Dumont (*L'Afrique noire est mal partie*, le Seuil, Paris 1962), a famous agronomist, tells the story of a project supposed to develop groundnut production in Casamance (Southern Senegal), the leader of which was a former French marine officer. He was perfectly ignorant of the elementary bases of agronomy, but sure of the necessity of big tractors, and very proud of using the recovered and anchor chain of a famous liner ship to slash the trees of the tropical forest. By doing so, he destroyed the soil he was supposed to improve.

⁸⁹ Even for these activities, however, one must be prudent in concluding economies of scale do exist: see M. Fafchamps, E. Gabre-Madhin, and B. Minten : *Increasing returns, and market efficiency in agricultural trade* MTID discussion paper N° 60, IFPRI, Washington, 2003.

Root-causes of insufficient solvent demand differ according to the location of such a demand. When considering local households demand, the lack of income among a large share of population explains the lack of solvent demand. As explained above, it is directly related to low labour productivity and to the lack of job opportunities. For the richest consumers, imported goods are often preferred for consumption. Moreover, exports subsidies as well as food aid have a negative impact on agricultural output prices and divert part of the local demand to foreign supply. Negative financial transfers, due to the burden of the debt repayment also affect the national income and thus solvent demand. Considering public demand, as already underlined, the drastic cut in public expenditures since the mid-Eighties explains a sharp drop. The lack of foreign demand is explained by high transaction costs, isolating local markets from the rest of the world, low competitiveness of local goods, due to low productivity, and foreign markets protection, through tariffs and non-tariffs barriers.

Mali gives striking illustration of the necessity to boost agricultural labour productivity without being restricted solely to this area. In Mali, about 76% of the population is rural and poverty is more prevalent in the rural areas. This means that 81% of the poor and 98% of the poorest live in rural areas. Keeping this in mind, pro-poor growth seems bound to be labour-intensive growth in the agricultural sector⁹⁰. Mali experienced growth during 1994-2000, with a rather modest poverty reduction. GDP increased by 33.3% between 1994 and 1999 (about 5.5% per year). During the same period, the productivity of labour for food crops improved steadily (figure 6.2) while the incidence of poverty fell by 4.6 points, or only 6.7% . Why then did not farmers income follow the movement of labour productivity?

Figure 6-2 : Productivity of cereals in Mali (1980-2001)



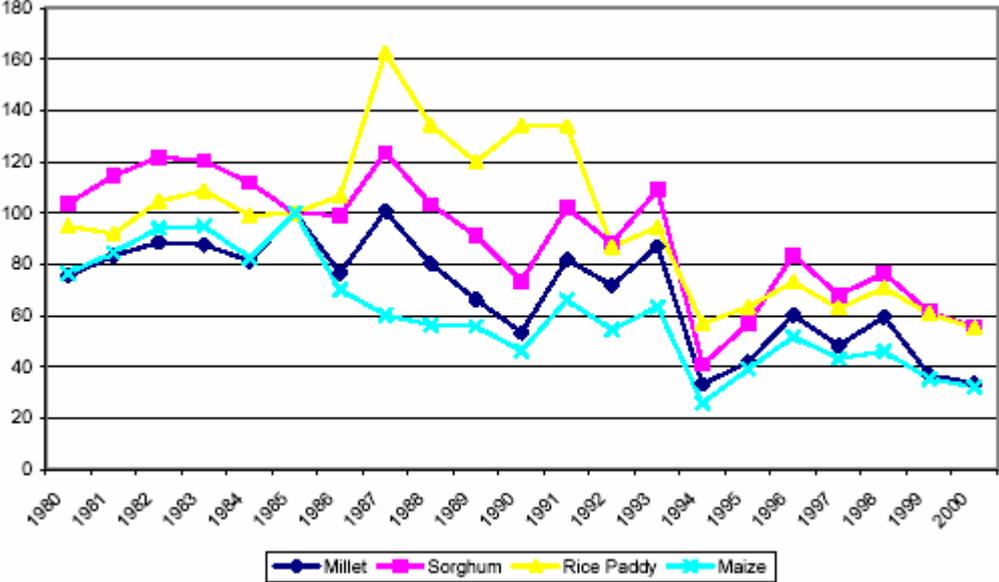
Source : Marouani and Raffinot, 2001 (based on FAO)

The first hypothesis made by two researchers is that the increase of productivity has been followed by a fall in agricultural prices. Indeed, it is well known that good harvests in the Sahel region causes a dramatic fall in prices (and vice versa). Thus, increases in productivity could be offset by the reduction of food prices. It is difficult to assess the net effect on the poor income since it depends whether they are net sellers or buyers of food. For net sellers a good harvest may result in decreasing monetary income. Using rice equivalent to compute the poverty line, Marouani and Raffinot find in this case an increase of poverty headcount.

⁹⁰ Marouani and Raffinot (2001)

In a more theoretical study De Janvry and Sadoulet (2002) present an attempt to tackle this problem within the framework of a General Equilibrium Model. They use an “African archetype” to compute the impact of an increase of agricultural productivity. In their model, a 10% increase in total factor productivity (such as improved seeds in all crops) results in an increase of 7.6% of the income of the rural poor households (with a large positive growth in non agricultural employment, which in turn causes an increase in the demand for food). In the model, poor rural households are supposed to produce all the food they consume, so they do not benefit from the decrease of food prices. The impact of a 10% increase of productivity in food crops is less important, resulting in an increase of 3.9% of small and medium farmers real income. This is because they do not benefit from the decrease of food prices (-12%) and because in the model, the cereal sector represents only 13% of the GDP (twice more in Mali). Eswaran and Kotwal (1992) presented a theoretical model in which increases in agricultural productivity and reduction of food prices allow people to buy other products, leading to the emergence of an internal market for manufactured products.

Figure 6-3 : Price of cereals deflated by the import price index (1985=100)



The second hypothesis is given by the deterioration of the terms of trade between agriculture and industry. Such a deterioration could also partially explain why the improvement of the productivity of food crops did not result in a sharp reduction of rural poverty. Figure 6.3 suggests that there has been an important decrease of food crops terms of trade in the recent years (since the 1994 devaluation). Productivity and income may indeed follow different paths. Both the de Janvry and Sadoulet theoretical model and actual real price data convey the idea that agricultural prices are either blurred by self-consumption patterns or too low to generate sufficient income. Having the gross income equal to the output sold times the selling price, we straightforwardly conclude that the volume of output sold is not sufficient to compensate for declining real prices reflecting productivity gains. Hence poor stay poor as long as growing volume of demand for their agricultural output is matched.

Low productivity and low demand are linked through a circular relationship. Early development theorists already wondered why income growth in economically backward areas was trapped. Starting with the demand size of the problem, the most documented determinants

are transport facilities, which Adam Smith singled out for special emphasis. Reductions in transport costs do enlarge the market in the economic as well as the geographical sense. But reductions in any cost of production tend to have that effect. So the size of the market is determined by the general level of productivity and the level of domestic factors use. Capacity to buy means capacity to produce. In its turn, the level of productivity depends largely on the use of capital in production. But the use of capital is inhibited, to start with, by the small size of the market. What is the way out this circle?

6.3 The policy way out of the circle linking low productivity and the small size of the market

The root causes identified of chronic food insecurity can be turned into priority objectives. Priority objectives for policy makers whose country has been facing chronic food insecurity should be, first, to improve productivity, and second, to boost demand for products and/or labour from food-insecure households. The first objective is widespread and consensual among policy advisers and academics, with the exception of the external (foreign) demand for labour. The second one is far more neglected, if not ignored. When applied to the rural sector, it goes beyond agricultural policy per se and involves clearcut choices in terms of growth and development policies. **Refocusing on demand growth, both local and external, is a top priority development policies that enhance food security.**

The review of policy measures actually implemented in African countries highlights the vanishing of agricultural policies in their OECD or post independence acceptance. With the exception of some subsidies on inputs (a few Southern African countries, cotton in some West African countries), remaining minimum price guarantee schemes (maize in some African countries), VAT exemptions, limited import tariffs (although far below the banded rate) and scattered public investment in rural areas, the scope of public intervention is narrow. This narrowness, when confronted with the breadth and depth of the causes chronic food insecurity in Africa, points to the scandalously limited policy response brought today by African countries to African populations. **A start in budget reallocation toward rural populations is urgent to overcome the unaddressed causes of food insecurity.**

It is worth recalling first that available policy measures are much more numerous than the ones still in use in Africa. Policy measures restricted to the rural sector include: border measures (fixed tariffs, variable tariffs, quotas, both on imports and exports); domestic support (minimum price, output subsidies, input subsidies, consumption subsidies, direct transfers, stabilisation); indirect taxes (VAT exemptions); investment funding and incentives (subsidies); interest rate subsidies; provision of agricultural services in remote areas (credit, irrigation, storage facilities). Successful food security strategies in places such as Indonesia, Europe or Central America in previous decades demonstrate that there is no orthodox, one-size-fits-all policy package. The larger the choice of measures available, the higher the probability to apply Tinbergen's efficiency rule, according to which one policy measure must be targeted at only one objective – following the popular idea that “you cannot hit two birds with one stone”. We have seen that root causes of food insecurity provide a large scope of policy objectives. **Significant widening and flexibility in the choice of available policy measures is urgent to overcome the unaddressed causes of food insecurity.**

International or regional commitments of African countries do not bring convincing explanation of the narrowness of public intervention targeted at food insecurity in Africa today. The room for ambitious agricultural policies at WTO is wide, with total exemption of tariff and support reduction being granted to least developed countries (most of them are to be found in SSA) while developing countries enjoy a special and differential treatment rehabilitating some of the pre PAS instruments (like input subsidies as long as they are targeted at the poorest). Examination of bilateral agreements (like EPA following Cotonou Partnership Agreements between EU and ACP countries) and regional agreements (such as UEMOA), reveals no significant constraints on any kind of domestic support, since the primary constraint relates to external tariffs. The most stringent constraints seem to stem from the conditions imposed by donors and international financial institutions (IMF, WB) and other aid agencies adopting the same agenda. **Upgrading in a coherent framework the set of rights and obligations of the governments of food-insecure countries towards the international community – and specifically toward the Bretton Woods institutions and other aid agencies - is urgent to overcome the unaddressed causes of food insecurity.**

Economists dealing with political economy have tried to show the losses and more generally, the dysfunctions and failures associated with the use of some specific policy instruments. Regarding African countries, two major inputs in the political economy analysis of agricultural policy must be considered :

- A first “bunch” of researches has been focused on agricultural policy instrument giving access to a limited amount of specific free or subsidized goods or services (inputs, credit, extension...) or limited access to a particular market (a foreign market, for example). This limitation in quantity gives rise to subsidies and people will compete to get these subsidies and devote resources to such competition. Depending on the allocation method used, the kind of resource provided will differ. When allocation of trade licenses is decided by government officials, different kind of expenses will be realized to influence the decision: trip to the capital, office rent in the same capital, lobbyist services and of course directly money, i.e. bribe. Therefore, waste of resources is a primary problem. Increasing inequality can be a second one. Corruption the last one.
- The second “bunch” of political economic analyses aims at explaining the apparent preference of African government for input or credit subsidies and projects instead of higher price for agricultural commodities. According to such analyses the role of pressure groups actuation can be important but the search of power by the state elite is the main issue. The first objective of governments is to secure political control over their rural population. By using project instead of higher prices, government can exercise discretionary power, they can choose regions, groups or even individual to be the beneficiary, they can also choose in staffing the project. By choosing some specific groups they get their support and weaken any opposition by dividing the rural world.

These two “bunches” have provided sound contributions for the writing of obituary notices of 60's and 70's agricultural policies. Yet, before leaving them out completely, one should be reminded that low farm gate prices were at the same time stable and predictable – eg stabilised. Ample evidence shows that agricultural supply responds to price stability just as much as to mean price level. As a consequence, providing stable prices to farmers is just as important for production as high prices. A trade-off was expected to occur between low and stable agricultural prices, allowing for productivity gains in agriculture through riskless investment in capital goods, along with productivity gains in labour intensive activities in all sectors thanks to moderate wages increases allowed for by moderate food prices. This subtle

trade-off did work in some places like Europe or Indonesia. It completely collapsed in most of African countries because too narrow a place was given to market forces between farm gate and consumer plate.

The policies maintained during the 60's and 70's are rightly criticized, especially in view of their poor outcomes. Yet this does not mean they were without any merit or justification. One should consider the rationale behind them. Relatively low farm gate price while international prices are high means profits for marketing boards and similar agencies. Economists who developed the concept, intended such profits to be spent on increased investments and long-term development devices that the market usually fails to secure, and **which by necessity must be funded by the State**. One may question the choice to have them funded by poor farmers rather than by richer people. But the central question is **why were these profits not spent on development by the States** responsible for it?

A second part of explanation derives from the lessons learnt from economic literature. Although controversy continues, academics tend now to promote budget-funded, targeted policy instruments to consumer-funded, price instruments, the latter suffering from poor targeting and distortive (inefficiency) effects. On efficiency grounds, the “modern” food policy relies heavily - theoretically at least - on freeing market prices, which means close-to-zero tariffs, decoupled support (compensation and insurance transfers), along with investment policy in public goods provision such as research, infrastructure, education, health and the enforcement of the rule of law so as to make market institutions properly work and even “work for the poor”. **When no such a budget is made available, the case for agricultural policy vanishes.**

How best to use a agricultural budget in an accountable manner cannot be defined in terms of policy measures at this stage. This can only be dealt with on a country-by-country basis, with extensive participation of local stakeholders throughout the policy-making process. A framework for action has been set here, whereby a step-by-step definition of agricultural policies could make them both legitimate inside and outside the country, at all levels of negotiations, within and among ministries. The initial step is to identify the characteristics of food insecurity on a country-by-country basis, followed by the identification of its root causes. This in turn will provide economic grounds for policy action, as long as such causes relate either to market failures or government failures as described above. Checking for country commitment and possible perverse effects of such policy, because of subsidy-seeking or any counterproductive effect current knowledge helps prevent, leaves room for the final design of sound agricultural policies embedded in demand-led growth which secures food.

Conclusion

The food insecurity problem is especially acute in Africa. Although it can be temporarily alleviated by food aid, it can be solved only by development. Therefore, this document, using food insecurity as a starting point, comes out stressing the importance of governance for development.

In effect, if it is true that food security, to some extent, can be maintained by food aid during a certain time, if it is out of question not to have recourse to food aid in case of emergency, and when every other method fails, at the same time, it is clear that *food aid is not a sustainable solution for removing hunger and poverty* in the long run. On a long-term basis, in any country, food must be produced domestically, or imported on a commercial basis, in exchange of competitive domestically produced non food goods. Since food shortages affect the poor first, whatever the choice between domestically produced or commercially imported food, the poor must be involved in the production – be it the direct production of food, or the production of the commodities exported in exchange of food imports.

The main obstacle to such solutions is the lack of capital – not financial capital, but real capital goods, machines, infrastructure, and so on, in the hands of the poor, at least at their disposal. The second obstacle is the limited extent of the market. Because there is not enough capital in Africa, labour productivity is low, and this *low productivity of labour is the main reason for poverty* and starvation. Because available capital is not adapted, some factors are underutilised, incomes shrink and the extent of the market is too narrow.

There are no reasons for this situation to continue last, all the more since international organisations are ready to help, and not only in cases of emergency food shortage. The NEPAD, in particular, is an attempt to reproduce one of the most outstanding success of the 20th century in terms of economic development, the Marshall Plan. Could the recipes of the Marshall Plan, if any, be applied to Africa, and does the Marshall Plan possess anything which could rightly be called a recipe? Could the African agricultural successes be replicated and scaled up? What could be learnt from experience on other continents?

It has been shown above that answers could be summarised as follows:

i - No development can occur spontaneously, solely through market forces. Any example of a successful development story demonstrates that the involvement of the State in the process is essential. In particular, when external aid is available, the government has to set up priorities for the sound management of investment goods purchased on foreign markets. This is the main lesson drawn from the history of the Marshall Plan, the success of which the NEPAD would like to reproduce.

ii - To be successful, State interventions must be done in sympathy, not in opposition, to the market. The market is an essential device in day-to-day decisions, and short term approaches. But *the market is myopic*. For the long run, collective management by State and public agencies is necessary to avoid false expectations and misunderstandings, as well as to fix standards, control quality, and advertise future priorities. In addition, providing infrastructure (roads, education, etc.) and a reasonably stable economic environment, facilitating budgetary calculations, is obviously the responsibility of any government – be it at

local or national level, although the national government must compensate for the weakness of local communities in rural zones.

iii – Because the poor, as a rule, are rural dwellers, and are not capable of practising activities other than agriculture, while land is in general abundant, *there is a comparative advantage in Africa to producing food* domestically, rather than, from scratch, developing an industrial export capacity capable of paying for food imports. For that reason, investments designed to increase the quantity of real capital at the disposal of poor farmers make much sense. It must be clear that the real capital in question can be owned privately (such as draught animals, farm machines, etc.) or collectively (such as roads, bridges, etc., which are capital goods at the disposal of the poor as well as the rich). At the same time, it must be stressed that such a development of farming and rural capital implies also the development of a domestic industry capable of absorbing the excess quantity of manpower which will be made available by the substitution of capital for labour in agriculture. Such an industry will found its market first domestically, from the increase of farm wealth and farm demand, and then, internationally, from its capacity to export high quality products if correctly managed.

iv - In developing agriculture, *particular attention has to be paid to price stability*. In agriculture, because demand is rigid, prices are instable: a small change in the supplied quantity results in large differences in price. Now, such price movements create an extremely stubborn uncertainty, discouraging investment and preventing banks from providing loans to farmers. Such price regulation policies are difficult to establish: they imply a delicate collaboration between private crop collectors and the public organisations in charge of enforcing regulations, and they might be in contradiction with IFI conditionalities and WTO rules. They also imply building costly infrastructure, such as stockpiling facilities. Yet, as it has been shown above, they are by and large the most efficient ones to develop the production of any agricultural commodity.

v – *Massive urbanisation is a major characteristic of the modern age*, implying the existence of intermediate industries between farm gate and consumers. This is not without consequences for food supply, food security, and the feasibility of agricultural policies. These food industries are much less numerous than farmers, and can be used as efficient intermediate bodies between farmers and governments. The situation, in this respect, is even better if – as was the case in most European and North American countries – these industries, taking the form of cooperatives, also represent farmers. In any case, *intermediate bodies are necessary* to set up a sound economic policy, in a “committee planning” framework.

These five points are strong reasons for a Ministry of Finance in Sub Saharan Africa to provide support to the agricultural and food sector. Yet it is clear that not *any* intervention is required. On the contrary, the above reasoning shows also that interventions should be carefully targeted not only in order to to squander money and other resources, buut also to allowthe private sector to assume as much responsibility as possible. In this respect, and as far as agriculture and food processing industries are concerned, the following points should be stressed:

i – *Providing a safe environment* and stable prices to agricultural and food processing industries is essential. It seems that the easiest way to achieve this goal is by fixing minimum prices authoritatively at a reasonable level, and guaranteeing that government will purchase any quantity supplied at this price. Another possibility is to buy or sell import or export licenses when necessary. Stockpiling facilities must be contemplated, on condition that they

are privately operated, even if prices are more or less administered⁹¹. In any case, it implies that the domestic price of staple food must be different from the world price, although the difference must be small enough not to make smuggling too attractive. But failures in many African staple food stabilisation schemes demonstrate that with a weak or budding State, price policies are doomed to fail. In such a case, an alternative should be provided by new arrangements and partnerships with the stakeholders involved, among which the State should play a crucial role by ensuring that the concerns of the poorest stakeholders are taken into account, that bargaining power is equally shared between committed parties, and the arrangement enforced.

ii – *Credit is the normal vehicle of privately operated capital accumulation.* But credit in Africa is hampered by uncertainty regarding the future, and by the lack of collateral. Any measure taken to secure decision makers and bankers – including the guarantee of the State to certain operations, but also, rendering assistance to rural and saving banks - is likely to have very large beneficial effect, without costing the Government too much. Land rights clarification, at the cost of creating smoothly operating cadastre agencies, and of improving civil court organisations, are also among the public goods likely to trigger agricultural development. In addition, property rights can be used as a basis for taxation, as a counterpart to the security provided by the State.

iii – In low population density regions, *roads and communication networks*, as well as harbours and other similar facilities are absolutely necessary so that markets can play their roles. This implies the State must consider the feasibility of heavy investments in such areas, which, by nature, are public goods, not amenable to private operation (even if day-to-day maintenance is leased to private companies against reasonable rates levied on users).

iv – Other infrastructure of benefit to agriculture and food industries includes *irrigation schemes, agricultural extension, education, and research*. Since managing such institutions is a matter of administrative skill, and such institutions deal with specific cases, it is difficult to state anything general in this respect, except to say these institutions are under the responsibility of the State, and a major determinant of competitiveness. They are also necessary to make the transfer from farming to other activities which should accompany development possible for the population.

v – Such a program is costly. As was the case with the Marshall Plan in Europe, at least a part of it will be possible to fund from the counterpart amount from the NEPAD or other aid programmes. But not all the necessary expenses can be funded that way. Thus, *a fiscal policy must accompany the development efforts*. How to implement such a taxation scheme is out of the scope of this document. But it must be stressed that the capability of the State to levy taxes is one of the components of its legitimacy. In addition, taxes levied on the rich for the benefit of all are a key tool in fighting against poverty.

The exercise departs from the main stream literature by the emphasis put on the role of the State, which had been somewhat forgotten since the inception of structural adjustment. This is not to say that structural adjustment was an error, but that it might have been more efficient if it had been more careful in considering the due role of the State in development. The consequences, of course, are deep. They implies a departure from pure liberalism, which have

⁹¹ The golden rule here is that “The State must never touch commodities”.

been just as excessive in its claim for market economy as Marxism had been in its negation of any value for markets. In any case, the points above provide some strong arguments in favour of State intervention, and State intervention in the agricultural and food sector.

References

- Abraham-Froix, G. : *Dynamique économique*. Dalloz, Paris, 1995.
- Abramovay R., Piketty M.G. *Politique de crédit du programme d'appui à l'agriculture familiale (Pronaf) : résultats et limites de l'expérience brésilienne dans les années 1990*. Cahiers Agriculture 14(1) : 25-29, 2005
- Ahmed, R. and C.L. Delgado, *L'Expérience asiatique des politiques de prix agricoles : Pertinence pour l'Afrique* in Afrique Asie : performance agricoles comparées sous la direction de G. Etienne, M. Griffon et P. Guillaumont, Revue Française d'Economie, Paris 1993
- Alston, J. M., Marra M.C., Pardey P.G., Wyatt, T. J. *Research returns redux: a meta-analysis of the returns to agricultural R&D*. Australian Journal of Agricultural and Resource Economics 44(2): 185-215, 2000
- Awudu, A., Barret, C., and P. Hazell, *Food aid for market development in Sub-Saharan Africa* discussion paper, IFPRI, Washington, April 2004.
- Awudu A., C.B. Barrett, J. Hoddinott, *Does food aid really have disincentive effects? New evidence from sub-Saharan Africa*. IFPRI mimeo, June. Washington, DC, 2004
- Baier, S.L., Dwyer, G.P., Tamura R. *How important are capital and total factor productivity for economic growth*. Mimeo April 2004.
- Bairoch, P., *World History: Myths and Paradoxes*, University of Chicago Press, 1993.
- Bairoch, P., *Le Tiers Monde dans l'impasse*, Gallimard, Folio. Paris, 1995.
- Barrett, C.B., K.C. Heisey (2002). *How Does Multilateral Food Aid Respond to Fluctuating Needs?* Food Policy. 27: 477-491, 2002.
- Barrett, C.B., *Food Aid Effectiveness: It's The Targeting, Stupid!* Policy Service, Strategy and Policy Division, World Food Programme working paper, 2003
- Barret, C.B., S. Holden and D.C. Clay, *Can food for work programs reduce vulnerability ?* Discussion paper D0762004, Agricultural University of Norway, 2004
- Barrett, C.B., S. Mohapatra, D.L. Snyder (1999), *The Dynamic Effects of U.S. Food Aid*. Economic Inquiry, 37(4): 647-656.
- Bates, R., *Markets and States in Tropical Africa*. Berkeley. University of California Press, 1981.
- Bates, R. H. *Governments and Agricultural Markets in Africa. The Role of Markets in the World Food Economy*. G. D. Johnson and E. G. Schuh. Boulder, Westview Press: 153-185. 1983.
- Berloffa, G., and M.L. Segnana, *Trade, inequality and pro-poor growth: two perspectives, one message*. paper presented at the Conference "Poverty, inequality and the quality of growth", University of Trento, Italy, December 2003

Bertrand J.P., Cadier Ch., Gasquès J.G. (2005). *Le crédit : un des facteurs clés de l'expansion de la filière soja dans le Mato Grosso*. Cahiers Agriculture 14(1) : 46-52.

Bezuneh, M., B.J. Deaton, G.W. Norton, *Food Aid Impacts in Rural Kenya*. American Journal of Agricultural Economics, 70(1): 181-191, 1988.

Binswanger, H.P. *Agricultural and Rural Development: Painful Lessons*. In C.K. Eicher and J.M. Staatz eds., International Agricultural Development. Third edition. Baltimore, Maryland: Johns Hopkins University Press: 287-299, 1988.

Bossuat, G., *La France, l'Aide Américaine et la construction Européenne, 1944-54*, Comité pour l'histoire économique de la France, Ministère des Finances, Paris, 1997.

Boussard, J.M., Introduction a l'économie rurale, Cujas, Paris, 1992.

Boussard, J.M., and F. Gérard, *Price Stabilisation and Agricultural Supply in*, M. Benoit-Cattin, M. Griffon and P. Guillaumont (ed.): Economics of agricultural policies in developing countries, éditions de la RFSP, Paris, 1995.

Boussard, J.M., *When Risk Generates Chaos* Journal of economic behaviour and organization, 29 (96/05) : 433-446, 1996.

Boussard, J.M., F. Gérard, M.G. Piketty, A.K. Christensen, T. Voituriez, *May the pro-poor impacts of trade liberalization vanish because of imperfect information ?* forthcoming in Agricultural economics, December 2004

Bradford De Long, J., and Barry Eichengreen : *The Marshall Plan: History's Most Successful Structural Adjustment Program* prepared for the Landezentral Bank Hamburg conference on post-world War II European Reconstruction, Hamburg, September 5-7, 1991

Brooks, J., *Agricultural policy design in developing countries: making use of disaggregated analysis*, World rural forum, OECD, Paris, 10-11 December 2003

Chaponnière, J.R., *La République de Corée : Un Nouveau pays industriel*, La Documentation française n° 4667-4668, 1983.

Collier P. and Gunning J.W. *Explaining African economic performances*, Journal of Economic Literature, vol XXXVII : 64-111, march 1999

de Janvry, A., Fafchamps M., Sadoulet E. *Peasant Household Behavior with Missing Markets: Some Paradoxes Explained*. The Economic Journal, 101(409), pp. 1400-17, 1991.

De Janvry A., Subramanian Sh. *The Politics and Economics of Food and Nutrition Policies and Programs : An Interpretation*, in Pinstrip-Andersen P. (ed.) (1993). The Political Economy of Food & Nutrition Policies. IFPRI. The Johns Hopkins University Press, Baltimore : 3-21, 1993.

De Janvry A., Sadoulet E. *World Poverty and the Role of Agricultural Technology: Direct and Indirect effects*, The Journal of Development Studies, vol 38(4), pp.1-26, 2002.

Dorfman, R., P.A. Samuelson and R. Solow : Linear programming and economic analysis. Mc Graw Hill, New York, 1958.

- Dorosh, P.A., C. del Ninno, D.E. Sahn, *Poverty alleviation in Mozambique: a multi-market analysis of the role of food aid. Agricultural Economics 13: 89-99, 1995.*
- Dorosh, P.A., Q. Shahabuddin, M.A. Aziz, N. Farid, *Bumper crops, producer incentives and persistent poverty. MSSD Discussion Paper 43, IFPRI, Washington, D.C, 2002*
- Duflo, E. *Schooling and Labour Market Consequences of School Construction in Indonesia: Evidence from an Unusual Policy Experiment. American Economic Review 91 (4): 795-813.*
- Dumont, R., *L'Afrique Noire est mal partie*, Editions du Seuil, Paris, 1962
- Dumont, R., *Pour l'Afrique, j'accuse*, Paris, Plon, 1989
- Dun, K.C., Mc Shaw T. *Africa's Challenge to International Relations Theory*. Palgrave, New York. 2001.
- Echeverria, R. G. *Assessing the impact of agricultural research. In: Echeverria, R. G. ed. Methods for diagnosing research system constraints and assessing the impact of agricultural research, Vol. II. Proceedings of the ISNAR/Rutgers Agricultural Technology Management Workshop, 6-8 July 1988, Rutgers University, New Jersey, USA. The Hague, ISNAR. Pp. 1-31, 1990.*
- Eicher, C., *Flashback: fifty years of donor Aid to African agriculture*, paper n° 16 presented at the InWent, IFPRI, NEPAD, CTA Conference "Successes in African Agriculture", Pretoria, December 1-3, 2003.
- Eswaran M., Kotwal A. *Why might Poverty be Impervious to Industrial Progress ?* in Basu and Nayak (eds), *Development Policy and Economic Theory*, Oxford University Press, Delhi, p. 40-63, 1990.
- Evenson, R. E., Rosegrant, M. W. *Determinants of Productivity Growth in Asian Agriculture: Past and Future*. Paper presented at the 1993 AAEA International Pre-Conference on "Post-Green Revolution Agricultural Development Strategies in the Third World: What Next." Orlando, Florida. 1993
- Eviatar, D., *Spend \$150 billion per year to cure world poverty. The New York Time magazine November 7th, 2004 : 40-49*
- Fafchamps, M., E. Gabre-Madhin, and B. Minten : *Increasing returns, and market efficiency in agricultural trade* MTID discussion paper N° 60, IFPRI, Washington, 2003.
- Fan, S., Hazell, P., Haque, T. *Targeting public investments by agroecological zone to achieve growth and poverty alleviation goals in rural India. Food Policy 25(4). 2000.*
- Fan, S., Hazell, P., Thorat S. *Government spending, agricultural growth and poverty in rural India. American Journal of Agricultural Economics 82(4). 2000.*
- Fan, S., Hazell, P. *Returns to Public Investments in the Less-favored Areas of India and China. American Journal of Agricultural Economics 83, 2001.*
- Fan, S., Rao, N. *Public spending in developing countries : trends, determination, and impact. EPTD Discussion Paper 99. IFPRI February 2003.*
- FAO, *Irrigation in Africa in figures, 1995.*

FAO, *Multilateral Trade Negotiations on Agriculture – A Resource Manual*, Rome 2000

FAO, *Final Statements – World Food Summit: five years later*, http://www.itdg.org/?id=wfs_statements, Rome 2002.

FAO, *The State of Food Insecurity in the World*, Rome , 1999, 2000,2001,2002,2003.

Gabre-Madhin, E., C.B. Barrett, P. Dorosh, *Technological Change and Price Effects in Agriculture: Conceptual and Comparative Perspectives*. IFPRI Markets, Trade and Institutions Division Discussion Paper No. 62. Washington, D.C., 2003.

Grilli, E.R., Yang, M.C. *Primary Commodity Prices, Manufactured Goods Prices and the Terms of Trade of Developing Countries: What the Long-Run Show*, World Bank Economic Review, Vol. 2, No. 1, 1-47, Jan. 1988.

F. Hayek, F., *Law Legislation and Liberty*, Routledge, London 1979 (3 vol.) Helleiner, G.K. *Aid and Dependence in Africa: Issues for Recipients*, in T.M. Shaw and K.A. Heard, The Politics of Africa: Dependence and Development. New York: Africana Publishing. Pp. 221-245, 1979.

Hicks, Sir John, *A theory of economic history*. Clarendon press, Oxford, 1969.

Hoddinott, J., *Examining the Incentive Effects of Food Aid on Household Behavior in Rural Ethiopia*. IFPRI working paper, Washington D.C., 2003.

Holden, S.,C.B. Barrett, F. Hagos, *Food-For-Work for Poverty Reduction and the Promotion of Sustainable Land Use: Can it Work?* Cornell University Working Paper, 2003.

IFPRI 2020 Focus, Building on Successes in African Agriculture. Edited by Steven Haggblade, April 2004.

IFPRI, Successes in African Agriculture: Building for the future, Pretoria, South Africa, December 1-3, 2003.

Illife J. The history of a continent Cambridge University press, Cambridge, 1995.

Intergovernmental working group for the elaboration of a set of voluntary guidelines to support the progressive realisation of the right for adequate food in the context of national food security, *Food Aid and the Right to Food – Draft information paper*, FAO, Rome June 2004.

Jacobs J. *Cities and the Wealth of Nations*, Vintage 1995.

Koester, U. *Regional cooperation to improve food security in southern and eastern African countries*, Washington D.C., IFPRI Research Report n° 53, July 1986

Krueger, A. O. *The Political Economy of Rent Seeking Society*. American Economic Review, 1974.

Krugmann, P., *Development, geography, and economic theory*. Cambridge, Mass., MIT Press, 1995.

Krugman, P.R., Obstfeld, M. Economie Internationale. Buxelles: De Boeck université. 2001.

Lanjouw, P., Shariff, A., *Rural Poverty and the Nonfarm Sector in India: Evidence from Household Survey Data*. Mimeo, DECRG, The World Bank. 2000.

Lattimore, R., and G.E. Schuh (1976), *A Policy Model of the Brazilian Feed Cattle Economy*. Chilean Journal of Economics 39 : 51-75.

Lele, U., *Structural adjustment, agricultural development and the poos : lessons from the Malawian experience* MADIA discussion papers, Vol. 1 World Bank, 1989.

Lele, U., (ed.): *Managing Agricultural Development in Africa (MADIA)* Various discussion papers, the World Bank 1989-90.

Lele, U., N. Van de Walle and M. Gbetibouo : *Cotton in Africa: An Analysis of Differences in Performance*. Madia Discussion Paper, N°7, World Bank 1998.

Mao, Y.K., Schive, C., *Agricultural and industrial development in Taiwan*, in *Agriculture on the Road to Industrialization*, ed by J.W. Mellor, Johns Hopkins University Press, 1995

Mazoyer, M., and Roudart, L., *A History of World Agriculture: from the Neolithic Age to the Current Crisis*, Monthly Review Press, 2005.

Mellor, J.W., *Agriculture to the road of industrialisation* IFPRI, Washington, 1995.

Merdaoui, F., *Importations et instabilité des marchés céréaliers au Burkina Faso*. Phd Thesis, Paris I University, France 426p, 1999.

Moore, M., *Political Underdevelopment*. Contributed Paper to the 10th Anniversary Conference of the Development Studies Institute, London School of Economics, London 7-8 September 2000.

Niho, Y., *Population Growth, Agricultural Capital, and the Development of a Dual Economy* American Economic Review , Vol 64(6):1077-1085, 1974

Newberry D.M ., and J. Stiglitz, , *The Theory of Commodity Price Stabilisation*, Oxford University Press, 1981

Ninno, C., Dorosh, P.A., *Government Policy, Markets and Food Security*. IFPRI Mimeo. Washington, DC, 1998.

Ocampo, J.A., M.A. Parra, *The Terms of Trade for Commodities in the Twentieth Century*. Background Paper for the ECLAC 2002 report, Globalization and Development, 2003

Paarlberg, R.L , *Governance and food security in an age of globalization*, IFPRI, Discussion paper n° 36, 2002.

Parris T., D. Way, J. Metzler, R. Cicone, S. Manley, and S. Metzler, *Integrated assessment of food and water security using vegetation and precipitation anomaly detection*, discussion paper, MSU, Ann Arbor, Michigan, 2002.

Platteau, J-P., : *Land Reform and Structural Adjustment in Sub-Saharan Africa : Controversies and Guidelines*, FAO, Rome, 1992

Platteau, J.P. and Catherine André : *Land Tenure Under Unendurable Stress : Rwanda Caught Into the Malthusian Trap*. Discussion paper, CRED, Louvain, 1996.

Prebisch, R., *The Economic Development of Latin America and its Principal Problems*. New York, United Nations, 1950.

Marouani, M.A., Raffinot M. Perspectives on growth and poverty reduction in Mali. DIAL Document de travail DT/2004/05, 2001.

Riely, Frank, Nancy Mock *et al.*, *Food security indicators and framework for use in the monitoring and evaluation of food aid programs* USAID, Washington, 1999

Schultz, T.W., *Value of US Farm Surpluses to Underdeveloped Countries*. Journal of Farm Economics 42 : 1019-1030, 1960.

Schumpeter J.A. *History of Economic Analysis*, New York: Oxford UP, New York, 1954.

Shapouri, Rosen S., *Food Security Assessment*. Market and Trade Economics Division, ERS, USDA, Agriculture and Trade Report, GFA-15. 2004

Spoor M. Two decades of adjustment and agricultural development in Latin America and in the Caribbean. Mimeo. 2000.

Srinivasan, T.N. *Poverty and Undernutrition in South Asia*. Food Policy 25 : 269-282, 2000.

Smith, L.D., *Reform and Decentralization of Agricultural Services: A Policy Framework*, FAO Rome, 2001.

Stiglitz, J.E., *Some lessons from the East Asian Miracle* , World Bank Research Observer, vol. 11, n° 2. 1996

Stiglitz, J.E., *Globalization and its discontents*, Penguin Books, 2002

Timmer, P.C., *Getting agriculture moving: do markets provide the right signals?* Food Policy, Volume 20, Issue 5, October 1995, Pages 455-47, 1995

Timmer, P.C., *The macro dimensions of food security: economic growth, equitable distribution, and food price stability*. Food Policy, Volume 25, Issue 3, June 2000, Pages 283-295.

Von Neumann, J. *A model of general equilibrium*. Review of economic studies, 13 (1, 1946) : 1-9.

Weeks, J. *Trade Liberalisation, Trade Deregulation and Agricultural Performance in Central America*. CDPR Discussion Paper 0598, London, 1998.

World Bank, *Rural Development: from vision to action*, Development studies and monographs series 12 Washington D.C, 1997

Yamano,T., Th. Jayne, J. Straus, *Does Food Aid Affect Crop Marketing? Evidence from Rural Ethiopia*. MSU Working Paper, July 2000.

Annexe

The policy instruments of agricultural development support

If it is admitted that the key solution for fighting food insecurity is development, and that, in Africa, development cannot ignore the agricultural sector, if it is admitted also that there exist specificities of the agricultural sector justifying specific policies, the question arises of the instruments available for this purpose.

Beyond the commitment made by African countries and some of their key partners regarding increased financial support to agriculture and rural development, there is a need for effective policies to be formulated and implemented. Whereas increased budgetary support would be necessary in most cases, it is not the only option available to boost agriculture and, in any case, it would not be effective without complementary policy measures.

Therefore, it seems useful at this stage to recall briefly what policy instruments are available for agricultural development. This section will describe their rationale, requirements, efficiency in addressing the risk and market failure issues mentioned in the previous section, their possible distributional effects (especially among the poorest) and last, their cost.

The choice of possible modes of intervention is wide and abundant. This is why it is necessary to review the various types of intervention already used in the past, by developing or by developed countries. Indeed, the policy options available are constrained by a number of factors including: i) limited public resources; ii) the dilemma between remunerative prices for producers and prices that a large number of poor households can afford to pay; and iii) constraints on foreign exchange availability leading to (possibly over) prioritising the production of export crops.

Although rather arbitrary, the following classification will be used in presenting the main instruments of agricultural policies:

- (i) Border measures.
- (ii) Taxes and subsidies
- (iii) Prices stabilisation and guarantee.
- (iv) Public goods (rules, regulations, infrastructure and services)
- (v) Reform of the institutional framework

1. Border measures

1.1 - Exchange rate policies

A classical measure to modify the farmers' (and all other producers') production environment is to modify the exchange rate. Devaluation has been extensively used to improve competitiveness, as it reduces the cost of locally produced goods expressed in foreign currency. But this is not always true. For instance, if the domestic commodity needs inputs from abroad – say, fertilisers – then the cost of production of the commodity will increase, as the cost in local currency of fertiliser will increase with devaluation. The higher the share of imported goods in the cost of production, the lesser the devaluation will help increase competitiveness. Devaluation, hence, encourages exports and discourages imports and provides generalized incremental protection to all domestic exporters and import competitors. Since devaluation pushes up the domestic price of exportable and importable commodities, it tends to have an inflationary impact. The fear that devaluation will feed the inflationary process often deters monetary authorities from devaluing in the face of creeping domestic

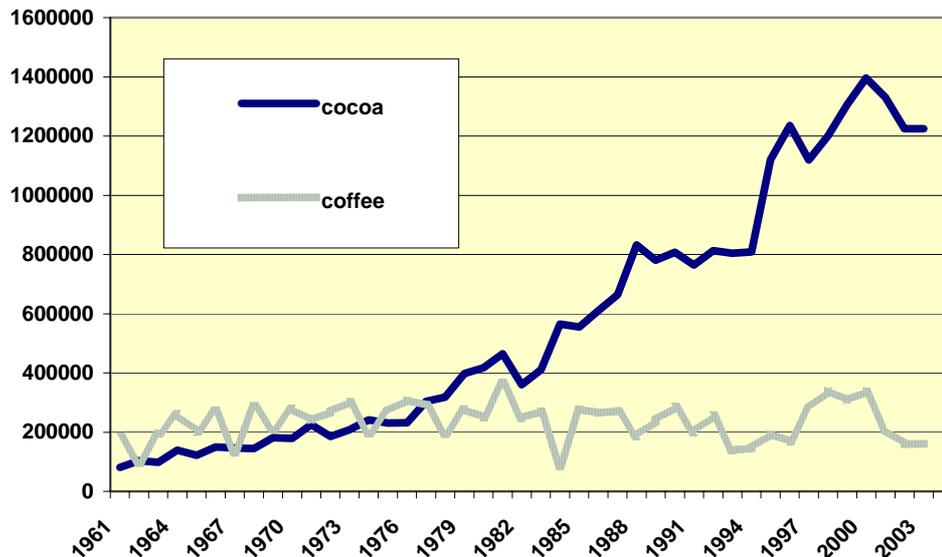
inflation, notwithstanding the potential positive effect of devaluation on the balance of trade
92

1.2 - Import and export tariffs

The basic philosophy of import and export tariffs and quota is exactly the same as for the manipulation of the exchange rate, except that, instead of modifying all foreign prices at the same time, a tariff can be used in order to protect particular domestic sectors from international competition by artificially increasing the domestic price of the imported commodity. In addition, while changing the exchange rate can be done only on rare occasions, changing tariffs rates and computation rules is relatively easy, although WTO regulations have restricted considerably the possibility for member governments to use this instrument, while quota have been banned. Tariffs have also constituted historically one of the main sources of revenue for the State.

Historical evolution in Ivory Coast since independence

Coffee and cocoa production in Ivory coast



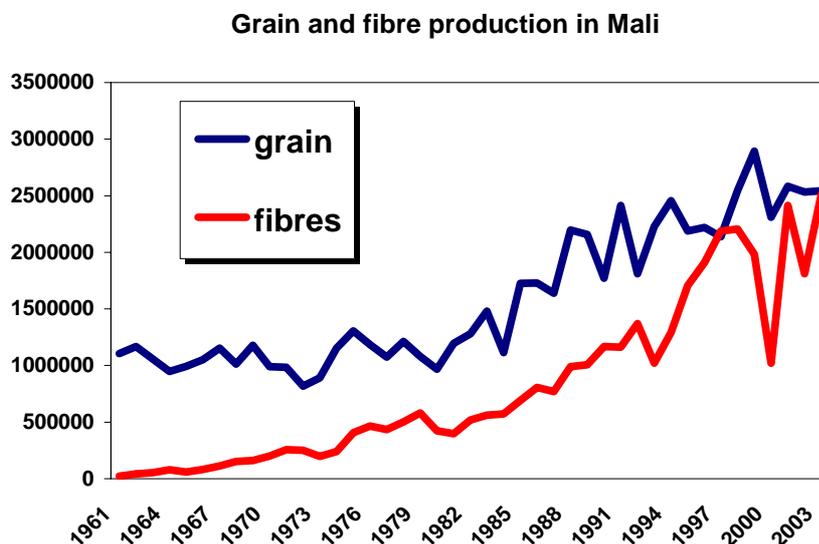
a) Permanent tariffs in a static framework

In static terms, domestic prices set above world prices through import tariffs will benefit net-producers, while domestic prices below world prices (because of export limitation) will benefit net-consumers. This is why protection of agricultural commodities is often considered as favouring rural households and hurting urban ones. The net aggregate effect on consumers and producers is generally considered negative: consumer losses are estimated to be greater than producer gains.

Yet, if one takes a dynamic point of view, the judgement on protectionism might be revised. Indeed, protectionism, in the long run, could turn out to be positive if designed to reduce

market fluctuations and price uncertainty, and hence foster investment and productivity gains⁹³. Variable tariffs were designed to that end.

Historical development in Mali, 1961-2003



Impact of the CFA Franc Devaluation in Western and Central Africa

The CFA franc is the currency of most former French colonies in SSA. It is exchanged at a fixed rate to the Euro. The main advantage of this link between an African and an European currency was its effectiveness in guaranteeing price stability. The drawback was the fact that increasing competitiveness through devaluation is not possible. Since the CFA zone countries export performances were deteriorating, in 1993, the World Bank and the IMF recommended a devaluation (change of parity between the CFA Franc and the French Franc to which it was then pegged). This devaluation occurred early 1994. The devaluation rate was enormous: the rate of exchange was doubled.

A few months after this historical devaluation, most officials and international bank executives were rejoicing, claiming the operation had been a success, and predicting a boom of exports. After 10 years, it must be acknowledged that nothing really significant occurred. One can see the impact of devaluation on the production of export commodities is not significant after 1994: no serious statistical test will detect a break in the series around 1994 - probably, only a slight increase in volatility in 1993-95.

There are many explanations for this. In particular, in the absence of capital and of infrastructure, most producers were not in a position of seizing this opportunity to profit by increasing

⁹³ In particular, see: Boussard, Gérard, Piketty, Christensen and Voituriez, (2004) . Based on the results of a general equilibrium model, this paper, like many others, develops the idea that, at a global level, under perfect market conditions, removing all obstacles to trade would generate significant benefits by fully exploiting comparative advantages. However, the model, contrary to others, can also be run under the assumption of "imperfect markets". In this case, the situation "with" liberalisation is much worse than the situation "without". The authors claim that, unfortunately, the latter reflects reality much more closely than the former situation.

production. Worse, deprived of imports, they were obliged to reduce production requiring imported inputs. Moll and Heering (1998) convincingly show this effect as regards meat production in West Central Africa. Meat imports from EC were considerably reduced, but not replaced by domestic production. More generally, it turns out that through inflation and price changes, firms and households fight to establish again the situation they enjoyed before the monetary adjustment. In so doing, if they succeed, they progressively adjust the prices of fixed factors, and come back to the *status quo ante* (except that the cost of the fight has to be born by somebody, usually, the weakest).

Such a scenario explains the situation after the CFA franc devaluation, which, far from being the promised outstanding success, was simply one small failure after many others.

b) Variable tariffs in a dynamic setting

Variable tariffs consist essentially in maintaining domestic price (almost) constant by levying a tax defined as (almost) the difference between the world and domestic price. Thus, importers have to sell at domestic price, whatever their costs. Of course, such an arrangement can be compatible with average import prices close to world market average prices. In this case, assuming average international prices moving slowly, distortions on domestic market are reduced to a minimum. Central America and Asia price-band policies (especially in Indonesia) were implemented in that spirit. This instrument, however, is not compatible with WTO regulations.

The situation for export products is similar to imported goods. Exports (particularly traditional tropical exports such as cocoa and coffee) have often been taxed in the past to collect revenue for the State, but this is usually at the expense of net producers (farmers).

c) Import or export quota

Quotas are limits imposed by government on the physical quantity of either imports or exports. Like tariffs, import quotas tend to raise the domestic price of the commodity and to increase the income of import-competing producers at the expense of consumers. The main contrast with tariffs is in the distribution of the revenue deriving from the difference in the selling price of the imported commodity with and without the protective measure. While in the case of tariffs this revenue is collected by government, in the case of quotas it may go in part or totally to license holders, who are allowed to buy imported goods and resell them at a higher price in the home market. The gains thus made are known as **quota subsidies** and may to some extent be collected by government if the licenses are sold or auctioned. WTO regulations imply a ban on quota that should be replaced by an equivalent tariff.

2- Taxes and subsidies

2.1 - Inputs subsidies

Many countries subsidise agricultural inputs— i.e. each time an input is sold to a farmer, a certain share of the cost is born by the government, and directly paid to the seller. Thus the farmer is provided the commodity at a price below its cost.

The rationale underlying input subsidies is usually to encourage farmers to make use of improved and more productive technologies – the cost and cash requirements of which is assumed to be a disincentive. Since farmers are often poor, have limited productivity, lack

cash, are risk averse – therefore averse to innovation -, and poorly informed on the technology available, it is thought that a financial incentive on inputs (including equipment) can help to convince them to use the improved technology by lowering the risk involved.

Another reason for subsidising inputs has been that spending resources on subsidising inputs, if it leads to increased use of inputs, will also contribute to greater production. This result will help reduce the amount of resources used for imports and, eventually for purchasing food in order to distribute it to food-deficit households. Overall, the replacement of imports and food distribution expenditure by input subsidies expenditure is expected to result in savings⁹⁴.

However, the cost of input subsidies is not always easy to determine. The “real cost” of input should account for the opportunity cost of the usage of the corresponding resource in excess of what it would be without the subsidy. For instance, in India, substantial subsidies are provided for the electricity used for pumping irrigation water. As a consequence, many farmers are obviously overusing irrigation water, and wasting electricity. Also, in some places – but this is far from the case in most SSA countries – subsidies on fertiliser and pesticide have led to excess utilisation with resulting pollution of groundwater. When an input-subsidising country has a porous border with a non-subsidising country, there is a risk of subsidised inputs crossing the border and a proportion of subsidies benefiting farmers in the neighbouring country.

Input subsidies have also been criticised as being socially regressive and of benefit mainly to better-off farmers. Benefiting from the subsidy implies purchasing the input, and the benefit accrued is in proportion to the amounts bought. So the greater the quantity purchased, the greater the benefit. Larger and more advanced farmers (from the technological point of view) are more likely to benefit (and more) than small traditional smallholders.

In addition, the use of inputs subsidy can create problems with trade partners who may consider they are victim of unfair competition. WTO regulations call for a progressive reduction of input subsidies unless they are directed to resource-poor farmers in developing countries (Special and Differential Treatment).

2.2 - Outputs subsidies

Farm output or, more frequently, agro-processed products can be subsidized as well. The subsidy is established as an equity device to allow wealthier taxpayers to help the poor have access to food. A variety of approaches have been adopted including targeted subsidies on staple food (at processing stage or by creating of parastatals), food distribution (public canteens, school feeding) or food stamps.

They can also occur as a consequence of over-successful price support policies. Price support policies are in principle designed to increase local production to the level required to feed the country. However, it has often happened in the past that the support price is fixed at a level that generates a surplus. To absorb of the surplus, sales are made at a below market price to the benefit of the poor. In some cases, subsidised exports are also resorted to in order to soak up the surplus (particularly when world prices fall).

⁹⁴ In more technical (but about equivalent) words, since the agricultural production function is homogenous and of degree one, the output price alone cannot change the input composition of the output. Only changing the price of input can create incentives to change input requirements. Now, if markets are not perfect, it might be in the common interest to choose a particular technique - for instance, a capital intensive technique - while the present price of labour would preclude it to be made use of spontaneously. In this case, by correcting the input price, the government corrects a market failure.

WTO regulations warrant the progressive removal of export subsidies, on the grounds that they amount to selling below cost and contribute to lowering international prices, thus preventing emergence of competitive productive activities. The exact price impact of export (and other) subsidies on world prices of agricultural commodities is a subject of controversy and a source of contradicting estimates.

Food subsidies have tended to be rather resistant to reform, because of the political dimension of the problem. Removal of subsidies on staple food has in many places led to riots, as was the case for example in Tunisia⁹⁵ and Zambia⁹⁶ obliging governments to make U-turns on reforms. However, because of financial constraints, they have tended to decline in most countries, although only progressively, and in some cases, food aid has helped to fill the gap to some extent.

2.3. - Investment and credit subsidies

Among inputs, credit has a particular importance, because it is the key method by which to increase the quantity of capital used in production, and therefore, labour productivity, which, as noticed above, is crucial. At the same time, credit markets are generally not working very well in rural zones. Because of the small size of loans requested, administrative costs are very high. In addition, lending to a poor peasant rather than to a rich entrepreneur seems more risky⁹⁷.

In line with the reasoning in the preceding paragraph, subsidizing credit would therefore be quite justified. The subsidy could be given either as a rebate on interest rates, through some agricultural bank, as was done for instance in France in the aftermath of the Second World War, or as a subsidy on the capital good - tractors, oxen, etc. - that the credit makes possible to purchase.

Yet, one may question the rationale for this kind of subsidy. The main obstacle for a poor farmer to borrowing is not in general the cost of the credit, because, as a rule, the expected profitability is far greater than the rate of interest. Indeed, the profitability of capital is as a rule enormous in such circumstances. The real obstacle is the risk associated with borrowing, which (together with the high cost of administration for small loans), explains the high rates of interest currently charged. Then, one may wonder whether measures designed to lower the level of exposure of the poor to risk of any kind -including the risk of not selling his output at expected price - would not be more appropriate.

2.4 - Direct subsidies and decoupling

Direct payment of an income supplement to producers is another approach to subsidising agriculture. In this case, farmers remain exposed to unaltered market signals. To avoid change in producers' behaviour and so as not to affect the market, farmers are paid a lump sum independent from production. In that way, they enjoy a minimum income – the lump sum – and, it is expected that they will respond efficiently to market signals.

⁹⁵ January 1984; Cf Louafi (2000)

⁹⁶ in 1986, see Gutner, (1999)

⁹⁷ This is not necessarily true: very (apparently) rich people can be crooks, while the poor often are anxious to reimburse their debts. A famous study of the Irish system of the "bank for the poor" during the 19th century shows that in that country, the risk, with the "bank for the poor" was not so much the bankruptcy of the debtor than the indelicacy of the cashier, who, sometimes, disappeared with the cash.

The advantage of this system is that benefits can be equitably distributed among target beneficiaries, or, alternatively payments could be targeted to the poorest.

Direct payments to farmers can also be justified on the ground that farmers produce externalities, i.e. goods which, by their very nature, cannot be sold on a market, because it is not possible to restrict its usage to a specified client who could pay for it. Such externalities include environmental services, landscapes, cultural heritage and food security, as shown by ROA (2002).

Drawbacks include:

- a potentially high cost for the government, if payment is done across the board;
- the management of payments requires a good administrative service: reliable information is needed as well as safeguards against corruption and embezzlement; and
- unfavourable equity considerations that stress that the system will make farmers a separate category of citizen, with the right to be paid money from the government without making a compensatory contribution.

Even the most ardent proponents of decoupling admit that it should not be permanent feature. In addition, most of the time, it is out of the reach of African governments. It must nevertheless be mentioned here for the sake of completeness, and more importantly, because it is a hot issue in WTO discussions.

Direct payments have been put into the WTO “blue” or “green” boxes, depending on their exact nature and fully authorized as it is generally agreed that they are not strongly distorting markets. However, it is clear that any payment will have an some impact on the way producers behave, particularly with respect to risk taking: lump sum payments can encourage farmers to engage in new relatively risky ventures/investments and increase their production capacity, thus generating additional production. In that sense, they are very far from being "decoupled", and there are some logic in the claim by various African governments that, if ones wants "free markets", then direct payments should be removed as are all others.

2.5 - Taxes and tax exemptions

Taxes are a powerful instrument for generating government revenue but also for orientating the price system in a direction which is deemed desirable by policymakers.

Apart from import and export taxes there are a number of other indirect taxes that can affect agriculture such as specific commodity excise taxes (including excise that is often used to fund commodity-based organisations and the services they provide to their members) taxes on inputs (fuel) and road taxes. Direct taxes (tax on individual income or on benefits made by companies) are also of importance.

Governments have been extensively using tax exemptions to help certain sectors or sub-sectors develop by raising their profitability and attractiveness (a sector exempted from taxes sees its terms of trade with the rest of the economy improve). While exemptions can be useful to help new industries establish (as is the case with import tariffs on products produced by industries in their infancy), their persistence can create distortions and a feeling of lack of equity.

The most frequently advocated tax is the “Value Added Tax” (VAT). The main advantage is that the tax is paid on the difference between the value of output and the value of inputs. In that way, the number and variety of transaction steps within the commodity chain does not change the level of the tax, ultimately paid by the final consumer. Yet, it is possible to adjust

the rate of the tax for various final usages. For instance, on the grounds that food must be cheap for the consumer, a low level of taxation for food is possible, while luxury goods can be taxed at a maximum rate. However it is difficult to put into practice with illiterate farmers and in cases where economic transactions are informal.

The land tax is an important instrument for agricultural development purposes for two reasons. First can be a strong inducement to more intensive agriculture, because farmers have to generate income in order to pay the tax. However, to be implemented it requires a system of land registration (this has other advantage to make land usable as collateral for credit). Tax on land and capital have a determining advantage on taxes on products as they can be made progressive (tax is higher for the richer than for the poor).

3. –Prices stabilisation and guarantee

It has been shown in this report that price uncertainty was a deterrent to investment. It is then quite natural to expect that some sort of price guarantee or stabilisation procedure would remove this obstacle and help promote investment. But price uncertainty can be reduced in many ways.

3.1 - Price guarantee

a) Principle and institutional set-up

Guaranteed farm gate prices are very common in developed countries. Although modalities may vary, the essential aspect of such policies is that governments (or governmental agencies) advertise that they will in all cases pay a minimum price for a certain commodity, whatever the quantity supplied. Probably the first historical example of such a policy is the Farm Act enacted by President Roosevelt in 1935 (although similar rules were introduced in France some years before for wine). After the World War II, such price guarantee schemes became commonplace.

Price guarantees may be granted under a variety of institutional settings. The simplest is probably when the government directly buys the commodity in question in public stores. However, this simple scheme is not the most convenient, because it implies that the government is playing the role of a trader and reselling the commodity to final users. This function is often delegated to auxiliary institutions, which may themselves cooperate with private traders. For instance, private firms may be in charge of operating trading and storage activities paying farmers the guaranteed price, and then be compensated for the losses they incur by a government agency.

Since consumer prices are linked to producer prices, the domestic price for the supported commodity at least equals the producer price (in practice, it should be above, in order to pay for transportation and processing costs). An automatic consequence is that border protection must be enacted in the event that the world price is temporarily or permanently below the guaranteed price. This explains the EC “variable duties”. Similarly, export subsidies would be required should production exceed domestic demand, if stockpiling is ruled out. As long as the country is a net importer, the system is costless to the government; it even generates revenue paid by consumers. If the country has a surplus, it generates a cost to the government (i.e. the taxpayer will have to pay).

b) Advantages and drawbacks

The main advantage of guaranteed prices is that farmers can use them in their calculations of projected income, with less risk of error. (Although price-related uncertainty has been eliminated, risk related to disease, drought, flood, etc., remains.) Bankers also are also more certain that, if a borrower works properly, he/she will not be ruined by a sudden fall in prices. Since it is easier for a banker to check whether a farmer is “serious” than to predict prices for the next season, this allows for an efficient distribution of credit. As a consequence, as production and labour productivity in agriculture are highly dependant on capital endowment, eased access to credit should help to achieve a higher production. A large share of the increase in agricultural production in developed countries since World War II can be ascribed to such mechanisms. In many developing countries, local increases in some cash crops can also be similarly explained⁹⁸.

The most direct economic effect of price guarantees is however the possibility that, depending on the level of the guaranteed price, it may encourage excessive allocation of resources in a particular sub-sector, thus creating some economic inefficiency. The mode of operation of the guarantee system can also offer opportunities for subsidy seeking and corruption. Another drawback is that, the guaranteed fixed price implies a politically unacceptable consumer price and that funding of the operation of the system puts a heavy burden on government budget. Last, if the guaranteed price is fixed too high, production increase generates surplus that leads to either stockpiling (with related costs) or (usually subsidised) exports. A way to address this has been to control supply at the same time as prices. This is the "quota" policy that has been adopted in many developed countries (EU for milk and sugar beet, Canada for milk and some grains, etc.). The question of surpluses (and eventual quota policy) is however not likely to be relevant to most SSA countries in the near future.

Guaranteed prices are not compatible with WTO rules as they have to rely on variable levies which are not allowed. Also, if the guaranteed price is higher than the world price, the difference will be considered as a measure of support, which if it is above the commitments of the country (including *de minimis*), could be challenged by trade partners.

3.2 - Price management

A “soft” version of guaranteed prices is “price management”. Here, farm gate prices are never given any fixed value. However, external trade is controlled – for instance, import and export licences are granted to businessmen by government. When the domestic price is deemed “too low” export licences are liberally granted, in such a way that excess supply is sold on international markets. When, on the contrary, it is “high”, import licences are granted to allow for the domestic market to be supplied through imports.

In this way, domestic prices remain flexible (and thus, to some extent, uncertain) but large deviations from the “normal” price are avoided. This is a way of providing security to farmers, whilst at the same time completely ignoring market signals. This policy carries basically the same risks as guaranteed prices, but yielded remarkable successes in countries such as Thailand during the Sixties and Seventies.

⁹⁸ Boussard and Gérard, 1992

3.3 - Public insurance schemes and stocks

Farming is a risky business and risk and uncertainty in agriculture are a constraint to production. They are also factors which lead to transitory food insecurity. The normal remedy to risk is insurance, but insurance does not suppress the social cost of risk. The payment of an insurance premium by one person contributes to the financing of the disaster met by another. For the individual who experiences the disaster, insurance has reduced the cost, but overall, the disaster has to be paid for. In that way, insurance can be considered in the same light as any other input.

Similarly, stocks are another way by which society handles risk. Storage is only a process by which a commodity produced now is made available later. When considering stocks over years, or within a country with diverse climatic conditions, stocks can be considered as an in-kind insurance contract.

Insurance and storage schemes have for long been a subject of discussion when considering food and agricultural policies, essentially because the special nature of risks in agriculture makes the proper functioning of most insurance contracts problematic, hence the limited private sector involvement of in these activities and the tendency to have public schemes deal with agricultural insurance and food stocks.

Insurances are an application of the “law of large numbers” which is based on a number of insured persons sufficiently large (in practice for example a few thousands in the case of car insurance), because each individually insured disaster (e.g. car accident) has a small cost compared to the total cost of all disasters occurring, and because the probability of one disaster for a particular insured person is completely independent of the probability for the disaster to occur for another insured person. The case is completely different when climatic or price risks are at stake. While climatic risks are generally fairly small at world level, in a given region, all farmers will be affected at the same time, thus creating a risk which cannot be considered as “small” by a regional company. Also damage assessment is difficult and costly. As a consequence, a local company cannot provide insurance and private insurance of most agricultural climatic risks is not feasible. Of course, the same argument broadly holds for storage. Price insurance is even more problematic.

As for other cases of “market failure”, there is a need for the State to intervene to fill the gap with safety nets, storage systems, subsidized insurance schemes, etc., which are compatible with WTO regulations (“green” box measures).

4 - Public goods (rules, regulations, infrastructure and services)

Public goods are essential elements of the environment in which economic agents operate. Because of their characteristics of low **excludability**⁹⁹ and low **rivalry**¹⁰⁰, public goods suffer from market failure. Typical examples of public goods of relevance to agriculture are the law, the rules and regulations established by public agencies, and the services provided by the police,

⁹⁹ Low excludability means that it may be difficult to exclude people from ‘free riding’ and enjoying the benefits of goods and services even if they have not paid towards their provision. Producers would find it difficult to recoup the full costs of their provision and, from an economic efficiency viewpoint, would thus tend to under-produce such goods.

¹⁰⁰ Low rivalry means that one person’s consumption of the commodity does not reduce its availability to others. As the cost to society of additional consumers enjoying the benefits of pure public goods is zero, economic efficiency requires their price to be set at zero. As a result it would not be profitable for the private sector to attempt to sell these goods.

the judiciary system, and agricultural inspection agencies. These are typically provided by the government and paid for out of taxation as they potentially benefit all members of the community and 'free riding' makes it difficult to charge users directly for these services. However, for many agricultural services the degree of excludability or rivalry is often determined by the precise nature of the service and the conditions under which it is delivered. Thus similar services, such as extension advice, may be delivered by the private sector in some situations but can only be provided efficiently by the public sector in others¹⁰¹.

The importance of public goods for agriculture has already been underlined. The absence of such facilities lead to situations such as:

- difficult access to markets because of lack of roads, lack of market information and absence of quality standards (or their poor enforcement);
- limited adoption of improved technologies for lack of effective technology production and outreach facilities (research and extension networks);
- low productivity of labour for lack of access to education and health services.

Another economic advantage of the provision of public goods in rural areas is that it will increase job opportunities, thereby contributing to income generation. In Africa, public resources allocated to the production of public goods for agriculture has seen its share in total government budget shrink. It is also lower than in other developing regions as shown in the report.

Public goods and services are generally budget-funded (central or local governments), even if some of their costs can be charged to the end users. However, this option requires consistent commitment over time and is necessarily limited for many resource poor African governments. Therefore, financing the development of public goods, including their maintenance or replacement over time, would require: (1) reliable external sources of funding that do not hamper excessively governments' budget; and (2) forms of private sector involvement in selected areas where it can find some interest through public-private partnerships. The latter may, in some instances, take indirect forms, as already demonstrated in a number of cases in Africa, such as commodity linked para-fiscal/levy mechanisms to finance research and extension services (e.g., tobacco in Malawi).

5 – Reform of the institutional framework

In this respect, in the past, considerable importance has often been attributed to land regimes, on the ground that "securing access to land" is the key factor to increase food supply and develop agriculture¹⁰².

Today, the problem of securing access to land in Africa has two basic dimensions:

- allowing farmers to use their titled land as collateral for obtaining credit; and
- protecting the right of communities against encroachment by large foreign or national investment companies.

It is obvious that a landless farmer cannot produce much. Therefore, a minimum quantity of land per worker is necessary. However, one should never forget that *the quantity a worker can manage depends essentially on the quantity of capital he/she has*. Only if sufficient capital is

¹⁰¹ This paragraph and its footnotes are extracted from: Smith 2001.

¹⁰² A complete analysis of the problem is provided in Platteau, 1992 and in Platteau and André, 1996.

available can a farmer produce more than what is required for his/her own subsistence. Overlooking this important fact is the reason why so many land reforms have been failures. Provided with land but deprived of capital, beneficiaries of land reform could not make full productive use of the asset given to them, sometimes putting in jeopardy the overall economic conditions of the country because of a sharp drop in production. Noteworthy is the fact that the mass of farmers benefiting from land reforms are generally unable to make use of the capital abandoned by the former land owners, as the machines in question are tailored for a large scale, capital intensive, labour saving usage, while the new agrarian structure requires equipment designed for individual small- or medium-sized farmers.

The issue of economies of scale and the alleged advantage of large farms over medium and small farms has already been discussed. Successful land reforms in the past took this question seriously. For instance, the French Revolution killed a number of land owners and forced others to run away. But at the same time, a sound monetary policy was set up, distributing an adequate amount of liquidity across the country to allow moderately rich people both to acquire the land sold by the State and, at the same time, increase the quantity of capital invested in farming. Very poor people did not benefit from the reform, but a development process was triggered. Above all, the system made possible the creation of a class of small landowners.

Whatever the context, the existence of a cadastre (an enormous public investment in Europe and the US during the 19th century), and of a judicial system guaranteeing property rights was essential. These conditions are also *sine qua non* for the emergence a land market which contributes to a more efficient allocation and use of land.

Synthesis of Agricultural Development Policy Options

Policy Instrument		Market failure / risk targeted	Efficiency/ return	Possible targeting on the poorest	Cost
Category	Options				
Import tariff					
	Fixed tariffs	Not explicit	Indeterminate	Small (target-commodities)	Consumers
	Variable tariffs	Price volatility	Positive	Small (target-commodities)	Budget (moderate)
Investments in the provision of public goods					
	Infrastructure	Public good	Positive	Possible	Budget
	Research & extension	Public good	Positive	Possible	Budget
	Education	Public good	Positive	Possible	Budget
	Health	Public good	Positive	Possible	Budget
Subsidies					
	Input subsidy	Not explicit	Indeterminate	Small (target-input)	Budget
	Output subsidy	Not explicit	Indeterminate	Small (target-commodities)	Budget
	Direct payment	Not explicit	Indeterminate	Possible	Budget
Tax exemption		Not explicit	Indeterminate	Possible	Budget
Price guarantee		Price volatility	Positive	Small (target-commodities)	Consumers and budget (surpluses)
Subsidised insurance scheme		Price / yield volatility	Positive	Possible	budget
Supply control		Non explicit	Positive	Small (target-commodities)	Consumers or budget