STRUCTURAL ADJUSTMENT IMPACTS ON REAL INCOMES AND DEMAND PATTERNS OF URBAN AND RURAL HOUSEHOLDS IN THE SAHEL

by

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INTRODUCTION

Over the last decade, most countries in the Sahel have heatedly debated structural adjustment programs (SAPs) recommended by the IMF, World Bank, et al. These include two sets of policies:

(i) 'stabilization’ measures intended to reduce substantial overvaluation of the CFA Franc, and the persistent and severe deficits in government budgets and balance of payments, e.g. devaluation and elimination of subsidies on food and agricultural inputs;

(ii) measures intended to spur efficiency and longer-term growth in stagnating urban and rural sectors, e.g. reduction of agricultural and industrial protection, liberalization of domestic markets, privatization of parastatals.

(i) and (ii) are not strictly separate in that adopters intend stabilization measures also to spur longer-term growth: for example, it is hoped that devaluation would raise incentives to grow local coarse grains by making imported rice more dear.

Many Sahel governments have declared themselves in favor of these measures but only implemented them partially. The reasons are mainly in the realm of political economy, and beyond the scope of this paper.

But clearly the debate over, and the implementation of, Structural Adjustment policies have been plagued by uncertainty as to how the measures might affect two sets of socioeconomic groups: (i) the lower and middle terciles of the cities and towns; (ii) farmers in both the higher potential zones in the southern Sahel (henceforth the ‘Guinean zone’) as well as farmers in the northern and middle belts of the Sahel (henceforth the ‘Sahelian’ and ‘Sudanian’ zones, respectively), the rapidly-degrading lower potential zones.

It is often argued that Sahel governments are most sensitive politically to policy effects on the urban groups, citing as evidence the urban bias in health and education infrastructure, food subsidy targeting and concessional grain sales, and so on (see e.g. Sherman et al. 1987, Bates 1985).

It is also often argued that governments’ political sensitivities with regard to rural areas are concentrated on a few key clients (see e.g. Jammeh’s discussion of peanut and rice policy in Senegal) and tend to neglect most smallholders.

We do not dispute or evaluate the ‘urban bias’ argument here, but only note that it appears to us that the importance of rural equity issues varies by regime and by year and by zone.

Certainly most Sahel governments were very worried about hunger among rural smallholders in the Sahelian and Sudanian zones during the recurrent droughts, directing food aid and concessional grain sales to them. Beside the humanitarian
concern, hungry people from drought-prone areas tend to migrate to Sahel cities where they appear to strain public services but not find adequate employment, or to migrate to high potential zones where sociopolitical conflict sometimes ensues (Matlon 1987).

Moreover, most regimes are very keen to get smallholders in the more fertile, Guinean, zone to exploit the agroclimatic potential to grow more grain for the burgeoning cities, and more cotton and peanuts to reduce balance of trade deficits.

Hence, with respect to potential impacts of Structural Adjustment policies, we perceive that Sahel governments, to varying degrees depending on the country, are worried about: (i) equity impacts on urban poor and middle classes; (ii) equity impacts on smallholders in the Sahelian and Sudanian zones; and (iii) efficiency impacts on farmers in the Guinean zones.

But these worries are compounded by the dearth of information about what these effects might be. Answering that question requires knowing how consumption and income patterns differ by income group, by agroecological zone, and by rural and urban area. National statistical services lack the capacity to provide this knowledge, as their data are often of poor quality or too aggregated.

By contrast, a number of household-level consumption and income surveys have been conducted over the last decade in the Sahel. They shed considerable light on these patterns, and by extension, on the potential equity and efficiency effects of policy on groups and zones.

But to date these results have not been systematically assembled to address this need. This paper is to that end, to whit, on the basis of patterns of consumption and income of rural and urban groups, and maintained hypotheses about agricultural supply response and export demand, we present propositions concerning the direction and rough magnitude of equity and efficiency effects on the socioeconomic groups of a subset of SAP policies.

The paper treats both urban and rural effects, but spends more words on rural, as agriculture is the main employer in the Sahel and the object of the most emphasis in SAP conditionality in most countries of the Sahel.

We focus on the following SAP policies: exchange rate devaluation (together with public spending cuts), fertilizer subsidy removal, and credit subsidy removal. We do not discuss possible effects of institutional and market reforms. The effects are cast in terms of impacts on 'outcome variables' such as real and nominal incomes, output, input use, and so on.

The analysis is partial equilibrium, and comparative static; we chose this approach not because we do not believe there are important intersectoral, indirect effects of the policies, or that policies will not have dynamic effects. Rather, ours is an initial exploration of what the new data tell us might be the most direct and immediate effects of policies.

Moreover, we have chosen to hypothesize effects rather than to attempt to trace actual impacts of policies partly because of the method difficulties of tracing the effects of specific policies among the morass of other strong shocks during
the last decade (e.g. drought), and partly because policies have often only been partially implemented.

The paper proceeds as follows. In section 1, we present 'stylized facts' about urban and rural Sahel. In section 2, we discuss the data used. In section 3, a number of propositions regarding policy effects are presented and justified with reference to patterns in the data (citing survey documents). In section 4 we conclude with policy implications.

1. CONTEXT OF STRUCTURAL ADJUSTMENT: STYLIZED FACTS ABOUT THE SAHEL

Below we set out stylized facts for urban and rural areas, breaking down the latter into three agroecological zones, and distinguishing coastal from interior Sahel. We contend that these geographic distinctions are important to evaluating the effects of SAPs.

1.1 General

In general, the Sahel economies are heavily weighted toward agriculture; in 1982, 82% of Burkinabe were primarily employed in agriculture, which composed 41% of GDP; for Niger, the figures were 91% and 31%, and for Senegal, 77% and 22%; for Mali, the figures were 73% and 43%.³

1.2 Urban

Most Sahel cities have populations well below a million, with the exception of Dakar, which is an exception in size, in being on the coast, and in relationship with the exterior in term of size of foreign aid and private capital flows.

The other Sahel cities, and most of the secondary towns, have a relatively high degree of economic and social integration with surrounding rural areas (both in intra-family flows of goods and remittances out, and intra-family flows of goods and labor in, as seasonal and permanent migration).

The weight of foreign assistance in the Sahel urban economies is huge compared to other places in Africa, and even more compared to other developing countries.

For example, the average income per capita in Senegal rural areas is around $140 (from Fall 1991), but the GDP per capita is around $600; this implies that urban incomes are far higher than rural. Given that Senegalese receive about $60 per capita in foreign assistance ($500 million in total per year), the much higher urban incomes imply that much of the foreign assistance translates into urban incomes.

But evidence from Burkina (see Reardon et al 1988b), that also shows a substantial difference in average incomes (between city and countryside), shows that income is much more unequally distributed in the urban than the rural Sahel, and that the poor tercile in the urban areas is on par with the lower half of the income distribution in rural areas.

Hence, in urban areas, there is a large gap (although not that found in Latin America) between the upper tercile, working in government or formal private
sector salaried posts, and the lower tercile, working in manual wage jobs and informal secondary and tertiary sector activities.

Given the relative lack of manufacturing and the high share of services in GDP (in 1982, 43% in Burkina, 47% in Mali, 39% in Niger, and 53% in Senegal), our maintained hypothesis is that private formal and public sector jobs, fueled to a large degree by foreign assistance, are generating 'ripple effects' of a large number of low-pay, informal service sector jobs. Below we show that the latter are important not only to the urban poor but also to the rural poor.

In section 2 we show that urban consumers have very different consumption patterns from those of rural groups in most of the Sahel; the share of imported rice and wheat is much more important in urban diets, both in the coastal Sahel and the interior. Nevertheless, imported rice consumption has penetrated quite deeply in diets in rural Senegal and Gambia.

1.3 Rural

There are three main agroecological zones, stretching across the Sahel in rainfall belts (isohyets). The characteristics of these zones are drawn from Matlon (1987; 1990) as well as household economy work in these zones based on the data described below. Income and consumption patterns for these zones are detailed more in section 2.

The most northern is the Sahelian zone, with secular rainfall range of 300-600. This zone is very poor agroclimatically, with extremely variable rainfall over years. Coarse grains and pulses are produced, with low yields per hectare. There are cropping season labor bottlenecks. Little animal traction is used. Very little area is irrigated. Cropping faces growing land constraints and degrading soils.

Livestock husbandry is widely practiced, but Gini coefficients for livestock holdings are much higher than for land or income. Husbandry faces degrading/disappearing commons.

Incomes tend to be quite diversified into non-cropping sources, especially local off-farm activities, livestock husbandry, and in particular, migration. Reardon et al. (1992a) found that cropping income composed only 49% of total household incomes in 1981-85 in the Sahelian zone of Burkina; migration constituted 10% of income (with peaks of 25% in deficit years). Fall 1991 found that cropping income was only 25% of income in northwest Peanut Basin in 1988/89; migration was some 6% of income.

The middle belt is the Sudanian zone, with secular rainfall range of 600-800. This zone is moderately poor agroclimatically, with very variable rainfall over years. Coarse grains and pulses are produced, with low yields per hectare. There are cropping season labor bottlenecks. Little animal traction is used except in Senegal and parts of Mali. Very little area is irrigated.

Livestock husbandry is less widely practiced than in the Sahelian zone, partly because cropping takes up a greater proportion of available land than in the north (there are severe land constraints), and partly because cropland and degradation have led to rapid reduction in grazing areas. During the last two big
droughts, large numbers of cattle were moved south and sedentarized there (Josserand 1987).

Incomes tend to be less diversified into non-cropping sources than in the Sahelian or Guinean zones. Migration is also relatively less important. Reardon et al. (1992a) found that cropping income composed 60% of total household incomes in 1981-85 in the Sudanian zone of Burkina; migration constituted only 2% of income. Kelly et al. 1992 found that cropping income ranged from 50 to 80% in two study zones in the central Peanut Basin of Senegal in 1988-90; migration was only some 3-4% of income; Hopkins and Reardon (1992) found that cropping constituted only 38% of total household incomes in the Sudanian zone of Western Niger in 1989/90, although migration composed 20% of income.

The southern belt is the Guinean zone, with secular rainfall range of 800-1100. This zone is moderately good agroclimatically, and considered 'high potential', although current performance is only moderate. The interannual variation in its rainfall is much lower than the other two zones. Coarse grains and pulses are produced, but a little rice and a lot of cotton is produced in Mali, Senegal, and Burkina. Yields are moderate. There are cropping season labor bottlenecks. Little animal traction is used, but more than in the other zones (with the exception of the Sudanian zone in the Peanut Basin of Senegal). Very little area is irrigated. Land constraints are less severe than in the other two zones, and the gap is growing as fertile land formerly plagued with tsetse and oncho is being freed from these and opened to settlement.

Livestock husbandry is now as important as in the Sahelian zone in most countries, partly because of lower population densities and adequate water sources, and partly because cattle from the north have increasingly been sedentarized in this zone.

Incomes tend to be as diversified into non-cropping sources as in the Sahelian zones, but the diversification is more related to the local dynamic cropping base, in downstream or upstream production linkages. Diversification also tends to be zone-oriented (migration is also relatively less important, except in Senegal). Reardon et al. (1992a) found that cropping income composed only 37% of total household incomes in 1981-85 in the Guinean zone of Burkina; migration constituted only 1% of income. Kelly et al. 1992 found that cropping income ranged from 50 to 60% in two study zones in southwest Peanut Basin and southeast Senegal in 1988-90; migration was only some 1% of income except in the southeast where it was 12 - 17%; Hopkins and Reardon (1992) found that cropping constituted 46-66% of total household incomes in the Guinean zone of Western Niger in 1989/90, although migration composed only 2-6% of income.

In general, the overall characteristics with the most import for assessing the impacts of SAPs are as follows:

(i) Production tends to be spatially-dispersed, with very high transport costs and poor road infrastructure (Badiane 1992).

(ii) Rainfall is highly variable, and production is risky. In Mali, Senegal, and Niger there has been some investment in irrigated perimeters for rice, but overall there is very little irrigation.
(iii) Land constraints are important in the two zones that are densely populated relative to their carrying-capacities (Sahelian and Sudanian).

(iv) About four-fifths of the rural Sahel population live in the Sahelian and Sudanian zones. The Guinean zone can support more population, and as human and cattle disease vectors are eradicated in that zone, rural-rural migration from the north is increasing.

(v) The highest cropping potential for both coarse grains, cotton, and rice is in the Guinean zone; the potential is relatively low for productivity or area gains in the Sahelian and Sudanian zones in these crops. Productivity gains require greater use of purchased inputs such as animal traction and fertilizer. (Hation 1990)

(vi) Incomes tend to be very diversified in the Sahelian and Guinean zones, with the former tending heavily toward migration, and the latter, local growth linkages with agriculture (with the exception of southeast Senegal where migration is also important).

2. DATA

The patterns are mainly drawn from detailed household panel surveys in Burkina Faso, Niger, and Senegal. We also draw on secondary data from other surveys. The propositions in section 3 are mainly based on the data sources below. Citations to the survey studies are made in section 3.

The rural Burkina Faso data come from the farm household survey conducted by ICRISAT.6 The survey covered four harvest-years (1981/82 – 1984/85, a period comprising both good and poor harvests). The sample included 150 households; 25 per village, with two villages per zone, in the three agroecological zones described above (Sahelian, Sudanian, Guinean).

The urban Burkina data come from the Ouagadougou household study conducted by CEDRES/University of Ouagadougou and IFPRI in one harvest-year (1984/85) plus one season in 1985/6. 84/85 was a period following a poor harvest but the season in 85/86 followed a good harvest, so there is significant price variation over the survey period. 125 households were enumerated.

The rural Niger data come from the IFPRI/INRAN survey conducted in two harvest years (1988/89 – 1989/90) in the three agroecological zones in Western Niger. 150 households were enumerated.

The rural Senegal data come from the IFPRI/ISRA survey conducted in two harvest years (1988/89 – 1989/90) in the three agroecological zones in the Peanut Basin and southeast Senegal. The survey also covered two secondary cities (Kaolack and Tambacounda). 360 households were enumerated.

3. PROPOSITIONS AND JUSTIFICATIONS

This section is organized into propositions and their justification, each of which follows the subsection title, a specific Structural Adjustment policy. When no source is given, the data cited are from section 2.
3.1.1 Devaluation

More than a dozen West African Francophone countries are members of the West African Monetary Union (WAMU). Its common currency is the Franc CFA, which has been held in a fixed relation to the French Franc for over 40 years.

A given Sahel country cannot devalue its currency without the WAMU doing it collectively, or without withdrawing from WAMU. Devaluation has not occurred under SAP in the last decade, but serious overvaluation of the CFA, combined with dependence on a number of wage-good imports, has created a climate in which there is heated debate concerning devaluation.

a) Devaluation would lead to increase in import prices (focus on rice, fertilizer, fuel)

In countries where rice imports are subsidized to consumers, the SAP policy of removal of this subsidy would have an effect in the same direction as devaluation i.e. to raise the domestic price of rice imports. The same goes for fertilizer and fuel (gasoline, oil). In this subsection we focus on rice and fuel as key popular (-wage-good) consumption products, and treat the fertilizer price issue in a later subsection.

i) ... Resulting in real incomes decrease from the demand side because of rice price increase:

* The effect is strongest in large cities both on the coast and in the interior, where rice constitutes from a third to a half of the cereal budget.

* Given Engel's Law (the proportion of food in the budget varies inversely with income), and that the working poor tend to consume rice substantially in prepared form from street vendors, the effect of the devaluation via rice price is regressive.

Reardon (forthcoming) makes a calculation of real income reduction (ceteris paribus) with a 50% increase in rice tariffs, which would be approximately equal to a 50% devaluation (a low figure compared to most devaluations in Africa in the last decade):

Suppose (from the urban Burkina study figures) that 50 percent of the poorest tercile's cereal budget goes to rice, and 50 percent of the food budget to cereals, and 60 percent of the household's overall budget to food. That means that 15 percent of income is spent on rice. A 50 percent tariff increase ceteris paribus would increase the share to 22 percent. The increase in the share (of 7 percent) is equivalent to the share n total expenditure of transport or fuel. By contrast, the richest tercile only spends 7 percent of its total expenditure on rice, so the effect of the tariff would only affect 3 percent of its total expenditure. Recall that the latter is thrice the size of that of the poorest tercile. Hence, although the absolute real income effect is greater for the richest tercile, the relative income effect is twice greater for the poorest tercile. It is the relative effect that is most worrisome because the poorest tercile is so close to bare survival. (Reardon, forthcoming, page 26)
Reardon (forthcoming) assembles recent evidence showing that secular increases in imported rice consumption in the Sahel are driven by two sets of factors:

* urbanization and attendant structural changes, in particular: (a) increases in the opportunity cost of women's time, and hence the need for cereal that can be processed and cooked more rapidly (rice's advantage over coarse grains) and (b) urban poor men tend to be far from home at noon and need a cheap prepared dish; rice dishes sold by street vendors fit the bill (and rice preparation costs give it the advantage from street vendors' perspective as well);

** the relative dearth, in the short run, of cheap and feasible methods of processing coarse grains for the mass market.

These two factors explain the relative insensitivity of rice consumption to changes in rice or coarse grain prices, a point borne out by the few survey studies that have addressed it. This provides support for the view that when devaluation raises the imported rice price, in the short to medium run (i.e. until processed and prepared coarse grain alternatives are made available) the above real income effects will hold.

* Yet the rural areas of the interior would be relatively unaffected (directly) (as less than 5% of the cereal diet in rural Burkina or rural Niger in the study zones). But those of the coastal Sahel would be severely affected.

In many areas of rural Senegal, for example, the share of rice in the cereals budget approaches the proportions found in Sahel cities. The rural towns and farm households in the northern Peanut Basin rely most heavily on rice (60-70% of cereal calories).

For the other rural study zones in Senegal, the share ranges from 10 to 30%, dropping as one goes southeast into more fertile and distant zones. In general, unlike the situation in urban areas, the share of rice in the diet increases with income.

Hence, there will be negative real income impacts in coastal rural areas, inversely related to agroclimatic level of the zone, and positively related to income level.

* Yet devaluation might have important direct effects on the maize price to the extent maize is traded. There is evidence7 that substantial maize is imported from coastal countries to Sahelian and Sudanian zones of Niger and Burkina Faso in cropping-deficit years. Apparently the imports come for the most part from Nigeria and Ghana for Niger and Burkina, respectively. The former two are non-CFA countries, and devaluation of the CFA would mean dearer maize in rural areas in deficit years.

Given the importance of maize in coarse grain net purchases in deficit years (around 40%, see sources cited in endnote 7), and the importance of the share of net grain buyers in the population, and the share of their diet from net purchases, the negative equity effect of devaluation could be important.
On the other hand, there could be a positive efficiency effect, but in the Sahel Guinean zone this time, from devaluation. The latter would make Nigerien and Burkinabe maize cheaper in northern Ghanaean and northern Nigerian markets, and may then expand outlets for and profitability of maize production in the Guinean zone. Nation (1990) identifies maize as having high potential for such increase if incentives and capacity were present.

* Wheat products form a very small part of the urban diet, increasing strongly with household income, so a devaluation would only have a weak urban effect, and a progressive one, via the wheat price. Wheat products are very minor in rural diets.

* Finally, it is worth worrying about the inflation effects over the medium run caused by devaluation, and the attendant exacerbation of the above regressive equity effects. We do not explore these here, but cite Berg et al. 1990:

> Very few African countries south of the Sahara have been able to contain the inflationary effects of nominal devaluations. A real depreciation of the currency has been sustained in most cases by repeated nominal devaluations (Berg et al. 1990, page 21).

Peru’s case is telling: with devaluation and attendant inflation in the first half of the 1980’s, real wages dropped by a third, leading to severe urban unrest (Thorp 1991).

ii) ... Possibly resulting in derived increases in domestic coarse grain prices:

* We perceive the conventional wisdom in the Sahel as being that increases in imported rice prices would have immediate strong impacts on coarse grain prices. Very little empirical research has been done for the Sahel on the determinants of grain prices, and transmission effects of macro policy changes on sectoral prices. Hence, the debate is still at the stage of conjecture with respect to how devaluation would affect local coarse grain prices.

Two factors lead us to doubt that the transmission effect will be strong or immediate:

(a) As mentioned above, urban rice demand appears to be relatively insensitive, at least in the short run, to the rice price or to coarse grain price changes. The urban cross-price elasticities appear also to be insignificant or even negative (Reardon, forthcoming).

(b) It appears that high transport costs relegate rural coarse grain price formation to the zone level, where harvest volume, determined mainly by rainfall, is the strongest effect on price formation.

* By contrast, if the devaluation effect is indirectly transmitted to coarse grain prices, this would hurt real incomes of the substantial numbers of net buyers in both interior and coastal rural areas in the short to medium run (assuming no strong productivity/supply response in that period).

Examples: Dione (1989) found that in 1985/86, 39 % of sample households were net buyers. Reardon and Mercado-Peters (1991) found for 1981-85 for the Sahelian and
Sudanian study zones of Burkina (where reside 85% of the rural population), that 65% of households were net buyers. 60% of the cereal diet of the net buyers in the Sahelian zone came from purchased coarse grains (maize important among them, though not produced in the zone) over the period. Hopkins and Reardon (1992) found that in 1989/90 in the Sudanian zone of Western Niger, 85% of households were net crop buyers, and in the Guinean zone, the figure was 79%.

* Based on classical Ricardian reasoning concerning the effects of 'food bottlenecks' on real wage costs to non-agricultural employers, and Ranis-Fei's extension of that to agricultural costs, we can expect that rural wages will be driven up, reducing competitiveness of export crops, increasing food costs in urban areas, and stymying the development of 'intersectoral growth linkages' (Lele/Hellor 1981). Delgado (1991) stresses that this can have negative effects in the long run on the potential for Sahel livestock exports to the humid coast and abroad.

* On the other hand, if there is transmission, there will be higher nominal incomes for coarse grain producers in the short run. The key issues will then be the short and medium term aggregate supply responsiveness of agriculture.

Matlon (1990), arguing mainly from Burkina data, and Martin (1988), arguing mainly from Senegal data, contend that aggregate supply responsiveness is quite limited in all zones in the short run, and in all but the Guinean zone in the medium run. Commander et al (1989) contend, using time series evidence, that the aggregate supply response, as well as the peanut supply response, are quite constrained in Senegal.

The reasons include land constraints and structural constraints in production. The latter will require investments by farmers in more animal traction, fertilizer, and small-scale irrigation, and by the State in roads and extension.

* We also stress that if there is a transmission effect (of devaluation via rice prices on coarse grain prices), the implied increase in the average medium-term incentive does not solve the fundamental problem of high risk and interyear instability. Sahel farmers are forced by risk to have a short planning horizon, and hence cannot afford to make decisions based on longer term average.

The facts bear out that the farmer believes that income smoothing and hence medium term food security requires income and asset diversification. In that setting we could imagine a backward bending supply response for coarse grains, while producers at least in Sahelian and Sudanian zones put resources into non-crop activities or insurance activities such as husbandry.

iii) The devaluation will increase (imported) fuel and vehicle prices. As these together form about 15% of the poor tercile's budget in Ouagadougou (Reardon et al forthcoming), this will have a significant direct impact (again, in absolute terms, smaller for the lower than for the upper tercile, but larger in relative terms).

But the general effects on price instability and supply response, via increasing transaction costs, may be more important. With high transaction/transport costs driving import and export parity prices far apart, there is relative 'enclavement', and local prices tend to be quite volatile.
It is plausible to expect that an increase in transport costs will increase the 'enclavement', and lead to even higher price instability hence risk, and to higher transaction costs. Beside the well-known negative effects this has on cropping productivity investments (Newbery and Stiglitz 1981), the larger price band also discourages supply responsiveness of farmers (de Janvry et al. 1991).

Note also that the ensuant increases in transport costs from devaluation might counterbalance the reduction in transaction costs from deregulation of cross-border trade, a key element of the SAP in Niger.

iv) With respect to export crops, the effect of the devaluation will depend on the following:

If the country is a price taker -- Small country assumption -- (e.g. cotton from Burkina, or livestock from Niger), then it faces a given world price for cotton in dollar terms. A devaluation would increase the number of FCFA that the producer or marketing board or both could earn. The equity impact would then depend on the distribution of the gain.

If the country can influence the product's world prices in dollar terms -- 'Large country assumption' (e.g. peanuts from Senegal; or perhaps cowpeas in Niger), then keeping the price fixed in CFA terms to the producer means that the exporter can sell at lower dollar price. This may be the needed edge for Senegalese peanut exporters to undercut competition.

But if the local price does not rise, then incentives to shift into peanuts or cotton will be smaller, and terms of trade effects (from importable prices rising) may even impoverish export croppers. If local prices do rise, and as most of the export croppers also grow coarse grains, then the price of coarse grains will rise unless there is an aggregate supply response.

Whether the export demand elasticity with respect to the dollar export price is sufficiently large so that the revenue effects are dominant, is an issue beyond the scope of this paper. See for example Badiane and Kinteh 1992 for the case of Senegalese peanut exports.

* Other longer term issues of supply response and export demand include tourism in Senegal and uranium in Niger; we do not explore those issues here.

3.1.2 Devaluation combined with public spending cuts

i) The transport cost point above is exacerbated with dearer imported road machinery, vehicles, and with fewer public workers repairing roads.8

ii) As shown above, substantial income diversification, including migration, and the high share of net cereal buyers, means that 'ripple effects' from urban public spending cuts, and the general short-term contraction from devaluation, affect the demand for informal services and manufacturing in urban and rural areas, both of which can cut deeply into rural food security.

This intersectoral consideration is absent from the SAP policy debate, but we contend that the effects might be substantial in rural areas. Substantiation of
this point relies on quantification of the 'ripple effects' (multipliers of public spending in informal sector activity), and we know of no such estimates.

Part of the reason for the neglect of the link is, we believe, because of the traditional view of rural Sahelians as only farmers, depending only on cropping for food entitlement. Both the evidence of net buyers and of income diversification reverse this perspective, ushering in urban-rural linkages and intersectoral linkages into the SAP debate.

3.2 Elimination of fertilizer and credit subsidies

Commander et al (1989), Kelly and Delgado (1990), and Gaye (1987) have all traced the negative impact on use and access of the removal of the subsidies (via State marketing) on fertilizer and credit in Senegal over the last decade. This is clearly a simple price effect.

Part of the reversal of that effect in the medium run depends on the response of private merchants to the profit opportunity. But there are significant transaction costs and demand side constraints to this. (see Kelly 1988).

Part of the demand-side problem is that credit price increases (relegating users to private sources only) reduces the ability of farmers to buy inputs. Given severe constraints in the informal credit market, households have to rely mainly on own-liquidity. Even in cash crop areas, this is mainly composed of off-farm earnings (see Reardon and Mercado-Peters for the Burkina case). On the other hand, access to off-farm jobs is a positive function of income and wealth levels in the Sahel (see Reardon et al 1992), and so the credit-constraint will tend to further constraint access to purchased inputs to the rural poor via the income diversification constraint.

4. CONCLUSIONS

The advocates of SAPs have the high ground in that it is clear that there are very severe fiscal and balance of payment deficits, structural inefficiency, and currency overvaluation in the Sahel.

On the other hand, we have contended that the short and even medium term effects of devaluation and subsidy cuts can be quite negative. Rather than arguing that there is no need for more efficiency, or a reversal of overvaluation, or more health in government budgets, we argue that one should be very careful to perceive SAP measures as panaceas, or even as positive without certain concomitant, and perhaps prior, public and private investments in structural change.

The latter suggests the search for concomitant measures. First among these would be key investments in reversing structural constraints to agricultural supply response, especially in the high potential Guinean zone.

Second is investment ways to make coarse grain processing cheaper and more accessible so that local grains can gradually replace rice as the grain that meets the needs of the poor in growing cities.
Third is investments in infrastructure and transport, and certainly a protection from spending cuts in this domain, so as not to allow devaluation and public spending cuts to increase price instability and transaction costs, thus choking off supply response.
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Kelly, V. and C. Delgado...


ENDNOTES:

1. The "Sahel" is here considered as the West African political grouping of countries in the CILSS (Burkina Faso, Cape Verde, Chad, the Gambia, Mali, Mauritania, Niger, and Senegal. The West African Semi-Arid Tropics (WASAT) is the agroecological term that covers the Sahel, plus semi-arid areas of coastal countries, such as Northern Nigeria. The SAT are areas where rainfall exceeds potential evapotranspiration two to seven months of the year. About 2/3 of the land area of West African countries is in the WASAT. About 1/4 of the semi-arid population of the world is in the WASAT. (Norman, Newman, and Ouedraogo, 1981).

2. See e.g. Berg (1990) for a discussion of such factors in Senegal.

3. Berg et al. (1990) point out that the GDP shares are underestimates because agricultural output is evaluated at farmgate official prices, which are often well below market prices, and because agricultural processing is counted as part of industry. We would add that there is a great deal of informal activity in rural areas upstream and downstream from agriculture, that escapes national accounting (see Reardon et al 1992b).

4. Delgado and Mellor (1984) hypothesize that foreign assistance in the Sahel pushes urban wages well above rural wages and thus creates a 'dutch disease' situation, moving resources from agriculture.


8. This appears to be the case to the authors in observing the worsening state of roads in Niger and Senegal in the last five years, and complaints from local people about fewer road crews and repairs.