"Operationalising Pro- Poor Growth"

A joint initiative of
AFD, BMZ (GTZ, KfW Development Bank), DFID, and the World Bank

A Country Case Study on Burkina Faso

Michel Grimm and Isabel Gunther

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How to achieve pro-poor growth in a poor economy
The case of Burkina Faso

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Executive Summary

Burkina Faso is a Sub-Saharan, landlocked country, with very limited rainfall, very weak natural resource endowments and with a low human as well as physical capital stock. As a mainly agricultural and cotton exporting country its economic performance depends heavily on climatic conditions and the world market price for cotton. Public revenue is for a large part financed through external aid. Despite the significant economic growth achieved during the last ten years - partly attributable to the currency devaluation in 1994, a favorable development of the world market price for cotton and structural adjustment- and a steady increase in social expenditure, official poverty estimates suggested that poverty did not decrease during that period, but stagnated at a high level with roughly 45% of the population being poor. Hence, the question aroused: Why did the poor not benefit from growth and what should be done so that growth becomes pro-poor in the future?

To answer this question first we carried out a reassessment of poverty and inequality trends. Past estimates were mainly affected by three sources of bias: changes in the household survey design, changes in the methodology used to compute household expenditure aggregates, and high relative price variations over time, which were only imperfectly taken into account for the computation of the official national poverty line. In our estimations we corrected these biases as most as possible and estimate that poverty as measured by the headcount index increased strongly between 1994 and 1998 from 55.5% to 61.8% but then decreased substantively between 1998 and 2003 to 47.2%. In rural areas we find roughly the same dynamic only on a higher level. Although through out all three survey years poverty in urban areas remained always significantly lower than in rural areas, we state that urban poverty rose from 14.7% in 1994 to 27.3% in 1998 and then decreased to 20.3% in 2003. Therefore, in contrast to rural areas and despite the fact that it decreased significantly between 1998 and 2003, urban poverty in 2003 was still substantially higher than in 1994.

Between 1994 and 1998, inequality as measured by the Gini coefficient increased from 0.45 to 0.50 in urban areas, but decreased significantly in rural areas from 0.39 to 0.35 and on a national level from 0.47 to 0.45. Thereafter between 1998 and 2003, inequality stagnated more or less in urban areas, increased again to 0.39 in rural areas but remained constant on a national level. To conclude, growth between 1994 and 2003, as measured by the growth-elasticity of poverty as well as by the pro-poor growth index, was moderately pro-poor on the national level and in rural areas but not so in urban areas. The growth and inequality decomposition of poverty further revealed that even the only slight decrease of national inequality over the whole observation period contributed substantially to poverty reduction.

This dynamic is quite different from the one presented so far by official estimates. But for the sub-period 1994 to 1998 the puzzle still remained: Economic growth of GDP per capita and declining inequality on the national level did not lead to any poverty reduction during that period. The reason behind this ‘phenomenon’ is actually that the nominal poverty line increased much faster than the general consumer price index (CPI). Analyzing the price changes of items particularly consumed by the poor, we stated that the prices of those items, increased indeed much faster than the CPI. Abstracting away the relative increase of basic food items and focusing only on the performance of CPI deflated per capita household expenditures growth would then have been pro-poor in absolute terms between 1994 and 1998 at least on the national level and in rural areas. Put differently, we would obtain a rise of real per capita expenditure of the poor and hence a poverty reduction if we used the ‘inappropriate CPI’ as a deflator, but obtain correctly a decline of real per capita expenditure and a poverty increase if we use a more appropriate price deflator accounting for the observed consumption basket of the poor. To sum up, a decline in the purchasing power of the poor and hence decreasing real per capita expenditures, led to a rise of poverty between 1994 and 1998. The driving force behind this relative price swing was in particular the 1997/98 drought which preceded the household survey of 1998 and makes this survey to an ‘outlier year’ with respect to both other surveys. Additional explanations for the inflationary surge of food staple prices are the lack of productivity increases in cereal production accompanied by high population growth and intra-annual price fluctuations. We also show that most rural households are net buyers and not net sellers of cereals, and therefore for most households the net effect of rising cereal prices is negative.

The link between sectoral growth rates and the respective household incomes is generally weak. The exception is the food crop sector where during the whole observation period, the sectoral growth rate was translated almost one to one into growth of household incomes. In addition the Burkinabè economy was affected by several macroeconomic shocks which had rather positive effects on macroeconomic growth, but at least in the short and medium term adverse effects on poor households’ incomes, and especially in urban areas. Moreover, the crisis in Côte d’Ivoire, which led to a collapse of remittances and remigration of Burkinabè back from Côte d’Ivoire prevented poverty to decrease more remarkable.

Agriculture is the most important sector of Burkina Faso’s economy, accounting for around 30% of GDP, for about 80% of the Burkinabè workforce and for more than 90% of the people living below the poverty line. In total, between 1994 and 2003 the rural sector has done relatively well but was also characterized by high income variance across time, space and sectors. For instance, we state a very different dynamic of the subsistence and the cotton sector, with the latter growing much faster during the last decade. Having been the motor of agricultural growth, the cotton sector has also been the agricultural sector which has received most attention of the government. However, growth in the cotton sector directly only benefited a fifth of rural households and had rather low positive spill-over effects on subsistence farmers, which still represent the majority of the rural sector. Those food crop farmers, not connected to international trade, experienced much lower growth rates, which was mainly due to low productivity increases, which in turn was the result of a lack of investment. Among other things, this was caused by a limited access to finance but also by the high risk of rural investments given the annually fluctuating climatic conditions. In addition to inter-annual production and price variations, the intra-annual production and price fluctuations further increase the volatility of rural incomes.

Turning to the urban labor market, we state that in the early 90s, urbanization and migration from rural to urban areas exerted substantive pressure on urban labor markets. However, with the favorable development of the cotton sector rural-urban migration decreased, but still remains at a high level. Labor market participation increased substantially after the devaluation, due to stagnating and in some cases even declining real earnings in the public and private formal sector. In both sectors, wages were not indexed to inflation and were only slightly adjusted after the devaluation. The decreasing purchasing power of the public and private formal employees in turn lowered earnings in the informal sector. But this effect was at least partly offset by a substitution of imported goods with domestic goods. Hence, earnings in the informal sector evolved better than those in the formal sector, but of course on a much lower level and, in consequence, poverty did only decline after 1998. Higher labor market participation further lowered wages and also led to a rise of unemployment. The private sector knew a slight boom after the devaluation but did not increase its labor demand after 1998. In addition, privatizing of public enterprises led to some layoffs, but less than initially expected. Working conditions worsened for many employees, e.g. a much higher proportion of the labor force is now confronted with short term working agreements increasing the vulnerability of urban households.

Much has been written in the past 15 years on what should be done in Burkina Faso to accelerate social and economic development and most of the advice given has still its legitimacy. However, past studies were less focused on pro-poor growth and the distributional impact of policy reforms, set seldom priorities and were based on a biased ex-post poverty assessment. We think that Burkina Faso's development in the next 10 years should be based on rural development, because, first of all, still most of the poor are situated in rural areas. In addition, indirect growth effects through growth in other sectors were found to be very low at least at this stage. Our analysis also shows that rural growth is also more pro-poor within itself than growth in other sectors, i.e. growth in the food-crop sector transfers best into higher household income of households employed in that sector. Finally, agricultural development has also positive effects on the urban (informal) poor, since it decreases prices of food staples mainly consumed by the poor, it increases the demand for locally (informal) produced goods and decreases the pressure of rural-urban migration on informal wages.

Rural development policies should not only address cotton farmers but also and especially food-crop farmers and producers of livestock. The most critical point in fostering broad-based rural development is to further invest in agricultural production but with more emphasize on staples as well as non-farm income activities to diversify rural incomes to further reduce the income risk of farmers and to invest even more than currently done in rural infrastructure to integrate markets. Policies could also consider to temporarily and cautiously stabilize prices of certain products the poor produce and consume or to subsidize agricultural investments and inputs. But, even if we think the country's development cannot solely be based on cotton exports, a reduction of the cotton subsidies in the U.S.A., China and the E.U. can make a non-negligible contribution to a further poverty reduction in Burkina Faso.

For urban areas, where the challenge is to prevent a further increase of poverty, likewise we consider investment in infrastructure and measures which reduce the risk of those engaged in the informal sector as the most important issues in the next years. Long term policies should of course aim to increase the formal secondary sector by developing value chains and by creating the appropriate legal framework, which makes the transition from the informal to the formal sector more beneficial for urban enterprises. Investments in education and health should of course be pursued and even intensified, but they should not crowd out investment in productive infrastructure. Infrastructure is a prerequisite for private investment and without private investments the return to increased human capital as well as the demand for social infrastructure will be low.

Of course, our suggestions might raise the question how these investments could be financed. However, we think that a more efficient system of taxation and redistribution and a reallocation of investments should deliberate non-negligible resources, i.e. existing resources (including the current level of foreign aid) if better allocated should allow to improve productive public infrastructure. In addition, a further effort has to be made to use the HIPC resources more efficiently. In the past, resources could not be absorbed because of missing investment projects and institutions being too weak to realize the existing ones. Finally, the elaboration of this study has prominently shown how important reliable National Accounts and household survey data are. The current data availability is surely much better than in many other Sub-Saharan African countries, but it is worth to improve the data quality on all levels.

Introduction

1. Macroeconomic data suggests that over the last decade Burkina Faso has known relatively strong economic growth and good macroeconomic performance. Since 1991 the country has implemented a wide range of economic reforms in the framework of stabilization and structural adjustment programs. Real GDP per capita began to rise after the devaluation of the CFA Franc in January 1994 and growth averaged 2% per year between 1994 and 2003 (IAP, 2004).[1] This good growth performance seems—according to the IMF—to be attributable, among other things, to the gains in competitiveness following the devaluation, the large public investment program (mainly externally financed), and the financial and structural policies (including price and trade liberalization) aimed at consolidating the market orientation of the economy and maintaining macroeconomic stability (IMF, 2003a).

2. However, despite the significant growth achieved and a steady increase in social expenditure, Burkina Faso remains one of the poorest countries in the world. Real GNI per capita was estimated at US$220 in 2002. On the basis of its Human Development Index, the country was ranked 164th out of 168 countries (UNDP, 2003). Official poverty estimates suggested that poverty did not decrease during the last ten years, but stagnated at a high level, with roughly 45% of the population being poor (INSD, 2003).

3. Therefore a key question, which has to be addressed, is why the poor did not benefit from macroeconomic growth and what should be done in the future so that growth becomes 'pro-poor'. The first part of the question has to be analyzed around two aspects. First, how robust are the official poverty estimates with respect to the household surveys used and the definition of the poverty line but also how robust is official national accounts data on GDP and population growth? Second, what have been the sources of growth, which socioeconomic groups benefited from it and why have other groups not participated in growth? Given that Burkina Faso takes part in the PRSP initiative, the analysis of these questions is of course of strong political importance.

4. The reminder of the paper is organized as follows. In Section 1 we provide a description of the country's historical and economic context and its initial conditions. Furthermore, we present the growth, poverty and inequality trends over the past ten years and check their robustness. In Section 2 we investigate the sources of growth and link them to inequality and poverty trends. We also draw growth incidence curves and compute pro-poor growth indices to see which percentiles of the income distribution benefited from growth. In Section 3 we analyze how different sets of policies facilitated or hampered the participation of the poor in the growth process. Given the country's economic context we focus in particular on rural development and labor market issues. In Section 4 we make an attempt to explore whether there are any trade-offs between growth and pro-poor growth. Finally, in Section 5 we derive, based on the former sections, policy recommendations on how to achieve further growth and especially pro-poor growth.

[1] IAP stands for 'Instrument Automatisé de Prévision'. It is a macroeconomic consistency framework based on National Accounts data developed by the Burkinabè Ministry of Economy and Development with technical assistance of the German 'Gesellschaft für Technische Zusammenarbeit' (GTZ). For details see Appendix D.

1. Description of the historical context and growth, poverty, and inequality trends

1.1. Broad political and macro-economic evolution since independence[2]

From independence to the revolutionary period, 1960 – 1980

5. After Burkina Faso gained independence from France in 1960 real GDP per capita declined on average by –3.7% per year. The economy started to recover in 1966 but not before 1980 did GDP per capita again reach its level of 1960 (Summers-Heston Penn World Tables Release 6.1, 'PWT 6.1' hereafter). During this period the economic policy pursued by the Burkinabè authorities was based, as in most Sub-Saharan African countries, on the development of a large public sector. Public monopolistic companies exported few raw materials, especially cotton. The country imported some goods of first necessity and put otherwise high tariffs on trade. The economy suffered from these distortions as well as from a producer cotton price disconnected from the world market price and relatively high salaries in the public sector.

The revolutionary period, 1981 – 1986

6. In 1981, after frequent changes in government, the military took power and set a first end to the democratic experience of Burkina Faso. In 1983 an insurrection brought Thomas Sankara to the top of the state. He represented a rather populist policy, putting forward social justice and national independence and giving more attention to the poor population.[3] The agricultural sector was characterized by the organization of farmers in production units, but with rather limited access to small credits on the capital market. Prices for agricultural products were fixed at such levels that they guaranteed a more equitable payment to the producers; however with the exception of cotton these measures were not very efficient. The government invested heavily in the education and health sector, started high labor intensive infrastructure projects and implemented a land reform, which mainly aimed to tackle the problem of internal migration. The policy was intended to be participative, but in fact went against most existing institutions and did not leave much place for private initiatives. The development strategy was based on central planning and pervasive controls that resulted in large macroeconomic imbalances and a continuing accumulation of arrears in foreign and later also internal debt service. During this period, real GDP per capita grew by approximately 2.9% per year (PWT 6.1), but was characterized by strong fluctuations, partly due to fluctuating cotton prices.

The period of political normalization, 1987 – 1991

7. Given the falling cotton price, increasing debt and stagnating public revenues, the country ran more and more into economic difficulties. Despite these problems real GDP per capita rose by approximately 6.4% per year between 1987 and 1991. This evolution was however again marked by substantial fluctuations (IAP, 2004). In 1987 the actual president Blaise Campaoré took power, turned away from the Sankaraian policy and started to undertake reforms in accord with the IMF and the World Bank.

The period of structural adjustment, 1991 – 1999

8. The first Structural Adjustment Program (SAP) was signed in 1991.[4] Given that Burkina Faso, due to its participation in the CFA Franc zone, showed already relatively modest public

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[2] This section draws heavily on Konaté and Raffinot (1998), Savadogo, Coulibaly and McCracken (2002) and IMF country reports of several years.

[3] One year after the revolution the country adopted 'Burkina Faso' as the country's name. Until August 1984 its name was 'Upper Volta'.

[4] End of the sixties and in 1983 the government already undertook 'auto-adjustment programs' to stabilize the economy.

expenditure and monetary stability, the most important element of the SAP was the liberalization and privatization of the economy. An original feature of the Burkinabè SAP was that right from the beginning some attention was paid to the consequences of the adjustment process for the poor. But despite the SAP, real GDP per capita declined between 1991 and 1993 by approximately -3.8% per year (see Figure 1). Finally, the failure of the internal adjustment strategy in several countries of the CFA Franc zone and especially in one of the most important ones—Côte d'Ivoire—led to a 50 percent devaluation of the CFA Franc parity in relation to the French Franc in January 1994. After the devaluation, real GDP per capita growth began to rise and averaged at approximately 3.3% per year between 1994 and 1998 (IAP, 2004). This growth was furthermore encouraged by a favourable development of the world market price for cotton and a multiplication of the sole used for cotton production.

[insert Figure 1]

Recent developments

9. During the last years Burkina Faso pursued its efforts for structural reforms in particular concerning its price and trade liberalization. Burkina Faso established its first PRSP in May 2000 (Ministère de l'Economie et des Finances, 2000).[5] The country reached its completion point in the HIPC II Initiative in April 2002. Real GDP per capita stagnated in 2000 (due to a drought year and a terms of trade shock), but then again reached a growth rate of around 2% (IAP, 2004). Since December 2001 Burkina Faso is confronted with the adverse effects of the Ivorian crisis. However, recent estimations forecast growth in 2003 to be around 6.8% due to, among other things, a very good harvest and a relatively quick adjustment of the country's import and export channels by using for example the harbours in Ghana, Benin and Togo. The most critical point seems to be the decrease in private workers' remittances and the migration back to Burkina Faso. It is estimated that migration added roughly 3 percentage points to the projected demographic growth rate of 2.4% depressing the estimated growth rate of GDP per capita for this year to only 1.4% (IAP, 2004). It is worth to emphasize that in Burkina Faso over the whole period from 1960 to 2003 real GDP per capita grew by only 57.5% or, put differently, on average by only 1.1% annually (PWT 6.1 and IAP, 2004).

Social outcomes

10. The rather weak economic performance of Burkina Faso over the last decades is also reflected in the level of any social indicator. And although throughout the 1990s Burkina Faso gave great priority to the education and health sector, in 2003 the literacy and primary enrollment rate was still at a low 21.8% and 42.9% respectively (INSD, 2003). Likewise, Burkina Faso's health indicators are still some of the worst even for Sub-Saharan African standards (Ministère de l'Economie et des Finances, 2000). Also, whereas 'already' 90% of the population had access to drinking water in 1998, access to electricity remained a major problem with only 34% of urban and 1% of rural households having access (INSD, 1998). Although, as we will show later,, Burkina Faso knew substantial improvements in social indicators between 1998 and 2003 (see Section 1.3), the country is still far behind most of the targets fixed in the 'Millennium Development Goals-Initiative'.

Governance

11. According to the 'Governance Indicators' established by Kaufmann, Kraay and Mastruzzi (2003) Burkina Faso made progress on all levels surveyed, but remains still in the negative part

[5] The first PRSP Progress Report and the related Joint Staff Assessment were presented to, and endorsed by, the Boards of the World Bank and the IMF in November 2001 and December 2001 respectively (Ministère de l'Economie et des Finances, 2001; IMF/IDA, 2002). The second and third progress report followed in November 2002 and March 2004.

of the defined range, which runs from -3 ('bad') to +3 ('good'). More precisely, the country is ranked as follows: 'Voice and Accountability' -0.44 (1996) and -0.27 (2002); 'Political Stability' -0.50 (1996) and -0.10 (2002); 'Government Effectiveness'-0.75 (1996) and -0.69 (2002); 'Control of Corruption' -0.29 (1996) and -0.04 (2002) (see also Section 3.4).

1.2. Structural features of the Burkinabè economy

12. According to National Accounts Data, agriculture accounted for 36.8% of total value added in 2003 (of which a quarter to a third concerns livestock production). In the same year the secondary sector accounted for 19.5% and the tertiary sector for 43.7% of value added. In the secondary sector the most important sectors were the food industry (approximately 10% of total value added) and the construction and public works sector (5%). In the tertiary sector the most important activity concerned trade and services (market and non-market 20% of total value added). The shares in total value added of the primary, secondary and tertiary sector did not change significantly since the early nineties. The share of the primary sector remained more or less constant, but knew high fluctuations. The secondary sector lost slightly in weight whereas the share of the tertiary sector increased a bit (IAP, 2004). Therefore structural change seems to be very slow. Overall, the structure of total value added depends mainly on the evolution of the primary sector which in turn depends heavily on weather conditions and the world market price for cotton, which also accounts for 56 percent of Burkina Faso's total export earnings and for 10 percent of value added in the agricultural sector, making GDP very sensitive to external price shocks. If instead of the shares of GDP we consider the shares of employed workforce in each sector, we note that roughly 92% of the workforce works in the primary sector and only 2% and 6% in the secondary and tertiary sector respectively. This confirms that the development of agriculture is of crucial importance for poverty reduction at least in the short and medium term.

13. In 2003, approximately 69% of total GDP were used for private and 21% for public consumption. 13% of total GDP were used for investment of which more than half concerned public investment, which in turn was mainly externally financed. During the last decade the share of public consumption decreased slightly, given the effort of the government to reduce public expenditure, whereas the share of private consumption increased.

14. The ratio of tax revenue to GDP was at around 8% in the beginning of the nineties and increased to only 11.1% in 2002 (IMF, 1999, 2003b), remaining substantially below the 17% level required to meet the convergence criterion in the West African Economic and Monetary Union (WAEMU). Given this very weak revenue collection, Burkina Faso relies heavily on external aid. External aid (official development assistance) reached more than 20% of GDP in the first half of the nineties, but decreased then to 14% in 2000. In 2001 external aid reached again 17% of GDP. The overall deficit is quite stable ranging at around 3% during the last decade. Excluding grants the overall fiscal deficit stood at 10.4% of GDP in 2002 (IMF, 2003a, 2003b).

15. External debt increased strongly during the last decade, but still remains lower than in many other Sub-Saharan African countries. Measured as a share of the sum of exports of good and services, the total external debt increased from 165% in 1990 to 400% in 1999. In terms of percentage of GNI it increased from 30% to 62%. Concessional debt in relation to total debt increased from 72% in 1990 to 82% in 1999. Total debt service increased from 1.24% to 2.54% during the same period (World Bank and Global Development Finance (SIMA)). In the framework of the HIPC II initiative, annual debt relief as a percentage of GDP amounts to approximately 1.8% (Bougouin and Raffinot, 2002).

After the devaluation in 1994, inflation measured as the increase in the general consumer price index (CPI) went up strongly, but was then relatively rapidly under control and remains below 5% since 1996 (IFS, IMF (SIMA)). The Ivorian Crises led to higher prices for some imported goods and intermediate inputs, but until now this seems to have no significant impact on the CPI. However, as we will show later, the CPI is a rather inappropriate indicator to estimate the development of the purchasing power of the major part of the Burkinabè population. Given that the CFA Franc is pegged to the Euro, over the last years the exchange rate increased against the US$. This evolution has some negative effects on the Burkinabè economy, because most of the cotton exports are traded in US$ whereas intermediate inputs for cotton are mostly bought in Euros and therefore part of the competitiveness which was gained through the devaluation in 1994 has already disappeared. After a massive increase in terms of trade following the devaluation, they are now again only slightly higher than in 1993. Besides the appreciation of the Euro against the US$, massive depreciations of some Asian and Latin-American currencies and the recent fall in the world market price for cotton are responsible for this loss in competitiveness.

16. Imports of goods and services as a percentage of GDP decreased from 25% in 1990 to 21% in 1992, went up to over 30% in 1998 and then decreased again to less than 25% in 2002. During the same period, exports oscillated between 10% and 13% principally in line with the world market price for cotton, the exchange rate and the prevailing harvest conditions (World Bank (SIMA); IAP, 2004). The principal import products in the year 2001 were capital equipment (30.9% of total imports), petroleum products (18.2%), food products (14.4%) and raw materials (9.8%). In the same year, the principal export products were cotton (58.6% of total exports), livestock products (18.9%) and gold (2.4%) (IMF, 2003b). Signs of a substantive diversification of exports -so often advocated- can until now not be observed.

1.3. Growth, poverty and inequality trends - A revised assessment

17. The first representative household survey on the national level measuring household expenditure and income in Burkina Faso was undertaken in 1994. It was then repeated in 1998 and 2003 (for a detailed description of the data, see Appendix A). Therefore, measures of poverty and inequality can only be calculated for the period 1994 to 2003. The trends of these measures can then be related to the evolution of real GDP per capita and real expenditure per capita of the private household sector as indicated by National Accounts on the one hand and to the evolution of average household expenditure as observed in the household survey data on the other hand.

18. It is very likely that the computed aggregates from household survey data will not exactly match the published National Accounts data, because of conceptual differences[6] as well as measurement errors on both levels.[7] However, for the case of Burkina Faso, one has to consider several additional measurement problems, which had a substantial impact on both poverty indicators as well as growth rates computed from household expenditures and therefore constitute a significant part of the official poverty dynamics so far stated.

[6] For instance, consumption in national accounts is typically determined as a residual and is thus contaminated by errors and omissions elsewhere in the accounts. In contrast, four sources of income/expenditure included in the National Accounts are usually only partly or not reflected in the household survey data: non distributed profits of enterprises, property income, taxes and transfers in nature from the government.

[7] In general, on the household survey side, there may be measurement errors, because it is difficult to get accurate responses from households concerning economic variables. On the National Accounts side, while supply-side information on output and income for some sectors is based on high-quality surveys or census data for agriculture and industry, information about subsistence farmers and informal producers is harder to obtain and usually of lower quality.

19. Previous poverty assessments were seriously affected by three types of bias: changes in the methodology used to compute household expenditure aggregates, changes in the household survey design, and high relative price variations over time, which were only imperfectly taken into account for the computation of the official national poverty line, which was therefore also subject to debate. In Appendix A we explain in detail how we recomputed time consistent consumption aggregates. Concerning the comparability of the different surveys we show in Appendix B that despite the differences in survey design from one year to another, a quite robust picture can be drawn for the whole period 1994 to 2003. Therefore, we argue that all three surveys should be taken into account to get a clearer picture of long term poverty trends and to examine the impact of all major macro-economic shocks and policy reforms which have taken place since the early nineties. The last issue concerns the official poverty line, which between 1994 and 2003 increased much more than the general Consumer Price Index (CPI), implying that the prices of the goods of first necessity and consumed by the poor increased faster than those of the goods consumed by the 'representative urban household' used for the computation of the CPI. Table 1 shows that the national poverty line increased by 76.9% between 1994 and 1998 and by 101.2% between 1994 and 2003, whereas the national CPI only increased by 22.7% and 31.4% between 1994 and 1998 and 1994 and 2003 respectively. In Appendix B we show that the sharp inflation of the poverty line between 1994 and 1998 is indeed justified given the massive price increase of cereals and the consumption pattern of the poor. However, the further inflation of the poverty line between 1998 and 2003 cannot be justified by observed relative price changes, and was actually caused by a change of the underlying consumption basket. Therefore, to be consistent over time, we take the poverty line of 2003 and deflate it to 1994 and 1998, using a constant consumption basket and applying the corresponding observed price changes, i.e. in contrast what was done when the official poverty line was constructed, we now use a true Laspeyres-Price-Index. Simply using the general CPI to inflate the poverty line over time would also clearly be not correct, because it would not take into account the specific bundle of goods the poor consume. For instance, the cereal share in the CPI is only 10%, whereas it is in fact 40% in the first two expenditure quintiles and still 20% in the fifth expenditure quintile of the household surveys. Hence, in what follows, we use our own revised expenditure aggregates and poverty lines, which allow a more consistent comparison of poverty and inequality measures over time. Finally, we base our conclusions, of course with the appropriate caution, on all three household surveys (1994, 1998 and 2003).

[insert Table 1]

20. Concerning the official estimates for GDP and GDP per capita, it seems that these indicators were largely overestimated in the year 2000, when Burkina Faso knew a severe drought. In contrast, the last revision of the National Accounts revealed that livestock production was underestimated during the last ten years. In addition, even the true rate of population growth is very uncertain. Especially the crisis in Côte d'Ivoire is estimated to have provoked a population growth rate in 2003 of over 5%, instead of the official rate of 2.4%, due to the remigration of many Burkinabè from Côte d'Ivoire. Again, all this should be kept in mind, when analyzing and confronting micro with macro data of Burkina Faso.

21. Table 1 presents our poverty assessment. On the national level the P0, the headcount index, that is the percentage of persons below the poverty line, increased strongly between 1994 and 1998 from 55.5% to 61.8% but then decreased also substantively between 1998 and 2003 to 47.2%, i.e. to a level lower than in 1994. We find the same trend whether we look at P1, the poverty gap, which is the average distance of the poor to the poverty line in relation to the poverty line or at P2, the severity of poverty, which also takes into account aversion against

inequality among the poor by giving more weight to the poorest of the poor. It is worthwhile to note that the poverty gap only ranges between 20.9% (1994) and 16.0% (2003) showing that on average the poor are very close to the poverty line, implying that the potential growth-elasticity of poverty should be quite high. In rural areas we find roughly the same poverty dynamics, but only on a higher level (63.4% to 68.7% to 53.3%). Although throughout all three survey-years poverty in urban areas always remained significantly lower than in rural areas, we find that urban poverty jumped from 14.7% in 1994 to 27.3% in 1998 and then decreased to 20.3% in 2003. Therefore, in contrast to rural areas and despite the fact that it decreased between 1998 and 2003, urban poverty in 2003 was still substantially higher than in 1994. The recent declining trend (between 1998 and 2003) in urban poverty is of course promising, but special attention should be paid to the urban sector, because the phenomenon of an 'urbanization of poverty' is now a common feature of several African countries (see e.g. Haddad, Ruel and Garrett, 1999; Grimm, Guénard and Mesplé-Somps, 2002; Azam, 2004). All these trends hold if we look alternatively at P1 and P2 or at the Watts Index, which is based on a different concept of poverty.[8]

22. The poverty trends are relatively robust to various poverty lines used. For instance, if we use alternatively the consumption basket of the poverty line suggested by the INSD in 1994 or that suggested in 1998, and inflate (deflate) it again with the appropriate price index (not the CPI), we find exactly the same dynamic, only on a lower level. Koné and Tesliuc (2004), who provide a poverty assessment for the period 1998 to 2003, compute a headcount index of 56.3% for 1998 and of 46.4% for 2003; hence finding roughly the same dynamic. They use a poverty line of 77,250 CFA F in 2003 prices to replicate exactly the official INSD poverty headcount of that year. Expenditures of 1998 were then inflated to 2003 using household specific price deflators (see also World Bank, 2004a).

23. Between 1994 and 1998, inequality as measured by the Gini-Index increased from 0.45 to 0.50 in urban areas, but decreased significantly in rural areas from 0.39 to 0.35 and on a national level from 0.47 to 0.45. Thereafter between 1998 and 2003, inequality stagnated more or less in urban areas, increased again to 0.39 in rural areas, but remained constant on a national level, indicating that between group (urban/rural) inequality decreased during that time, leading to constant national inequality rates despite increasing or constant within group inequality.

[insert Table 2]

24. Table 2 allows comparing the evolution of poverty and inequality with growth rates of GDP, GDP per capita, private consumption from National Accounts and household per capita expenditure from household surveys. According to the official estimates, real GDP grew between 1994 and 1998 by 5.3% per year, between 1998 and 2003 by 4.8% and over the whole observation period 1994 to 2003 by 5.1%. Taking into account population growth leads to per capita growth rates of 2.9%, 1.8% and 2.3% for the respective periods. National accounts indicate an even higher growth rate for real private consumption per capita for the period 1994 to 1998 (4.6%), but a lower growth rate for the period 1998 to 2003 (2.3%). If we applied a similar price deflator than the one used to compare GDP per capita over time (i.e. the general CPI) to per capita household expenditure (as observed in the household surveys), we would find a more or less similar trend and almost the same growth rate over the whole period 1994 to 2003. But as discussed above, the use of the general CPI is completely inappropriate to compare household expenditures over time, because it does not account for the observed consumption pattern of the households covered by the household surveys and thus cannot reflect correctly the development of their purchasing power. Hence, using decile and rural/urban specific price deflators, that is

[8] The Watts Index is the population mean of the log of the ratio of the poverty line to censored income, where the latter is the actual income for those below the poverty line and the poverty line for those above it (Ravallion, 2004).

accounting for the exact consumption baskets bought by households, we state that real household expenditures per capita decreased by –4.7% per year between 1994 and 1998 and increased by 5.6% per year between 1998 and 2003. Over the whole period this yields an annual growth rate of 0.9%. The substantive decline of the purchasing power of households between 1994 and 1998 and therefore the rise in poverty is first of all caused by the strong rise in cereal prices (see Figure 3). Again, cereals, mainly millet, sorghum and maize, constituted on average between 29% (1994), 47% (1998) and 37% (2003) of total household expenditure in the two lowest quintiles of the expenditure distribution and still between 13% (1994), 24% (1998) and 16% (2003) in the highest quintile of the expenditure distribution. In contrast, the CPI has only a cereal share of 10%. This kind of measurement problem is not specific to the Burkinabè case. Pritchett, Suharso, Sumarto *et al.* (2000), for instance, faced a similar problem when assessing changes in poverty in Indonesia after the 1997 crisis. Given the devaluation and the *EL Nino* drought, food prices increased from 1997 to 1999 by more than 160%, while non-food items of the CPI increased by 'only` 81%. Similar to our case, not accounting properly for the weight of food consumption in the budget of the poor would clearly have led to an underestimation of poverty. The authors found a difference between 'correctly' and CPI-deflated median expenditures of almost 10%.

[insert Figure 2]

25. As shown in Table 3, our revised assessment of monetary poverty is entirely in line with the development of various social indicators, which were computed using the same household surveys. For instance, enrollment rates in urban as well as in rural areas decreased between 1994 and 1998 and increased between 1998 and 2003. The share of persons living in a household where the household head suffers some serious physical handicap increased between 1994 and 1998 and decreased afterwards. Whereas living conditions, for example electricity connection or a comfortable access to (proper) water or toilet facilities, did not improve much between 1994 and 1998 (or even deteriorated), they improved substantially between 1998 and 2003. These results support our monetary poverty estimates and also show, besides the arguments given in Appendix B, that a quite robust poverty assessment can be drawn if all three household surveys are used; despite their differences in design. Again, the rise in poverty between 1994 and 1998 is mainly driven be the shift in the poverty line, a phenomenon which will be analyzed and discussed in more detail in the following sections.

[insert Table 3]

2. The link between growth, inequality and poverty

26. In what follows we analyze the link between growth, inequality and poverty. We start with an empirical analysis of the poverty and distributional impact that growth had in Burkina Faso during the last ten years, both on a national as well as on various disaggregated levels. Following, we attempt to link the Burkinabè growth pattern, looking at sector-specific growth rates, exogenous shocks and sources of growth, to household incomes and poverty changes; i.e. after looking at the magnitude to which growth has influenced inequality and poverty we try to analyze how and why the specific growth pattern in Burkina Faso has led to the observed inequality and poverty trends.

2.1. Impact of growth on poverty and inequality

2.1.1. Pro-poor growth indices

The growth-elasticity of poverty

27. As one can expect from the previous section, the growth elasticity of poverty, which describes the relationship between growth of GDP per capita and relative changes in poverty, was positive in the period 1994 to 1998 and negative between 1998 and 2003. For instance, Table 4 shows that between 1994 and 1998 one percent growth of GDP per capita on the national level was accompanied by an increase of 0.9% in the poverty headcount index. In rural areas this elasticity is slightly lower (0.7%) and in urban areas it is much higher (5.8%). In contrast, between 1998 and 2003 the respective elasticities are –2.9%, –2.7% and –3.2%, showing that during that later period macro-economic growth clearly led to poverty reduction. Over the whole period the growth elasticity of poverty is slightly negative in rural areas, i.e. macro-economic growth led to poverty reduction and slightly positive in urban areas, i.e. macro-economic growth was not sufficiently strong to reduce poverty. This shows what is today widely recognized, that the relationship between growth and poverty can enormously vary over time and space and that average elasticities derived from cross-country regressions as done by Dollar and Kray (2002), are of limited use. However, the computed elasticities do not at all question that growth is good for the poor, but rather that a country might face specific circumstances where macro-economic growth alone is not enough.

[insert Table 4]

Growth incidence curves

28. To analyze the pro-poorness of growth in more detail, we also constructed the so called 'growth incidence curves' (GIC). These curves draw for each percentile of the distribution of household expenditure per capita the corresponding growth rate for a given period of time. Figure 3 shows such a set of curves for the two sub-periods 1994 to 1998 and 1998 to 2003 and for the whole period 1994 to 2003. Moreover we present them separately for the national, the urban and the rural level. It is important to note that these curves rely on the axiom of anonymity, i.e. they reflect only deformations of the distribution over time, but contain no information on transitions in the expenditure distributions of specific households or groups of households. We again use decile and urban/rural household specific price deflators instead of the general CPI to compare per capita household expenditures over time. That means we account appropriately for the evolution of the purchasing power, given the household specific consumption patterns. Using household specific price deflators for the computation of the GICs seems to be particularly important in countries where we observe highly different consumption baskets across household groups combined with a high change in relative prices over time. Since the described characteristics often lead to a different inflation of the poverty line in comparison to the general CPI, this approach also ensures consistency with respect to the poverty line and other pro-poor growth measurements.

[insert Figure 3]

29. For the period 1994 to 1998 and for the national level, we state that over the whole expenditure distribution per capita household expenditure decreased. This should certainly be expected given the discussion above. But what is interesting to see now, is that up to the 85^{th} decile this decline was the stronger the higher the initial level of expenditure. Only above the 85^{th} decile the negative growth rate decreased in absolute value. So, in the sense of Ravallion and Chen (2003), growth was not pro-poor, independent of where we set the poverty line. In

addition, the mean of the percentile specific growth rates, which gives more weight to the poor because it is population and not expenditure weighted, lies below the mean growth rate, again indicating that growth was not pro-poor between 1994 and 1998. If we only look at rural households, we roughly obtain the same shape of the GIC. However, this time the percentile specific growth rates of the poor are above the mean growth rate over a wider range of the distribution and we do not observe the same massive 'up-swing' of growth rates at the upper-end of the expenditure distribution. So taking the relative concept of 'pro-poor growth', where growth is considered as pro-poor if the expenditures of the poor increase with a higher rate than average expenditures (see e.g. Klasen, 2003a), we have the somewhat 'perverse' result that growth was indeed pro-poor in rural areas, because richer households had to support heavier relative declines of their expenditures than the poor. Of course, given that we speak here of negative growth rates, we should be careful with the term 'pro-poor'. In urban areas, the GIC looks completely different and is in absolute as well as in relative terms less pro-poor than in rural areas. Up to the 60th percentiles urban households did not only became relatively poorer - i.e. they had to support higher negative growth rates- than rural households but the urban GIC also always lies below both the mean growth rate as well as the mean of the percentile specific growth rates. However, the richest five percentiles of urban households show positive growth rates of household expenditure per capita. Given their specific consumption pattern, households in this part of the distribution were less affected by the highly increasing food prices in 1998. This particular shape of the GIC illustrates very well why inequality in urban areas increased significantly between 1994 and 1998.

30. Again, abstracting away the relative increase of basic food items and focusing only on the performance of CPI deflated per capita household expenditures, growth would have been pro-poor in the sense of Ravallion and Chen (2003) between 1994 and 1998 at least on the national level and in rural areas but not so in urban areas (see also Table 5). Put differently, we would obtain a rise of real per capita expenditure of the poor, i.e. a GIC showing positive growth rates, and hence a poverty reduction if we used the 'inappropriate CPI' as a deflator, but obtain correctly a decline of real per capita expenditure and a poverty increase if we use a more appropriate price deflator accounting for the observed consumption basket of the households in the household surveys.

31. Turning to the period 1998 to 2003, we have exactly the reversed version of the GICs for 1994 to 1998. Growth rates were highly positive over the whole range of the distribution, i.e. growth was pro-poor in the sense of Ravallion and Chen (2003), with the highest growth rates between the 30th and the 90th percentile. Moreover, during this later period growth was also pro-poor in relative terms with the mean of percentile specific growth rates lying above the growth rate of the mean. The rural GIC for the same period is also strongly pro-poor in absolute terms. However, it shows a positive slope from the 10th percentile until the upper end of the expenditure distribution, suggesting that it was not particularly pro-poor in relative terms. In urban areas growth rates are also positive over the whole distribution, however on a much lower level than in rural areas or on a national level and slightly decreasing over the whole distribution.

32. Finally, if we draw the GICs for the whole period 1994 to 2003 we obtain on the national level a flat almost horizontal GIC around an annual growth rate of 0.9% (compare also with Table 2). This flat line is the result of the contrasting curves obtained for the two sub-periods. In rural areas the shape of the GIC is again very similar to the national one: we also observe an almost flat line. In urban areas the GIC is U-shaped with negative growth rates from the first to the 85th percentile and positive growth rates thereafter. Again, this illustrates very well the moderate decrease of poverty in rural areas and on a national level and the increase of poverty

and inequality in urban areas over the total observation period (but with a falling trend after 1998).

Pro-poor growth indices

33. Table 5 provides a further documentation of the degree of 'pro-poor growth' in Burkina Faso. The 'absolute' rate of pro-poor growth (RPPG) is defined as the area under the GIC up to the headcount index at the beginning of the observation period (see e.g. Son, 2003).[9] To test the robustness of the results with respect to the poverty line, we did not only use the moderate absolute poverty line but also one which we set equal to the per capita household expenditure observed at the 20th percentile. The results of the different poverty lines are completely consistent and of course tell the same story as the GICs, but can certainly only give an indication of pro-poor growth in absolute terms and not in terms of the stricter definition also requiring a distributional change in favor of the poor. Again, growth was clearly not pro-poor between 1994 and 1998, but was clearly pro-poor between 1998 and 2003 and was slightly pro-poor on the national level and in rural areas and slightly not pro-poor in urban areas over the whole observation period. For comparison and to document the importance to use appropriate price deflators to compare household expenditures over time, Table 5 also provides the RPPGs when instead of household specific price deflators the (inappropriate) general CPI is used.

[insert Table 5]

Growth and distributional components of poverty change

34. Table 6 shows the results of a decomposition of the poverty changes in their growth and distributional components using the methodology suggested by Datt and Ravallion (1992).[10] The increase of P0, the headcount index, by 6.3 percentage points on the national level between 1994 and 1998 is the result of a growth effect of 7.5 percentage points, a redistribution effect of –3.4 percentage points and a non-separable interaction effect of growth and redistribution of 2.2 percentage points (residual). In other words, the distributional neutral growth rate, i.e. applying the average (negative) growth rate of household expenditures per capita to all households, would have led to an increase of poverty of 7.5 percentage points. Redistribution between households, i.e. differences in growth rates known by households was in favor of poorer households and reduced the potential negative affect by the average growth rate alone by 3.4 percentage points in terms of the headcount index. Whereas for rural areas the decomposition yields similar results, in urban areas both components—growth and redistribution—contributed to the rise of poverty.

[insert Table 6]

35. For the period 1998 to 2003 the growth component as well as the redistribution component had a poverty reducing effect. Growth alone would have led to a poverty reduction by 13.7 percentage points. Redistribution, i.e. in average higher growth rates for poorer households resulted in a further poverty reduction of 1.7 percentage points. It is worth to emphasize here, that a relative small redistributional component does not imply that redistribution is (or changes in inequality are) not important, but simply that not much redistribution took place in the past. This decomposition illustrates well, that obviously in rural areas the lower level of initial

[9] In particular, the RPPG is given by the ratio of the actual change in poverty over time (using the Watts Index, see Table 1) to the change that would have been observed under distributional neutrality times the ordinary rate of growth (Ravallion and Chen, 2003; Ravallion, 2004).

[10] We always use the initial period as the reference period, i.e. we do not average the results over the two possible decomposition paths to get rid of the residual, because there is no methodologically good argument to do so. For comparison with other studies we also provide the averages, where the residual is equal to zero if we only compute the growth and redistributional effect. The shown dynamics are however not different to the first approach.

inequality led to a—in absolute terms—high growth-elasticity of poverty, since we state an important growth effect and a redistribution effect of almost zero. In urban areas where initial inequality was higher, the similar growth-elasticity of poverty was mainly driven by favorable distributional changes and, in contrast, the higher initial level of inequality was an obstacle for further poverty reduction.

36. Over the whole period 1994 to 2003 and on the national level, the growth component was –3.2 percentage points and the redistribution component was -4.5 percentage points, i.e. the effect of growth was slightly lower than the effect of heterogeneity in growth rates over households. The residual was almost zero. Looking on rural and urban areas separately, we state for both an important growth component—poverty reducing for rural areas and poverty increasing for urban areas—and a very low redistribution component. The low redistribution component shows that the poverty reducing redistribution effect on the national level stemmed mainly from a decrease of inequality between rural and urban areas.

37. Again, for comparison and to document the impact of relative price shifts on poverty, in Table 5 we also show a decomposition where we deflate household expenditures per capita by the (inappropriate) CPI but keep our poverty lines over time. Of course, then a third component explaining the change in poverty has to be taken into account. This third component is the difference of the inflation of the poverty line to the inflation of the general CPI. Hence we have to compute the poverty change explained by the increase (decrease) of the poverty line in real terms (in comparison with the CPI) in a growth and distributional neutral case. Then, taking the period 1994 to 1998, one clearly sees, that the massive increase in the poverty line, i.e. the amount of money necessary to buy items of first necessity, is principally responsible for the rise in poverty. In other words, would the purchasing power of households and especially poor households have evolved like the CPI suggests, poverty had decreased by approximately 7.5 percentage points between 1994 and 1998; 4.1 percentage points due to growth and 3.4 percentage points due to redistribution. Figure 4 shows this kind of decomposition in a very illustrative way using a bar for the total observed change in poverty and for each decomposition component. To our knowledge, this kind of 'triple' decomposition has not been done before. But to us it seems quite useful whenever the development of the price index specific to the consumption of the poor differs significantly from the development of the general CPI.

[insert Figure 4]

2.1.2. Growth, inequality and poverty profiles

38. We have shown increasing poverty between 1994 and 1998 and considerable poverty reduction between 1998 and 2003 leading to an overall moderate growth elasticity of poverty between 1994 and 2003 of -0.8 lowering national poverty rates from 55.5% in 1994 to 47.2% in 2003. However, as already indicated by the last section's paragraphs on urban and rural poverty, large variances across various 'household groups' exist and hence the national averages might be somewhat misleading by covering important group-specific dynamics. Disaggregated by the 13 Burkinabè economic regions, urban and rural households, six socio-economic groups, four educational levels and by gender, both high and low growth as well as poverty in- and decreasing groups can be identified (see Tables A5 and A6 in Appendix C). In what follows we first shed some light on which household characteristics were associated with higher poverty and poverty changes between 1994 and 2003. We then analyze how much of these poverty changes were due to group-specific growth and inequality variations; in the end revealing a more precise pro-poor growth picture. We do not consider 1998 explicitly since as already mentioned we rather

consider the year 1998 as an 'outlier' of the long term Burkinabè growth–poverty trend due to the severe drought that occurred in 1997/1998.

Poverty Profiles

39. To begin with the spatial differences in poverty, there are several economic regions where poverty headcounts across all three survey years are considerably lower than in other regions, mainly in the 'Center' (region of the capital Ouagadougou) and the 'cotton' region 'Hauts Bassins' (47% of national cotton production). In contrast, the regions 'North' and 'Centre-South' have consistently shown poverty rates well above 60%. Similarly, regions, where poverty has considerably decreased between 1994 and 2003 ('Sahel', 'East', 'Centre-West' and 'Cascades') oppose the 'Plateau', the 'Boucle de Mouhoun' and the 'South-West' were poverty did not decrease at all or the 'Centre' where a tremendous increase of poverty during the last nine years can be observed (see Table A5). Most of the differences in poverty levels might be explained by different climatic conditions and population density which vary considerably across regions. However, what is somewhat puzzling is the fact that the region of 'Sahel' shows such a high poverty reduction during the last nine years, since this region suffers under very bad climatic conditions even for Burkinabè standards and that some cotton regions, such as 'Hauts Bassins', 'South-West or 'Mouhoun', did not transfer the impressive poverty reduction of cotton farmers into overall regional poverty reduction. However even more puzzling is the lack of concordance in the welfare ranking of regions (see Tables A5 and A6) which has also already been noted by Fofack, Monga and Tuly (2001). Those very different poverty trends across space are certainly an evidence for the 'isolated' economic regions in Burkina Faso, with very low spill-over-effects between the various regions and might be an indication for a high transitory poverty in Burkina Faso. The lack of geographic linkages is even more apparent in the spatial urban-rural divide: poverty among urban households is generally much lower than among rural households, but it has also increased between 1994 and 2003 whereas it has decreased among rural households during the same period.

40. Concerning specific household characteristics, across all three survey years, households earning their main income from the public or formal private sector had a much lower poverty incidence (never more than 10% and 20% respectively) than all other socio-economic groups (see Table A5). However, the public and private sectors are also those two socio-economic groups with the highest increase of poverty between 1994 and 2003 (28% and 47% respectively). The informal sector, which has a much higher poverty rate than the public and private formal sector, but a much lower poverty rate than the agricultural sector also had to support a massive increase of poverty (25%) between 1994 and 2003. In contrast the agricultural socio-economic groups, cotton farmers as well as subsistence farmers, experienced both considerable poverty reductions during the observation period. However, the poverty reduction among cotton farmers was much higher with -25% than among subsistence farmers with only -11% (for further analysis see section 3.1). Last, and as expected, households where the household head benefits from a higher educational level show much lower poverty rates across all three survey years, with secondary and higher level education having the most positive impact, probably due to the fact that only very few Burkinabè household heads have higher educational levels, leading to relatively high returns.[11] In addition, households where the household head is a woman also show lower poverty rates. However, this fact, especially for the case of Burkina Faso, might in many cases be due to transfers from male household members, e.g. living in Côte d'Ivoire not living within the household. But nevertheless, households with an educated household head had to suffer in the same way under the negative shock of 1998 than households headed by a person with no formal education. Also worth to note is the fact, that with an increasing share of

[11] Kazianga (2004) also provides empirical evidence for relative high returns on secondary and tertiary education in Burkina Faso, in absolute as well as in relative terms (relative to primary education).

household heads having a secondary educational level (see Table A2 and A5), poverty rates within this group also increased significantly. Finally, although different socio-economic groups show different poverty trends over time the welfare distribution across the various socio-economic groups, in contrast to the geographic one, remained constant between 1994 and 2003.

Inequality and Growth Profiles

41. Inequality, as measured by the Gini-Index, within household groups varies between 0.35 and 0.52. Interestingly, household groups with higher poverty rates most of the time show lower Gini-Indices (see Table A5), indicating that the higher poverty rates of various household groups are mainly due to lower average income of those household groups and not to distributional issues (see also Table A6). Across time, within-group inequality has however not changed much and remained more or less constant.[12] So the decrease of inequality in Burkina Faso from 0.47 to 0.45 between 1994 and 2003 is mainly due to a decrease of between-group inequality. Indeed, looking at the thirteen economic regions, urban and rural households and the various socio-economic groups one can observe that the average per capita household expenditures among those groups have become much more even during the observation period (see Table A6). Unfortunately a large part of this trend can be explained by the only slight positive or even negative per capita household expenditure growth rates of urban socio-economic groups, rather than by a pure 'catch-up' of the poorer rural households. But despite this decrease of between-group inequality, between-group income differences still remain high with the educational level divide being the highest, followed by the socio-economic group and urban-rural divide (see Table A6). The combined analysis of the described poverty-, inequality and growth profiles shows that a disaggregation of national income and poverty estimates into various household groups suggests that in general higher average incomes are a good indicator for lower poverty rates (although usually also accompanied by higher inequality). Similarly, comparing growth rates and poverty changes over time, higher growth rates led to a higher poverty reduction within groups. Again, deflating per capita household expenditure with the general CPI might lead to the 'puzzling' result that low growth rates led to stagnating or even increasing poverty rates, with growth being not high enough to keep up with the massive inflation of the poverty line and hence only having led to poverty reduction if it passed a certain threshold (see Table A5 and A6). However, if we apply an appropriate household specific price index we obtain a consistent development.

2.2. Link between growth, inequality and poverty

42. Whereas the previous section has quantified and described the impact of growth on inequality and poverty, the following section makes an attempt to analyze the link between growth, inequality and poverty, i.e. to analyze through which channels the specific growth pattern of Burkina Faso has affected inequality and poverty.

2.2.1. Sector-specific growth rates and their link to household incomes

43. Table 7 presents growth indices of real value added for 14 economic sectors drawn from National Accounts (NA) data. Measurement problems of household incomes and expenditure were already discussed and similar objections certainly apply to sectoral growth rates as well. Keeping that in mind, the growth indices are confronted (also in Table 7) with real growth rates of household expenditure per capita, where households are classified according to the same economic sectors. Table 7 thus helps to identify the sources of macroeconomic growth and gives an idea to what extent sectoral growth of value added was transmitted into household income,

[12] Again, the spatial disaggregation into the thirteen economic regions shows a different dynamic with de- and increasing inequality rates within some regions.

here approximated by household expenditure per capita. It is important to note that for this analysis we use the general CPI to deflate household expenditures, because here our focus lies less on the increase of purchasing power of households but more on the magnitude of transmission of sectoral growth into household incomes, so on both levels similar price deflators have to be used.

[insert Table 7]

44. Of course, there is no reason to assume that sectoral growth of value added is one by one reflected in household expenditure. (i) Besides wages, value added also comprises distributed and non distributed profits, property income and interest payments. The latter three components show only up in household income if the household owns the farm or the enterprise where its members are employed. (ii) Income data in the household survey is of poor quality; therefore we use household expenditure as an approximaton. Expenditures will only match incomes if saving rates remain constant. Furthermore, given that we have no complete information on individual incomes and expenditures, we have to analyze household expenditure, making implicitly the assumption that total household income arises uniquely from the main activity of the household head.[13] (iii) If labor markets always clear, a shift of labor supply across sectors might lead to decreasing or increasing wages not necessarily correlated with sectoral growth rates. (iv) Whereas value added is usually deflated by the price index of GDP, household expenditures are here deflated by the CPI. This may also cause some minor differences.

45. Value added in the agricultural sector grew roughly with or even slightly more than the average growth rate of total value added. This evolution is similarly reflected in the evolution of household expenditure per capita of agricultural households. NA show a growth rate of 57.5% between 1994 and 2003, the household surveys indicate a growth rate of 43.6%. Particular strong was the growth in the cotton sector, with a growth rate of 249.4% (NA). This immense growth rate is however only partly reflected by the growth rate of household expenditures (55.4% growth between 1994 and 2003). Several explanations can be offered: (i) For the cotton sector we only have growth rates for the purchases by the SOFITEX, not for value added; (ii) cotton farmers might have saved a large part of their additional income; (iii) most cotton farmers produce also food crops and other cash crops, therefore their expenditure does not only reflect cotton production;[14] and (iv) a substantial increase of labor supply in the cotton sector can be observed over the observation period (see Table A2). Livestock, forestry and fishing production also knew a good growth performance, but a little bit less than the rest of the agricultural sector. In 1994, 11.3% of the total population was directly or indirectly (via the household head) involved in the cotton sector and 74.9% in the non-cotton agricultural sector. The share of cotton farmers and related household members increased between 1994 and 2003 from 11.3% to 19.9%, the share of non-cotton farmers and related household members decreased simultaneously from 74.9% to 65.0%. The good performance of the cotton sector after the devaluation therefore incited households to substitute food-crop production with cotton production or simply to expand already existing cotton production or add cotton to other agricultural production.

46. In the secondary sector, between 1994 and 2003, growth of value added was negative in the mining sector (-73.6%), relatively strong in the manufacturing sector (78.9%), in the

[13] However, this should not lead to a very serious problem. First, in rural areas most household members are directly involved in agriculture. Second, in urban areas, household income diversification across sectors is certainly more important, but the survey data shows, that usually the household head earns by far the largest part of total household income, especially if the household head is employed in the public or private formal sector.

[14] We defined a farm household as a cotton-farming household, if some cotton was cultivated, independent of the overall production structure of the household.

construction and public works sector (49.3%) and very strong in the electricity, gas and water sector (325.4%). The household survey data suggests that growth in these sectors did not at all or at least not much translate into growth of expenditures for people employed in these sectors.[15] In sum, the secondary sector, at least so far, does not seem to contribute to any poverty alleviation. First, because growth rates in the secondary sector do not necessarily translate into growth of incomes of individuals employed in those sectors (the missing link), second, because it is a very capital intensive sector, i.e. 20% of total value added are produced by less than 3% of the total work force (the low weight), and third people working in these sectors are in most cases already above the poverty line.

47. In the tertiary sector, growth of value added was substantial in the transport and telecommunication sector (153.3%), the trade sector (43.3%), the bank and insurance sector (86%) and in the sector of other commercial services (99.5%). For all these sectors, growth of household expenditure per capita was much less than the growth rates indicated by the NA data, again suggesting that benefits were only partly redistributed to the workers employed in these sectors. In contrast to the significant growth rates of the private tertiary sector, value added in public administration—in principal measured by the wage bill paid to public employees—decreased between 1994 and 1998 by 13.2% and increased then again in 2003 to the level of 1994. In the public sector the household data matches almost exactly the National Accounts data. The reason for the poor income performance is in particular the non-indexation of wages in the public administration sector (see also section 3.2). The trade sector and the public administration sector employed more than 75% of all household heads employed in the tertiary sector. Given that in most other branches of the tertiary sector growth of household expenditure was also close to zero or even negative and given the poverty line which increased between 1994 and 1998 stronger than the CPI, it is not surprising that urban poverty increased strongly during the nineties.

2.2.2. Macroeconomic shocks and their impact on growth and poverty

48. It is of course very difficult to disentangle the growth and poverty effects of the various macroeconomic shocks the Burkinabè economy knew during the last ten years. Such an analysis should normally rely on counterfactuals performed using a Computable General Equilibrium Model. However, given that such a model is not available for Burkina Faso, we use simple 'before-after' comparisons and rely on the existing literature. No attempt is made to quantify the growth-impact of the different shocks; at most we give some indication of magnitude.

Effect of CFA Franc devaluation in 1994

49. The devaluation in 1994 increased the level of foreign prices measured in CFA Francs and thus the price of tradable goods relative to non-tradable goods. The resulting effect on aggregate growth was without doubt significantly positive. In particular, exports of cotton increased after the devaluation given the gain in competitiveness. However, the impact of the devaluation on other export products was rather small. The trade deficit as well as the current account deficit did not improve and even worsened after the devaluation. Investments picked up after the devaluation in parallel with decreasing maximum lending rates on commercial bank credits. But the expected expansion of domestic supply did not arise; first because of a very limited access to the credit market for most entrepreneurs and, second, because the increase in domestic-currency prices of many imported goods, e.g. the fertilizers demanded by farmers, represented a real

[15] Which however might partly be explained by the fact that those households had per capita household expenditures which were already 1.8 (manufacturing), 3.1 (public work) and 4.1 (electricity, gas, water) times higher than the national average and thus higher wages might not have been translated into higher consumption, but instead into higher savings.

bottle-neck (Monga, 1999). In urban areas the devaluation led at least in the short and medium run to a decrease of real incomes because prices of imported goods increased and wages (formal private and public) were not indexed to inflation (see also section 3.2). This had positive as well as negative repercussions on the informal economy. On the one hand households of the formal sector substituted to a certain extend imported goods with informal goods, but on the other hand, had to reduce their total demand for informal goods given their lower real wages. Today the gain in competitiveness induced by the devaluation is again partly offset by the recent appreciation of the Euro (to which the CFA Franc is pegged) against the US$ and the recent Asian and Brazilian crises, which led to a massive depreciation of the currencies in these countries.

Effect of structural adjustment program

50. Given the various measures which fall under the different structural adjustment programs undertaken since 1991, it is very difficult to make an overall assessment of their impact on economic growth and poverty reduction. But it can clearly be seen that the efforts made to stabilize the economy were quite successful. As reported above, after the devaluation inflation as measured by the CPI was again very quickly under control and remains until today at relatively moderate levels. Furthermore it seems that privatizations and the acceleration of trade liberalization contributed to GDP growth (Monga, 1999; IMF, 2003a). It can be assumed, that the growth effects of other measures undertaken, e.g. the improvement of the tax administration or of the public financial management has been less important, simply because the progress made in these fields remains until now rather modest. A massive destruction of urban public and private formal employment cannot not be observed, among other things, because privatizations were counterbalanced by large public investment programs and recruitment of public employees in social sectors (Konaté and Raffinot, 1998). However, a labor code reform, which started in 1993, eliminated the indexation of wages and a new income policy changed real wage formation. Furthermore, the reforms suppressed to a large extent existing price policies and marketing schemes of traditional cereals, oil seeds and livestock as well subsidies for fertilizers. These measures might have had a negative impact on household incomes and thus increased poverty. However, price controls are still in effect for rice, generic drugs, petroleum products and utilities which are still entrusted to public monopolies (Monga, 1999).

Effect of the world market price for cotton

51. After a favorable development following the devaluation, the world market price for cotton (Liverpool Index in CFA F) fell in 1998 and 1999 by -16.4% and -15% respectively.[16] In 2000 the price recovered (+28%), before falling again in 2001 and 2002 by -16.1% and -8.9% respectively. Retrospectively seen, the Burkinabè economy tackled this unfavorable trend of world cotton prices relatively well, and better than most of its cotton exporting neighbors (e.g. Benin, Mali, Tschad and Togo). Although growth rates of GDP (see Figure 1) suggest that the fall of world cotton prices affected significantly and adversely the countries macroeconomic performance, SOFITEX achieved to keep the seed cotton producer price constant (159.4 CFA F/kg on average) and even raised it by 9.4% in 2001 (174.1 CFA F/kg on average) preventing poverty among cotton farmers to rise. Even if today the world cotton price in CFA F is still approximately twice as high as before the devaluation, the Burkinabè economy is very sensitive to a further decline of world cotton prices. In this respect, it should be emphasized that one important reason for the recent decline in cotton prices are the substantial subsidies paid to cotton producers in the U.S., the E.U., and China.

[16] In addition, the 'white fly' destroyed an important part of the cotton harvest in 1998/99 and lowered therefore sales in the following year.

Effect of the new common external tariff (CET)

52. In January 1994, the government of Burkina Faso ratified the WAEMU Treaty which transformed the former WAMU into a true economic union. According to the treaty the government adopted and implemented the common external tariff (CET) in 2000. To mitigate the losses from the introduction of the CET, Burkina Faso implemented the decreasing protection tax (*Taxe Dégressive de Protection*-TDP), which provides temporary but declining protection for selected products.[17] However, despite this measure, the CET led to lower public revenues, which had potential negative consequences for social expenditures. Resources provided through the HIPC II initiative might however be used for compensation. The regional integration poses a further challenge for Burkina Faso, because now the economy has to compete directly with other member states, with most of them showing higher productivity. Therefore, at least in the medium term, Burkina Faso might not particularly benefit from this integration.

Effect of climatic shocks

53. Given that approximately 37% of total value added is generated in the primary sector, that more than 90% of the total workforce and also more than 90% of the poor work in or receive income from this sector, climatic conditions and in particular annual rainfall is crucial for both economic performance and poverty alleviation in Burkina Faso. As a Saharan, landlocked country, with very limited rainfall, the country suffers from recurrent droughts. During the last ten years, the most important ones occurred in the years 1997/98 and 2000/01. In 1998 the negative impact on growth could be partly compensated for by a rather favorable cotton production. However, the negative shock on incomes of subsistence farmers, as well as on poverty in general through exploding staple prices, was tremendous as already documented in detail. To reduce the negative impact of an inflationary surge of cereal prices on poverty, the government then implemented a special food aid program under which in 2000/01 42,246 tons of food were distributed to the most vulnerable provinces. In general, climatic fluctuations constitute a much larger problem for poor households than for overall national growth rates.

Effect of the crisis in Côte d'Ivoire

54. Even if today Côte d'Ivoire has achieved to reconcile its most important political groups after the political crises started in 1999 and civil war started in 2002, it remains very unstable and suffers under a paralyzed economy. Being the most important economy in West-Africa, this has substantial effects on its neighboring countries. For Burkina Faso, Côte d'Ivoire is not only the provider of many intermediate inputs and final goods (on average 21.7% of total imports between 1999 and 2001 (IMF, 2003b)), but also an important buyer of exports (on average 15% of total exports between 1999 and 2001 (IMF, 2003b)). Given the interruption of the railway between Bobo-Dioulasso—the industrial center of Burkina Faso—and Abidjan, the closest harbors are now in Ghana, Togo and Benin, implying at least 500km longer transportation routes for industries situated in Bobo-Dioulasso. However, after very pessimistic growth projections for 2003 (IMF, 2003a; AFD, 2003), one could already observe in early/mid 2003 that the transport circuits had been very quickly reorganized and adjusted to the new circumstances. In addition, according to the Ivorian population census, approximately 1.2 million persons with Burkinabè origin live and work in Côte d'Ivoire (Heuler-Neuhaus, 2003). Their remittances constitute an important income source for many Burkinabè households. The total sum of yearly remittances even largely exceeds the country's income earned through cotton exports. As expected, the share of households receiving remittances from Côte d'Ivoire decreased from 20.7% in 1998 to 12.7%

[17] The TDP is a temporary surtax applied on the c.i.f. value of industrial and agro-industrial products, which has declined linearly since July 1999. Initially, it was envisaged that the surtax would reach a zero rate in January 2003. However, in December 2002, the WAEMU decided to extend the duration of the TDP at rates of 2.5%- 5% until end of December 2003 (IMF, 2003a).

in 2003 (rural: 24.6% to 14.6%; urban: 7.0% to 5.3%).[18] If the average amount of remittances also decreased is however not clear. The *Enquête Prioritaire* III suggests the opposite, which could be explained by relatively huge amounts of savings which returning migrants brought with them or the fact that in 2003 households were only asked to declare the amount of remittances they received the last month, whereas in 1998 households were asked to declare the amount of remittances they received during the whole last year. Given that most households receive remittances irregularly, both declarations cannot be compared appropriately. Lachaud (2004) also claims that the declarations in the *Enquête Prioritaire* III are biased and opposes statistics of the *Banque Centrale des Etats de l'Afrique de l'Ouest* (BCEAO) which show that the volume of transfers decreased by approximately 68% in real terms between 1998 and 2003 from approximately 4% to 1.3% of GDP.[19] Using the EPIII, we simulated that without any reduction of remittances of Côte d'Ivoire the poverty headcount in 2003 would have decreased by additionally 2 percentage points and that a further decline of 100% of the remaining remittances would increase the poverty headcount by roughly 3.5 percentage points. Of course the impact would be much more negative for households which receive remittances, given that for those households, remittances constitute almost 35% of total household income.

55. Further negative growth effects were induced by a higher population growth rate due to a significant remigration of Burkinabè formerly living in Côte d'Ivoire. The total number of migrants who came back is estimated to be at least between 340,000 and 640,000 (Heuler-Neuhaus, 2003).[20] In the year 2003, their number is estimated to be at least 200,000 (Heuler-Neuhaus, 2003), which corresponds to approximately 1.56% of the total population in Burkina Faso (see Table 2). The migration back from Côte d'Ivoire concerns especially the regions in the south at the frontier to Côte d'Ivoire and the regions in the center of Burkina Faso and rather rural than urban regions.

2.2.3 Sources of growth and total factor productivity

56. Two studies, so-called—'growth-accounting-exercises'—have been undertaken recently to assess the role of physical capital, human capital and total factor productivity in Burkina's growth since the 1960s (Chambas, Combes and Guillaumont *et al.*, 1999; Sirima and Savadogo, 2001). A commonly used methodology is to estimate econometrically the following equation, which is derived from a Cobb-Douglas production function:

$$y_{gr} = \gamma + \alpha\, k_{gr} + (1-\alpha)\, h_{gr} \qquad (1)$$

where y_{gr} is the growth rate of real GDP per worker, k_{gr} is the growth rate of physial capital per worker, h_{gr} is the growth rate of the stock of human capital per worker, and γ is the growth rate of total factor productivity (TFP).

57. Sirima and Savadogo (2001) estimate the contribution of physical capital to per capita GDP growth at only 0.32.[21] Savadogo *et al.* (2002) claim that the impact of physical capital is under its potential due to two facts: (i) a very low capital productivity (the capital output ratio was approximately 5 in 1997) resulting, partly from the large public component in physical capital

[18] Authors' computations using the EPII (1998) and the EPIII (2003).

[19] Ousmane, Benoit and Engmann (2003), estimate that Burkina Faso workers' remittances fell from CFA F 50.3 billion to CFA F 41.0 billion in the year 2000.

[20] The official statistics of the *Ministère de l'Action Sociale et de la Solidarité nationale* indicate a lower number of migrants who come back, because only a part of the migrants passes by the officiel welcome centers and can therefore be registered.

[21] Cited after Savadogo *et al.* (2002).

(see below) and (ii) an insufficient capital accumulation even if relatively high for Sub-Saharan African standards. However, measurement error—growth of the capital stock is reconstructed via investment data and using rough hypotheses concerning depreciation rates—suggests that α is downward biased. Given that saving rates are very low (under 10% of GDP), the majority of total investment is externally financed (and mainly through foreign aid). Factors which may explain the slow accumulation of capital are 'crowding out effects' due to large public deficits in the 1960s, 1970s and 1980s, very limited liquidity of the banking system, real exchange rate misalignment, and very low foreign direct investment (less than 0.5% of GDP on average (Savadogo *et al.*, 2002)). We add to this list the lack of lucrative investment opportunities.

58. Concerning human capital, approximated by the number of years of education, Sirima and Savadogo (2001) estimate a coefficient close to zero (0.03) also being insignificant. The estimations by Chambas *et al.* (1999) confirm this result. Several reasons might be given: (i) measurement error; (ii) a bad allocation of human capital in the economy, i.e. concentration in the civil service and state enterprises where its productivity is very low, and (iii) the very low level of human capital, i.e. that the human capital stock is below a certain threshold below which no significant contribution to economic growth can be made.

59. For the growth rate of TFP, a coefficient of -0.20 was estimated. Estimates for more open economies such as Kenya or Mauritius, which experienced TFP increases of approximately 2, show that Burkina Faso might range far behind its potential. But this applies to almost all West-African countries, all revealing negative TFP growth rates (Sirima and Savadogo, 2001). The negative TFP growth clearly indicates that Burkina Faso lacks innovations, which is most likely the consequence of very low foreign direct investment hampering transfers of technologies, the legal and regulatory environment, pervasive state interventionism (dominance of monopolies and oligopolies in the secondary sector), deficiencies in infrastructure, the weakly functioning credit system and the very low human capital endowment.

60. A shortcoming of these growth-accounting exercises is that they do not take into account the contribution of the factor 'land'. In the Burkinabè case 'land' cannot be considered as constant. The area of cultivated land especially for cotton production increased steadily and has to be considered as the main source of agricultural growth (see also Table 8). Given that the primary sector accounted always for more than a third of total GDP and that roughly 92% of the total work force is employed in this sector we should not limit the production function to the factors physical capital per capita and human capital. However, it seems that recently new cultivable soil is more and more scarce and that more and more existing cultivated area for cotton is destroyed due to the use of too much fertilizer and the non-respect of recovering periods for cultivated soils. Therefore in the future, in contrast to the past, land might indeed become an important obstacle for further economic growth.

61. Other important determinants of the growth rate of GDP per capita are climatic shocks, terms of trade, worker's remittances from Côte d'Ivoire, political instability, and foreign aid per capita. The effects of the most important shocks which occurred in the past 15 years have already been discussed in section 2.2.2. Chambas *et al.* (1999) made an attempt to include some of them in their growth regressions. The results suggest that climatic conditions are very important to explain fluctuations in GDP growth with coefficients of 0.07 for current and 0.09 for lagged climatic conditions. Terms of trade show up with a significant coefficient of 0.23. Lagged worker's remittances come out with a significant coefficient of 0.05. Political instability has a negative impact of -0.03. The coefficient of lagged foreign aid per capita is estimated to be 0.04, but is only significant at an 8% level.

62. As emphasized earlier, the contribution of physical capital to economic growth was rather weak. At a first glance this seems surprising, given that the ratio of investment to GDP was always above 17% during the last decade and even ranged above 20% between 1994 and 1999 (IAP, 2004). As Figure 5 shows, the largest part of investment concerns public investment and is externally financed by more than 75%. Unfortunately almost no information on investment by sector or by product group is available. An additional problem is that most likely the official data on investment also includes to a substantial part current expenditures caused by the investment projects (Monga, 1999). However, it seems that most investment took place in the public and private construction sector. These investments have in general rather low returns.[22] Monga (1999) claims that when adjusted for risk, the rates of return on most capital investment operations are usually lower than real interest rates on loanable funds.

[insert Figure 5]

2.3. Conclusion

63. Over the whole period 1994 to 2003, Burkina Faso experienced considerable economic growth accompanied with moderate declining national as well as rural poverty rates but increasing urban poverty rates. However, in the first half of this period, between 1994 and 1998, poverty increased in both rural as well as in urban areas substantially. In urban areas the rise in poverty was mainly the consequence of the adverse effects of the devaluation and structural adjustment programs, leading on impact to stagnating or even declining household incomes. In rural areas the drought in 1997/98 and the following increase of cereal food prices prevented that macro-economic growth translated more efficiently into poverty reduction in the short term. Given the large share of the rural population and the fact that this drought represented an enormous shock on rural poverty, makes the 'year 1998' an 'outlier year', explaining the much higher poverty rates in 1998 with respect to both years, 1994 and 2003.

64. To see how the long-term observed growth-elasticity of poverty can be explained, we checked the link between sectoral growth rates and household incomes on several levels. Despite the methodological problems such an exercise entails, our analysis indicates that this link is rather weak and sometimes even completely missing. In some cases sectoral growth might simply be exaggerated by National Accounts data, but in others it seems that growth accrued simply to a few agents in form of rents, not necessarily covered by the household data or disappeared in unproductive investments. The exception is the food crop sector where during the whole observation period, the sectoral growth rate was translated almost one to one—abstracting from the increase of the poverty line relative to the CPI—into growth of household incomes. However, most of total agricultural growth occured among cotton farmers and was thus concentrated on less than a fifth of all households living mainly in the west and south-west of the country. In addition the Burkinabè economy was affected by several macroeconomic shocks which had rather positive effects on macroeconomic growth, but at least in the short run rather adverse effects on household incomes. Finally, existing growth accounting exercises suggest that returns to physical and human capital are very low or insignificant and that TFP growth was even negative. Therefore growth can only be explained by the use of more labor and more land. This is of course not a favorable prerequisite for sustained long-term growth and fast poverty reduction. In the next section we look in more detail which factors, and especially policies, favored or hampered the participation of the poor in growth.

[22] The ZACA project ('*Zone d'Activités Commerciales Administratives*') in Ouagadougou is a recent and nice example of such an investment project. This project will probably have an important effect on imports, but the effect on local employment will probably be weak.

3. Factors affecting the participation of the poor in growth

65. Poverty in Burkina Faso is still mainly a rural phenomenon. However, the increase in urban poverty during the nineties is also a cause for concern. Hence, a description of the dynamics of rural development as well as of the urban formal and informal labor market and an evaluation of the policies within these sectors is crucial for an understanding why the poor have or have not (enough) participated in growth in Burkina Faso.

3.1. Rural development

66. Agriculture is the most important sector of Burkina Faso's economy, accounting for around 30% of GDP, for nearly 80% of the Burkinabè workforce and for more than 90% of the people living below the poverty line (see Table A5). Hence pro-poor growth and poverty reduction in Burkina Faso is at least in the short and medium run almost impossible to achieve without rural growth and development. Moreover, today it seems widely recognized that in poor economies rural development can also have very positive spill-over effects on the urban economy, via lower migration flows to urban areas, food security and positive final demand linkages (see Timmer, 2003; Sarris, 2003; Dorwad, Kydd, Morison *et al.*, 2004).

Cotton production – motor of economic growth
67. After the devaluation of the CFA Franc in 1994, Burkina Faso experienced a massive increase of export driven cotton production (16.5% growth annually between 1995 and 2002) whereas food crop production only increased slightly over the same period (see Table 8). So in the last ten years the motor of agricultural growth has clearly been the cotton industry (see also Table 7) and hence, because of its important contribution to overall economic performance, it has also been the agricultural sector which has received most attention of the government. As one would assume, the growth in cotton production has clearly led to a high decrease of poverty among cotton farmers from 62.1% in 1994 to 46.8% in 2003 (see Table A5). However between 1994 and 1998, the impact on poverty probably could have even been greater, given the fact, that price gains right after the devaluation in 1994 mainly went to the benefit of SOFITEX and due to the devaluation of the CFA, imported fertilizer prices increased heavily (by 100% between 1990 and 2000, see Ouedraogo, Sanou and Sissao (2003)) reducing actual profit margins of cotton producers. On the other hand the guaranteed fixed price of SOFITEX sheltered cotton producers relatively well against the falling world cotton prices between 1998 and 2002 and the fixed price Burkina Faso's seed- and fiber-cotton producers receive from SOFITEX also increased considerably after 1995 (AFD, 2004).

[insert Table 8]

68. Poverty reduction among cotton farmers did not massively decrease total rural poverty rates directly, since in 1994 only 10.3% of households derived part of their income from cotton production. But an indirect positive effect on total rural poverty induced by the growth of the cotton industry after 1994 was certainly the increasing share of population involved in the cotton sector (from 10.3% in 1994 to 18.2% in 2003); a phenomenon which has also most likely prevented a stronger increase of poverty among subsistence farmers between 1994 and 1998 and contributed strongly to the observed total rural poverty reduction between 1998 and 2003. Hence the cotton sector can in general be seen as a 'success story' for Burkina Faso. However, it seems that the increasing average income of cotton producers did not have significant demand growth linkages to the food crop sector, since in most cotton regions (the exception being 'Cascades') no substantial regional poverty decrease could be observed (see Table A5). In addition, one has to consider that the increase of cotton production was mainly due to an expansion of cotton

cultivated land and not to a substantive improvement in factor use (see Table 8), so the growth from increasing cotton production during the last years was rather short-term, in this form not being sustainable given the limited Burkinabè land suitable for cotton production. In addition, too intensive use of land for cotton production has already led to environmental degradation and will later on also limit the production for alternative crops.

Cereal production – motor of poverty reduction

69. Since in 2003 cereal food items—such as millet, sorghum and maize—still accounted on average for 33% of total rural household expenditure and was produced by 95% of rural households (see Table 9) rural well-being in Burkina Faso still seems to depend heavily on cereal production and prices. However, staple production only increased slightly between 1994 and 2003, growth just being high enough to keep up with population growth (see Table 8). Yields have remained constant at very low levels of about 0.8 tones per hectare and any subsistence crop agricultural growth stemmed from land and unskilled labor accumulation and neither from an increase of productivity nor from capital accumulation. During the last decade rural literacy rates did not improve significantly and remained at a low 15% for rural household heads. Also, the use of modern agricultural equipment remained at least until 1998 rather low (see Table 10); partly caused by the substantial negative price effects the CFA devaluation had on the mainly imported agricultural inputs. But the potential for land expansion has already almost reached its limit and further growth in the food crop sector has to come from increasing productivity. Moreover, the migration back from Côte d'Ivoire now imposes additional pressure on land availability. Having recognized this, within the last two years, the government has started within the framework of the HIPC initiative to distribute free production factors (e.g. improved seeds and fertilizer) to the poorest provinces, with some positive impacts already evident in the EPIII data (see Table 10).

[insert Table 9]

70. In addition to low productivity and low factor endowment, the unfavorable and annual changing climatic conditions also heavily determine rural poverty rates. In fact, the variability of income might be equally severe than the low level of income among the rural population. For instance, in the years of droughts in 1997/98 and 2000/01 cereal production dropped by 23.5% and 31.3% respectively, leading to much higher rural poverty rates in the respective years (see also Table 1). Growth and poverty rates in the rural sector are thus very volatile, which can lead to misleading conclusions about long-term growth-poverty dynamics in the case where they are based on monetary indicators and specific survey years. To overcome this problem one might look at indicators that are not that much subject to weather conditions and economic fluctuations, such as education, health, housing and assets. Some of them were discussed in Section 2 (see Table 3) indicating that the so-called 'social outcomes' stagnated or even decreased between 1994 and 1998, but improved afterwards, and in some cases substantially.

Price volatility and income vulnerability

71. The high volatility of agricultural output has not only led to lower income and higher monetary poverty in the years of drought and increased poverty in terms of risk and vulnerability, but has also negative long-term effects, hindering economic growth by constraining investments into the subsistence crop sector: faced with the uncertainty of annual rainfalls, farmers have little incentives to invest in production facilities. However, whereas several development programs are now providing better access to rural finance, relative little attention has so far been paid to reducing the risk of rural investments. However unfortunately, even good harvest years might not be particularly beneficial for food crop farmers since an increase of agricultural production is often followed by a dramatic decrease of prices (see Figure

6), which might offset some of the positive effects from an increase in quantity, also known as *King's law*. For a similar phenomenon for the case of Mali, see for instance the study of Marouani and Raffinot (2004).

[insert Figure 6]

72. It is difficult to assess the overall effect of good (or bad) harvests on the income of rural households since it depends if they are net sellers or buyers of food. For net sellers a bad harvest may result in increasing monetary income (via higher cereal prices) whereas a good harvest may lead to decreasing monetary income (as described above). In contrast for net buyers the impact is vice versa. However, looking at Table 9 we can assume that many Burkinabè rural households and especially the poor are net buyers and hence are negatively affected by high agricultural prices caused by supply constraints; since in those years they would not have any surplus to sell.

73. Since rainfall in Burkina Faso is not only irregular, but also seasonal, in addition to the annual volatility of agricultural output and prices, seasonal fluctuations between the harvest (production surplus) and lean season (production deficit) further contribute to the immense vulnerability of rural income. Poor farmers are often forced to sell their products when domestic terms of trade for agricultural products are low (harvest season) and to re-buy the same food items when domestic terms of trade for agricultural products are high (lean season), with prices sometimes almost doubling between harvest and lean seasons (Ministere de l'Economie et des Finances, 2000; see also Figure 7). This inability of poor farmers to cope with fluctuating prices penalizes them and compromises their food security whereas wealthier farmers might actually benefit from this annual price variability selling their agricultural output when cereal prices are highest. This problem of intra-annual fluctuations of cereal prices for poor farmers and the importance of the appropriate institutions such as access to storage or credit to mitigate this phenomenon is now frequently emphasized in the literature (see e.g. Winters, McCulloch and McKay (2004) or Marouani and Raffinot (2004)). Acknowledging this, the National Security Stocks Management Corporation (SONAGESS) already helps farmers to storage their output to smooth seasonal price variations.

[insert Figure 7]

74. Whereas price controls on locally produced goods were eliminated between 1993 and 1996, cotton farmers still receive a fixed producer price from SOFITEX, stabilizing their annual revenues. Their stable income in connection with the good organization of the sector leads to the much higher credit use (76.8% vs. 5.2%), fertilizer use (92.2% vs. 19.2%) and plough use (57.5% vs. 30.7%) (see Table 10) among cotton farmers in relation to food crop farmers. Through positive externalities, this also leads to higher cereal yields among 'cotton farmers'[23]. Hence the question is to what extent a trade-off between distorted (but stable) and free (but high-risk) rural markets exists; or put differently: if one should foster stable (but on average lower) prices at the expense of on average higher (but volatile) prices. The point to be made is, that there might indeed be some benefits from temporal state interventions to reduce transitory poverty and secure more stable revenues and consumption prices for the rural poor, but also to have positive effects on productivity through enhanced investments, i.e. fostering growth through poverty reduction (for a detailed discussion see Section 5). Of course, for some richer farmers, which are able to speculate in the market and to have their own storage facilities, such 'state interventions' would be harmful.

[23] Most cotton farmers are not 'pure' cotton farmers but only cultivate cotton in addition to food crops.

[insert Table 10]

Income diversification – motor of rural incomes

75. Whereas cotton production can be seen as the driving force behind agricultural growth and food crop security as the driving force behind reducing extreme poverty, cash crop (mainly groundnut and sesame, except cotton), fruit and livestock production (being Burkina Faso's number two source of revenue after cotton) has been seen as the mean to broadly increase and diversify rural incomes. This is also the reason why those sectors have largely been promoted[24] and as a result have experienced strong growth during the last years. Indeed, the substantial increase of livestock production might have been the driving force behind the massive increase of rural incomes in the Sahel zone in the last years (see Tables A5 and A6). However, whereas now also more and more households are deriving part of their income from cash crop and fruit production the income growth for households involved in those sectors was rather modest (EP I, II, III). The main reason might be that increasing production did not go hand in hand with improving (i) processing (most output is still exported in raw form) (ii) marketing and quality (because of low quality standards a lot of production still has to be sold locally) and (iii) transportation facilities (high transportation costs, given the quasi-monopole of *Air France* for inter-continental flights). Last, even more efficient than diversification of agricultural income for rural risk reduction should be household diversification into non-agricultural income.

Lack of market integration

76. An additional factor which has somewhat limited the ability of the poor to participate in growth is the lack of Burkinabè market integration. First, high regional price differences, which are still up to 30%, as well as income and poverty disparities (see Tables A5 and A6) indicate a very weakly integrated national market. Second, a major gap between producer and consumer prices, which is twice as high as in Burkina Faso's neighboring countries (Sirima and Savadogo, 1999) exists and most of the benefits from production growth and prize liberalization actually went to traders. As a result, subsistence crop farmers were at least until 2000 not very much integrated into markets. In 1999 only 15% of cereal production was commercialized (Sirima and Savadogo, 1999) and in 1998 still only 15% of rural households derived income from the sale of food crops (see Table 9). This lack of market integration has certainly hindered growth spill-overs across regions as well as sectors. The problem of market integration and market access for the rural poor is however not only one of high transportations costs and a lack of infrastructure but also one of information asymmetries and power, i.e. a lack of education and individual negotiation power of farmers. The crucial importance of the rural road system (to reduce transportation costs) as well as farmer organizations (to increase negotiation power) in overcoming market isolation was for a long time overlooked. However, since the year 2000 it has attracted more attention[25] and higher market participation (see Table 9) could already be observed in 2003.

Explaining rural poverty between 1994 and 2003

77. The previous sections, figures and tables very well explain the evolution of rural poverty during the last ten years. With cereals being the main food component of the poor, the cereal price explosion caused by a supply constraint in 1997/1998 (see Figure 6) led to the massive inflation of the poverty line between 1994 and 1998 (see Table 1). At the same time these higher food prices did neither lead to higher incomes for poor farmers—in lean years or seasons especially poor farmers become net-buyers of cereals with their own production not being high enough for self-consumption (see Table 9)—nor trigger much higher cereal production in the following years (see Table 8), due to the high output risk and low commercialization possibilities

[24] For the various measurements undertaken see Ministère de l'Economie et des Finances (2003).

[25] E.g. (i) creation of the General Directorate for Rural Roads (DGPR) and (ii) several farmer umbrella organizations (see Ministère de l'Economie et des Finances, 2004).

the incentives for investments were rather low. In addition, in contrast to the urban population, rural farmers seem to have been not able to adjust their consumption pattern to respond to the increased relative prices of basic food crops (see Table 9). Between 1998 and 2003 more focus was then put on rural development by the government and in 2003 cereal prices were relatively high despite a good harvest (see Figure 6). So this time also many poor farmer could benefit from the favourable terms of trade of food crops by selling some of their surplus (see Table 9) reducing substantially poverty in 2003. However some of the poorest might again have suffered under the high prices. The reasons why staple food prices in 2002/2003 were rather high despite a rather good agricultural production year have been (i) a temporary strong demand for imported cereals from neighbouring countries suffering under bad harvests and (ii) higher purchases of 'offices céréaliers' and traders still in the remembrance of the severe drought in 2000/2001 (CILSS, 2003).[26]

Conclusion

78. It is not really possible to quantify the effects of the countries circumstances and policies on rural development between 1994 and 1998, since the household survey in 1998 took place during one of the most severe droughts in Burkina Faso leading to a sharp temporary rise of rural poverty in 1998. Considering the longer time period 1994 to 2003, one observes relatively strong agricultural growth rates and, after 1998, substantially decreasing poverty rates. However, our analysis outlined some basic features of the Burkinabè agricultural sector which prevented rural poverty to decline already after 1994 and shows at the same time potential for further poverty reduction in the future. As emphasized, the cotton sector is of course an important pillar of the country's economy and in itself a kind of success story, but the export-led growth in the cotton sector can only benefit part of the rural households. Subsistence farming which is by definition not connected to trade experienced rather modest growth rates in per capita terms, mainly due to low productivity increases. The main factors preventing productivity increasing investments to be undertaken are certainly an insufficient access to finance but also the high investment risk and market imperfections. Moreover, rural farmers are still very vulnerable to external shocks. Therefore, rural development has to build on both, on an increase of food productivity as well as on rural diversification into non-farm activities (for a further discussion see also Section 5).

3.2. Urban labor market

79. As emphasized in Section 1 and 2, urban poverty increased substantially between 1994 and 1998. Thereafter, urban poverty declined again, without however reaching the lower level of 1994. Therefore, although the urban population so far only constitutes the smaller part of the Burkinabè population (however with an increasing share), it is very important to analyze the forces having reduced urban incomes and to derive appropriate policy recommendations for the future. We assume that labor income is mainly determined by three factors: (i) occupational choices (of course constrained by labor demand), (ii) remuneration rates, i.e. returns on the labor market, and (iii) individual socio-economic characteristics (including those of the corresponding households) influencing the individual's occupational choice and determining together with the returns the received earnings on the labor market. Hence, using the EPI, EPII and EPIII, we examine empirically how changes in these three factors modified the labor income of urban households between 1994 and 2003. In a last step, we then try to link the stated changes to policy reforms and macroeconomic shocks as well as to the development of urban household expenditures and resulting poverty outcomes.

[26] *Comite Permanent Inter-Etats de Lutte contre la Sécheresse dans le Sahel*, http://www.agrhymet.ne.

80. The analysis suggested here is a rather descriptive one, i.e. it emphasizes more the direction and less the magnitude of the different forces determining labor income. To perform a more accurate analysis of the transmission channels and their effects on the overall income distribution one has to rely on microsimulation techniques (see Bourguignon, Fournier and Gurgand (2001) or Grimm (2004)). However, such techniques would require detailed data of very high quality on individual incomes. Declarations of individual incomes in the Burkinabè household surveys are judged to be of only moderate quality and are therefore of only limited use (for details, see Somda, Koné and Sawadogo, 1999).

Changes in the socio-demographic population structure

Population census data indicates that the urbanization rate increased between 1975, 1985 and
81. 1996 from 6.4% to 12.7% to 15.5%. Population growth was highest in other cities, i.e. not in Ouagadougou and Bobo-Dioulasso, mainly due to a redefinition of villages and towns now having the size of cities. The corresponding annual growth rates for these three strata 'other cities', 'Ouagadougou' and 'Bobo-Dioulasso' between 1985 and 1996 were 7.4%, 4.3% and 0.6% respectively (INSD, 2000b). Besides differences in mortality and fertility between these strata, migration is the major force driving these changes of the regional population distribution.

82. Table 11 shows that the share of those adults who are already for more than four years at their current residence increased between 1994 and 1998, for both men and women (by 6.0 and 5.6 percentage points respectively). The share of those who migrated during the last four years from rural areas to urban areas was 6.4% and 5.5% in 1994 for men and women respectively. In line with the deceleration of the census based urbanization rate, these rates decreased in 1998 to 3.0% and 2.5%. Likewise, for those having migrated between urban areas or those coming from outside the country the migration rates decreased. However, all these numbers still range at rather high levels. Unfortunately for 2003 the corresponding data was not available to us. The only information we had concerned the fact whether a person lived 12 months prior to the survey in Côte d'Ivoire. This was the case for 3.3% of adult men and for 3.0% of adult women. Moreover, in Section 2.2.2 we already provided empirical evidence that remigration rates of Burkinabè back to Burkina Faso are very high since the outbreak of the political crisis in Côte d'Ivoire.

83. Table 11 also shows that the urban male and female adult population became slightly older between 1994 and 2003. This reflects to a certain extend decreasing birth rates since the eighties even if the mentioned migration flows into urban areas worked in the opposite direction.[27] Further more, Table 11 presents the distribution of two proxies for human capital which is widely recognized as a key determinant of labor earnings. In 1994, the percentage of adults being able to read and write in French is about 55% and 39% for men and women respectively. These rates remain the same in 1998 but increase to 63% and 45% in 2003. For educational achievement one can state an increase of those having at least some secondary schooling between 1994 and 1998. However, the proportion of those without any schooling remains almost constant. After 1998 educational achievements increase strongly, in particular the share of those without any schooling has been reduced significantly. This seems plausible with respect to the direction of change, but a bit overestimated in magnitude. Part of this progress can of course be explained by a general increased effort in the past of the government and international donors to increase enrollment rates, which together with high population growth modify rapidly the overall distribution of educational attainment.

[insert Table 11]

[27] In urban areas the total fertility rate decreased according to population census data (INSD, 2000c) and DHS data (INSD, 2000d) from 6.5 in 1985 to 5.4 in 1996 to 4.1 in 1998/99.

84. So one can state, that between 1994 and 1998 the population structure over observable earnings determinants did not change in a way which would suggest earnings—constant employment structure and returns assumed—to rise substantially. However, the continuous inflow of people, even if stabilizing or temporarily decreasing, put enormous pressure on the labor market and has therefore to be considered as a potentially important force of decreasing wages, especially in the informal labor market. In contrast, in 2003 higher average educational endowments should have had a positive impact on average wages, again under the condition that returns to education did not decline.

Changes in the occupational and employment structure[28]

85. Table 12 shows the development of the occupational structure between 1994 and 2003. One can clearly see that after the devaluation in 1994 the inactivity rate decreased substantially, namely from 23.7% to 17.4%. This resulted in a slight increase of 'open declared' unemployment and a significant increase in the employment rate. This evolution can be driven by two things: first, higher labor demand or attractive earning offers while reservation wages remained constant or, secondly, higher labor supply due to decreasing real earnings of related household members and therefore decreasing reservation wages relative to market wages. In other words, more household members had to work on the labor market to prevent total household income to decline. The following analysis indicates that the second channel is rather the relevant one. Between 1998 and 2003 we state a further reduction in the inactivity rate, but this seems to have collapsed entirely into unemployment. In accord with this evolution the dependency ratio—non-occupied (including unemployed) household members divided by household size—decreased from 63% in 1994 to 57% in 1998 and remained than at this level in 2003. We find no evidence in the data that recently immigrated persons into urban areas are more concerned with unemployment than others.

[insert Table 12]

86. The trend of the employment structure between 1994 and 1998 shows that obviously the entries into the labor market were more or less equally distributed over all activities. The only sector which knew a boost in employment was the formal wage earner sector. The informal sector is characterized by an increasing share of workers involved in the trade sector. In contrast the share of informal workers occupied in the manufacture sector or the sector of 'other commercial services' decreased. The number of non-agricultural enterprises increased between 1994 and 1998 only insignificantly from 0.63 to 0.66 per household, but did however not decrease. The average number of employed persons in these enterprises increased from 2.0 to 2.2. This together suggests, that misclassification is most likely the reason for the significant drop in the share of informal workers between 1994 and 1998, i.e. the sum of the share of independent informal workers and the share of persons being employed within their family yields a consistent employment structure for 1998 with the respect to the statistics of 1994 and 2003.

87. After 1998 the share of public and private formal wage earners was maintained, but the share of informal workers plus family helps decreased. In contrast, the share of non-remunerated workers increased. Finally we state that working conditions for those involved in the public or private formal sector or as an independent worker in the informal sector worsened. This is indicated by an increasing share of workers having agreements only on a seasonal, daily or other

[28] The following statistics are all based on the declarations made for the seven days prior to the survey. However, if we use the declarations made for the main occupation and activity during the past 12 month we get no significant difference in numbers.

temporary basis (see Table 12). Similar evidence but using different data is provided by Calvès and Schoumaker (2004).

Changes in the remuneration rates on the labor market

88. Table 13 presents the average declared real monthly individual earnings in the public, private formal and informal sectors. Again, interpretations based on this data should be taken with caution, given the only moderate quality of declared earnings in the surveys.[29] As expected, earnings in the public sector are highest followed by earnings in the private formal and informal sector. In addition, the development of earnings and earnings differentials is coherent with the evolutions stated earlier. However, averages may hide important distributional changes and be biased through outliers especially in the upper tail of the distribution. Therefore in addition we also analyze medians and average earnings for specific quintiles as well as non-parametrically estimated kernel density curves (Figure 8).

89. If we first look at average earnings, we state that between 1994 and 1998 real earnings decreased in all three sectors but the strongest in the private formal sector. If we look at the median we still state a decline of earnings for the public and private formal sector, but not for the informal sector in which the median increased by 20%. If we look at the change in average earnings of the poorest quintile of workers, we still observe a slight decrease for workers in the public sector, but a slight increase for workers in the private formal sector and a more or less constant value for workers in the informal sector. For the period 1998 to 2003, we find for all three sectors slightly increasing earnings, whether we retain average values or medians as an indicator, indicating a more favorable and recovered—from the shocks in the nineties—situation on the labor market even if, as mentioned earlier, working conditions in terms of the type of contracts workers possess, deteriorated.

90. All these shifts are also well documented in the kernel density curves (Figure 8). For the distribution of wages earned in the public sector one can state a shift between 1994 and 1998 to the left with slightly higher densities in the lower tail and lower densities in the upper tail of the distribution. The distribution for the private urban sector also shows a clear shift to the left between 1994 and 1998. In contrast, the earnings distribution for informal workers shows a clear shift to the right between 1994 and 1998, and hence an increase of earnings for a wide range of workers. Afterwards, between 1998 and 2003, the distribution for all sectors shift slightly to the right, especially in the lower tail of the distribution. However, the distributions also show that earnings in the informal sector are for most workers much lower than for those employed in the private formal or public sector. They are also for most workers in the informal sector well under the poverty line. Regarding the wage differentials between sectors, we find a more or less constant gap, when comparing medians, between the formal private and public sector and a narrowing gap between the informal sector and both other sectors. However, comparing averages for the period 1994 to 1998 a significant widening of the wage gap between private formal earnings and public earnings on the one hand and between informal earnings and public earnings on the other hand can be observed, which explains very well why urban inequality increased considerably between 1994 and 1998 and stagnated afterwards (see Table 1).

[insert Table 13 and Figure 8]

[29] In 1994, 1998 and 2003 18.8%, 13.7% and 9.3% of all public, private formal and informal workers declared no wage. Of course this further limits the confidence we can have in this data. Those who declared no wage are almost all workers in the informal sector; older than the average, often head of a household (except in 2003) and less educated than the average. This of course introduces a bias in the following analysis. Furthermore, it is not possible to control for the hours worked per month.

Linking urban labor market changes to policy reforms and macroeconomic shocks and the development of urban poverty

91. Urbanization and migration from rural areas to urban areas put substantive pressure on the urban economy, and hence on the provision of social services, the housing and the labor market; this is especially the case for Ouagadougou, even if temporarily, probably caused by the boom in the cotton sector, reduced migration to urban areas. Recently, as documented, the crisis in Côte d'Ivoire has again accelerated urban population growth. The significant increase of participation in the formal and informal labor market observed directly after the devaluation can be explained by the decline of real earnings in the public and private formal sector. Of course, the wages we observe in the household surveys are wages in equilibrium, so we cannot say with certainty if increased labor supply was the consequence or, first of all, the cause of decreasing real earnings. However, in both sectors wages are not indexed to inflation and were only slightly adjusted after the devaluation.[30] So it is very plausible that decreasing real earnings in the private formal and public sectors pushed formerly inactive household members into the formal and informal labor market in order to maintain initial household income levels. Accordingly, the average dependency ratio within households decreased. Then, as a second round effect, higher labor supply has most likely, at least on impact, further lowered formal wages and increased unemployment. In fact, the rise in urban unemployment is also documented by other authors. For instance, using a retrospective survey conducted over 8,644 individuals in the year 2000, Calvès and Schoumaker (2004) show that the unemployment rate increased especially among urban youth over the last two decades. In this context it is important to note that in line with the SAP the public sector currently only recruits for certain priority areas (e.g. education, health and tax administration). Projects using a 'high intensity of labor' were not systematically launched during the past 15 years, as it was done in the eighties (see e.g. Konaté and Raffinot, 1998). The decreasing purchasing power of employees in the public and private formal sector had of course some negative impact on the informal sector. However, these negative demand side effects were partly offset by a substitution of imported goods with domestic goods produced or sold by the informal sector. As a result the informal sector suffered less than the formal sectors between 1994 and 1998 and the earnings distribution even shifted slightly to the right, suggesting higher earnings at least for a part of informal workers (see Figure 8)

92. How can these changes explain the substantial rise of urban poverty between 1994 and 1998? For households which draw their income principally from the public or private formal sector—roughly 40% of all urban households—increased labor supply and the corresponding decrease of the dependency ratio were not sufficient to maintain household expenditure per capita at their initial level. As documented in Table A5, the poverty headcount ratio among households where the household head was employed in the public sector increased from 3.2% to 9.9% and among households where the household head was employed in the formal private sector increased from 7.8% to 18.5%. In contrast, the change in the earnings distribution of informal earnings would suggest that right after the devaluation households drawing their principal share of income from that sector knew increasing levels of expenditure per capita. However, Table 13 shows that the share of informal workers living in a poor household increased between 1994 and 1998 from 14.3% to 26.4%. Or, as Table A5 shows, the headcount ratio among households where the household head was employed in the informal sector increased from 16.2% to 20.2%. This increase in poverty is indeed lower than that observed for other groups, but still implies a

[30] For the first three decades of independence, the wage formation process in the public sector was dominated by a de facto indexation of nominal wages to inflation and a centralized bargaining structure. Real wage growth was positive throughout the 1970s and 1980s, irrespective of aggregate business cycle conditions. Starting with the 1993 labor code reform, the indexation of wages was eliminated, and a new income policy changed real wage formation. Wages in the public sector were increased by 8% in March 1994 and by 3% in October 1996 (Konaté and Raffinot, 1998; Monga, 1999).

worsening of living conditions. A more detailed analysis of the data helps to identify the driving forces. First, given that the median wage of the informal sector is only half of the one in the private formal sector and less than a forth of the one in the public sector huge increases of earnings are necessary to lift an 'average' informal household out of poverty. In other words, here again the poverty impact or the growth-elasticity of poverty depends of course where the wage level lies relative to the poverty line. Second, household heads working in the informal sector, i.e. persons who have in general to care for the main part of household income faced in fact more or less stagnating earnings (only 0.6% growth per annum between 1994 and 2003), suggesting that most of all secondary household members in general receiving rather low earnings knew a rise in earnings. Third, the dependency ratio in 'informal' households decreased less than in other households. Further elements behind the rise of urban poverty between 1994 and 1998 are that the share of household drawing their main share of income from non-labor income, i.e. mainly inter-household transfers, increased from 7.2% to 12.5% and that the average share of informal earnings in total household income increased from 32.3% in 1994 to 38.8% in 1998 (all our own computations). In this context, it is interesting to note again that a rise of urban poverty following the devaluation and the implementation of substantial structural reforms was stated in other WAEMU-member countries as well (see Section 1.3 and references there).

93. After 1998, the urban labor market showed clear, and as documented by the earnings distributions, signs of recovering. Earnings increased in all segments of the labor market and in particular in the informal sector, explaining very well the U-shaped growth incidence curve in urban areas over the period 1994 to 2003 (see Section 2.1.1). Accordingly, poverty rates for all socio-economic groups decreased, without however reaching the low levels of 1994. In addition, the average dependency on informal sector earnings of urban households decreased again. However, needless to say, that the informal sector still remains the most important income source for most urban households and hence, only by addressing this sector directly, substantial pro-poor growth can be achieved in the short and medium term. Moreover, the data shows that working conditions worsened for many employees, and not only in the informal sector. E.g. a much higher proportion of the labor force is now confronted with short term working agreements, increasing the vulnerability of households. In addition the introduction of a new labor code has lowered the negotiation power of workers and workers' unions. All these elements suggest that the urban labor market has to be observed in more detail and that safety nets to compensate for the higher risk of workers resulting from the macro-economic change have to be established (for details, see Section 5).

3.3. Public spending

94. In regard of Burkina Faso's high inequality and very weak social indicators, reasonable pro-poor public spending could certainly play a key role for substantive poverty reduction in Burkina Faso. However, because of the even higher importance of rural development and urban labor markets for a Burkinabè pro-poor growth analysis, in this study public spending was only given third priority.

95. Because of its very weak economic performance, public revenue collection in Burkina Faso has always been very weak and has even slightly decreased during the last years (from 13% of GDP in 1999 to 11% of GDP in 2003) (see Table 14), among other things because of the CET, which has considerably reduced revenues from trade taxes. However, a lack of institutional capacity but especially the informal character of the Burkinabè economy is responsible for its very low public revenue collection: Progressive income taxes, which play a major redistributive role in industrialized nations, can only play a minor role in an informal economy like Burkina Faso, where the main income taxes stem from public wages. However, improvements in the tax

collection and an enlargement of the tax base of income taxes would certainly raise public revenues (see also Section 5.6). A differentiation of the VAT—for instance separate rates for basic food items, for luxury goods and for the rest of consumption items—could also play a redistributive role. However, an agreement within the WAEMU has set VAT taxes to a uniform rate of 18%.

96. Hence, the fiscal structure, and especially public investment, is heavily dependent on external assistance. Between 1994 and 1999, 90% of public investments were financed by the donor community (see Table 14 and Figure 4). Thereafter, external contributions slowed down by 6.6% annually, while (thanks to HIPC flows) the government's effective contribution to public investments rose, but was still at only 26.4% of public investments in 2001. Given the extend of external financing, the level of public spending actually becomes a crucial question of donors' commitments and the predictability of their budget support as well as the government's capacity in absorbing and managing those external flows. Taken together, internally and externally financed public spending grew in line with GDP and remained at about 20% of GDP during the whole period 1994-2003 (see Table 14).

[insert Table 14]

97. To foster pro-poor growth via public spending, the structure of spending is at least as important as the level of spending, i.e. public spending has to be targeted in particular to the poor. Despite a steady increase of absolute social expenditures, during the whole period 1994-2003, the share of social expenditures remained below 20% of total expenditures (see Table 14) although additional funds for poverty reduction through the HIPC initiative are available since 2000. However, of the CFA F 54.4 billion, which Burkina Faso received in debt relief between 2000 and 2003, actually only 41% (IMF, 2003a) were spent. This shows Burkina Faso's difficulties in absorbing and managing funds. Even more concerning is the level of social investments, because of total capital investments on average only 13% was social investments. So the major part of public capital investments took place in large infrastructure projects (IMF, 1998), mainly in urban areas and hence not having been particularly pro-poor. In addition, not even many spill-over effects could take place since the projects were often not very labor intensive and used imported material.

98. The 20% of GDP which were available for spending on poverty reduction were in turn heavily weighted towards expenditure for education and health. With the beginning of the HIPC initiative in 2000, much more emphasize was then actually put on expenditures to support the economic situation of the rural poor. Moreover, three priority sectors were defined in the PRSP: education, health and rural development (e.g. investments into the rural road-system). However, resources used for rural development constitute only about one forth of expenditure used for education and health (IMF, 2004). This is still far below the targets set in the PRSP. In addition, the amount recorded as being spent on rural development in the last years, was mainly driven by investments into Ouagadougou's water supply project, the Ziga dam (World Bank, 2004b).

99. This 'neglecting' of the rural production sector might actually reduce the effectiveness of spending into social sectors. Expenditures only focusing on the supply side of social services, i.e. providing social infrastructure, and neglecting the demand side of social services, i.e. creating better income opportunities for the poor (i) to reduce the (opportunity) costs of using the created social infrastructure and (ii) to be able to use the acquired human capital thereafter, can lead to increasing services (e.g. schools or health centers) while keeping social indicators constant (e.g. enrollment rates, use of health centers). Furthermore, investments in social infrastructure have to be complemented by additional resources for current expenditure in subsequent periods to cover

the operational costs of the made investments, so that a certain quality of that infrastructure can be guaranteed.

100. Both facts taken together explain to some extend why Burkina Faso's social indicators are still very low, although having improved during the last couple of years (see Table 3), despite substantial investments into social sectors took place since the mid 90s. Or put differently, a focus on social investments for long-term poverty reduction, without being complemented by spending to improve short-term economic indicators and additional resources to cover further current costs, might constrain their impact and might make them in particular not very beneficial for the poor. In fact recent benefit incidence analyses of public spending in Burkina Faso have shown that poor households receive proportionately less of public funds than rich households (World Bank, 2004a). Hence a sensible balance between expenditures into production sectors and rural infrastructure and investments into education and health has to be found. However, one has to say again that this fact (at least in theory) has already been acknowledged, with an increasing focus of the government and donors on rural economic development. But for the future the danger could be that from an unbalanced bias towards social expenditure at the expense of productive expenditure, an unbalanced bias towards rural development neglecting the increasing poverty of the urban informal sector could emerge.

101. Besides looking at the structure of public spending one might also look at the spatial distribution of public spending, to see if public resources are not only spend in 'pro-poor' sectors, but are also directed towards those geographic regions where most of the poor live. However, regional public expenditure[31] is more or less equal to the revenues collected within the regions and is not redistributed much to poorer regions (Collectivités Locales, 2002). As a result public spending per capita is much higher in the 'Center' as well as in the richer cotton regions, 'Hauts Bassins' and 'Cascades' and obviously also biased towards urban areas, leading to high regional inequalities in access to education and health facilities (World Bank, 2004b).
Last, after the level and structure of public expenditure, the question of its efficiency is the third dimension, which has to be examined when evaluating the impact of public spending on pro-poor growth. This dimension is particularly important for a country like Burkina Faso, because its low level of available resources makes an efficient spending particularly important. Some progress has indeed been made in recent years to track public expenditure and their efficiency. However, there still remain several problems: First of all, the budget data is mainly recorded in administrative and broad economic categories and not in functional or programmatic classifications, which makes the evaluation of public spending somewhat difficult. Second, given the high regional economic disparities in Burkina Faso a further regional break-down of public spending would be useful. Third, given that public expenditures are highly foreign aid dependent, it is unfortunate that most of foreign financing bypasses the budget data (World Bank, 2004b) and is tracked separately, which makes both coordination as well as an examination of aid effectiveness difficult. Last, rural development again seems to be somewhat neglected (in comparison to health and education) concerning its proper reporting and is also not a part of the latest public expenditure review of the World Bank (World Bank, 2004b).

102. In sum, the potential of public spending as a mean of redistribution and as a crucial policy to enhance pro-poor growth has so far been not fully used. First of all, the low overall public revenue base as well as a bias towards large infrastructure projects has limited the funds available for social expenditure. Secondly, social spending was somewhat biased towards investments in health and education neglecting (at least until 2000) investments into rural infrastructure and productivity. In addition resources to maintain infrastructures were often

[31] Unfortunately only numbers on total expenditure (and not social expenditure) per region were available to us.

missing, which led in some cases to the fact that new social infrastructure was not sufficiently used by the poor. Of course, the positive effects of some investments can only be seen in the long term and therefore cannot been evaluated yet.

3.4. Institutions and political economy

103. In Burkina Faso, as in most low income countries, the weakness and lack of institutions presents a major obstacle to development and pro-poor growth. Since 1991, Burkina Faso undertook a bundle of reforms to improve its institutions and to promote good governance and an efficient administration. The effort was further increased by declaring 'The promotion of Good Governance' as one of the four pillars in the PRSP. The integration of Burkina Faso in the WAEMU also had some positive influence in this respect.

104. Legislative elections were held in Burkina Faso in May 2002. For the first time, all opposition parties participated in the elections, which were also evaluated as fair elections by international observers.[32] The first municipal elections took place in 1995 and were repeated in 2000 (Ministère de l'Economie et des Finances, 2004; IMF 2003a). On the non-governmental side, one can identify roughly 6,000 associations, 12,000 village groupings, 200 NGOs, 150 associations promoting the rights of women, 10 associations promoting human rights and several labour unions are part of the civil society in Burkina Faso. They partly contributed, as foreseen, to the process of elaborating the PRSP. However, their power to influence significantly good governance is generally judged as rather weak. They certainly play a more important role in the provision of local services, but representative data to analyze their specific role in detail does not exist.

105. Corruption is generally judged to be a smaller problem than in most neighboring countries. However, it is also far from being not a problem at all (see indicators presented in Section 1.2). Hence, in May 2001, the government established the so-called 'national-ethics committee', whose responsibilities include the reduction of corruption. Then, in September 2002, an additive 'high authority to coordinate the fight against corruption' was created to strengthen the institutional mechanisms to combat fraud and corruption. This authority can, according to the government, undertake any investigation at its own initiative. Furthermore, an initiative called 'national anti-corruption network' emerged from the civil society (Ministère de l'Economie et des Finances, 2004).

106. Within the PRSP, the Burkinabè authorities formulated five measures which should help to promote good governance (Ministère de l'Economie et des Finances, 2000): (i) adoption (October 1998) of a national plan on good governance (PNBG); (ii) adoption (April 2000) of an action plan for justice reform (PANRJ); (iii) a general reform of public administration (1992); (iv) the development and diffusion of economic and social information; and (v) a process of decentralization (1998). The launch of the different initiatives in the framework of the pillars (i) to (iv) should of course have a positive impact on the livelihood of the Burkinabè population and help to foster pro-poor growth. Past studies indicated a strong necessity for reforms in these areas (see e.g. Sirima and Savadogo, 1999). Access to information and greater transparency, a more efficient administration, greater access to the justice system, higher security, participation of the civil society, protection and promotion of human rights are all measures which should especially help the poor to improve their economic conditions (among other things via a better

[32] President Compaoré's party (Congrès pour la Démocratie et le Progrès—CDP) obtained 57 out of the 111 seats in parliament (51%), with the remaining seats going to representatives of 13 different parties. Prime Minister Paramanga Yonly was reappointed to head a new cabinet comprising 26 ministers, of which three ministers are not members of the ruling party.

investment climate). However, at this stage it is difficult to evaluate the effective impact. First, most of the initiatives have only recently been launched and, second, it is difficult to find appropriate outcome indicators in these fields, and third (and not only in Burkina Faso) it seems that there exists a significant lack between decisions and effective implementation (for instance, according to local voices, corruption seems not to have been decreasing significantly during the last three years).

107. The decentralization process entails similar problems. Already having started in 1998, this process seems, at least until now, not having provided the expected efficiency improvements. It is still impeded by insufficient transfers of authority and resources from the state to the corresponding local units. In addition, it so far only affects roughly one fifth of all Burkinabè citizens (Ministère de l'Economie et des Finances, 2004). Therefore decentralization is until now not really an operational instrument to foster pro-poor growth on the local level. It might even be that the process is currently more costly than beneficial.

108. The elaboration of the PRSP shows another important institutional problem: the lack of coordination between the different ministries involved in economic and social policies and poverty reduction. Participation in policy setting and implementation seems to depend on the amount of financing the specific ministry receives or has to expect from the PRSP-HIPC initiatives. Therefore, some entities, even if they should *a priori* strongly be involved in poverty reduction policies, do not cooperate sufficiently in the elaboration of policies, entailing that policies are not correctly implemented (or not implemented at all) or that they are simply not appropriately defined. These latter problems do not only apply to the PRSP, but the PRSP process makes them particularly obvious. In fact, such coordination failures were certainly, besides the weak capacity of institutions, another important factor behind the relatively low growth-elasticity of poverty Burkina Faso knew in the nineties.

3.5. Gender inequality

109. For this case study gender issues have not been identified as a core area, because other topics seem to be more important for the country's economic and social development. Or put differently, even if the Burkinabè economic and social system is far from offering equal chances to men and women, there are only few issues which seem very particular to the Burkinabè case in comparison to other Sub-Saharan African countries.

110. From a legal point of view, several initiatives have been launched in the past to protect the rights of women and to equalize their chances to those of men. However, in many areas traditions prevent those favorable changes in the legislature to become effective in practice; in other areas a legislative framework ensuring equal rights for women does not even exist. For instance, women still cannot buy land and they only can inherit land indirectly via their spouse (Diallo, 2002). Women can also be expropriated of their cultivated land, a fact which exerts most likely negative effects on their propensity to invest. Women who divorce (voluntary or involuntary) loose frequently everything they own and are expulsed from their families. Of course, this means for many of them to fall immediately under the poverty line. Women have often no access to fertilizers, because the money necessary to buy them is under the control of the male household head who besides the family plots, also possesses his own individual plots for which he usually prefers to use the financial resources. As in most Sub-Saharan African countries, women accomplish many different and very time-consuming tasks (in the household and on the market), but in most cases the corresponding time allocation is determined by the household head. Women typically cultivate niébé, shea nuts and other oil seeds, but the more important cash crops are typically in the hand of the male household head. This has often

negative implications for the intra-household allocation of cash-income, in the sense that investments into children's health and education are lower than if the woman decided on the allocation of resources.

111. As in most Sub-Saharan African countries, women also have on average much lower education than men. For instance in 2003, 29.4% of all adult men were literate (any language), whereas this was only the case for 13.5% of all adult women. Illiteracy is especially high for rural women (94.1%). However, the educational 'gender gap' narrowed weakly between 1994 and 2003. This progress is mainly due to the fact that enrollment rates for girls increased slightly faster than those of boys. It is still possible, but it seems not very likely, that the *Millennium Development Goal* on the 'gender disparity in education'[33] will be reached, given that in 2003 the gross primary school enrollment rate for boys was 40.6% and that of girls was only 27.0%.

112. We do not have at hand the data to examine in detail to what extend women are discriminated on the labor market. All we can say is that women, given that they have on average less education and that they usually are expected to pursue many tasks in the household, are less represented in the public and private formal sector and have on average a lower employment status than men. For instance in urban areas, 15% of all adult men are employed in the public sector, whereas the corresponding percentage for women is only 9%. In the private formal sector the respective numbers are 22% and 9%. In contrast, women are disproportionately found in the informal sector, either being independent or as a 'family help'. Within the informal sector they generally pursue a limited range of traditional activities related to their domestic tasks, such as the processing and sale of foodstuff or hairdressing. Informal activities generating higher incomes are mainly carried out by men (Calvès and Schoumaker, 2004). Wage gaps between men and women can only hardly be estimated with our household survey data because we have no information on hours worked and can therefore not compute earnings per hour, which would be necessary for such a comparison.

113. Today it is widely recognized that the promotion of women's human capital does not only lead to less, healthier, and better educated children, to a higher autonomy of women, and to an increased labour supply of women outside the household (see. e.g. Jejeebhoy, 1995), but that these channels constitute also an important source of economic and especially pro-poor growth (see e.g. Klasen, 2003b). Consequently, the Burkinabè PRSP emphasizes the role of women. According to the government, additional financial allocations from the HIPC resources made it possible to establish various socio-economic infrastructures to the special benefit of women (construction of women's centres, acquisition of mills, shea nut presses, grain hulling machines etc.) and to organize training sessions for income generating activities for women. Other programs aim to reintegrate girls who dropped out of school. Finally, an effort is made to fight female genital mutilation (Ministère de l'Economie et des Finances, 2004). All these measures are up to now in particular targeted towards the most disadvantaged provinces and are not national wide acting programs. Given that most of them started only recently in the framework of the PRSP and HIPC initiatives, it is too early to evaluate the corresponding poverty effects.

4. Trade-offs between growth and pro-poor growth

114. Trade-offs between growth and pro-poor growth promoting policies are generally hard to quantify, because again the difficulty lies in separating what was due to a particular policy and what was due to other shocks, such as terms-of-trade and climate shocks, which certainly had a

[33] Goal 3, Target 4: 'Eliminate gender disparity in primary and secondary education, preferably by 2005, and to all levels of education no later than 2015'.

major impact on the economic performance of Burkina Faso during the nineties. In what follows we try to rely on our analysis above and existing cross-country evidence to explore such trade-offs for Burkina Faso in a rather qualitative way. The analysis will be mainly ex-post; however, we try to provide some indication on how policies, which we identify as being characterized by possible trade-offs, might be transferred into win-win strategies. These indications will be rather short, but discussed in more detail in Section 5, where we formulate our main policy recommendations to achieve higher pro-poor growth in Burkina Faso in the future.

115. From a macro-economic point of view, the Burkinabè economy was, during the last ten years, characterized by structural adjustment, by the devaluation of the CFA Franc in connection with a temporarily favorable evolution of the world market price for cotton, and by a policy of trade and price liberalization. Together these measures seem to have been important drivers of GDP growth. However, the resulting pattern of growth was, as we hope to have emphasized in the previous sections, not as much pro-poor as it could have been. A large part of GDP growth stemmed from the cotton sector and some in terms of the employed share of the total workforce small and rather capital intensive sectors (e.g. electricity, gas, water). This growth was further pushed by substantive investments, which were to a large extent only weakly productive. Over the whole observation period, we also observed growth and hence poverty reduction in the subsistence agricultural sector. However, recall that we showed that in agriculture, productivity growth could not be identified as a significant source of growth. Moreover, agricultural growth in volume was mainly due to an increase of land and was only high enough to keep up with population growth.

116. Given this particular pattern of growth, food-crop farmers—the large majority of the Burkinabè population and especially of the poor population—did not benefit as much as they could have. Especially in the first period from 1994 to 1998, the growth process in this sector was not strong enough to compensate for the increase in food prices (which was mainly caused by the drought in 1997/98 but also partly due to price liberalization policies), i.e. the purchasing power of the rural population was not increased. Likewise, the urban population seems to have taken a large part of the burden of the adverse effects entailed by the macroeconomic change. Hence, it seems that the economic policy especially in the early and mid-nineties favored rather strong growth in specific sectors (and a few regions), but with rather low spill-overs on the poor, instead of lower but higher pro-poor growth. If this trade-off was inevitable or to a certain extent a choice of the government and what would have been promising alternatives are the thereof following important questions.

117. The favorable evolution of cotton exports (pushed by the devaluation) in connection with the fixed producer price paid by the SOFITEX led to substantive income growth among cotton farmers (see Table A7). In addition, this group benefited from well organized marketing channels, access to credits and fertilizers, all factors together leading to a substantive poverty reduction among cotton farmers during the whole observation period (see Table A6). However, as we emphasized, cotton farmers only form the smaller group within the rural population in Burkina Faso and are concentrated in a few regions, so that significant linkages via the demand for labor and goods to other sectors are very weak. Therefore the growth elasticity of poverty with respect to growth enhancing policies in the cotton sector is necessarily limited.[34] In addition the income gap between provinces specialized in cotton and those specialized in food crops put a further obstacle on poverty reduction. Klasen (2003a) summarizes empirical evidence that regional inequality can indeed sharply reduce the impact of growth on poverty.

[34] Microsimulation analyses testing the potential impact of price variations of the producer price for seed cotton on overall rural poverty also suggest that significant poverty reduction cannot be achieved uniquely by a favourable evolution in the cotton sector (Ministère de l'Economie et des Finances, 2003).

118. Food crop farmers act in a much riskier environment than cotton farmers. With the onset of structural adjustment programs price controls were completely eliminated, so that food crop farmers now face high annual as well as seasonal price volatility. Consumption smoothing is hindered by the very limited availability of credits for this group and the lack of sufficient storage possibilities for their production. Investment in productive agricultural assets and rural infrastructure were at least until the onset of the PRSP-HIPC initiative at a very low level preventing any substantive gains in productivity. In addition the population suffered under the severe drought of 1997/98, which resulted in shortages of food production and a strong increase of food prices. These facts suggest that (at least until 1998) the government did not make sufficient efforts to improve the possibilities of food crop farmers, to raise their incentives to invest and particularly to protect them from negative temporary shocks.[35] Policies of this type would most likely present so-called win-win-strategies in the sense that they would reduce poverty (and especially transitory poverty) and would also set the conditions for sustained economic growth (see Section 5). Various studies support this hypothesis. Klasen (2003a) identifies the rise of agricultural productivity as very critical for pro-poor growth. Danielson (2001) concludes that rural growth is not only good for poverty reduction in rural areas, but that it presents also strong positive linkages to the urban economy; first, via the demand for local non-agricultural goods of the urban sector, second, via increasing incomes of the urban informal sector which is often strongly linked to agricultural production trade and, third, via decreasing rural-urban migration—and might therefore even be more efficient in reducing urban poverty than growth in urban areas itself.

119. As we outlined in Section 2 and 3, urban households were seriously hit by the adverse affects of the devaluation and the structural adjustment program. Increased prices for imported goods, wages which were not indexed to inflation and a labor market reform let to stagnating and in some sectors even to decreasing real earnings, higher unemployment and less stable labor contracts. In consequence, urban poverty increased sharply between 1994 and 1998. This is particularly serious, because before 1994 urban poverty was only a minor problem relative to rural poverty. A more careful sequencing of the abolishment of wage indexation would most likely have prevented the substantive reduction of real earnings in the formal urban sector and hence (via a stable demand for local products) would also have had a positive effect on the informal sector. In addition, temporary cereal food price stabilization would have been an additional mean to protect the urban poor from rising food prices to prevent urban poverty to rise so fast.

120. Although macro-economic stability is of course a critical and necessary condition for pro-poor growth, because the poor are hurt the most by high inflation and high macro-economic volatility (see also Klasen, 2003a and Lopez 2003), there is sufficient evidence that in many countries structural adjustment tends to reduce the growth-elasticity of poverty, and that frequently the poor seem not to be placed well enough to take advantage of the new opportunities created by structural reforms (Lopez, 2003). Lopez (2003) provides further evidence that financial development, trade openness, and decreases in public expenditure are recurrently associated with increases in inequality. These negative effects might prevail only in the short term and be off-set in the long term by strong macro-economic growth. However, this calls as long as the effects are negative at least in the short term for complementary measures in the sense of safety nets.

[35] Producers of livestock benefited from more support by the government and indeed their incomes grew more than that of food-crop farmers.

121. In sum, a better redistribution of the benefits resulting from the devaluation, a reallocation of resources to infrastructure investments beneficial for the poor (roads, storage possibilities, mechanization, marketing channels, water, and electricity), a better sequencing of those measures of the structural adjustment program which affected directly household incomes and a higher focus on temporary shocks which hurt especially the poor would maybe have reduced in the short and medium term the overall rate of growth, but would most likely also have prevented poverty to rise between 1994 and 1998 and set the conditions for even higher pro-poor growth rates in the longer term between 1994 and 2003.

5. Policy implications for pro-poor growth

122. Much has been written in the past 15 years on what should be done in Burkina Faso to accelerate social and economic development (see e.g. Monga, 1999; Sirima *et al.* 1999; Roemer, Collier, Graham *et al.* 1996). Most of the advices given by these authors still have their legitimacy and could therefore exactly be reprinted. For instance, macro-economic stability, broadening the tax base, export diversification, investment into rural infrastructure, or investment into health and education were always among the key recommendations. As one can expect, they also appear in the PRSP and are regularly emphasized by the IMF in the Burkina Faso 'Country Report'. A certainly legitimate question is then, what is the surplus of our study at this stage?

123. First, given that we provided, in our opinion, a more accurate poverty assessment over the period 1994-2003 than it was done before, we will examine the potential development strategies in the light of these new numbers. Second, given the purpose of our study, we will more than most authors before focus on the potential distributional changes the various development strategies have and try to identify those which maximize household income per capita among the poor and not the country's GDP per capita. Third, we have the impression that existing studies on Burkina Faso as well as the country's PRSP often present simply a catalogue of all measures one could reasonably envisage without setting any significant priorities among them and without evaluating at least roughly their feasibility. One might even argue that part of these recurrently appearing recommendations are the same given to all other Sub-Saharan countries and are also similar to those one can find in the World Bank's so-called 'Sourcebook' (World Bank, 2001).[36] This section is structured as follows. First we define briefly the cornerstones of our policy recommendations. Then we give a more detailed description of what we think should be done (and what should *not* be done) for growth to become even more pro-poor in Burkina Faso. Our aim was not to provide a complete and exhaustive list of all measures, which one might assume as somehow useful for the country. We prefer to highlight the—in our opinion—most important and most feasible ones and those which are the most related to our concern, i.e. pro-poor growth. Where it is possible, we underpin our recommendations by a quantitative assessment carried out using the IAP-PAMS framework, which is a macroeconomic consistency framework linked to household survey data calibrated on the Burkinabè economy end of 2003.[37]

[36] The World Bank's 'Sourcebook' should guide countries, which wish to participate in the HIPC initiative, to elaborate their PRSP..

[37] This tool is shortly described in Appendix E. A detailed explanation of the simulations' assumptions and results can be found in Kindé and Ouedragogo (2004). Although this tool can give some useful insights with regard to the potential growth and distributional effects of specific development strategies, it should be noted that it is more suited for short-term projections. Furthermore, it should be emphasized that the baseline scenario set by Kindé and Ouedragogo (2004) is a rather pessimistic one, in the sense that despite relatively sustained GDP growth poverty is projected to decline only modestly until the year 2010 because of strong inequality increases.

124. We think Burkina Faso's development in the next 15 years should be based on broad rural growth. Policies should not only address cotton farmers but also and especially food-crop farmers and producers of livestock. The most critical point in fostering broad-based rural growth is to further invest in agricultural production but with more emphasize on staples as well as non-farm income activities, to invest even more than currently done in rural infrastructure, to reduce the risk of farmers, to integrate markets and to keep an eye on price trends of goods of first necessity. For urban areas, where the challenge is to prevent poverty to rise further, likewise we consider investments into infrastructure and measures which reduce the risk of those engaged in the informal sector as the most important issues. High economic volatility is particularly harmful for the poor and builds with limited access to the capital market a significant obstacle for investments in the informal sector.

125. Investment in education and health should of course be pursued and even intensified, but it should not crowd out investment in infrastructure. Infrastructure is a prerequisite for private investment and without private investment the return to education will be low. In addition to investments into infrastructure the institutional framework plays a crucial role in setting the right incentives for small local and bigger foreign investors. Of course, what we suggest might raise the question how these investments could be financed. We think a more efficient system of taxation and redistribution and a reallocation of investment should deliberate non-negligible resources. In other words, existing resources (including the current level of foreign aid) if better allocated should allow to improve productive public infrastructure much faster as it happens at the moment.

126. In the long run, there is of course no doubt that Burkina Faso needs substantial structural change and cannot only rely on agriculture. The secondary sector then has to expand substantially, among other things by developing value chains. Moreover, the formal sector would have to be reformed such that it is feasible and beneficial for actors in the informal sector to go into the formal sector in order to profit from larger markets, a higher degree of labor division and access to credits. In what follows, we explain in more detail our arguments which led to these conclusions.

5.1 Rural development

127. In the PRSP it is emphasized that besides improving education and health, rural development is the key to substantial poverty reduction in Burkina Faso to take place, with the reason given, that this is the sector where most of the poor are situated. In addition to this reasoning we want to add three equally important issues for why pro-poor growth (at least in the short run) has to be achieved through further rural development although we have indeed seen urban poverty to rise during the last decade whereas the rural sector has done relatively well.

128. First, since pro-poor growth cannot only occur through direct growth effects, but also through spill-over effects and redistribution and hence indirect growth effects, growth in the first place would not necessarily have to occur where the poor are in order to be pro-poor. However, for the case of Burkina Faso (i) the so far low market integration hinders many spill-over effects between the urban formal secondary and tertiary sector on the one, and the mostly rural primary sector on the other side; (ii) the very low human capital base of the rural population makes it very difficult for them to move to the formal urban sector at least in the short run; (iii) and the so far weak rural (use of) infrastructure somewhat limits the potential for redistribution; all factors taken together limiting the potential of indirect growth effects for poverty reduction to take place. Second, our analysis has shown that rural growth is also more pro-poor within itself than growth in other sectors since (i) growth in the agricultural sector seems to be translated best into

increasing household incomes (see Section 2.2.1) and (ii) it is marked by low inequality (see Table A8) which allows a higher growth-elasticity of poverty (Bourguignon, 2003). Third agricultural development has also positive effects on the urban (informal) poor, since it decreases prices of food staples mainly consumed by the poor, it increases the demand for locally (informal) produced goods and decreases the pressure of rural-urban migration on informal wages.

129. Having explained the 'agricultural paradox', where growth has to start in agriculture so that the economy can grow out of the 'agrarian phase' and having emphasized the importance of rural development policies for pro-poor growth, what are the pillars on which those policies should be based? As our analysis has shown policies should (i) increase rural incomes through agricultural intensification and diversification, (ii) reduce farmers risk to external shocks and (iii) integrate markets. To achieve these objectives various policies are possible and have already been proposed. However to evaluate which policies should be (and not be) given first priority, it is important to clearly distinguish (i) between subsistence and cotton farmers, (ii) between reducing poverty (ensuring food security) and significantly raising average rural incomes and (iii) between rural development and agricultural development. In addition, one should always keep in mind the physical constraints Burkina Faso faces—being a landlocked, Sahelian country, suffering from short rainy seasons, recurrent droughts and a so far very low human capital base—when evaluating the feasibility of the various policies suggested.

Agricultural intensification and diversification

130. To achieve a higher and a more sustained rate of pro-poor growth an intensification of agricultural production is necessary. This could be done via an increase of productivity, through higher use of fertilizers, modern equipment and investment into human capital or through the expansion of cultivable land. Since land expansion has already almost reached its limits, increasing productivity should be the policy to chose. A policy, which aims to increase productivity through increased human capital, must however, at least in the medium run, heavily invest into adult education to see any results. Hence, investments into modern equipment and subsidies for fertilizers should, at least in the short run, yield higher returns. However, one should keep in mind that a pure focus on agriculture goods would increase, given the irregular rainfalls, the volatility of household incomes. Moreover, a promotion of higher productivity without at the same time ensuring better storing, processing and commercialization including export of those products, will lead to decreasing prices. This would certainly have a very positive effect on the poverty line because of the decreasing basic food prices, but this might not lead to substantial higher average household incomes since the terms of trade for farm products would decrease. This trade-off is not specific to our case; historically there has been considerable debate about whether agricultural productivity improvements are good for the poor. However, among others, Datt and Ravallion (1998) showed recently for the case of India that productivity increases should generally have a positive impact on poverty.

131. However, another strategy might be to diversify into cash crops with higher yields and prices. An export-led agricultural growth strategy has actually been the driver of agricultural growth within the last years and has also resulted in decreasing poverty rates among cotton farmers. This trend might lead to the misleading conclusion that one should only focus on cotton (or other export crops) for rural poverty reduction. It is important to keep in mind that (i) growth in cash crops is translated much less into higher household incomes than food crops, (ii) export oriented cash crops have much less spill over effects than domestically traded food crops, (iii) growth in cash crops might have a rather negative effect on income distribution (iv) to the climatic risk external price volatility is added and (v) cultivatable land for cotton is limited. What could nevertheless be done to facilitate the potential of the cotton sector for poverty reduction,

would be a reduction (or even abolishment) of the massive cotton subsidies in the U.S.A, E.U. and China.[38] The impact on poverty in Burkina Faso would be substantial as shown by Kindé and Ouedragogo (2004).

132. Since both, domestic- as well as export led agricultural growth, have their shortcomings concerning their impact on poverty reduction, we tried to contrast the effects of supporting policies in both sectors on pro-poor growth by undertaking various simulations using the IAP-PAMS framework. Whereas a further promotion of exports would lead to higher national growth rates, promotion of staple production would lead to higher growth rates in the primary rural sector. Hence productivity increase of food crops should be given higher priority than in the past. However if one does only focus on productivity increase (neglecting the below described dimensions of rural development) the simulations also show, that the poverty impact would rather be low (for details see Kindé and Ouedraogo (2004)). In addition, livestock seems to be a very promising sector, since it is both an export as well as basic food component combining the advantages of food- and cash crops for poverty reduction. Actually, poverty in the 'Sahel' zone, where livestock production has heavily been promoted in the last years, has substantially decreased between 1994 and 2003 (see Table A5).

Risk reduction and market integration

133. For the case of Burkina Faso, output uncertainty and risk and not land inequality (in contrast to e.g. many Latin American countries) is a major barrier for rural growth and poverty reduction. Hence any policy reducing the risk of farmers is a win-win pro-poor growth strategy for Burkina Faso. First of all, policies could consider to directly stabilize prices of certain products the poor produce and consume, e.g. staples, which would also have a very positive effect on the poverty line (see also Section 1.3). But endangering market efficiency, one would prefer to think of (i) establishing 'drought insurances' or countercyclical fiscal policies to ensure food security and moderate prices of food items of first necessity, (ii) subsidizing agricultural investments and inputs (Dorwad, Kydd, Morison *et al.*, 2004), (iii) delivering storages, such that farmers can better stock their production throughout the year. The very well organized cotton sector, although sometimes being said to be not enough liberalized, might however stand as an example of how moderate risk-reducing interventionist policies can lead to higher efficiency.

134. Since some climatic vulnerability will always remain, more important as an anti-risk strategy for rural households seems to be diversification into non-farm sectors.[39] Income diversification is indeed already present in Burkina Faso and whereas agricultural production is most of all used for auto-consumption, most of rural household revenue (30%-40%) originates from non-farm sources. Another 'special feature' of Burkinabè rural household income is the high percentage of transfers either from urban or exterior zones (see also Section 2.2.2). This shows that rural development policies are not well designed as long as they purely focus on agricultural output neglecting rural non-farm income opportunities.

135. Besides increasing and diversifying agricultural output and reducing rural risk, market integration is the third pillar on which pro-poor growth policies should build. Whereas the former two mainly enhance poverty reduction through higher growth rates and decreasing poverty lines, higher market integration will especially help to translate existing growth into

[38] Minot and Daniels (2002) cite studies which show that a removal of all subsidies in the cotton sector could increase the world cotton price by more than 50% from its 2001/02 level. Oxfam (2002) cites estimations showing that the withdrawal of U.S. cotton subsidies alone could already raise the world cotton price by 28%, or 11 cents per pound.

[39] In fact in the Sahel region, where the degree of diversification is relatively high, poverty did not increase between 1994 and 1998 as in most other regions.

higher household income. To integrate markets and reduce transaction costs first of all heavy investments into rural infrastructure have to take place. Second, farmers' organizations, improved marketing channels and better information systems should be added to ensure functioning markets, which would foster the commercialization of agricultural products, a better allocation of resources and would again have a positive impact on staple prices.

5.2 Urban labour markets

136. Urban poverty increased strongly in the second half of the nineties. An important factor behind this increase was the fact that there was no safety net to protect the population from the adverse effects of the devaluation and the structural adjustment program. Real incomes stagnated or even declined, prices for several food items increased substantially and employment conditions became less stable than before. In such an environment transitory poverty may rapidly transform into chronic poverty. We do not question the general necessity for structural adjustment, but we think it should be accompanied temporarily by measures which guarantee a minimum real income to the poor. This can be reached by price regulation for some food items of first necessity and by an indexation of real wages to inflation in the formal sector,[40] which would also most likely have positive effects on the informal sector.

137. Given that more than 60% (see Table 12) of the total urban work force works in the informal sector (incl. family helps), that 20% of them are among the poor (see Table A5) and that they usually face high income volatility, poverty reduction strategies have to comprise specific measures for this sector. For workers in the informal sector the most important problems are limited access to the capital market and the high volatility of the demand for informal goods. A high-risky environment reduces incentives to invest and therefore investments in the informal sector are usually relatively low. In contrast, during the last ten years the Burkinabè economy knew relatively huge amounts of public and formal private investment. However, our analysis has shown that total factor productivity stagnated, i.e. that obviously the returns of these investments have been very low or even negative. Given these facts, it might be promising to exploit the growth potential of individuals acting in the informal sector, which are so far most of the time prevented to invest, but who might have investment opportunities with higher marginal returns. In other words, in line with the arguments put forward by Aghion and Howitt (1998) a redistribution of resources from the rich to the poor can accelerate economic growth by increasing the average returns to investments. This redistribution might take the form of investments into infrastructure which directly increases the productivity of the urban poor or the form of micro-credit programs and alike facilitating the poors' access to capital.

138. In the long run, measures have to be undertaken to develop the private formal sector, which currently only employs a little more than 15% of the total urban work force. To expand this segment of the labour market, the government has to provide a transparent and simple regulatory framework, adequate infrastructure and a workforce having at least completed primary or junior-secondary school. Furthermore, for informal enterprises the transition from the informal to the formal sector should be simplified. The time it takes to pass the necessary administrative steps was recently significantly shortened (to two days), but the additional costs involved in becoming formal—mainly taxes on the employed workforce and social security contributions—are so high, that for most enterprises in the informal sector this transition constitutes not an interesting option.

[40] Of course, we are aware of the fact that governments' pay policies and limited competition in product markets can lead to wage misalignment and real wage rigidity and by this channel to an over-valuation of the currency (see e.g. Rama, 1998), so these policies have to be undertaken carefully and with moderation.

5.3 Private sector development

139. Sectors where Burkina Faso might be competitive and where it might therefore be worth to invest relatively more resources are the sectors involved in the transformation of fruits and vegetables, tannery and cotton. Sometimes it is suggested that Burkina Faso should engage in the fabrication of electronic components or textiles. But we think that without a significant improvement of the public infrastructure and without a higher educated and trained workforce Burkina Faso has no chance to be competitive on the world market in these sectors in the near future. In any case, private sector development should absolutely concentrate on sectors which have a high labour intensity since spill-overs among sectors seem to be at least in the short run relatively low. For instance, the mining sector, which has certainly a growth potential, can never employ more than a few thousand workers and can therefore not be seen as a particularly pro-poor strategy.

140. Finally, private sector development has to be accompanied by the development of financial markets. But in Burkina Faso the lack of credits for enterprises seems to be a smaller problem than the availability of interesting investment projects, most of all limited by unproductive infrastructure and relatively high factor costs (water, electricity, telephone, transport), which are recurrently cited as the main obstacle for a further development of the private formal sector.[41] Whereas this argument is certainly true, there are good reasons why factor costs in Burkina Faso are higher than in neighbouring countries and hence in the close future it will be very difficult to reduce them significantly. First, Burkina Faso is a landlocked country without any significant natural resources and therefore the production of energy is of course more expensive and limited. To ensure at least in the long term a sufficient supply with energy at reasonable costs, the WAEMU countries should recognize the importance and potential of the West-African-Power-Project (WAP), which is partly financed by the World Bank. Cost for telephone services could certainly be lowered via a further liberalisation of this sector. Internal transport costs can somewhat be lowered by the construction of more roads. However the main issue remains cross-country transportation costs. Therefore, once the crisis in Côte d'Ivoire is over the train connection between Abidjan and Bobo-Dioulasso should again be used and improved. Also, it should be possible to attract one or two additional international airlines to the airport of Ouagadougou. Currently *Air France* offers the sole regularly non-stop connection to Europe (five times a week), explaining why airfares are so expensive.

5.4 Population, health and education

141. Population growth in Burkina Faso is still very high, putting pressure on natural resources, the labour market, public infrastructure and hence poverty. However, for poor households, and especially in rural area, many children are often the only mean to have cheap and a large enough workforce and to have old age security. In addition, effective fertility is higher than desired fertility.[42] Given the high rate of child mortality, parents may have the tendency to anticipate a certain death probability of their children and then, given their risk aversion, over-compensate the number of real losses (*hoarding effect*). We think to reduce population growth one has to make investment into education more profitable. Confronting parents with sufficiently high returns to education, they might prefer to invest in the education of their children ('quality')

[41] For instance, the price of water was at the end of the nineties three times the price in Côte d'Ivoire and four times the price in Togo. The price for telecommunication was 60% higher than in Côte d'Ivoire and more than 100% higher than in Togo. Likewise, transport costs by route, air and train were among the highest in West-Africa. The price for electricity was also very high, but here the difference to other countries was less important; Mali and Senegal have even higher prices (Sirima *et al.* 1999).

[42] TFR of 6.8 vs. desired TFR of 6.0 (INSD, 2000d).

instead in the 'quantity' of children. Further more, educated mothers have generally less and healthier children. Such a strategy should be accompanied by an appropriate diffusion of contraceptives and contraceptive knowledge, to enable parents to then actually achieve their desired number of children.

142. In the past the remittances made by Burkinabè migrants working in Côte d'Ivoire constituted an important income source for many, and especially poor rural, Burkinabè households. Given the crisis in Côte d'Ivoire and the policy of "*Ivoirité*" this source has lost its importance. Roemer *et al.* (1996) even saw a potential for increasing household incomes by sending migrants to industrialized countries in Europe and North-America. We think that this is not a feasible option given the migration policy in these regions. However, the government should try to keep contact with those who leave, especially with those who leave for acquiring higher education, which is certainly a constraining factor in Burkina Faso. The government and local companies cannot compete with the wages paid by international organisations and international companies and therefore the country can barely hold highly qualified individuals in the country. Internal migration offers also less potential than in the past. Areas with abundant land or excess labour demand became scarcer, even if population density still varies considerably across the country.

143. In the second half of the nineties, AIDS became a severe problem in Burkina Faso.[43] The government has already undertaken numerous measures to inform the population of the causes and consequences of this epidemic. This effort has to be pursued and supported more by international donors. Information is especially important in rural areas, where the real causes of AIDS are often still unknown. Even if prices for antiretroviral therapies decreased during the last years, they still remain too expensive for the majority of the population. Here again the international community jointly with the pharmaceutical industry has to continue their efforts. If the epidemic cannot be kept under control the consequences for the stock of human capital, the public budget, economic growth and poverty can be dramatic and dilute any effort for pro-poor growth. Of course further investments in the health sector are necessary to lower child mortality, maternal mortality and to fight against malaria and other diseases. We think it is already widely recognized that these are important elements of a long-term pro-poor growth strategy so that it has not to be discussed in detail at this place.

144. The same holds for investments into education. However, here we emphasize, that education policy should not only focus on primary education but also support secondary and higher education.[44] Returns to primary education are generally very low and not sufficient to increase incomes significantly (see Kazianga, 2004). Further more, education policy has also to ensure that all parts of the population, boys and girls, the rich and the poor have equal access to education. This implies that not only the supply of education but also the demand for education has to improve, which is so far particularly low among the poor. Increasing education demand could be achieved via transfer programs such as Bolsa Escola (Brazil), Progressa (Mexico) or Food for School (Bangladesh). Whereas the Burkinabè budget and the institutional framework seem not to be prepared to implement such transfer programs until now, such programs should however be envisaged in the long term. Second, creating demand for education, also means investments into production sectors, both to provide parents with the sufficient income to pay for the education of their children, and to increase both the returns to and the demand for educated

[43] HIV sero-prevalence among antenatal clinic attendees increased from nearly 2% to 10% from 1985 to the end of the nineties in major urban areas. In rural areas the average level is slightly lower, but the variance is much higher (UNAIDS/WHO, 2002).
[44] The government has already planned to provide costless education from grade 6 to 9. But this program is not yet implemented, because most schools lack financial resources.

individuals.[45] However, one has to acknowledge, that investments into children's education can only pay off the earliest in ten years. This is far too late to help to reach the *Millennium Development Goal* on monetary poverty reduction. Hence, in addition, education policy should also address the adult population. It seems particular important to provide agricultural and non-agricultural informal workers with specific knowledge, so that they can increase their productivity and their negotiation power within the market. A further effort has then to be made to use the HIPC resources for education and health more efficiently. In the past, resources could not be absorbed because of missing elaborated investment projects and institutions were often too weak to implement the existing ones. Furthermore, teachers need more attractive working conditions in rural public schools, otherwise the tendency of teachers to move from rural areas to urban areas and private schools will continue.[46]

5.5 Public revenue collection

145. Burkina Faso suffers under very low public revenues (see Section 2 and 3.3). The weak revenue collection certainly hinders a substantive independent provision of the state of social services and productive infrastructure. This means that under the status quo the country remains strongly dependent on international aid. Therefore, the World Bank as well as the IMF recurrently require that the country has to improve the efficiency of its tax collection and to undertake measures to increase its tax base. One option, which is sometimes discussed, is to include by some means urban informal and agricultural activities into the tax base.[47] Besides the operational problems such a measure would entail, it would be an even harder task to design such a tax scheme in a way that it would not be detrimental for the poorest of the poor, i.e. the taxation would have be highly progressive and incomes up to a certain threshold (which would have to be well above the poverty line) should be exempted from the tax or have a least a very low tax rate.

146. To assess the growth and distributional effects of a taxation of agricultural and non-agricultural informal activities, we performed some tentative simulations using the IAP-PAMS framework. We assumed a direct tax rate of 5% on agricultural wages and profits, 2.5% on profits in the non-agricultural informal sector and 1% on wages earned in the non-agricultural informal sector. For formal wages, we kept the single progressive tax with rates between 2% and 30%. The simulation results suggest that GDP growth per capita would first be lowered by 2 percentage points, but would then in the following years increase by roughly 0.1 to 0.3 percentage points per year. The positive growth effect is driven by higher public revenue allowing higher public investment. However, as one can expect the poverty headcount ratio would increase by approximately 0.5 percentage points on average; a little bit less in rural areas than in urban areas. Given the low tax rates we assumed, poverty effects are however moderate and the affected households might in turn be compensated benefiting from improved social and productive infrastructure. The tax rise would increase public revenues from 13.4% of GDP to 15.3% of GDP (for details see Kindé and Ouedraogo (2004)).

147. Given that the large majority of the population is engaged in the agricultural and non-agricultural informal sector, the government does obviously not have many other alternatives to increase tax revenues. However, most likely tax revenues could already significantly be

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[45] Using micro-simulation techniques, Grimm (2004) shows for the case of Côte d'Ivoire, that even if the most optimistic education policy was really set up, the effects on poverty in the next 20 years would be very modest as long as returns to education remain constant and the labour market segmented.

[46] At the current state, teachers can choose their employment location after four years of service.

[47] Agricultural companies with a turnover higher than 25 or 50 million CFA F (depending on the type of activity) already fall under profit taxes.

increased if private formal enterprises as well as wages and rents of those employed in the public and formal private sector were consequently taxed. Our analysis in section 2 indicates that obviously a non-negligible share of profits and earnings benefits a small but very rich part of the population (not necessarily covered by the household surveys). In sum, a limited, but systematic taxation might be enough to significantly increase public revenues without hurting the poor. A further important issue then concerns the management of the public budget, but this has already been sufficiently emphasized by past studies and is also present in the country's RPSP. Therefore we will not discuss this issue here.

5.6 Policy monitoring, assessment and appropriation

148. We think the elaboration of this study has prominently shown how important the availability of reliable National Accounts and household survey data is, the latter comprising information on expenditure, income, employment and social indicators. The current data availability is surely much better than in many other Sub-Saharan African countries, but it seems in any case worthwhile to improve the data quality on all levels. Concerning the household survey data, further efforts have to be undertaken to increase the comparability between different years and to agree on a transparent and consistent poverty line. For the macro level it would be particularly useful to have reliable time series on investment by sector and product. In addition more effort should be put into the computation of consistent and more representative temporal and regional price deflators. Finally, more financial resources should be spent to increase the capacity of local administrative staff and researchers to analyze the data and to use them for the evaluation of policy reforms. If then, policy makers take these evaluations into account, an important step towards more efficient policy implementation is made.

149. A last recommendation concerns the relationship between the government of Burkina Faso and the international donor community. Most likely this recommendation is not really specific to the Burkinabè case and might apply to other developing countries as well. A large part of the economic policy undertaken by the Burkinabè government is determined by the international donor community, especially by the IMF and the World Bank. This has of course its justification in the sense that those who provide the financial resources should also have some control over them. However, if national economic policies are determined to a large extent outside of the country—and this also seems to apply to some extent to the current PRSP—the appropriation of these policies might not work very well. Put differently, in this case a crucial prerequisite for successful policy implementation is not given. The government of Burkina Faso has to build its own development strategy. In this context it is also worth to notice that the Burkinabè government cooperates very well with international donor agencies. This explains why so many donors are currently present in Burkina Faso and why constantly a huge amount of development projects are under way. It would certainly be interesting to analyze in how far this recipient cooperation only attracts further funds or really contributes to pro-poor growth.

Conclusion

150. After having experienced rising poverty in the mid nineties, especially in urban areas, Burkina Faso now seems to be on a poverty reducing growth path. However, as our analysis has shown, the specific growth pattern does not use the whole potential the country would have to reduce poverty, i.e. growth could be more pro-poor than it is at the moment.

151. During the last decade, growth in Burkina Faso was mainly driven by an expansion of cotton exports and to a lesser extent by growth in the formal secondary and tertiary sector; all sectors being marked by a rather small percentage of the total Burkinabè workforce and by

spatial concentration; hence bypassing a large share of the informal rural and urban population. Moreover, the high urban-rural and regional segmentation of the economy (and even isolation of certain regions) was a barrier to cross-national efficient markets which could at least have led to some positive spill-over effects.

152. Further more, the main growth seeking policies in Burkina Faso during the nineties, namely the devaluation of the CFA Franc and a policy of trade and price liberalization, benefited the sectors connected to international as well as domestic trade, but had some adverse affect on the not to trade linked rural and especially urban population. As in Burkina Faso the difference between mean income and the poverty line is rather small, the devaluation and decreasing real earnings, especially in the middle part of the urban income distribution, pushed many urban households below the poverty line. The rural poor, mainly dependent on domestic production and consumption, were more affected by the price liberalization, leading to in general higher and more volatile prices for production inputs, outputs as well as consumption goods, which certainly benefited traders and same richer rural households, but had some adverse effects on many agricultural producers. Hence, since price reforms did not come along with technical progress and improvements of markets, they did little to increase rural household income and to move rural people above the poverty line. In addition, our analysis has shown, that whereas high inequality is certainly a factor limiting pro-poor growth in urban areas, it is less so in rural areas, where the notion of risk-aversion of the poor becomes more important in explaining low pro-poor growth.

153. Many of the problems of rural development were recognized in the last years and acknowledging that poverty is mainly a rural phenomenon, several policies to support the rural population have been initiated in the framework of the PRSP-process. However, because of obvious time lags between policy changes and impact, not all improvements can be observed at this stage and now one has to be somewhat cautious to not forget the urban poor. They clearly constitute a much smaller share of the total poor, but 'the urbanization of poverty' is a worrisome phenomenon and although certainly short-term poverty reduction has to focus on rural development, in the long run—given the natural constraints of Burkina Faso and with a hopefully increasing human capital base—Burkina Faso should move more into the secondary and tertiary sector.

154. Last, this study has prominently shown, that the relationship between growth and poverty in Burkina Faso was -besides the specific growth pattern, initial conditions and inequality changes- to a large extend also determined by relative price distortions (in this case a massive price increase between 1994 and 1998 of the goods the poor consume). And again, this study has revealed, that national favorable long term growth elasticities of poverty might hide the high variability of elasticities—in both magnitude as well as direction—across time and groups. To finally conclude, given the high spatial segmentation as well as the limited potential for redistribution in a poor country like Burkina Faso, pro-poor growth in the next ten years has to be achieved through growth which arises where the poor work and live.

Appendices

A. Description of the used households surveys (EP I, II, III) and discussion of adjustments made

The main features of the three household surveys, which were undertaken in Burkina Faso by the *Institut National de la Statistique et de la Démographie* (INSD) with financial and technical assistance of the World Bank within the last 10 years in 1994 (EPI), 1998 (EPII) and 2003 (EPIII) and which provided the expenditure data used to compute pro-poor growth, poverty and inequality estimates in the three reported years, are summarized in Table A1. Furthermore Table A2 provides a brief description of the socio-economic population structure of all three samples.

[insert Table A1 and Table A2]

To construct and analyze the expenditure aggregates used for our assessments the following (not exhaustive) adjustments and assumptions were made:

- *Durables.* Equipment such as television, radio and refrigerator, mobile devices such as motorcycles, bicycles, and cars and investments into housing, land and livestock were not included into the aggregated expenditure variables.
- *Transfers.* Made transfers were included into the aggregated household expenditure variables.
- *Housing rents.* For approximately 30% of urban and 2% of rural households rents were declared. For most other households an imputed rent was computed by the INSD with a hedonic regression, but is still missing for 22%, 16% and 6% of households in 1994, 1998 and 2003 respectively. To approximate those missing rents regional and urban/rural averages were taken from the declared and imputed rents, since it was not possible to estimate a valid regression between housing features and declared rents, especially in rural areas.
- *Outliers.* Households with no declared expenditure for purchased or auto-consumed food, as well as households with unreasonable high expenditure in the socioeconomic group 'subsistence farmer' were dropped from the data set.
- *Large household size.* 10.7%, 8.5% and 3.2% of all interviewed individuals in 1994, 1998 and 2003 respectively lived in households with over 20 members. However, no adjustment was made to account for possible measurement errors in this variable.
- *Recall periods.* To obtain annual values we multiplied expenditures with a 30 days recall period by 12 and those with a 15 days recall period by 24.
- *Per capita expenditure.* Per capita expenditure was estimated by dividing our total household expenditure aggregate by household size. For reasons of comparison with other studies, we did not use any equivalence scale; i.e. no adjustment was made for economies of scale in consumption within households and different needs by age.
- *Regional deflators.* Since no official regional deflators could be found, we used for 1994 and 1998 the regional deflators approximated by Koné and Telsiuc (2004). For 2003 regional deflators were estimated comparing nominal and real aggregated household expenditures computed by the INSD. These regional deflators were then used to account for regional differences in the cost of living (see Table A3).
- *Inter-year price variations.* To compare expenditure aggregates over time, they have to be adjusted by price variations. As emphasized in our main text, the CPI is in this respect not an appropriate deflator to use, because the budget shares it uses do not reflect the consumption habits of the majority of the population and especially not those of the poor, i.e. the food and

in particular the cereal share is largely underestimated in the CPI. So, unless otherwise indicated, we use as decile and urban/rural specific price deflators (see also Appendix B).

- *Socio-economic groups.* For the disaggregation of households into the various socio-economic groups, wage earners in the public sector and wage earners in the private formal sector were identified as those who declared that they worked in the public or private sector (and had a labour contract and/or social security) respectively. Subsistence farmers were identified as those who declared that they generated their income from some form of agriculture. Those individuals working in agriculture, but who were in addition somehow involved in cotton production were specified as cotton farmers. Individuals who had not worked during the last 7 days were specified as inactive. The residual was treated as people working in the informal sector.
- *Economic regions.* Since the number of strata used differed in each survey (see Table A1) the strata used in 1994 and 1998 were converted into the 2003 strata to evaluate regional poverty changes. This was done via the 45 provinces which were declared for all households for 1994 and 1998. The conversion could be undertaken perfectly for 1998, since no province fell into two strata, but might not be fully correct for 1994, because before 1996 Burkina Faso was only partitioned into 30 provinces and 2 provinces slightly cross two strata in the 2003 divide. However, this should have only a marginal impact on regional poverty estimates.

[insert Table A3]

Many of these adjustments have not been made in previous studies by other authors, explaining, besides a different poverty line used (see Appendix B), the divergence between their results and ours. In the computations made by the INSD for instance we found the following problems (these problems are also summarized in Table A4, see Appendix B):

- Since most households do not pay any housing rent (90%), rent for most households was estimated by the INSD using a hedonic regression in 1994, 1998 and in 2003, but is however non-systematically missing for 22%, 16% and 6% of households in 1994, 1998 and 2003 respectively.
- Durables (equipment such as television, radio and refrigerator, mobile devices such as motorcycles, bicycles, and cars and investments into housing, land and livestock) were included by the INSD in the total household expenditure in 1998 and 2003. Although this fact does not have a large effect on poverty headcounts, it does considerably increase inequality measures as the Gini-index.
- Comparing the raw data (adjusted for regional deflation) with the official INSD processed data, we found that to all aggregated expenditure categories an additional 12.4% 'expenditure margin' was added across all households in 1998, which might be justified by the extremely 'bad' year in 1998 or the fact that the survey was conducted in the pre-harvest season. However this 12.4% surplus margin was not applied in 2003 when the household survey was also conducted in the pre-harvest season and therefore introduced a major bias into poverty comparisons over time.

B. Comparability of the household surveys and the construction of a new poverty line and consistent consumption price deflators

When evaluating pro-poor growth, the measurement of poverty and thus the used household data and the chosen poverty line gain of crucial importance. In fact, because the household surveys undertaken in Burkina Faso in 1994, 1998 and 2003 were first of all aimed at providing current ‘snap-shot’ poverty estimates and less for being used for a comparison across time, the ‘Burkinabè growth-poverty puzzle’ can (i) partly be explained by unusual and inconsistent assumptions made by the INSD and other previous studies when computing household expenditure aggregates, (ii) partly by changes in the survey design, and finally (iii) to a large extent by changes in the real poverty line and the use of inappropriate price deflators over time. The first issue was already discussed in Appendix A; the second and the third, also being the most important, issue will be discussed in what follows.

Comparability of the three household surveys

The changes in survey design of the Burkinabè household surveys between 1994 and 1998/2003 are indeed crucial and not using the EPI (1994), as suggested by some, might be an option to prevent possible misinterpretations. We are fully aware of the differences in survey design and will therefore discuss them in detail. However, given the purpose and objective of the ‘Operationalizing pro-poor-growth’-project, we think, that the EPI should be used to draw on all of the available information to determine what happened during the last ten years in Burkina Faso. Focusing only on the surveys of 1998 and 2003 would tell us very little about longer-term dynamics between growth and poverty. It would also prevent us from examining the impact of the 1994 CFA F devaluation, a key event for Burkina Faso. In addition, Burkina Faso experienced, as recurrently mentioned, a severe drought in 1997/98, which tends to make 1998 a rather ‘poor’ and not very representative year. Therefore, we think it is important to take into account all three data points: 1994, 1998 and 2003. In what follows we discuss again briefly the differences in survey design between the EPI on the one hand and the EPII and the EPIII on the other hand. We show that the potential biases tend to partly offset each other. Even making the most pessimistic assumptions on the resulting net effect, our poverty assessment between 1994 and 1998 would hold.

The survey design of the EPI, the EPII and the EPIII differs in three points:

1. Whereas the EPI was undertaken in the post-harvest period (October-January), the EPII and the EPIII were undertaken in the pre-harvest period (April-August).
2. Whereas the EPI has a recall period for food items of 30 days the EPII and the EPIII have a recall period for food items of 15 days.
3. The disaggregation of expenditures was continuously increased from 1994 to 1998 to 2003.

According to empirical evidence of other countries the first bias will result in lower expenditures in 1998 and 2003, compared to 1994. The shorter recall period in 1998 and 2003 will however result in rather higher declared expenditures in 1998 and 2003 compared to 1994, thus generating a bias in the opposite direction. Finally the higher disaggregation will most likely also lead to higher expenditure in 1998 and 2003 with respect to 1994. It follows that the ‘potential errors’ go in both directions and will therefore partly offset each other. Below we will try to give a rough evaluation of the magnitude of each of these ‘errors’. It is important to note, that the first bias reflects a real change in consumption, whereas the biases two and three are due to pure measurement error.

a) Post harvest/pre-harvest bias

Of course, it is hard to quantify accurately the seasonal effect on the expenditure declarations. This is especially true for our case, because the seasonal effect is mixed with the effects from the drought which Burkina Faso knew in 1997/98. Using panel data of 1,450 rural Ethiopian households Dercon and Krishan (2000) examined differences in labor supply and food consumption before and after the harvest. They show that for less wealthy households a 10%

increase in food prices would result in an 8% reduction in consumption. In the Ethiopian sample poverty head count measures vary by up to 15% per year due to seasonal fluctuations. Reardon and Matlon (see Sahn, 1989) have shown for the case of Burkina Faso, that fluctuations in real food consumption vary only by roughly 13% over seasons for poor households, since most of seasonal production fluctuation is compensated with purchased food. Whereas during the post-harvest season only around 10% of calories consumed by poor households is purchased, during the lean season in fact 60%-70% are purchased (Sahn, 1989) Taking this and the fact that average food prices vary by approximately 20% over season in Burkina Faso, we may adopt 13-16% as an estimation of seasonal variations in real consumption. To make the three surveys compatible, one could hypothetically thus either lower consumption by 13-16% in 1994, or increase it in the two later years.

b) Recall bias
Empirical studies tend to show that longer recall periods lead to less declared expenditures. Scott and Amenuvegbe (1990) show using the Ghanaian LSMS that for 13 frequently asked purchased items, reported expenditures fell at an average of 2.9% for every day added. Deaton (2003) reports an experiment with different recall periods in India where shortening the recall period for food items from 30 to 7 days resulted in 30% higher consumption (or 1.1% for every day). In the case of Burkina Faso, where the share of total food expenditures for poor household amounts to roughly 60-70% the recall bias might be responsible for 12-15% lower declared consumption in 1994 compared to 1998 and 2003 (1.1% over 15 days times 0.7).

c) Disaggregation of expenditure items
In 1994 the poverty relevant consumption items (excluding durables) where disaggregated into 50 items whereas they have been disaggregated into 70 items in 1998 and 80 items in 2003. For instance 'expenditures for diverse schooling expenditures' in the EP94 where asked in the EP98 separately as 'schooling fees' and 'other schooling expenditures'. Or expenditures for 'Millet and Sorghum' in the EP94, where separated into 'Millet' and 'Sorghum' in the EP98. Again it is difficult to quantify exactly the resulting bias of such changes in the survey design. Concentrating on those expenditures which have been asked in exact the same degree of disaggregation might be one solution, but it might also introduce a new bias if the true weights shifted between different consumption items; i.e. when relatively to total consumption much more was spent on millet and sorghum in 1998 than in 1994 or vice versa. Therefore, we chose not to delete any items to prevent a further enhancement of measurement mistakes, since most of the 'additional' items were only a mere disaggregation of the former.

It can be seen that the above biases partly offset each other, but that it is even likely, that the latter two are in sum even a bit higher in magnitude than the first one. This implies that, despite the fact that the EPI was conducted in the post-harvest season, poverty estimated using the EPI might even be overestimated with respect to 1998 and 2003. Or, put differently, if we assume that the net impact of the three biases is uniform over the whole population, we would need a more than 12.4% reduction in per capita consumption in 1994 (i.e. the pre-/post-harvest bias would have to off-set the two later biases by more than 12.4%), in order to obtain a poverty headcount for 1994 which is higher than the one observed in 1998.

Construction of a new poverty line
Another concern was of course the appropriate poverty line to use. We think it is widely recognized that this line has to have a major basic food component, much higher as the one taken to construct the national CPI (with a cereal component of only 10%). The official poverty line fulfils this requirement (with a ~ 50% basic food component). Therefore we argued that a fixed poverty line which is simply updated over time using the CPI would not be appropriate in the

case of Burkina Faso. More precisely the official poverty line in all three reference years was based on the price of a 2,283 calorie food component, based on millet, sorghum, maize and rice prices, which are the main components of nutrition intake for poor people in Burkina Faso. Again, whereas the CPI only increased by 22.7% between 1994 and 1998 the prices for cereals more than doubled during the same time (see Figure 2). Conversely, between 1998 and 2003 the CPI further increased whereas cereal food prices decreased again.

Hence, given these large changes in relative prices and the high share of food or cereal consumption of the Burkinabè population, a key issue is the weight given to food and especially cereals (and the use of their respective price changes) to compute the poverty line. However, whereas the real food component was appropriately inflated with the respective price index, an important drawback of the official poverty line is the fact that the non-food component was not inflated by an appropriate price index but was only calculated as a share of the nominal food component. In addition this ratio of non-food to food was even increased over time: only slightly between 1994 and 1998, but much stronger between 1998 and 2003. Therefore the price index implicit in the poverty line corresponds not to a true Laspayres-Index. Here, we suggest the use of a new poverty line using constant and appropriate real weights of food and non-food items over the period 1994-2003.

The poverty line was computed as follows. We took the nominal value of the official poverty line for 2003, and the cereal food, other-food and non-food budget shares as they are observed in the lower part of the expenditure distribution (1st and 2nd Quintile) via the household survey. The cereal food component (accounting for ~40% of per capita household expenditure) was then deflated to 1998 and to 1994 using the observed prices changes for the corresponding cereals. Figure A1 shows that prices for these cereals are in the post-harvest season considerably lower than in the pre-harvest season. The remaining food and non-food component was deflated using the non-food monthly CPI. Of course one could also use the official poverty line and the food and non-food weights of 1994 or 1998 as a point of departure. We did this to check the robustness of our results and found the same poverty trends, but on a lower level.

Construction of consistent consumption price deflators

To express household expenditures at various points in time in real terms we need a price deflator. As emphasized, the CPI would be completely inappropriate in this case, given that the underlying consumption basket is not all representative for the majority of the population in Burkina Faso. Therefore, to be consistent with observed consumption patterns and in order to reflect correctly the relevant purchasing power of households, we compute separately for urban and rural areas decile specific consumption price deflators. More precisely, for each decile in the distribution of household expenditures per capita we measure the mean food and mean non-food share in total expenditure and use these shares as weights for the price changes of food and non-food items. This procedure provides as with decile specific price changes between the different survey years for each household, which then can be used to convert nominal expenditures into real expenditures with 1994 being the base year. As described, we do the same to deflate the poverty line over time and as a result obtain a consistent deflator for both household expenditure per capita and the poverty line.

Final remark

To conclude, we tried to correct as many as possible inconsistencies to make consumption aggregates and poverty estimates more comparable over time. Table A4 provides again an overview of the influence of all sorts of errors and bias previous poverty estimates contained. However we were not able to fix the problems arising from different consumption patterns in the pre- and post-harvest season as well as from changes in the household survey design (throughout all years). In our opinion, any correction factor would have meant to make some further arbitrary assumptions. However, above we evaluated the direction and potential magnitude of each of these effects and showed that they partly offset each other and a quite robust picture of poverty dynamics can be drawn. The found trend is completely consistent with the trend we found using alternative social indicators (compare Tables 1, 2 and 3).

[insert Table A4]

C. Disaggregated growth, poverty and inequality data

Tables showing growth, inequality and poverty profiles (household survey based)

[insert Table A5 and A6]

D. Description of the IAP-PAMS framework

The '*Instrument Automatisé de Prévision'* (IAP) is a macroeconomic projection tool (in a macroeconomic consistency framework) developed by the Ministry of Economic Affairs and Finance with support of the German Technical Cooperation (GTZ) and with financial assistance of the European Union (for details see Ministère de l'Economie et des Finances, 1997a, 1997b).[48] The IAP was initially constructed to improve the planning and design of the public budget and to examine the impact of some economic policies, especially in the field of public expenditures and taxation.

The principal data bases of the IAP are the National Accounts provided by the INSD. For each sector a specific projection method is used. The model distinguishes sectors where production is traditionally exogenous and those where the production is linked to the demand via domestic incomes. The supply driven sectors are agriculture, the transformation of cotton for exports, and mining. In some sectors prices are exogenous, e.g. regulated by the state as the producer price for cotton, others are given by the world market as for cotton or gold, and others are endogenous as the prices of food crops. The sectors where production is linked to domestic incomes, it is generally assumed that prices are determined by applying a surplus to the variable costs (intermediate inputs, wages, and indirect taxes). However, this hypothesis can be relaxed in the model.

The principal modules constituting the IAP are:

- *Population*; separated in urban and rural. Population growth is exogenous.
- *Agricultural production*; differentiates between the production of food crops, vegetables and fruits, cotton, other agricultural products, livestock, and fishing, hunting and forestry.
- *Input-output-table (IOT)*; the core of the projections is computed within the IOT. Based on exogenous assumptions (e.g. on the production of the supply driven sectors, public expenditures etc.), these computations allow to determine the production for those sectors which are driven by the domestic demand side.

[48] The tool is presently managed by the "*Direction de la Prévision et de l'Analyse Macro-économique*" (DPAM) in the Ministry of Economic Affairs and Finance. Technical assistance is still provided by technical advisors of the GTZ in Burkina Faso.

- *Accounts of private agents*; these are the accounts of the private households and private enterprises, in which are determined, at least roughly, the different income sources, the use of incomes and the financial operations of the private agents.
- *Balance of payments*; designed in the usual way, allowing computing the different balances (trade, current account etc.).
- *Table of public financial operations*; allows based on exogenous assumptions on the external and internal financing to compute the deficit or surplus of finance and how they are balanced with sources not linked to the expenditures.
- *Public debt and debt service*; this module computes based on the initial condition the current debt and the current debt service.
- *Money*; the IAP contains no systemic link between real variables and monetary values. Generally, the link goes from the real variables to the monetary values.

The current version of the IAP uses a retrospective data base covering the period 1985 to 2003. Projections are made from 2004 to 2010. The main hypotheses and projections of the IAP baseline scenario as they are provided by the *Ministère de l'Economie et des Finances* and the GTZ can be found in Kindé and Ouedraogo (2004). The baseline scenario is characterized by a quiet favourable development of the macroeconomic situation; it is assumed that the economy will continue to grow as during the last three years.

To analyze the impact of policies related to the agricultural sector, the *Secrétariat Permanent pour la Coordination des Politiques Sectorielles Agricoles* (SP/CPSA) with assistance of the GTZ developed a special version of the IAP, called 'IAP-Agro', which contains a more detailed representation of the agricultural sector than the basic version of the IAP. IAP-Agro provides not only projections on disaggregated output but also for example on the returns on land which are endogenous with respect to the techniques used and therefore to the investments made in different sub-sectors (for details see Kindé and Ouedraogo, 2004).

To analyze also the policy impact on the income distribution the IAP framework was recently linked to the World Bank's PAMS-framework. 'PAMS' was developed by Pereira da Silva, Essama-Nssah and Samaké (2002) and stands for 'Poverty Analysis Macroeconomic Simulator'. It offers a model of linkages, in particular a in several representative groups disaggregated model of the labor market, which transmit changes of key variables-mainly employment, earnings and consumer prices-given by a macroeconomic consistency framework into a household survey. This allows to construct a hypothetical income distribution 'after policy-reform' and to compute changes in poverty and inequality due to the reform. The main principle is to expand the expenditures observed in the household data by group-specific growth rates given by the macro-consistency framework. Changes in consumer prices are used to update the poverty line. It is important to note that this kind of linkages ignores changes in intra-group inequality; it can only measure changes in inter-group inequality. The framework does not model any behavior (like labor supply) on the household or individual level. The nine household groups distinguished by the IAP-PAMS-framework are: unskilled self-employed workers in the rural non-tradable sector, unskilled self-employed workers in the rural tradable sector, rural unpaid workers, workers employed in the public sector, unskilled workers employed in the formal private non-tradable sector, skilled workers employed in the formal private tradable sector, self-employed workers in the urban informal non-tradable sector, unpaid urban workers and persons outside the labor force. Again, the hypotheses and projections used in the baseline scenario regarding the income distribution can be found in Kindé and Ouedraogo (2004). The IAP-PAMS framework is still calibrated on the expenditure variables and poverty rates as they have been computed and published by the INSD end of 2003. Therefore, not too much weight should be given to the absolute level of poverty given by the model, instead one should focus on changes across time (in respect to initial inequality) and on changes, that various policy scenarios induce (in respect of the baseline).

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Tables

Table 1
Poverty and inequality trends

Indicator	1994	1998	2003
NPL revised (CFA F)	53,219 (100)	82,885 (155.7)	82,672 (155.3)
NPL revised (US$)	95.9	140.5	142.5
NPL (CPI) (CFA F)	*62,916 (100)*	*77,198 (122.7)*	*82,672 (131.4)*
NPL (INSD) (CFA F)	*41,099 (100)*	*72,690 (176.9)*	*82,672 (201.2)*

	Urban			Rural			National		
	1994	1998	2003	1994	1998	2003	1994	1998	2003
P0 NPL rev.	14.7	27.3	20.3	63.4	68.7	53.3	55.5	61.8	47.2
P1 NPL rev.	3.9	8.3	5.7	24.1	25.8	18.3	20.9	22.9	16.0
P2 NPL rev.	1.5	3.5	2.3	11.7	12.5	8.3	10.0	11.0	7.3
Watts NPL rev.	5.1	11.2	7.4	34.3	36.9	25.3	29.6	32.6	22.1
Gini-Index (pop. weight.)	0.45	0.50	0.48	0.39	0.35	0.39	0.47	0.45	0.45
Former poverty and inequality estimates of INSD									
P0 NPL INSD	*10.4*	*16.5*	*19.9*	*51.0*	*51.0*	*52.3*	*44.5*	*45.3*	*46.4*
Gini-Index (pop. weight.)	*0.45*	*0.51*	*0.49*	*0.38*	*0.37*	*0.39*	*0.46*	*0.46*	*0.46*

Notes: P_α is the Foster-Greer-Thorbecke Poverty-Measure, where α is a poverty-aversion parameter (see Foster, Greer and Thorbecke (1984)). $\alpha = 0$ yields the headcount index, that is, the percentage of poor households. $\alpha = 1$ yields the poverty gap index, that is, the average distance between income and the poverty line (where for non-poor households this distance is set to zero) as a fraction of the poverty line. $\alpha = 2$ yields a measure that takes into account the average distance between income and the poverty line as well as the inequality between the poor. Poverty lines are stated in current CFA F prices. The national poverty line (NPL) is calculated by the authors (see Appendix B). *NPL (INSD)* and *Poverty and Inequality Estimates of INSD* refer to the poverty line and official poverty estimates of the INSD end of the year 2003 (for a discussion for the differences between the welfare indicators calculated by the INSD and the welfare indicators calculated by the authors see Appendices A and B). NPL (US$) is calculated converting the NPL in CFA F with the respective official exchange rates for 1994, 1998 and 2003 into US$. In 1994 the PPP between the CFA F and the US$ was estimated at 123.4 CFA F/US$ (PWT 6.1'). NPL (CPI) is calculated using the national poverty line of 2003 and deflating it back to 1998 and 1994 using the official national CPI (IAP, 2004).

Source: The NPL (INSD) is taken from INSD (2003); the NPL rev. is calculated by the authors, for details see Appendix B; the national CPI is taken from IAP (2004); household data is taken from EPI (1994), EPII (1998), EPIII (2003); ccomputations by the authors.

Table 2
GDP, consumption and population, levels and growth
(Prices in 1994, Ouagadougou)

	Absolute levels 1994	1998	2003
Real GDP (in billion CFA F)	1,189	1,464	1,853
Population (in thousand)	9,839	10,809	12,506
Real GDP per capita (NA accounts based, in CFA F)	120,821	135,434	148,195
Real private consumption per capita (NA accounts based, in CFA F)	68,004	81,598	90,381
Real household expenditure per capita (HH survey based, in CFA F, HPI)[a)]	78,772	64,952	85,428
(for comparison) Real household expenditure per capita (HH survey based, in CFA F, CPI)[b)]	78,772	85,540	99,153

	Average annual growth 1994-1998	1998-2003	1994-2003
Real GDP	5.3	4.8	5.1
Population (official hypothesis)	2.4	3.0	2.7
Real GDP per capita	2.9	1.8	2.3
Real private consumption per capita (NA accounts based)	4.7	2.6	3.2
Real household expenditure per capita (HH survey based HPI)[a)]	-4.7	5.6	0.9
(for comparison) Real household expenditure per capita (HH survey based CPI)[b)]	2.1	3.0	2.6
Population	Growth per year 1985-1996 (UN, census based)		2.7
	Growth per year 1992-1998 (DHS based)		2.1
	Estimations of add. growth due to migration back from Côte d'Ivoire		0.4 (2002) 1.6-4.8 (2003)

Notes: [a)] deflated with household-specific price deflators (HPI), for method of calculation, see Appendix B; [b)] deflated with the official CPI (IAP, 2004).

Source: Real GDP, population estimates, real GDP per capita and real private consumption per capita: IAP (2004). Real household expenditure per capita: computations by the authors using EPI (1994), EPII (1998) and EPIII (2003). CPI deflator: IAP, 2004. HPI deflator: computations by the authors. Population growth: Demographic and Health Survey Coorp. (2004) and United Nations (2004). Additional growth due to migration back from Côte d'Ivoire: Heuler-Neuhaus (2003).

Table 3
Social Indicators, household survey based
(in percentages, i.e. share of individuals)

	Urban			Rural			National		
	1994	1998	2003	1994	1998	2003	1994	1998	2003
Education									
Literacy rate	51.1	51.2	46.1	89.4	89.1	88.9	82.7	81.8	79.6
Enrolled 6 to 12	70.9	65.3	71.4	27.1	18.9	23.6	33.4	25.4	30.8
Enrolled 13 to 18	51	53.8	56.3	12.4	12.4	14.4	19.9	20.1	23.3
Health									
Handicap	4.8	5.9	3.4	5.1	5.9	2.7	5.1	5.9	2.9
Med. Consultation	45.9	50.9	71.2	37.1	42	60.7	39.5	44.2	63.0
Housing									
Electricity	29.7	35.7	45.6	0.7	0.4	1	5.4	6.3	9.3
Water	23.5	24.3	27.1	0.3	0.1	0.2	4.1	4.2	5.2
No Toilet	11.2	15.2	9.2	81.9	85.4	78.7	70.5	73.7	65.8
Assets									
Cultivated Land	33.6	32.3	0	93.2	95.4	0	83.5	84.9	0
Plough	8.2	10.8	18.1	36.7	48.9	50.7	32.1	42.6	44.6
Bike	57.9	67.6	75.0	79.9	85.1	88.5	76.3	82.2	86.0
Radio	76.2	81.5	88.2	41.2	52.4	67.4	46.8	57.2	71.3

Notes: Illiteracy rate: share of individuals older than 18 years not knowing reading and writing in any language; Enrolled 6 to 12: Share of children 6 to 12 years old enrolled in school; Enrolled 13 to 18: Share of children 13 to 18 years old enrolled in school; Handicap: Share of individuals living in a household where household head suffers an handicap; Share of ill persons having consulted medical services; Electricity: Share of individuals living in a household with electricity connection; Water: Share of individuals living in a household with modern water access. No Toilet: Share of individuals living in a household with no modern toilet facility. Cultivated Land, Plough; Bike, Radio: Share of individuals living in a household which possesses the respective asset.

Source: EP I (1994), EPII (1998), EPIII (2003) and computations by the authors.

Table 4
Growth elasticity of poverty
(Growth of GDP per capita)

	1994-1998			1998-2003			1994-2003		
	Urban	Rural	National	Urban	Rural	National	Urban	Rural	National
P0 NPL rev.	5.8	0.7	0.9	-3.2	-2.7	-2.9	1.6	-0.8	-0.8
P1 NPL rev.	7.2	-4.0	1.9	0.6	-3.7	-1.3	0.8	-3.8	-1.3
P2 NPL rev.	8.1	-4.5	2.1	0.6	-4.4	-1.6	0.8	-4.4	-1.5

Source: Poverty Estimates: Computations by the authors using EPI (1994), EPII (1998) and EPIII (2003). GDP per capita growth rates: IAP (2004).

Table 5
Rate of pro-poor growth (annual)
(per capita household expenditure)

	1994-1998			1998-2003			1994-2003		
	Urban	Rural	Nat.	Urban	Rural	Nat.	Urban	Rural	Nat.
HPI used as deflator [a)]									
Pro-poor growth P0	-7.9	-5.2	-5.2	4.2	6.6	6.6	-1.6	1.0	1.0
Pro-poor growth 20%	-8.2	-4.6	-4.7	4.0	5.2	5.4	-1.6	0.8	0.8
Mean percentile growth	-6.2	-5.9	-5.8	2.7	7.0	6.7	-1.4	1.1	0.8
Growth in mean	-2.7	-6.3	-4.7	1.3	7.7	5.6	-0.5	1.3	0.9
(for comparison)									
CPI used as deflator [b)]									
Pro-poor growth P0	-1.1	5.2	4.9	1.8	2.5	2.6	0.4	3.6	3.5
Pro-poor growth 20%	-1.4	5.2	5.2	1.7	1.9	2.0	0.3	3.4	3.4
Mean percentile growth	-1.5	4.0	3.2	0.9	3.2	3.0	-0.2	3.5	3.1
Growth in mean	0.4	2.8	2.1	0.3	3.9	3.0	0.3	3.4	2.6

Notes: [a)] deflated with household-specific price deflators (HPI), for method of calculation, see Appendix B; [b)] deflated with the official CPI (IAP, 2004). Pro-poor growth P0: Area under the GIC up to the moderate headcount index. Pro-poor growth 20%: Area under the GIC of the first quintile. Mean percentile growth: Mean of percentile specific growth rates. Growth in mean: Growth rate of mean per capita household expenditure.

Source: Poverty EPI (1994), EPII (1998), EPIII (2003) and computations by the authors. GDP per capita growth rates: IAP (2004).

Table 6
Decomposition of the change in the Headcount Index, ΔP0

	1994-1998			1998-2003			1994-2003		
	Urban	Rural	National	Urban	Rural	National	Urban	Rural	National
Observed ΔP0	12.6	5.3	6.3	-7.0	-15.5	-14.6	5.6	-10.2	-8.3
Components:									
Growth (HPI)	6.8	6.7	7.5	-3.4	-18.7	-13.7	4.2	-7.5	-3.2
Redistribution	3.4	-3.3	-3.4	-3.1	0.1	-1.7	-0.2	-1.7	-4.5
Residual	2.4	1.9	2.2	-0.6	3.0	0.8	1.6	-1.0	-0.6
Growth (CPI)	-0.4	-5.9	-4.1	-0.5	-12.5	-9.2	-1.1	-18.4	-12.6
Redistribution	3.4	-3.3	-3.4	-3.1	0.1	-1.7	-0.2	-1.7	-4.5
Poverty Line	7.4	11.3	10.7	-2.8	-4.7	-4.4	5.0	8.4	7.8
Residual	2.3	3.2	3.1	-0.7	1.5	0.6	2.0	1.5	0.9
(for comp.)									
Growth (HPI)	*8.0*	*7.7*	*8.6*	*-3.7*	*-17.2*	*-13.3*	*5.0*	*-8.0*	*-3.5*
Redistribution	*4.6*	*-2.3*	*-2.3*	*-3.4*	*1.6*	*-1.3*	*0.5*	*-2.2*	*-4.8*

Notes: The decomposition is based on the methodology suggested by Datt and Ravallion (1992). The first decomposition applies the household specific deflators (HPI), which correspond to the implicit inflator in the poverty line. Hence per capita household expenditure and the poverty line are deflated with the same deflator, keeping the poverty line constant in real terms. The second decomposition shows the decomposition when expenditures are deflated with the national CPI and not with the deflator implicit in the poverty line. As a result, and if the implicit inflation of the poverty line is not equal to the inflation of the CPI, the poverty line is not constant in real terms over time (in comparison to the CPI deflated per capita household expenditure). Then a forth decomposition component has to be included, computing the poverty reduction explained by the shift of the poverty line in real terms. Residuals are computed as the change in poverty not explained by the growth, the redistribution and the poverty line components. We always use the initial period as the reference period, i.e. we do not average the results over the two possible decomposition paths to get rid of the residual, because there is no methodologically good argument to do so. or comparison with other studies we also provide the averages, where the residual is equal to zero if we only compute the growth and redistributional effect. The shown dynamics are however not different to the first approach.

Source: EPI (1994), EPII (1998), EPIII (2003) and computations by the authors. CPI: IAP (2004).

Table 7
Economic growth by sector
Real growth of value added (National Accounts, NA)
Real growth of household expenditure per capita by sector of activity of household head (HH-Survey)
To study direct linkages between macro and micro levels, the CPI is used for deflation on both levels,
i.e. household expenditure does not reflect real purchasing power
1994 = 100

	1990	1994			1998			2003		
	NA	NA	HH-surv.	% Pop.	NA	HH-surv.	% Pop.	NA	HH-surv.	% Pop.
Agriculture	72.8	100	100	86.2	136.5	114.2	86.9	157.5	136.7	84.8
Agriculture exlc. cotton	72.8	100	100	74.9	144.7	111.2	69.2	168.2	134.0	65.0
Cotton [a]	132.5	100	100	11.3	198.9	125.0	17.7	349.4	144.8	19.9
Livestock	61.5	100	100	.	128.0	96.0	.	127.7	.	.
Forestry and fishing	80.5	100	100	.	110.8	142.9	.	133.3	.	.
Mining	161.8	100	100	0.2	97.1	56.5	0.3	16.4	49.0	0.5
Manufacturing	120.6	100	100	2.5	132.8	111.1	1.7	178.9	94.8	1.7
Electricity, gas and water	117.0	100	100	[0.1]	206.2	130.1	[0.1]	425.4	124.9	0.4
Constr. and public works	88.8	100	100	0.7	94.3	61.9	0.9	149.3	82.9	1.0
Transport and telecom.	85.2	100	100	1.0	176.8	96.0	0.7	253.3	116.7	0.8
Trade	136.0	100	100	3.6	131.7	115.6	3.8	143.3	97.7	5.9
Banks and Insurances	102.7	100	100	[0.1]	145.6	104.0	[0.2]	186.0	73.9	0.3
Oth.commercial services	118.9	100	100	1.8	140.6	120.0	1.0	199.5	97.3	0.6
Public administration	39.6	100	100	3.7	86.8	101.1	4.1	99.2	109.2	4.0
Ext. admin. and ONG	36.9	100	100	0.4	100.0	86.8	0.4	97.1	128.9	[0.1]
All sectors (value added)	81.2	100	100	100	123.8	108.6	100	151.0	125.9	100

Notes: [a] Growth rates of cotton are growth rates of total production (purchases SOFITEX) in constant prices. % Pop.: population share by sector according to the activity of the household head. […]: <= 30 observations.

Source: NA: IAP (2004); EPI (1994), EPII (1998) and EP III (2003) and calculations by the authors.

Table 8
Cereal and cotton production 1995-2002

	Cereal Production				Cotton Production		
	ha	ton	kg/ha	kg/pc	ha	ton	kg/ha
95/96	2.712	2.308	851	228	145	150	1.035
96/97	2.700	2.448	907	236	201	199	993
97/98	2.851	1.980	694	186	277	343	1.239
98/99	2.981	2.620	879	239	340	325	956
99/00	3.517	2.318	659	206	214	257	1.200
00/01	3.517	1.593	453	138	210	213	1.012
01/02	3.694	2.643	716	223	356	395	1.107
02/03	3.672	2.618	713	215	414	438	1.058
Annual Growth	4,4%	1,82%	-2,50%	-0,86%	16,1%	16,5%	0,3%

Notes: Cereal production includes mil, sorghum, fonio, maize and rice. ha: cultivated area. ton: tonnes produced. kg/ha: yield. pop: population. kg/pc: kg produced per capita (with an assumed population increase of 2.7 per cent per year). ha, ton and pop are in 000s.

Source: Economic accounts for the agricultural sector, based on the Enquête Permanente Agricole (1995–2002).

Table 9
Rural and urban cereal production, sale and consumption

	1994			1998			2003		
	Urban	Rural	Nat.	Urban	Rural	Nat.	Urban	Rural	Nat.
Cereal production	0.26	0.90	0.78	0.25	0.94	0.79	0.24	0.95	0.80
Cereal sale	0.02	0.16	0.13	0.01	0.15	0.12	0.04	0.30	0.25
Cereal consumption	0.12	0.27	0.24	0.23	0.46	0.42	0.17	0.33	0.30
Cereal purchased	0.83	0.15	0.26	0.91	0.49	0.56	0.86	0.33	0.42

Notes: Cereal production: % of households producing mil, sorghum or maize. Cereal sale: % of households selling mil, sorghum or maize on the market. Cereal consumption: share of cereal consumption in total consumption (expenditure). Cereal purchased: share of purchased cereal in total cereal consumption.

Source: EPI (1994), EPII (1998), EPIII (2003)

Table 10
Rural household production modes 1994/1998/2003
(in percentages)

	1994				1998				2003			
	HH	Fert.	Cred.	Mode	HH	Fert.	Cred.	Mode	HH	Fert.	Cred.	Mode
Cereal	91.1	20.6	5.5	31.9	94.5	19.2	5.2	30.7	94.8	57.0	4.0	30.5
Cotton	10.9	81.9	53.9	49.2	16.6	92.2	76.8	54.5	20.4	.	.	.

Notes: HH: % of households producing cereals and cotton respectively; Fert: % of households using fertilizer for producing for cereals and cotton respectively; Cred.: % of households using financial credits. Mode: % of households possessing a plough.

Source: EPI (1994), EPII (1998), EPIII (2003) and computations by the authors.

Table 11
Socio-demographic characteristics of the urban adult population (15 years and older)
(in percentages)

	1994	1998	2003
Proportion men	52.5	51.1	49.7

	Men			Women		
	1994	1998	2003	1994	1998	2003
Age group						
15-24	40.3	39.2	37.6	41.0	40.5	39.4
25-44	43.1	42.0	43.3	40.8	39.5	41.1
45-64	13.2	15.1	15.6	14.0	15.5	14.8
65 and older	3.4	3.7	3.5	4.1	4.4	4.7
Stratum						
Ouagadougou	53.9	45.7	47.7	50.1	44.8	45.8
Bobo-Dioulasso	18.9	23.4	23.5	19.5	21.9	24.0
Other cities	27.2	30.9	28.8	30.4	33.3	30.2
Migration status						
Current residence > 4 years	82.5	88.4	-	84.1	89.7	-
Cur. resid. < 4 y., from rural	6.4	3.1	-	5.5	2.5	-
Cur. resid. < 4 y., from urban	7.1	5.8	-	6.9	5.0	-
Cur. resid. < 4 y., from abroad	4.0	2.7	-	3.6	2.7	-
Resid. in Côte d'I. 12 months ago	2.6	1.6	3.3	2.6	1.5	3.0
Reading and writing French	56.3	55.3	(63.0)	39.3	39.4	(44.9)
Highest education achieved						
No schooling	56.2	57.1	(33.7)	68.3	68.4	(52.1)
Some primary	13.0	9.2	(15.9)	9.4	8.4	(12.6)
Completed primary	12.0	10.9	(11.1)	10.3	8.7	(7.5)
Some or compl. junior high	9.8	12.0	(21.7)	7.0	9.3	(18.6)
Some or compl. senior high	6.8	9.4	(16.2)	3.0	3.9	(7.7)
Technical	2.1	1.5	(1.6)	1.9	1.3	(1.5)

Notes: Numbers in parentheses signify that we presume strong measurement error.

Source: EPI (1994), EPII (1998), EPIII (2003) and computations by the authors.

Table 12
Occupation and employment of the urban adult population (15 years and older)
Percentages

	1994	1998	2003
Occupied	53.2	58.7	58.2
of whom:			
(1) Public wage earner	12.8	12.3	12.7
(2) Private formal wage earner	13.6	16.8	17.0
(3) Independent (informal)	41.3	(37.5)	40.6
of whom			
Trade sector	62.6	69.3	72.6
Manufactory sector	17.4	15.3	13.2
Other commercial services	11.1	5.7	2.6
(4) Family help	25.6	(29.0)	21.7
(5) Non-remunerated (outside family)	6.8	4.4	8.1
of whom (only cat. 1-3):			
Permanent contract	85.9	91.2	75.5
Seasonal	6.3	3.5	13.8
Daily	1.8	0.9	8.8
Other temporary	6.0	4.5	1.9
Unemployed (open)	8.9	9.4	12.8
Enrolled in school/univ.	14.3	14.5	13.5
Inactive	23.7	17.4	15.5
Dependency ratio (over households) [a)]	63.1	57.4	57.4

Note: Occupation and activity concerns those carried out the seven days before the survey. However, we computed the same statistics for the main activity the last 12 month; the results were not significantly different. Numbers in parentheses signify that we presume strong measurement error. [a)] The dependency ratio is computed over households, it is defined as the number of inactive and unemployed persons divided by the household size.

Source: EPI (1994), EPII (1998), EPIII (2003) and computations by the authors.

Table 13
Average urban real monthly earnings
(in thousands of CFA F and in prices of 1994 and Ouagadougou, decile-specific deflator used (HPI))

	1994	1998	2003
(1) Public wage earner			
Total average	130	74	81
(1994=100)	(100)	(56.9)	(62.3)
Median	65	57	62
(1994=100)	(100)	(87.6)	(95.4)
Average first quintile	32	24	25
Average second quintile	51	43	49
(2) Private formal wage earner			
Total average	97	37	48
(1994=100)	(100)	(38.1)	(49.5)
Median	27	20	24
(1994=100)	(100)	(74.0)	(88.9)
Average first quintile	7	7	9
Average second quintile	17	13	18
(3) Independent (informal)			
Total average	75	36	36
(1994=100)	(100)	(48.0)	(48.0)
Median	10	12	15
(1994=100)	(100)	(120)	(150)
Average first quintile	2	2	3
Average second quintile	5	6	7
Ratios between median earnings			
(2)/(1) in %	41.5	35.1	38.7
(3)/(1) in %	15.4	21.1	24.2
(3)/(2) in %	37.0	60.0	62.5
Percentage of workers living in a poor HH			
Public wage earner	1.0	4.0	2.5
Private formal wage earner	6.6	13.3	12.8
Independent (informal)	14.3	26.4	20.3

Note: The monthly minimum wage is currently at 25,000 CFA F (≈ 19,000 CFA F in prices of 1994). In 1994, 1998 and 2003 18.8%, 13.7% and 9.3% of all public, private formal and informal workers declared no earnings. Those who declared no earnings are almost all workers in the informal sector; older than the average, often head of a household (except in 2003) and less educated than the average. Another bias is due to the fact that the recall period for wages in 1994 was 7 days, whereas in 1998 and 2003 the interviewed person was allowed to choose the recall period. Most declarations were then made per month (25%-30%) or per year (60%). In general, declarations of individual incomes in the Burkinabè household surveys are judged as largely underestimated (for details see Somda, Koné and Sawadogo, 1999).

Source: EPI (1994), EPII (1998) and EPIII (2003).

Table 14
Public Spending, 1994-2003

	1994	1995	1996	1997	1998	1999	2000	2001	2002
Total exp.	22.1	20.9	21.3	23.3	22.3	25.3	22.7	22.4	22.4
Total rev.	11.0	11.6	12.3	13.0	13.1	13.7	11.8	11.2	11.9
Current exp.	57.5	54.1	48.8	43.3	46.6	41.1	46.7	48.2	52.9
Capital exp.	42.5	45.9	51.2	56.7	53.4	58.9	53.3	51.8	47.1
Int. fin.	10.0	10.0	10.0	10.0	10.0	25.6	21.3	26.4	(11.0)
Ext. fin.	90.0	90.0	90.0	90.0	90.0	74.4	78.7	73.6	(89.0)
Health	8.8	8.3	10.8	9.5	9.0	5.5	5.5	6.0	7.9
Education	9.4	8.9	8.6	9.5	9.3	6.7	7.1	7.7	8.8
Rural Roads	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.4
Other Soc. Exp.	--	--	1.3	0.8	1.0	0.8	0.8	3.5	5.4
Total	18.2	17.2	20.7	19.8	19.4	16.0	16.6	17.6	22.5

Note: Total expenditure and total revenue: % of GDP. Current, capital and social expenditure: % of total expenditure. Internally and externally financed: % of capital expenditure. Numbers in parentheses signify that we presume strong measurement error.

Source: IMF (1998), IMF (2003a).

Table A1
Survey design of EP1, EPII, EPIII

	1994 (EPI)	1998 (EPII)	2003 (EPIII)
# Households	8,642	8,478	8,500
# Individuals	65,014	63,509	54,034
# Strata	8	10	13
# Provinces	30	45	45
# Clusters	436	425	425
Period	Oct-Jan	May-Aug	Apr-Jul

Table A2
Data description EPI, EPII, EPIII
(in percentages)

	1994 (EPI)	1998 (EPII)	2003 (EPIII)
Urban			
Urban	16.2	16.7	18.2
Rural	83.8	83.3	81.8
Gender			
Female	4.5	4.3	5.3
Male	95.5	95.7	94.7
Socio-economic groups			
Public	4.0	4.0	3.6
Private	2.3	2.7	2.1
Informal	6.5	5.7	8.3
Agr. Subsistence	68.3	66.1	58.3
Agr. Cotton	10.3	16.7	18.2
Inactive	8.6	4.7	9.5
Education			
None	85.4	87.5	84.4
Primary	9.5	6.8	8.7
Secondary	2.7	3.2	4.4
Higher Level	2.4	2.5	2.5
Economic region			
Hauts Bassins	11.9	10.8	10.8
Mouhoun	10.2	10.6	12.2
Sahel	5.5	6.4	5.8
East	6.9	8.6	8.5
South-West	5.3	4.2	4.9
Center-North	8.1	8.9	8.3
Center-West	10.5	10.7	8.6
Plateau	5.5	5.6	6.0
North	9.8	9.6	8.6
Center-East	7.0	8.0	8.3
Center	8.3	9.3	10.2
Cascades	4.6	3.0	3.6
Center-South	6.3	4.4	4.3

Notes: Measured as a percentage of the total population according to characteristics of the household head.

Source: EPI (1994), EPII (1998), EPIII (2003) and computations by the authors.

Table A3
Deflators used to correct for regional consumption price differences

EPI (1994)		EP II (1998)		EP III (2003)	
West	0.863	Hauts Bassins	0.934	Hauts Bassins	0.960
South	0.863	Cascades	0.934	Cascades	0.960
Center-North	0.888	North-West	0.843	North-West	0.860
Center-South	0.863	Sahel	0.983	Sahel	1.010
North	0.976	East	0.887	East	0.710
Other Cities	0.970	South-West	0.776	South-West	0.840
Ouaga & Bobo	1.000	Center-North	0.953	Center-North	0.800
		Center-West	0.832	Center-West	0.820
		Center	1.000	Center	1.000
		Plateau Central	1.000	Plateau Central	0.970
		Center-South	1.000	Center-South	0.890
		North	0.876	North	0.910
		Center-East	0.627	Center-East	0.840

Notes: Regional Deflators for 1994 are only available for a divide in seven economic regions, which do not correspond to the economic regions of 1998 and 2003. Hence a direct comparison of regional deflators between 1994 and 1998/2003 is not possible.

Source: 1994 and 1998: World Bank. 2003: INSD.

Table A4
Survey design and data measurement problems and inconsistencies

	Year	Variable Influenced	Poverty Impact	Corrected For
HHS design				
Shortening of recall period	1998/2003	Real Consumption	Decrease	No
Data collection in pre-harvest season	1998/2003	Real Consumption	Increase	No
		Nom.Consumption	Decrease	Yes
Increased number of exp. variables	1994-2003	Real Consumption	Decrease	No
Calculation of Exp. Aggregates				
Missing rents	1994-2003	Real Consumption	Increase	Yes
Inclusion of durables	1998/2003	Real Consumption	Decrease	Yes
12.5% surplus margin	1998	Real Consumption	Decrease	Yes
Poverty line				
Seasonality of prices	1998/2003	Poverty Line	Increase	Yes
Change of consumption basket	2003	Poverty Line	Increase	No

Table A5
Disaggregated poverty and inequality estimates

	P0			% of Total Poor			Gini		
	1994	1998	2003	1994	1998	2003	1994	1998	2003
Hauts Bassins**	33.8	47.0	34.7	7.2	8.2	7.9	0.43	0.43	0.42
Mouhoun**	59.5	65.5	61.5	11.0	11.2	15.9	0.46	0.38	0.35
Sahel	62.9	59.3	36.9	6.2	6.2	4.5	0.42	0.35	0.44
East	68.4	66.7	42.1	8.5	9.2	7.6	0.42	0.35	0.38
South-West**	56.3	64.2	57.9	5.4	4.4	6.0	0.45	0.36	0.34
Center-North	63.7	78.4	36.0	9.3	11.3	6.3	0.32	0.31	0.35
Center-West*	61.1	61.8	42.1	11.6	10.7	7.7	0.48	0.42	0.41
Plateau	60.8	67.7	60.5	6.1	6.2	7.8	0.38	0.36	0.39
North	78.1	79.9	69.0	13.8	12.5	12.5	0.37	0.36	0.36
Center-East	56.5	70.3	56.3	7.2	9.1	9.9	0.37	0.43	0.42
Center	8.8	27.3	23.2	1.3	4.1	5.0	0.44	0.53	0.52
Cascades**	58.3	48.2	38.4	4.9	2.3	3.0	0.44	0.44	0.47
Center-South*	67.2	67.3	65.9	7.6	4.8	6.0	0.37	0.40	0.36
Rural	63.4	68.7	53.2	95.7	92.6	92.2	0.39	0.35	0.38
Urban	14.7	27.3	20.3	4.3	7.4	7.8	0.35	0.50	0.48
Public	3.2	9.9	4.1	0.2	0.6	0.3	0.41	0.42	0.44
Private	7.8	18.5	11.5	0.3	0.8	0.5	0.46	0.53	0.45
Informal	16.2	20.6	20.3	1.9	1.9	3.6	0.43	0.47	0.45
Subsistence	64.1	71.6	57.2	78.8	76.5	70.7	0.36	0.33	0.37
Cotton	62.1	58.2	46.8	11.5	15.9	18.1	0.36	0.35	0.37
Inactive	46.9	57.3	33.9	7.3	4.3	6.8	0.49	0.48	0.44
None	60.9	66.8	51.9	93.7	94.6	92.7	0.40	0.36	0.38
Primary	33.1	40.3	31.5	5.6	4.4	5.8	0.45	0.42	0.43
Secondary	9.9	11.8	15.3	0.5	0.6	1.4	0.45	0.42	0.46
Higher Level	3.6	8.2	0.9	0.2	0.3	0.1	0.42	0.48	0.41
Male	56.4	62.7	47.7	97.1	97.1	95.7	0.47	0.44	0.44
Female	35.6	41.8	38.5	2.9	2.9	4.3	0.50	0.50	0.51

Note: Calculation based on revised poverty line. ** , * Regions where more than 40% (between 20% and 40%) of the population are directly involved in cotton production.

Source: EPI (1994), EPII (1998), EPIII (2003) and computations by the authors.

Table A6

Disaggregated expenditure and growth estimates

Real expenditure per capita: mean=100. Real growth per capita: 1994=100

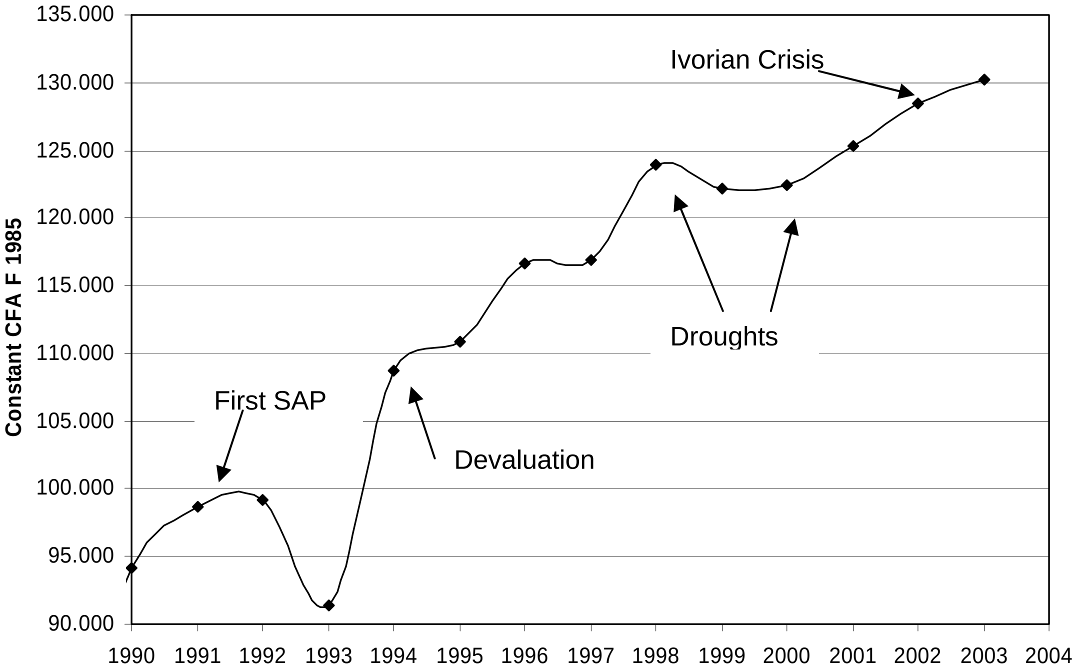
	Real HH-expenditure per capita			Real HH-expenditure growth a)			Real HH-expenditure growth b)		
	1994	1998	2003	1994	1998	2003	1994	1998	2003
Hauts Bassin**	130	120	115	100	100	111	100	78	97
Mouhoun**	86	85	68	100	107	99	100	76	82
Sahel	74	88	117	100	129	198	100	91	168
East	73	83	95	100	124	165	100	87	139
South-West**	100	81	73	100	88	92	100	62	76
Center-North	71	68	99	100	103	175	100	72	148
Center-West*	92	95	101	100	112	138	100	82	118
Plateau Centr.	79	76	75	100	104	120	100	72	99
North	56	70	63	100	136	143	100	99	119
Center-East	82	88	83	100	117	128	100	87	108
Center	257	227	200	100	96	98	100	85	91
Cascades**	92	113	115	100	133	157	100	103	135
Center-South*	75	73	63	100	106	106	100	74	87
Rural	75	78	81	100	112	135	100	77	112
Urban	227	212	186	100	101	103	100	90	95
Public	351	306	314	100	95	113	100	82	105
Private	274	276	228	100	109	104	100	98	97
Informal	199	213	163	100	116	103	100	99	93
Subsistence	71	73	75	100	111	133	100	77	110
Cotton	75	86	85	100	125	143	100	87	119
None	79	81	82	100	111	131	100	80	110
Primary	141	137	125	100	105	111	100	84	98
Secondary	298	277	217	100	101	92	100	87	84
Higher Level	467	453	421	100	105	113	100	95	107
Male	98	98	98	100	109	127	100	82	109
Female	153	153	131	100	109	107	100	89	96

Note: a) deflated with the official CPI (IAP 2004). b) deflated with household specific price deflators (HPI). ** , * Regions where more than 40% (between 20% and 40%) of the population are directly involved in cotton production.

Source: EPI (1994), EPII (1998), EPIII (2003) and computations by the authors.

Figures

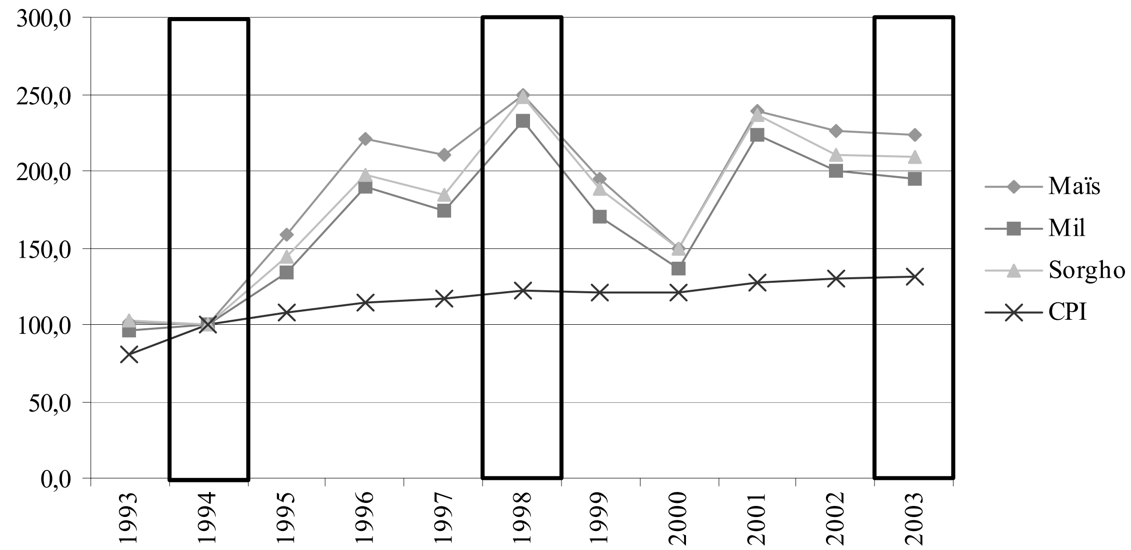
Figure 1
Real GDP per capita
(Constant CFA Francs 1985)



Notes: 1998-2003 estimation.

Source: IAP (2004).

Figure 2
Annual cereal price variations

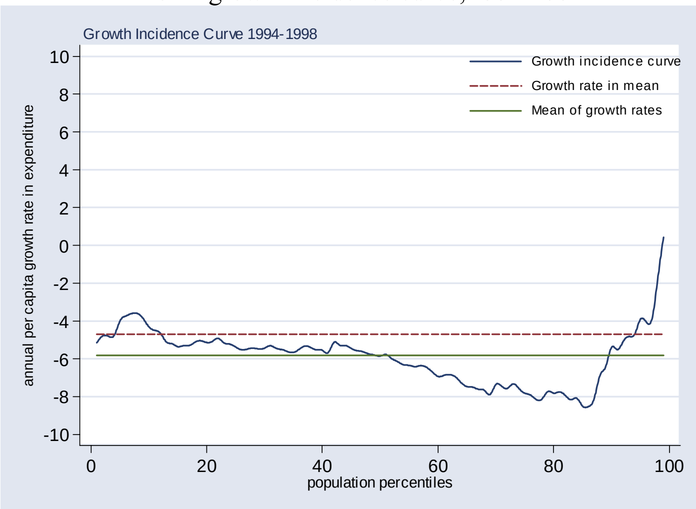


Note: Annual average cereal consumer prices. 1994=100. CPI: national consumer price index.

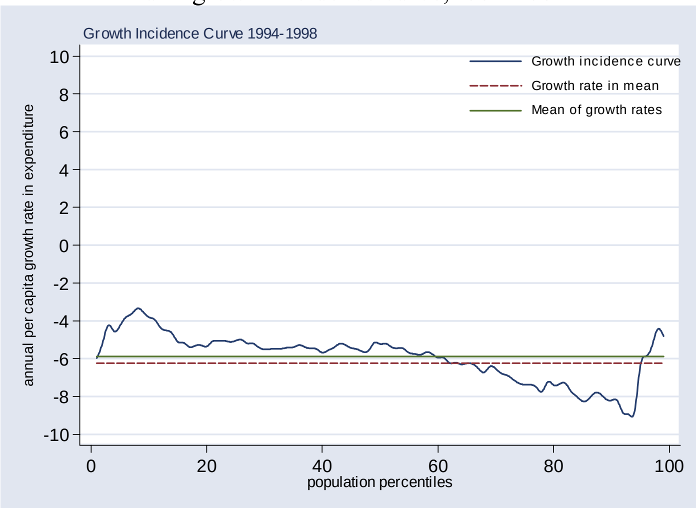
Source: CPI: IAP (2004). Cereal prices: Grain Market Price Surveillance System, Burkina Faso, Ministère du Commerce (2003).

Figure 3
Growth incidence curves 1994-1998
Decile and urban/rural specific deflators

National growth incidence curve, 1994-1998



Rural growth incidence curve, 1994-1998



Urban growth incidence curve, 1994-1998,

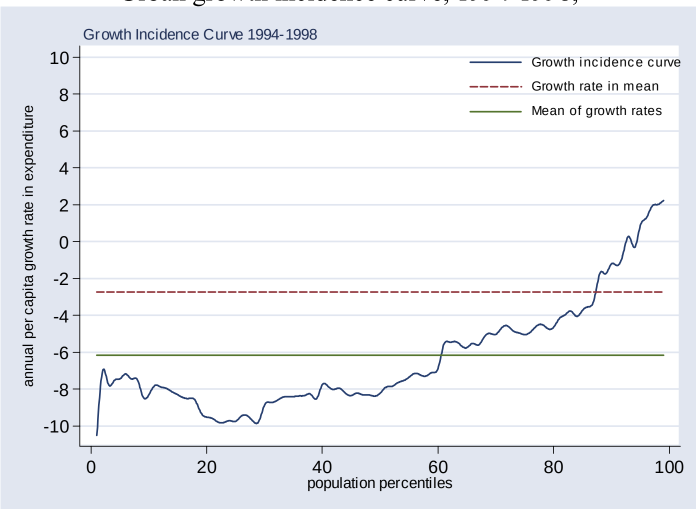
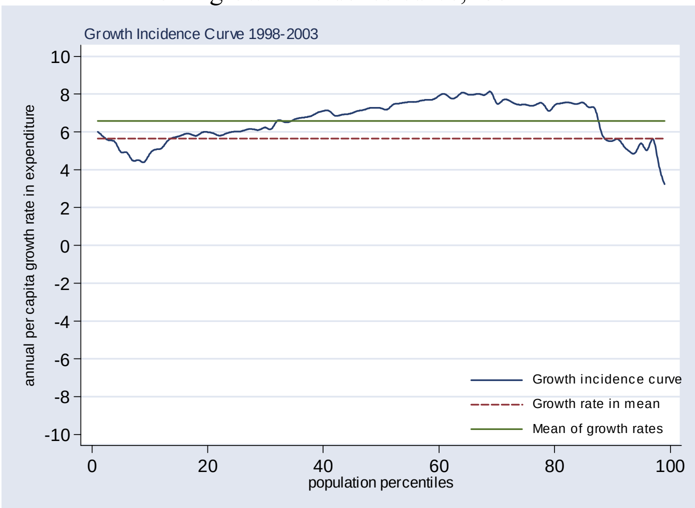
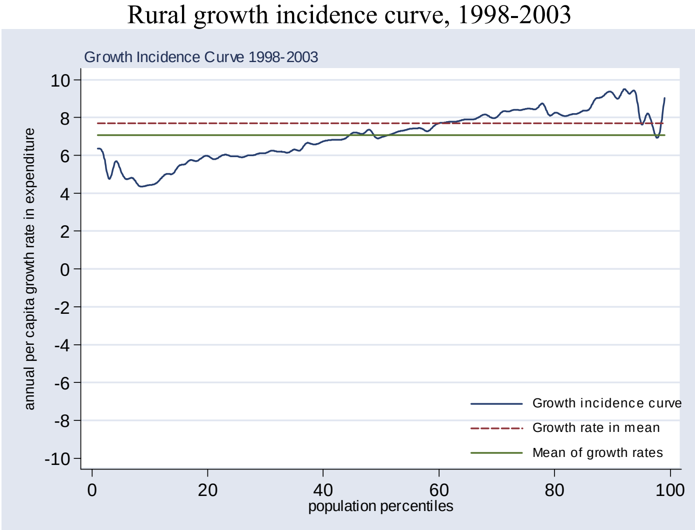


Figure 3 (… *continued*)
Growth incidence curves 1998-2003
Decile and urban/rural specific deflators

National growth incidence curve, 1998-2003



Rural growth incidence curve, 1998-2003



Urban growth incidence curve, 1998-2003

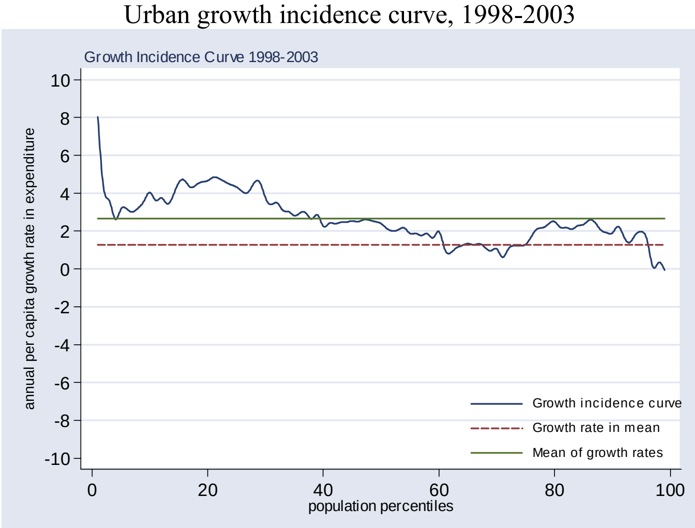
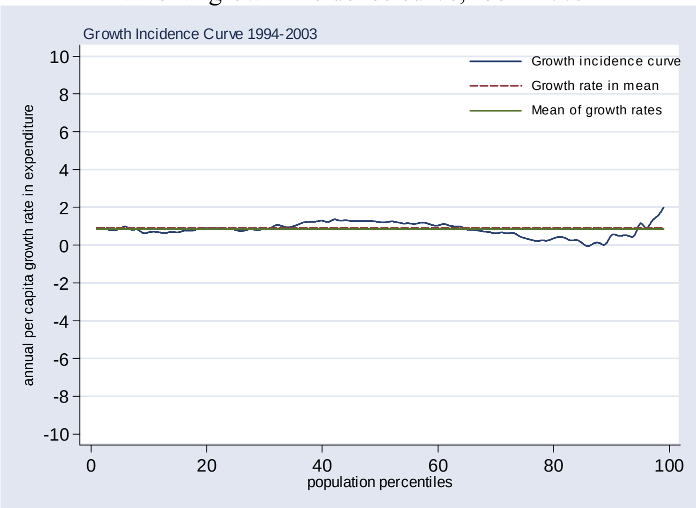
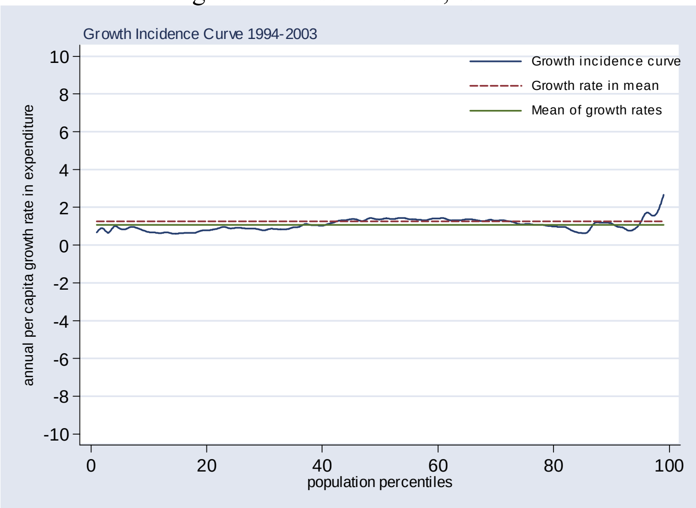


Figure 3 (*… continued*)
Growth incidence curves 1994-2003
Decile and urban/rural specific deflators

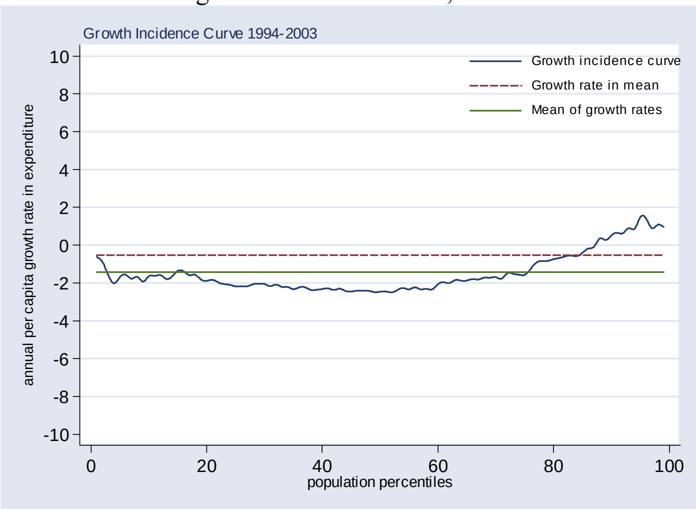
National growth incidence curve, 1994-2003



Rural growth incidence curve, 1994-2003

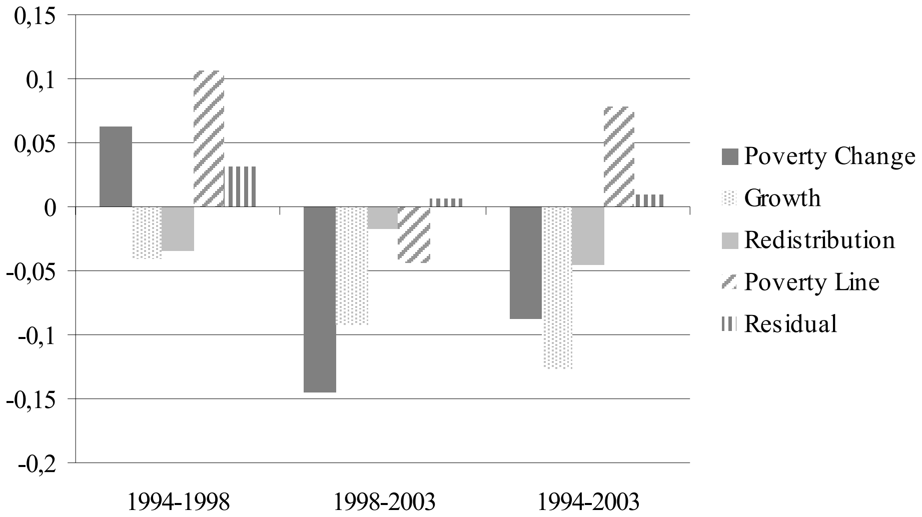


Urban growth incidence curve, 1994-2003



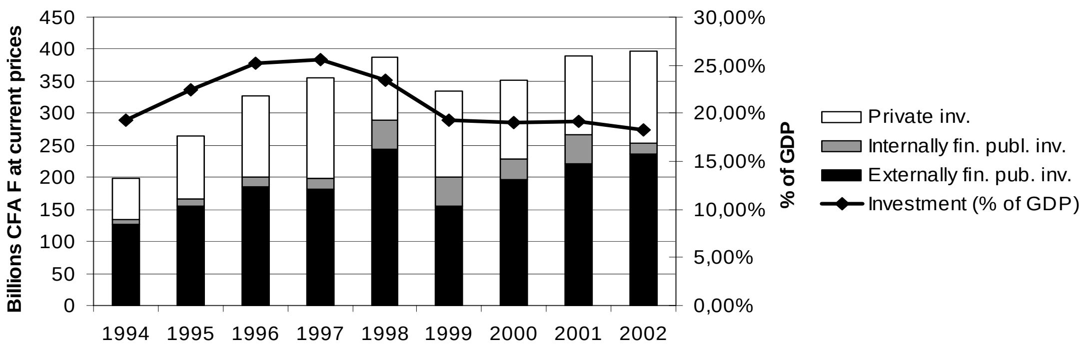
Source: EP I (1993), EP II (1998), EP III (2003) and computations by the authors.

Figure 4
Poverty decomposition, national level



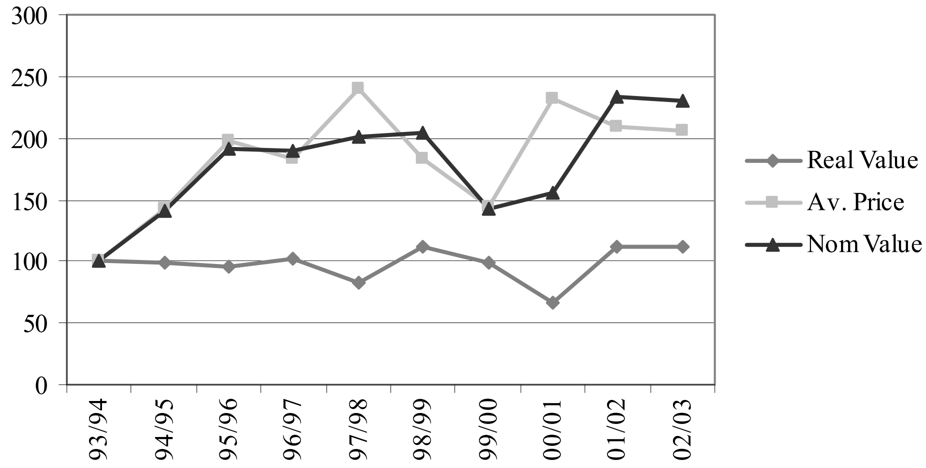
Source: EP I (1993), EP II (1998), EP III (2003) and computations by the authors.

Figure 5
Structure and finance of investment
(Current prices and in percentage of GDP)



Source: IMF (1999, 2003b).

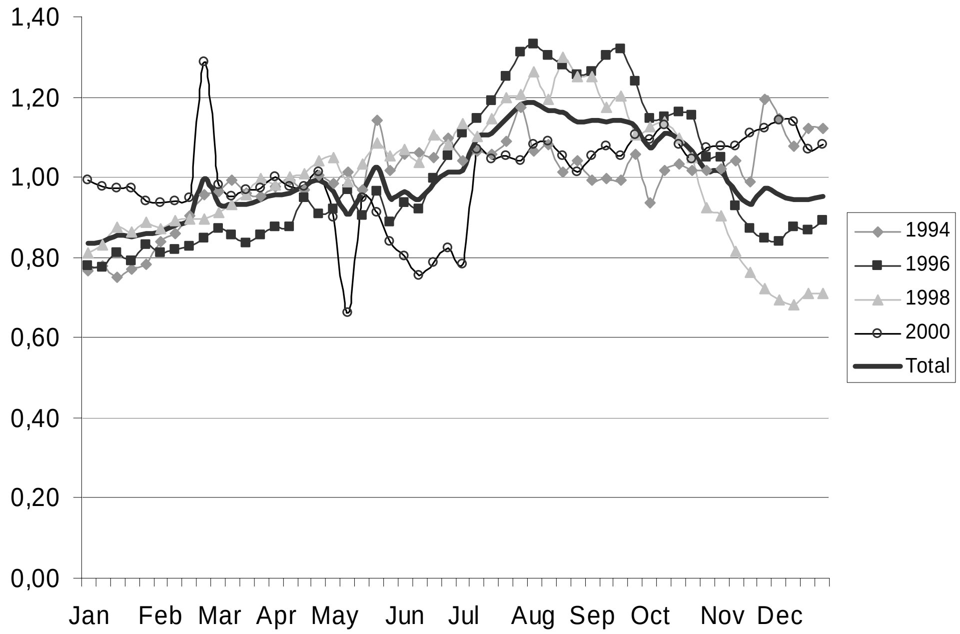
Figure 6
Evolution of cereal production, prices and nominal value



Note: Real Value: annual cereal production (millet, sorgho, maize). Av. Price: average per kg consumer price of cereals (millet, sorgho, maize) weighted with their respective shares in total production. Nom. Value: Real Value times av. price. Indexed to 95/96=100.

Source: CPI: IAP (2004). Cereal prices: Grain Market Price Surveillance System, Burkina Faso, Ministère du Commerce (2003). Cereal Production: Economic accounts of the agricultural sector: Enquête Permanente Agricole (1995–2002).

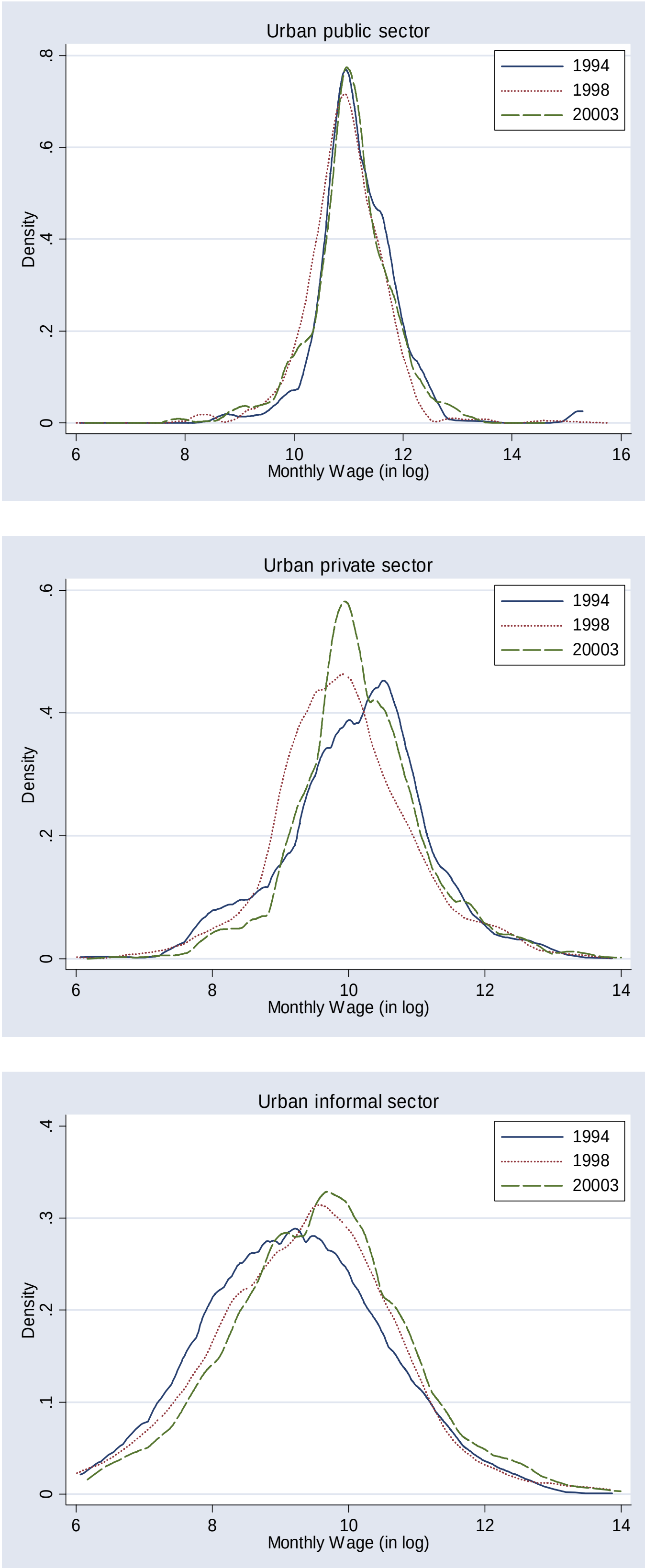
Figure 7
Seasonal cereal price variations



Notes: Calculations for 1994/1996/1998/2000, annual mean=1.0. 'Total' is the average 1994-2000.

Source: Grain Market Price Surveillance System, Burkina Faso Ministry of Trade (2003).

Figure 8
Urban real monthly earnings distributions
Vertical line: real poverty line per month per capita
(logarithmic scale, decile urban specific deflators used (HPI))



Source: EP I (1993), EP II (1998), EP III (2003) and computations by the authors.

List of persons we discussed with during our visit in Burkina Faso, January 28 to February 7 2004

Name	First Name	Profession	Institution
Achour	Ali	Statistician-Economist	Coopération Française
Appeldoorn	Geke	Adviser in Gender Issues	SP-CPSA
Bahm	Andrea	Agriculture-Program-Manager	GTZ
Burki	Jean-Francois	Regional Advisor (West-Africa)	DDC (Coop. Suisse)
Coulibaly	Ouala	Economist	STC-PDES
Coulibaly	Siaka	Economist	World Bank
Dialla	Emile	Sociologist	CAPES
Diop	Mariam	Economist	Embassy of Danmark
Guicquero	Yves	Economist	AFD
Issa	Boureima	Statistician-Economist	DEP-MEDEV
Kinde	Bakary	Statistician-Economist	GTZ-MEF
Kone	Michel	Statistician	DSG-INSD
Linulf	Jakob	First Secretary	Embassy of Danmark
Meier	Rolf	Economist	GTZ
Moussa	Kabore	Statistician-Economist	Statistiques Agricoles
Ouandaoga	Ousmane	Statistician-Economist	DEP-MFB
Pierrel	Hugo	Economist	European Union
Ponty	Nicolas	Senior Economist	UNDP
Sebre	Dvamane	Statistician-Economist	STC-PDES
Sidi	Tiral	Statistician-Economist	DDCGT-INSD
Sie	Tioye	Statistician-Economist, Director	DPAM-DGER
Sikirou	Souleymawe	Professor	University of Ouagadoug.
Sissao	Christian	Economist	SP-CPSA
Some	Seglaro	Economist	CAPES
Tougma	Yemdougu	Statistician-Economist	SP-PPF
Yago	Namaro	Statistician-Economist	DEE-INSD
Zonon	Abdoulaye	Economist	CAPES