

**Document of  
The World Bank**

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**Report No. 94191-ML**

**REPUBLIC OF MALI**

**PRIORITIES FOR ENDING POVERTY AND BOOSTING  
SHARED PROSPERITY**

**SYSTEMATIC COUNTRY DIAGNOSTIC (SCD)**

**June 22, 2015**

**International Development Association  
Country Department AFCW3  
Africa Region**

**International Finance Corporation  
Sub-Saharan Africa Department**

**Multilateral Investment Guarantee Agency  
Sub-Saharan Africa Department**



## REPUBLIC OF MALI - GOVERNMENT FISCAL YEAR

January 1 – December 31

### CURRENCY EQUIVALENTS

(Exchange Rate Effective as of June 2015)

Currency Unit	=	CFA Franc
US\$1.00	=	FCFA 575

### ABBREVIATIONS AND ACRONYMS

AMADER	<i>Agence Malienne d’Energie Rurale</i> , Mali Rural Energy Agency
ATT	Amadou Toumani Touré
CFAF	CFA Franc
CMDT	<i>Compagnie Malienne pour le Développement des Textiles</i> , Mali Enterprise for Textile Development
CSCR	<i>Cadre Stratégique Pour la Croissance et la Réduction de la Pauvreté</i> , Strategic Framework for Growth and Poverty Reduction 2012 - 2017 – CSCR
DHS	Demographic and Health Survey
DNCC	<i>Direction Nationale du Commerce et de la Concurrence</i> , National Directorate for Trade and Competition
ECOWAS	Economic Community of West African States
EDS	<i>Enquête Démographique et de Santé</i> , Demographic and Health Survey
EDM	<i>Energie du Mali</i> , Mali Energy
EITI	Extractive Industries Transparency Initiative
ELIM	<i>Enquête Légère Intégrée auprès des Ménages</i> , Integrated Household Survey
EMEP	<i>Enquête Malienne sur l’Evaluation de la Pauvreté</i> , Mali Survey for Poverty Monitoring
FDI	Foreign Direct Investment
FGM	Female Genital Mutilation
GDP	Gross Domestic Product
GSPC	Salafist Group for Preaching and Combat
GWh	Giga Watt / hour
HIV/AIDS	Human Immunodeficiency Virus/Acquired Immune Deficiency Syndrome
IBK	Ibrahim Boubacar Keïta
ICA	Investment Climate Assessment
IDP	Internally Displaced People
IED	Improvised Explosive Device
IMF	International Monetary Fund
INSTAT	Statistical Services Center
IT	Information Technology

ITU	International Telecommunications Union
LSMS-ISA	Living Standards Measurement Survey – Integrated Survey of Agriculture
MINUSMA	United Nations Multidimensional Integrated Stabilization Mission in Mali
MW	Mega Watt
ODA	Official Development Assistance
ODHD	<i>Observatoire du Développement Humaine</i> , Human Development Observatory
OED	Operations Evaluation Department
PAG	Government Action Plan
PASEC	Program for the Analysis of Education Systems
PFM	Public Financial Management
R&D	Research and Development
SCD	Systematic Country Diagnostic
SME	Small and Medium Enterprises
SSN	Social Safety Net
TFP	Total Factor Productivity
UN	United Nations
USc	United States Cents
USD	United States Dollar
VAT	Value Added Tax
WAEMU	West African Economic and Monetary Union

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## PREAMBLE

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*This SCD was prepared during the still unresolved conflict in northern Mali. The roots of this conflict are multiple. One major element is Mali's system of 'consensus politics' which has led to governance problems that are also responsible for poor levels of service delivery and elite capture of budgets, policies and institutions. Addressing the conflict is a priority in the short term. In its presence little meaningful development and poverty reduction can take place. In the long term, addressing the underlying governance problems is of primordial importance. The feasibility of attaining these ambitions may, however, be limited.*

1. **This document presents the Systematic Country Diagnosis (SCD) for Mali.** The SCD was prepared following a consultative process within and outside the World Bank. It identifies constraints and opportunities for achieving the twin goals of ending poverty and improving shared prosperity by 2030 while acknowledging (i) the need for selectivity in pro-poor interventions, and (ii) the many competing “binding” reasons for poverty in Mali. The objectives of the twin goals are similar for Mali as the incidence of dollar-a-day poverty exceeds 40 percent of the population.

2. **Selectivity means the identification of principal opportunities for poverty reduction in the next 15 years, as well as the identification of binding constraints to reaping such opportunities.** In the search for selectivity, there is the risk of not identifying the correct set of opportunities and constraints. However, the risk of not being selective would probably have more serious implications as it could lead the government and its development partners to disperse their resources and attention too thinly over too many competing priorities.

3. **Selectivity also implies making trade-offs between immediate and longer term objectives.** In this document priority is given to the identification of poverty reduction opportunities which could deliver results before 2030, while acknowledging that efforts should not undermine the prospects for poverty reduction and shared prosperity beyond 2030. In this regard, particular attention is paid to environmental and fiscal sustainability.

4. **This SCD is prepared as Mali experiences protracted insecurity following a resurgence of the conflict in the north.** Significant areas of the north are not under government control and there have been numerous attacks on soldiers from the Malian armed forces and the UN peacekeeping mission (MINUSMA), as well as occasional fighting among rebel groups. A preliminary peace accord was signed between the government and six rebel groups, but whether it will be ratified (planned for June 20, 2015) and bring lasting peace remains to be seen. Many of the rebel groups that operate in the north did not participate in the negotiations and violence continues unabated.

5. **This tumultuous period comes after two decades of relative stability, with a multiparty democracy viewed as West Africa's success story.** Mali's transition to democracy started when coup leader Amadou Toumani Touré (ATT) did not present himself as candidate for the elections in 1992. The new leadership under president Alpha Oumar Konaré got off to a good start aiming to generate economic growth to help the poor get out of poverty. The new impetus managed to enhance access to services (between 1990 and 2010, life expectancy increased from 47 to 54 and gross primary school enrollment from 27 percent to 80 percent) and led to the implementation of reforms such as the liberalization of the grain market.



6. **Mali's democratic transition benefitted initially from strong legitimacy.** It was shaped during a national conference<sup>1</sup> (1991) with nearly 2,000 participants representing a broad range of society during which the building blocks for a democratic system were agreed: a civilian government with regular elections, an independent constitutional court, political decentralization, and various participatory mechanisms which built on a strong tradition of dialogue.<sup>2</sup> During the subsequent two decades, Mali passed the “elections” test of a peaceful electoral transition by bringing to power a president who did not belong to the incumbent’s party.<sup>3</sup> At the same time, a small political elite continued to dominate - out of more than one hundred political parties, only a few could ever mobilize more than 5,000 votes.

7. **Legacies from the past put stress on the consolidation of the newly secured democracy.** Mali’s centralized and hierarchical administrative system, with a strong presidency, and “the problem of the North” with calls from various groups (including some Tuareg groups) for both more autonomy and more economic support was at odds with a strong support for national unity. The 1992 National Pact was the culmination of negotiations between the Malian government and several Tuareg factions to end the rebellion that started in 1990. It integrated Tuareg combatants into the Malian armed forces, demilitarized the north, stimulated economic integration of northern populations, and resulted in a special administrative structure for the three northern regions. Concomitantly, the quest to secure democracy was associated with attempts to weaken the security forces to avoid future coups d’états. Spending on security was reduced to about 1.5 percent of GDP. While this figure was comparable to the regional average, embezzlement, nepotism and corruption assured that no real investments were made (with the exception of the berets rouges which protect the president), and the army quickly lost its effectiveness.

8. **ATT deepened the system of consensus politics and, by doing so, gradually diminished the legitimacy of the state.** When a divided presidential party was not able to field a candidate for the 2002 presidential elections, ATT, the “soldier of democracy”, presented himself as an independent candidate and won. ATT did not have a political party to fall back on and promulgated a politics of consensus instead, an apolitical coalition of all political parties and some civil society representatives. While seemingly progressive, this approach led to constant redistribution of positions and resources amongst members of a fragile coalition, and strengthened existing tendencies to co-opt any potential opposition through pay-offs, corruption, nepotism, and impunity. This approach undermined the creation of a professional bureaucracy, independent oversight institutions and a proper judicial service and weakened the army further as recruitment and promotions became largely based on political and familial affiliations. External accountability was limited as civil society organizations were co-opted and as a mostly illiterate rural citizenry remained outside the formal political process. This situation led to a gradual deterioration of the legitimacy of the government and fueled resentment towards the political elite (viz. the downward trend in trust in democracy and political institutions<sup>4</sup>). Consensus politics and associated capacity problems also prevented the implementation of the government’s economic vision of growth and poverty reduction.

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<sup>1</sup> Additional local, regional, and national dialogues were held on educational, healthcare, judicial, and electoral reforms, among others.

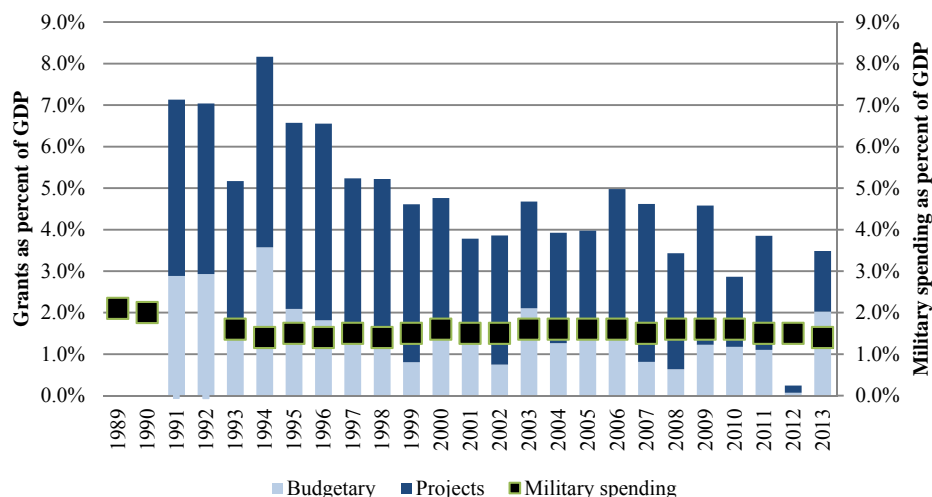
<sup>2</sup> Wing, S. Briefing Mali: Politics of A Crisis, African Affairs, May 2013.

<sup>3</sup> Huntington S.P. 1991. The Third Wave: Democratization in the late 20<sup>th</sup> century. (Norman, University of Oklahoma Press).

<sup>4</sup> Afrobarometer 2013.

9. **Financial resources from gold mining and ample donor funds facilitated the consensus politics.** In return for its commitment to peace and return to democracy, Mali was bestowed with the largesse of the international community, which seemingly ignored deteriorating governance indicators and public perceptions that grew more and more dissatisfied with corruption.

**Figure P.1: Aid and military spending as a percent of GDP (1991-2013)**



(\*) In 2006 Mali qualified for HIPC and MDRI.  
Source: IMF 2014

10. **The politics of co-optation led to the demise of the decentralization process which in 1992 had been one of the cornerstones of the new democracy.** The decentralization process stemmed from a dual objective: appeasing the tensions in the north, and supporting stronger development and accountability via bottom up development. Initially lauded for its scope, it encountered resistance from a centralized and hierarchical bureaucracy which was quick to point out inefficiencies and the lack of accountability of some decentralized entities. Confronted with political realities, decentralization became a means to enhance loyalty to the center by devolving responsibilities without the transfer of the resources and capacities necessary to meet the new obligations.

11. **The system of pay-offs and co-optation was also employed in the aftermath of the 2006 Tuareg rebellion during which security control of the north was gradually replaced by an almost demilitarization of the region.** The non-governed area that emerged allowed elements of Algeria’s GSPC (Salafist Group for Preaching and Combat) to settle in northern Mali. Likewise, international crime such as drug and arms trafficking and hostage taking increased, creating highly attractive economic alternatives both for the deprived population in northern Mali, and also for selected high level officials.

12. **Mali’s population became increasingly disillusioned with these political realities.** This manifested itself in low confidence in the country’s leaders and their policies (Afrobarometer 2008)<sup>5</sup>, low participation rates in national elections (participation never surpassed 38 per cent), and

<sup>5</sup> In 2008, 74 percent of the population agreed or strongly agreed with the statement that the government’s economic policies have hurt most people and only benefited a few; 38 percent trusted the president a lot, while 65 percent trusted traditional leaders a lot.

the opening up of political space for religious leaders.<sup>6</sup> Disillusionment led to several kinds of ‘rebellions’ or *incivisme*: in the West of Mali, youth emigrated in high numbers; commune dwellers refused to pay local taxes (in 2002, for example, only 39 per cent paid their taxes<sup>7</sup>) and when in 2012 the armed secessionist rebellion in the north ended in a successful coup d’état by military who refused to fight the rebels, many cheered for the new leadership.

13. **Consensus politics, crippled by a general long-term deterioration of governance, thus laid the foundation for its own demise.** Facing a very weak army, the three northern regions of Gao, Tombouctou and Kidal were rapidly occupied by various rebel and militant factions in early 2012. It took until early 2013 when a coalition composed of the Malian Army, French troops, the ECOWAS-led African-led International Support Missions to Mali and other countries, was able to recapture the occupied areas.

14. **In June 2013, a new president, Ibrahim Boubacar Keïta (IBK), was elected,** supported by a coalition of 12 political parties, and also by the army, religious leaders, economic operators and a large segment of the international community. However, the participation rate for the presidential election was low (46 percent). The legislative elections that followed a few months later had a participation rate that was even lower (38 percent) and did not give IBK’s party a majority.

15. **The road to recovery will be long and fraught with difficulties.** Institutions in Mali remain personalized with continued rent-seeking behavior and weak enforcement of laws and regulations. Addressing existing governance constraints will be necessary to strengthen legitimacy and inclusion and to lay the foundation for short and long-term development. However, following a period of optimism that immediately followed the election of IBK as president, a number of well publicized scandals and continued nepotism are making it increasingly clear how deeply entrenched the resistance to change is.

16. **Finding a peaceful solution to the conflict in the north remains as urgent as ever.** Rebel groups control many of the urban centers in the north, and most of the area north of Timbuktu and east of Gao are inaccessible for government and international actors without force protection. Finding (and implementing) a lasting peaceful solution will not be easy due to a number of factors: largely incompatible bargaining positions between the government and the rebels –the peace accord is not yet ratified; the continued access to easy sources of (illicit) funding; the limited punch of existing accountability mechanisms; and the likely presence of large mineral reserves (oil, gas, phosphate) in the north. However, ending the insecurity is of utmost importance as in its presence poverty reduction cannot happen.

17. **The SCD was prepared in collaboration with the entire Mali country team and benefitted from an intensive consultative process inside and outside the Bank.** This process is summarized in one of the background documents (see annex to the preamble for a complete list of background documents and studies). The SCD covers two related tasks, the SCD itself (P151730), as well as “Mali: Political Economy of Poverty Reduction” (P151364).

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<sup>6</sup> Religious leaders sent out a strong message to politicians in 2011, when they mobilized large numbers of believers and effectively blocked a modernization of the Family Code that dated from 1962.

<sup>7</sup> Pringle, Robert. 2006. “Democracy in Mali, Putting History to Work”. Peaceworks no. 58. Washington DC: United States Institute for Peace, pp 25-26.

18. **The document is structured as follows.** The executive summary is followed by section 1 which presents the country context. A discussion of poverty and poverty trends follows in section 2. Section 3 discusses Mali's economy. Using the background information provided in the first three sections, section 4 lays out a strategy for achieving the twin goals. Section 5 presents the most binding constraints to the poverty reduction and shared prosperity strategy.

## EXECUTIVE SUMMARY

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### Background

19. **This document presents the Systematic Country Diagnosis (SCD) for Mali.** It identifies how to achieve the twin goals of ending poverty and improving shared prosperity by 2030 in a sustainable manner. These objectives are considered to be comparable because the incidence of dollar-a-day poverty exceeds 40 percent of the population. The document thus focuses on reducing headcount poverty.

20. **Mali is a landlocked economy with a population of approximately 14.9 million, mostly illiterate, people.** With a per capita GDP of USD 480 (2005 constant prices) in 2012, Mali is one of the poorest countries in the world. Life expectancy is low (54 years) and levels of malnutrition are high (28 percent of under five children are stunted). The economy is predominantly rural and informal: 73 percent of the population resides in rural areas; 80 percent of jobs are in the informal sector. The formal sector is largely located in Bamako, the capital city, and is highly concentrated. As few as 40 firms pay 80 percent of all formal private sector salaries. These firms operate in (gold) mining, telecommunications, cotton ginning, sugar manufacturing, banking and electricity generation.

21. **Mali is culturally and geographically diverse.** The country can be divided along a north-south axis, with the northern areas extending into the Sahara and Sahel, and the southern ones blessed with more fertile land and contributing most economic activity. Large-scale cattle husbandry takes place in the north and around the Niger inland delta, whereas food and cash crops are produced in the Office du Niger and in the southern regions where levels of rainfall are higher. The semi-arid region linking the north and south has limited agricultural potential and the people living there combine farming and animal husbandry. The main commercial agricultural crops are rice and cotton. Farmers also produce significant quantities of millet, sorghum and maize, mostly for their own consumption. Half of the national rice crop is produced under rain-fed conditions but yields are low (at 0.5-1.5 tons/ha). The other half is concentrated in the center-north, along the Niger river, and involves modern irrigated or flooded rice cultivation techniques, yielding an average of 5-6 tons/ha.

22. **Bamako is by far the largest city in the country, hosting 15 percent of the population and generating 40 percent of GDP.** Bamako is the destination of choice for internal migrants; between 1998 and 2009 the population of Bamako grew at an annual average of 6.1 percent (compared to a national average of 3.0 percent). Bamako is particularly popular with migrants from the northern regions of Ségou, Mopti, Tombouctou and Gao. Internal migrants tend to be better educated than the average person in the country, but less well educated relative to the average person in Bamako. Better educated migrants have a greater likelihood of success while poorly educated migrants are more likely to return to their home towns and villages.

23. **Bamako is not an engine of growth** and between 2001 and 2010 per capita consumption in Bamako grew at 0.4 percent per annum, less than the national average of 0.6 percent. The lack of dynamism is corroborated by other evidence: the sectoral composition of jobs in Bamako changed little between the two population censuses of 1988 and 2009 and the secondary sector (which is largely located in Bamako) did not grow in per capita terms.

24. **Poverty incidence is high and most of the poor live in rural areas.** In 2010 more than half the population (51 percent) lived below the dollar-a-day poverty line. Since that time, drought (2012) and conflict (2012-present) have taken their toll and poverty incidence is likely to have risen. Reliable estimates do not exist, however, and there is a dire need to improve welfare measurement and to collect data that permits a better understanding of the livelihoods of poor households.<sup>8</sup> Poverty incidence is much lower in urban areas (14 percent) and 90 percent of all poor live in rural areas. Poverty is concentrated in the south where population density is highest.

25. **Between 2001 and 2010 Mali experienced rapid poverty reduction as growth was pro-poor.** Particularly between 2001 and 2006 poverty declined substantially. Poverty incidence declined from 60 percent in 2000, to 53 percent in 2006 to 51 percent in 2010; the Gini coefficient dropped from 0.40, to 0.39 to 0.33 respectively. Rapid poverty reduction occurred despite a sluggish overall consumption growth rate of 0.6 percent per capita over the period. The high rates of poverty reduction are associated with a rapid increase in the production of cereals following market liberalization, as well as sustained subsidies on fertilizer, increased remittances, improved off farm income opportunities (informal gold mining; telecom) and improved road connectivity.

26. **Improvements in cereal production were particularly effective at reducing poverty.** The poorest in Mali, even those who make a living from farming, are net-buyers of food. Low levels of own-production do not allow for self-sufficiency. To make ends meet, poor households depend on income from casual labor and gifts. Casual labor opportunities are usually found in the community and, if the transport costs can be afforded, via seasonal migration (at times as far as to Abidjan). In this context, policies that lead to increases in cereal production, and particularly in the production of cereals grown and consumed by the poor (millet and sorghum), offer three pathways to poverty reduction: through increased production; through lower cereal prices (important not only for the rural poor but also for the urban poor); and through increased demand for wage labor by commercial cereal farmers.

27. **Households and the overall economy are prone to shocks.** A dependence on rain-fed agriculture, in a region where droughts, floods and locust infestations occur regularly, makes household incomes and overall GDP growth subject to large fluctuations. The economy is undiversified (gold makes up 67 percent of exports, followed by cotton, 12 percent, and livestock, 5 percent; all oil is imported) and dependent on aid. This creates vulnerabilities to changes in international prices and the readiness of donors to offer support. Seasonal price fluctuations, conflict, climate change and competing demands for land by pastoralists and farmers present additional sources of risk. Finally, in the absence of formal safety nets and low levels of household wealth, ordinary life events, such as illness or the death of a family member, often result in significant welfare shocks.

28. **The conflict which erupted in 2012 is the consequence of deep rooted governance problems.** The conflict is not an isolated event but is the last in a series which started shortly after independence. It is one manifestation of a governance problem that affects the entire nation. The problem springs from a personalized competitive political settlement that emerged since Mali became a democracy in 1991. In this settlement the elite secured its grip on power by maintaining a weak security apparatus and by buying loyalty by doling out rents (*'consensus politics'*). Few

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<sup>8</sup> The so called Sikasso paradox –the fact that the region with the greatest agricultural potential has the highest incidence of poverty, is attributed to the fact that food prices are not accurately measured. As a consequence the poverty line for Sikasso is overestimated and consumption underestimated.

competitors for power emerge as the education system is of low quality and as there are few ways to become wealthy that do not require loyalty to the state (procurement contracts; import monopolies; tax exemptions). The system of consensus politics has led to the emergence of a procedural democracy with a corrupted bureaucracy characterized by elitist, urban-oriented policies and captured institutions which are incapable of (and uninterested in) delivering quality services.

29. **Consensus politics has led to high levels of discontent.** In the south discontent manifests itself through *incivisme* (not paying taxes; withdrawal from the state; self-provision of services), low participation rates in elections and low approval ratings of officialdom. In the north popular resentment is exploited by rebel groups to justify their participation in a conflict to gain greater autonomy (an independent state preferably), but which is also motivated by the desire to secure profits from illegal trade in weapons, drugs, people, fuel, food stuffs, stolen cars and cigarettes. The conflict is made more complex by the participation of jihadist groups, the interests of neighboring countries and the agendas of the MINUSMA and the countries which came to Mali's rescue when rebels were advancing towards Bamako in 2012.

30. **The conflict undid much of the progress achieved prior to it.** Once the conflict erupted 36 percent of the total population of the north fled to the south of Mali and to neighboring countries. The crisis had dramatic effects on public infrastructure and services. The conflict reduced human mobility, limited access to markets and led to theft of assets. Farmers were cut off from their fields; traders were unable to move and herders with many livestock were forced to leave places of conflict for safer areas. The conflict shook investor confidence, decimated Mali's tourism industry and led to the near withdrawal of donor support (it has subsequently returned).

31. **Violence continues even though on March 1<sup>st</sup> 2015 a preliminary peace accord was signed between the Government and six rebel groups.** This accord puts emphasis on decentralization and partner support towards implementing it. Whether the accord will also be ratified by all parties (planned for June 20<sup>th</sup> 2015) and will bring lasting peace remains to be seen. The fact that five past peace agreements were not fully implemented, continues to leave doubts among the rebel groups of the government's commitment to addressing their demands. Moreover not all armed groups operating in the north have been represented at the negotiations. The situation continues to remain volatile and explosive with negative spillover effects on the south, including terrorist attacks and the risk of more widespread destabilization.

### **Poverty reduction strategy**

32. **The scope for economic transformation is limited and until 2030 opportunities for poverty reduction will need to be found in the rural sector.** Mali ranks low on the economic complexity index which measures the total amount of productive knowledge embedded in an economy. The low ranking reflects that the economy produces mostly basic products and suggests that opportunities for future diversification are primarily in agro-processing. A buoyant supply of rural labor (high population growth), extremely low levels of education (adults have on average 2.4 years of formal education), and the limited scope for embracing labor intensive manufacturing or services (high transport and communication costs; long distances to the nearest sea ports), all suggest that large-scale 'between-sector' structural change (away from agriculture and towards manufacturing and services) is unlikely to materialize in the short run. This is reinforced by the limited capacity and leadership needed to resolve the complex coordination problems associated

with developing new sectors. A successful poverty reduction strategy will thus need to start by raising the incomes of those engaged in the primary sector and by putting in place the foundations for economic transformation. Over time, when incomes increase, improvements in human capital are realized, and when transport costs decline, successful rural-urban migration, economic transformation, and a demographic transition will become feasible.

33. **Within the primary sector, opportunities for growth and intra-sector economic transformation exist.** Selected crops (papaya, mango) are already being processed and exported. Opportunities to expand the area under cultivation by poor households as well as the area under irrigation are ample. Small-scale irrigation schemes are particularly attractive for poverty reduction as they benefit smallholders and have the highest rates of return on investment. The yield gap for crops grown under rain-fed conditions by the majority of poor farm households (sorghum, millet, maize) is high and reducing this gap by half would imply a doubling or tripling of current production. The demand side is favorable to increased food and meat production too. Rapid urbanization and a region that has a structural food deficit guarantee a solid uptake of increases in agricultural and livestock production. Mali's location even presents a comparative advantage, as the transport costs to serve the markets of Niger or Burkina Faso are less than those incurred by overseas producers.

34. **To systematically identify opportunities for poverty reduction, an analytical framework was developed that elicits constraints to income generation by poor households.** The framework is summarized graphically in Figure 4.1 on page 49. It starts from the observation that poverty can be reduced in three ways: by alleviating the budget constraint of poor households through income growth, through a redistribution of consumer goods, assets or income, and by making consumption goods less expensive.

35. **Poor households support their consumption via income from wage labor and by producing goods and services which are auto-consumed or exchanged for money and other goods and services.** Low levels of own-production can be the result of low productivity (which in turn is affected by lack of access to land, to equipment or inadequate technology) or could be the result of poorly functioning markets which prevent the fruits of specialization and economies of scale from being realized. As net purchasers of food (i.e. the poor need cash), and active participants in the labor market, demand for casual labor is critical for the welfare of poor households.

36. **The potential of safety nets to significantly reduce poverty is substantial.** To eliminate poverty by 2030 would take less than 2 percent of GDP in perfectly targeted transfers in combination with 2 percent per capita growth (of the poorest households). Mali's current safety nets program, however, does not meet the criteria of a well-designed program. It is small, poorly targeted, and emergency driven as it concentrates on the sale of food at subsidized prices.

37. **The entire household 'production function' is embedded in an institutional environment** which determines whether the household is able to appropriate the fruits of its labor and the provision and quality of public services.

38. **Poor households do not lack access to land.** Conflicts over land use are frequent, in urban and peri-urban areas as well as in rural areas, particularly around irrigated areas and in areas where the interests of pastoralists and farmers collide. Legal pluralism and the coexistence of different



land tenure systems contribute to this. However, land for rain-fed farming remains relatively abundant: about 3.2 million hectares are used out of a total of 12 million with cultivation potential. The difference between poor and non-poor households in crop farming areas is therefore less determined by *access* to land than by the *ability* to bring land under cultivation.

39. **Poor households lack the able-bodied household members and equipment to cultivate larger areas.** Poor households lack the assets necessary for plowing (draft animals; plows) or the cash to hire plowing services. Poor households may also lack the time for cultivating their land, as the obligation to repay old debts may force them to prepare the land of other farmers. Consequently poor households tend to be stuck in a cycle of planting late, planting small areas, weeding less, and consequently producing little, forcing them into debt and to supplementing their incomes with low casual wages.

40. **Cotton is not grown by the poorest households (they lack the equipment to cultivate sufficient land), but is critical for more commercially oriented farmers who, in turn, hire the poorest farmers as casual labor.** In 2004/5 29 percent of all rural household grew cotton; in Sikasso as many as 86 percent did. Cotton has long been upheld as a bastion of poverty reduction and shared development as the vertically integrated value chain managed by Compagnie Malienne pour le Développement des Textiles (CMDT) facilitated local community organization and channeled resources into schools, adult-literacy, extension services, clinics, and road maintenance. Yet throughout its history CMDT has been plagued by financial mismanagement and producer discontent. CMDT was meant to be privatized in 2002 but the sell-off was repeatedly postponed out of fear of a collapse of the system, which would have had a devastating effect on farmers' incomes. Some reforms were implemented however; increased producer prices and the payment of arrears to producers and subsidies for fertilizers helped cotton production to rebound from 190,000 tons in 2007-08 to 450,000 tons in 2012/13 and 440,000 tons in 2013/14. Further reforms are needed to enhance transparency, reduce cost, increase resilience to changes in world market prices, and possibly, to restore the developmental functions of CMDT.

41. **Financial markets could be instrumental for increasing farm production by offering financing for equipment, irrigation or to repay debts.** However financial markets, though liquid, have not shown much appetite for agricultural financing (or medium term financing in general) and have failed to develop instruments suited for smallholders, such as equipment leasing, warehouse receipt systems, or crop and seed insurance. Given the persistence of asymmetries and high transaction costs (both are pertinent problems given the low population density), the feasibility of such products emerging and being offered at scale is doubtful, even though developments in the ICT market, particularly the high rate of mobile phone subscriptions, do create new opportunities for financial inclusion.

42. **Small and medium sized enterprises are scarce and in rural areas agricultural produce is typically bought by (informal) traders.** These traders are mainly self-funded (limited access to financing). They maximize the return to their working capital by rapidly turning over small quantities. Quality grades are rarely standardized, nor are the weights and measures used, making personal inspection by buyers essential. As a consequence, traders travel extensively, increasing transaction costs. Transaction costs are further increased by the large number of layers of intermediaries between producers and consumers. The provision of storage is hampered by the absence of a marketable surplus (due to the seasonality and the small scale of production), the absence of quality standards, limited possibilities for financing and a tax system that makes it hard

for formal small and medium enterprises to compete with informal ones as the latter do not pay VAT and other taxes. As a consequence even in Sikasso, the most developed agricultural region of the country, only 30 percent of communities have a storage facility and the coefficient of variation of producer prices is high (0.27 for maize; 0.35 for millet; 0.48 for sorghum 0.48).

43. **Stronger farmer organizations and better developed value chains for products important to poor farmers can be instrumental for reducing transaction costs and improving market access.** At the local level cooperatives and other types of producer organizations have the potential to aggregate and attain the scale needed for the efficient supply of critical products (fertilizers, seeds) and services (storage, transport, access to finance, skills training and extension). Interventions that structure and organize (poor) farmers so they can participate in the agricultural value chains (as cotton farmer associations already do) offer an alternative to overcoming market access constraints.

44. **Low levels of human capital are a big obstacle to poverty reduction.** Levels of anemia are high, as is exposure to diseases like diarrhea, respiratory infections and malaria. The latter is a particularly serious risk for farmers as the prevalence of malaria is highest during the planting season. Illiteracy and low levels of education are strongly correlated with (low) levels of consumption. This seems like an argument for increased investments in education but the quality of formal education is so low that in the short run, preference would have to be given to adult literacy training, skills training and extension services. Reforms leading to a higher quality of education are critical to attaining acceptable rates of return to investments in formal education.

45. **Access to electricity, improved infrastructure and ICT contribute to poverty reduction, but policy reforms are needed to improve returns on investments.** High transport costs can be attributed to poor maintenance of rural roads, a high frequency of road blocks and the presence of trucking cartels, requiring policy reform and improved budgetary allocations to be addressed. Limited access to electricity in rural areas is attributable to the failure of the financial sector to offer medium term financing, while in urban areas electricity tariffs are lower than production costs even though demand exceeds production capacity. Meanwhile private operators are not interested in investing in this loss making sector. In the ICT sector, the fiber-optic backbone is present, but policies to increase competition, enhance coverage, reduce prices and stimulate innovation are not in place. In the absence of these policy reforms, investments in these sectors (with the exception of rural electricity) can be expected to yield low (or even negative) returns. However, while the need for reforms is high, their feasibility is unclear.

46. **Successful policy reforms require an opportunistic approach, improved transparency and stronger accountability institutions.** In a personalized competitive political settlement, standard technocratic reform, such as the liberalization of the transport sector or a meritocratic public sector, go contrary to the personalized-competitive political logic, and are unlikely to gain much traction. Rather, improvements are likely to come incrementally via a combination of two strategies: a sustained (rather than a big-bang) approach addressing specific capacity, policy and institutional constraints as and when opportunities to do so arise; and an 'islands of effectiveness' approach -- where groups of developmentally-oriented stakeholders co-operate opportunistically to achieve a specific developmental purpose for which they have an incentive to see results. The former approach has de-facto been followed with respect to the cotton sector; efforts to contain the recent ebola outbreak are an example of the latter. Enhanced transparency and stronger institutions

of (social) accountability can catalyze reform as the risk of exposure changes the incentives of elite members in favor of less predatory approaches.

47. **Exposure to shocks and the presence of poverty traps justify greater reliance on social safety nets.** In addition to the need to protect the already low levels of consumption of the poor during adversity, safety nets are also needed to help the many poor households who find themselves in a poverty trap that is often brought about by the simple fact that the investment to obtain a pair of oxen requires a significant amount of money. Once in a poverty trap and faced with exclusion from financial markets, a poor household's only remaining option to avoid chronic poverty is an autarkic savings strategy. This requires substantial medium-term sacrifice in the form of diminished consumption which many very poor households cannot afford. Already prior to the harvest, many adults are found to lose significant weight.<sup>9</sup> In such instances safety nets help chronically poor households maintain and build their productive asset base.

### **Binding constraints**

48. **The greatest impact on poverty reduction can be attained by increasing the off and on farm incomes of poor households with a focus on subsistence as well as high value cash crops.** In the short run poverty reduction efforts will need to focus on (i) restoring security in the north, (ii) increasing the incomes of the rural poor, and (iii) redistributive efforts to reduce extreme vulnerability.

49. **In the long run poor governance and low levels of education (especially of females) are key obstacles to poverty reduction.** Improving the incomes of the poor in the short run will facilitate higher public and private investments in education and health. But if governance problems remain unaddressed and the quality of education remains low, insecurity is likely to remain, service provision will stay inadequate and levels of human capital will remain too low to realize “between-sector” economic transformation and a demographic transition –even in the longer run.

50. **Policies to reduce rural poverty extend beyond improving the lot of subsistence farmers (and agro-pastoralists) alone.** Subsistence farmers participate in the wider economy and benefit from improvements therein. While the on-farm incomes of poor households are low they rely on social networks for resilience, and depend on casual labor opportunities (and migration) offered by better off households to make ends meet. Poor urban (and rural) households benefit from reductions in food prices brought about by increased production of business farmers. Poor rural households benefit from technologies and value chains developed for more commercially oriented farmers.

51. **To alleviate these obstacles, three clusters of binding constraints to reducing poverty have been identified based on the SCD criteria (impact, feasibility, evidence base, implementation capacity) while also considering alignment with the sustainability objective.**

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<sup>9</sup> Oumou M. Camara 2013. Seasonal Price Variability and the Effective Demand for Nutrients: Evidence from Cereals Markets in Mali. African Journal of Food, Agriculture, Nutrition and Development vol 13(3).

## **Binding constraint 1: a personalized competitive political settlement**

52. **The personalized political settlement is behind the unacceptably low levels of public service provision.** It explains the persistence of policies which favor the rich and urban class, the mismanagement of public finances and the failed attempts at decentralization – essential to a sustainable resolution to the conflict in the north. Avoiding the spread of insecurity towards the more densely populated areas in the south and restoring security in the north are of great importance if the objective is development and not emergency assistance. In the short run, restoring security starts with a credible peace accord but to be implemented and sustained, governance reforms are needed to improve service delivery and to restore state legitimacy.

53. **Instead of ranking policy reforms by priority and attempting to achieve first-best solutions, an adaptive, opportunity driven, incremental, good-enough approach to policy reform is more likely to succeed.** In a personalized competitive country-setting it is preferable to follow a sustained approach to governance reform -- addressing specific capacity, policy and institutional constraints as and when they become binding; and an ‘islands of effectiveness’ approach -- where groups of developmentally-oriented stakeholders co-operate opportunistically to achieve a specific developmental purpose for which they have an incentive to see results. This necessitates flexibility, adaptability and, persistence, and, as resources are limited, the identification of a small number of policy reforms that are pursued vigorously (in addition to those that occur opportunistically).

54. **Policy reforms to improve PFM systems, the functioning of the cotton sector and the quality of education should take priority.** Improved PFM systems are critical for restoring state legitimacy and for increasing the budget envelop. A large share of public resources goes uncollected, is lost through inefficient procurement or is poorly allocated. If these issues are addressed, 3 to 5 percentage points of GDP could feasibly be generated - this would be sufficient to create the large scale safety net (requiring 2 percent of GDP) that in combination with 2 percent growth per capita could eliminate poverty by 2030. The cotton sector is of importance because it touches the lives of many farmers, generates casual labor opportunities and because it has demonstrated its potential to act as an engine of rural development. The quality of education, finally, is critical because if the human capital base is not improved, economic transformation and demographic transition will remain out of reach and investments in education would yield a low rate of return.

55. **Weak (social) accountability and transparency mechanisms create space for the political and economic elites to behave in anti-developmental ways.** Elite capture happens at all levels and can be reduced by increasing the risk of exposure and by strengthening accountability institutions. Improving the collection of information, the capacity to analyze it and to share results in the public domain are important. Technological advances provide new opportunities for the monitoring and dissemination of findings. Donor agencies, whose resources are the equivalent of 40 percent of the budget, can play a catalytic role by insisting on transparency around the spending and results of their own programs and interventions.

## **Binding constraint 2: low productive capacity of poor farmers and pastoralists**

56. **The inability to plow and lack of access to irrigated land are major constraints to increased farm production.** Plowing allows bringing more land under cultivation than manual land preparation, while access to irrigated land allows obtaining multiple harvests throughout the

year. Increasing production requires a multi-sectoral effort to realize greater integration between farming and agro-pastoral systems, for skills development (animal traction; mechanics), development of adapted financial products (leasing) and the development of a market for farm services. Increased production will also increase the demand for casual labor, thus creating an indirect channel for poverty reduction.

57. **The yield gap for crops grown mostly by the poor (sorghum, millet, maize) and by those who engage with the market (rice, maize, cotton) needs to be reduced.** Addressing the yield gap in the presence of climate change and weather shocks, necessitates soil improvement, better water management, seed development and better access to inputs. On-farm extension services and enhanced literacy will help farmers to adapt their farming techniques in the face of climate and other changes. For the more commercial crops, reforms of the fertilizer market are needed. In addition, the functioning of the cotton sector needs to be strengthened as it offers a unique value chain with many positive developmental spillover effects.

58. **The functioning of value chains for selected crops, animals and animal products remains a constraint.** Value chains for food grains, chicken, meat and milk need to be strengthened as they have a direct impact on the production and consumption by poor households. Value chains that increase the demand for (casual) labor should also be strengthened. Doing so will require interventions at the village level (stronger producer organizations to facilitate access to inputs, credit, storage, quality control and marketing), the middle-level (small and medium sized traders who aggregate, package, store and distribute) and the national level (where large businesses provide a gateway to urban and export markets). The latter is particularly important to prevent prices from collapsing following successful increases in production. Policy reform (discussed already in the previous section) is needed to address biases against the proper functioning of value chains (tax policies, export bans, import subsidies).

### **Binding constraint 3: exposure to uninsured risks**

59. **Exposure to uninsured, exogenous shocks is a binding constraint.** Weather variability (aggravated by climate change), food price variability and health shocks are the main risks affecting poor households along with exposure to conflict for those living in the north. Exposure to uninsured shocks takes a big toll on poverty reduction: farmers opt for low-risk, low-return activities and are prone to falling into poverty traps. On average, rural households which sell their assets to deal with a shock take 7 years to return to their initial state. When food prices rise, levels of consumption drop and poverty increases. Farmers who fall sick during the planting season lose their income for the year.

60. **Well targeted transfers can lift many poor people out of poverty and increase resilience.** Productive safety nets such as public works programs increase resilience by offering access to income opportunities when these are needed most (during a crisis, or after the harvest) and by improving community infrastructure that helps improve productivity (rural roads, irrigation schemes). They require multi-sector approaches and can also be used to reduce fragility, for instance as part of the reintegration of ex combatants in support of the peace process.

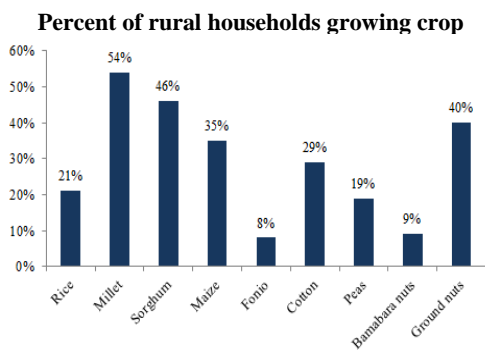
61. **Investments in health and education increase resilience and create long term opportunities for economic transformation.** In the short run, healthier, better educated individuals have more options to reduce exposure to risk and to deal with shocks when they arise;

they also have more opportunities for successful outmigration (particularly critical for those dependent on low-productivity agriculture, or those living in conflict affected areas). Literate and trained farmers are more likely to successfully adopt new farming techniques; educated girls marry later and have fewer children. It is no coincidence that those who fled the crisis in the north were the better educated.

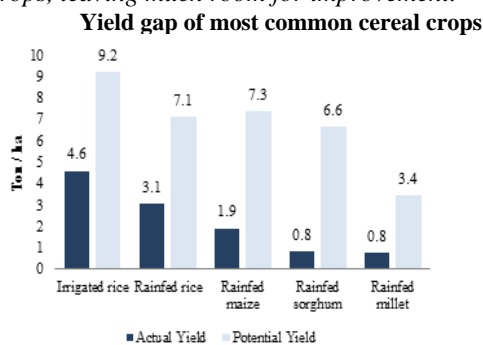
62. **Stronger local organizations increase resilience.** Mali has a strong tradition of non-formal assistance and organization. Strengthening these local systems –either in the form of producer organizations (cotton), or community based organizations for social accountability can strengthen risk coping mechanisms. It can also act as barrier to elite capture at local and even at the national level (as the successful ‘boycott’ by cotton producers in 1991 demonstrated). The risk of the country sliding into a situation of increased fragility due to conflict and climate change presents another reason to focus on strengthening resilience at the local level.

**Figure E.1: Agriculture and poverty in Mali**

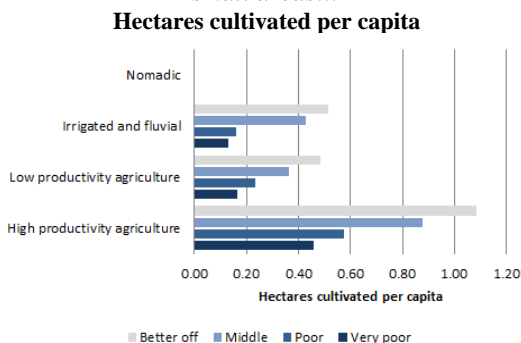
*Cereal crops are most commonly grown.*



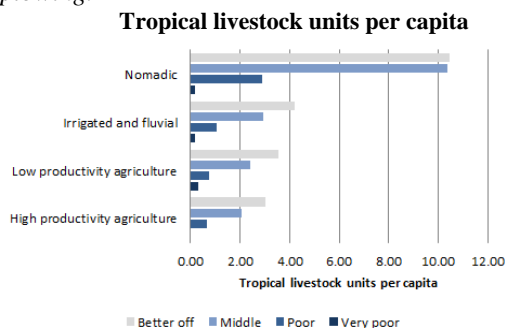
*The yield gap is large, particularly for the most popular crops, leaving much room for improvement.*



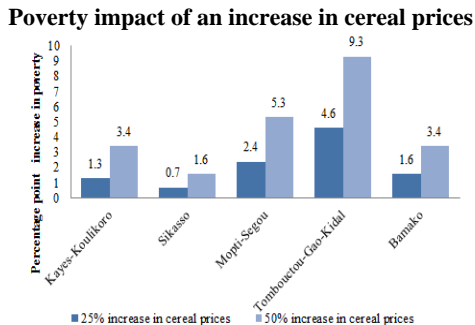
*Even though land is available, the poorest cultivate small areas...*



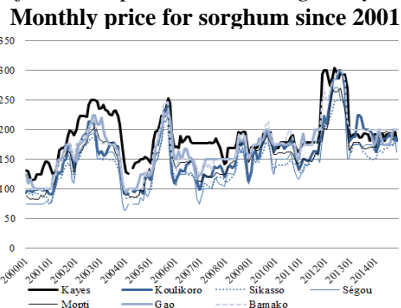
*...in part because they lack the livestock needed for plowing.*



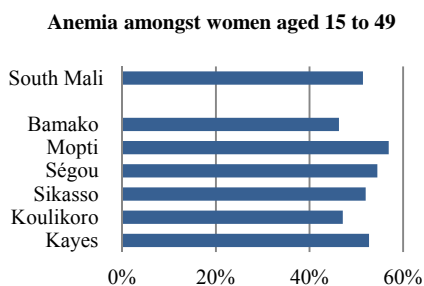
*Poverty is elastic with respect to changes in cereal prices.*



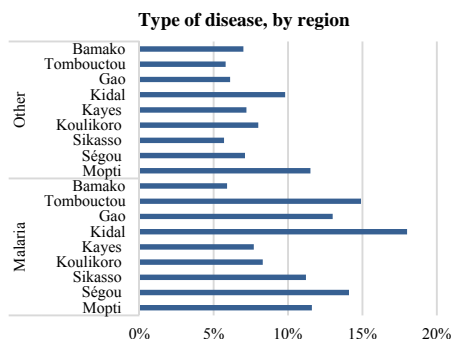
*Cereal prices fluctuate a lot and within-year price changes of 50- 100 percent occur regularly.*



*Agricultural productivity is reduced by poor health. The prevalence of anemia is high*



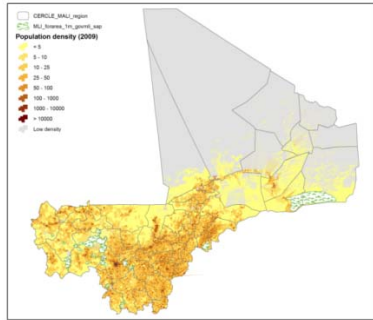
*... and so is exposure to malaria, a disease that is most prevalent, during the planting season.*



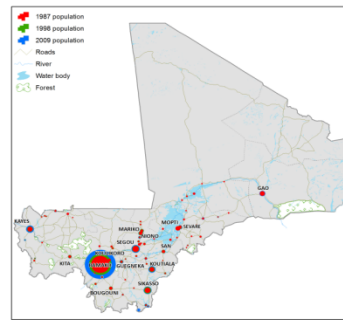
Source: World Bank 2014, Observatoire des Marchés Agricoles, 2014, FEWSNET, 2010, EMOP 2011 and 2013.

**Figure E.2: Mali in maps**

Most people in Mali live in the south of the country, in areas with irrigation potential and along the Niger river



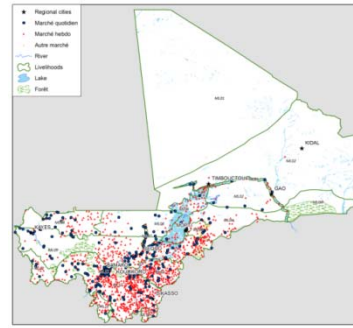
Bamako is the dominant city. In 2009 it was 13 times larger than the next biggest city (Ségou)



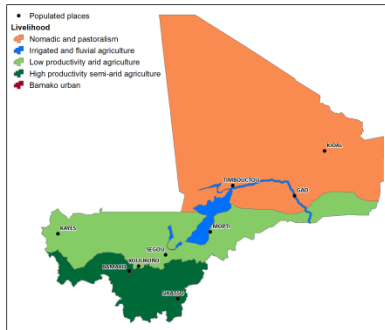
The road network connects the country internationally and follows population density



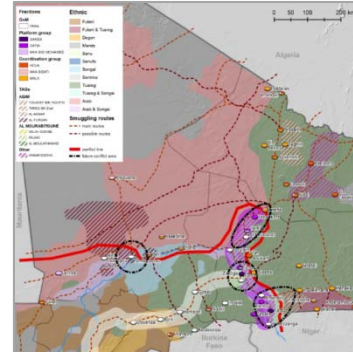
Daily and weekly markets are mostly found in the south



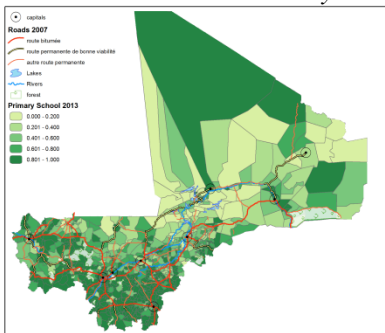
Mali is geographically diverse. Globally four different livelihood systems can be distinguished.



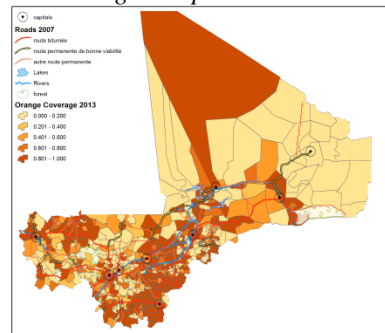
The conflict in the north is complex. It has multiple actors and is spilling over towards the south.



The fraction of communities with a primary school varies across the country



As does the fraction of communities covered by the Orange cell phone network



Source: INSTAT RGPH 2009; ODHD 2013 Commune Census; UN 2014



## 1. CONTEXT

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*Mali is a poor landlocked country with low population density and great geographic diversity. The formal economy employs few people and is dominated by a small number of large enterprises which are concentrated in Bamako. Cotton and gold mining are the most important export sectors and gold contributes up to 30 percent of revenue annually. Most people live in rural areas and make a living from pastoralism and farming. Sorghum, millet and maize are the main food crops; rice and cotton are the most important cash crops. Access to services, levels of education, and governance indicators are all poor. Weather variability is high and, combined with a poor population that depends on rain-fed agriculture, results in extremely high levels of vulnerability. Drought and the recent conflict in the north of the country have undone much of the social progress that was achieved in the previous decade. The conflict continues unabated and has started to spill over to the south.*

### 1. Geography and Population

1. **Mali is a large, landlocked country.** Mali is bordered by Algeria to the north, Niger to the east, Burkina Faso to the south, Guinea to the south-west, and Senegal and Mauritania to the west. Mali is geographically divided along a north-south axis, with the northern areas extending into the Sahara and Sahel, and the southern ones blessed with more fertile land and accounting for most of the country's economic activity. Population density is low (11.8 people/km<sup>2</sup>) and varies from less than 1 in the desert to over 50 in Sikasso in the south of the country. Despite covering 61 percent of Mali's land mass, only 6 percent of the population lives in the north<sup>10</sup>. The Senegal and Niger rivers are major lifelines offering opportunities for transport, electricity generation, fisheries and irrigation. Water from the Niger River is used for irrigation in the Office du Niger and electricity generation at the Sélingué dam, while approximately 40 percent of Mali's livestock migrate to the floodplains in the Niger Delta region during the dry months which start in October.

2. **Mali's population of approximately 14.9 million people is poorly educated and growing rapidly.** The majority of Malians (65 percent) have no education and the average years of schooling amongst adults is 2.4 years. At about 540 per 100,000 births Mali is among the countries with the highest maternal mortality rates and nearly a third of children under five are stunted. Mali also has one of the highest fertility rates in the world with 6.9 children per women leading to an exceptionally high rate of population growth of 3.0 percent. This growth rate is expected to continue, given the country's young age structure (68 percent of Malians are under the age of 24), low levels of (female) education and low levels of contraceptive use (8 percent in 2012/13 DHS). The very high age-dependency ratio (among the very highest in Africa) represents a heavy economic burden on active adults, and the high rate of population growth implies that the labor market will have to absorb 6.2 million new workers between now and 2025 (over 250,000 annually) and that the total population will (almost) double between now and 2030, with concomitant consequences for the demand for public services or cultivable land.<sup>11</sup>

3. **The rate of population increase is highest in urban areas.** A combination of rural-urban migration and high levels of 'natural'-growth make cities grow more quickly, particularly Bamako.

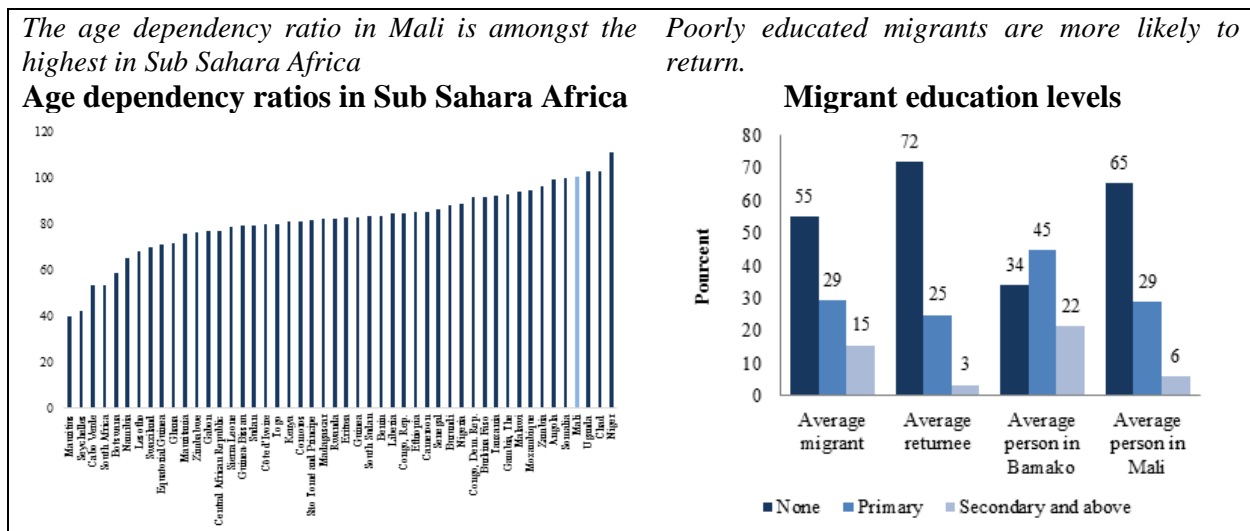
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<sup>10</sup> North is the far north, livelihood zones 1, 2 and 3, or the area delimited by Tombouctou and the Niger River (see also box 1). The numbers are from 2009, prior to the 2012 crisis.

<sup>11</sup> World Bank, 2014: Population and Development in the Sahel: Demographic Dividend or Disaster (draft).

Between 1998 and 2009 the population of Bamako grew at an annual average of 6.1 percent.<sup>12</sup> By contrast secondary cities and rural locations grew at 3.6 percent and 2.3 percent respectively. It is estimated that by 2020, the population of Bamako will exceed 4 million, making Bamako even more dominant than it already is (at present the population of Bamako is 5 times larger than that of the next three largest cities combined: Ségou, Sikasso and Kayes). By 2030 47 percent of the population will live in urban areas, up from 37 percent in 2014.<sup>13</sup>

**Figure 1. 1: Age dependency ratio and level of education of internal migrants**



Source: The World Bank. Accessed on January 8, 2015; INSTAT 2009 Population Census.

4. **Levels of inter-regional migration are high and an important contributor to city growth.** The regions of Bamako and Koulikoro are net recipients of migrants; the regions of Ségou, Mopti, Tombouctou and Gao are the largest net providers of migrants. Intra-regional migration is relatively marginal: migrants move to urban areas in other regions, and less to other (rural) localities in their region of origin. Those who migrate tend to be better educated than the average person, but relative to the average person living in Bamako, migrants are less well educated. About 6 percent of people in Mali have secondary education compared to 15 percent of migrants. Better educated migrants have a greater likelihood of success and poorly educated migrants are more likely to return: amongst the returning migrants one finds few people with a secondary education (3 percent) while the vast majority (72 percent) has no education.

5. **Rapid urbanization does not lead to agglomeration effects.** Bamako is the dominant city in the country. The primacy of Bamako in generating income is such that it generates about 40 percent of GDP with only 15 percent of the population. With 18 percent of GDP, the region of Kayes is another important contributor to GDP followed by Sikasso (12 percent) and Koulikoro (11 percent). In other aspects Bamako is equally dominant. There is, for instance, a concentration of doctors, nurses and midwives in the capital, while rural areas are largely underserved. Despite

<sup>12</sup> The crisis in Côte d'Ivoire may have contributed to the acceleration of Bamako's growth, as migrants who used to travel south, opted to go to Bamako instead. If this is the case, the growth of Bamako can be expected to slow down as the economy of Côte d'Ivoire picks up.

<sup>13</sup> United Nations, Department of Economic and Social Affairs, Population Division (2012). World Urbanization Prospects: The 2011 Revision. CD-ROM Edition - Data in digital form (POP/DB/WUP/Rev.2011).

its primacy and attractiveness to migrants, per capita income growth in Bamako hovered around 0.4 percent per annum between 2001 and 2010. Decomposing the overall change into two periods, 2001-2006 and 2006-2010, one finds that the city transformed from a place with high levels of per capita growth in the early 2000s to a place in which per capita consumption growth is negative. This lack of dynamism is corroborated by other evidence: a comparison of the 2009 and 1998 population censuses shows that the sectoral composition of jobs has changed little; macro-economic statistics show that the secondary sector (which is largely located in Bamako) did not grow – at least not in per capita terms.<sup>14</sup>

**6. Mounting population pressure due to migration and population growth, land degradation and increasing non-agricultural use put localized pressure on land tenure systems.** Conflict, climate change and competing demands by pastoralists and farmers create a rapidly changing demand for land with productive potential in the Niger Delta and Sikasso and lead to pressures on the land tenure systems. In general, land is still available, but conflicts over land use are frequent, in urban and peri urban areas as well as rural areas, particularly around irrigated areas and in areas where the interests of pastoralists and farmers collide.<sup>15</sup>

**7. Mali's rural livelihoods are diverse and include pastoralism, sedentary farming (often combined with animal husbandry and fishing).** Large-scale cattle husbandry takes place mostly in the north and around the Niger inland delta, whereas most food and cash crops are produced in the Niger Basin and in the southern regions. Artisanal river fishing is of great importance, mostly in the Niger inland delta. The main commercial agricultural crops are rice and cotton, although farmers also produce significant quantities of millet, sorghum and maize, mainly for their own consumption. Half of the national rice crop is produced in the south of the country, under rain-fed conditions, but yields are low (at 0.5-1.5 tons/ha). The other half is concentrated in the center-north along the Niger River and involves modern irrigated or flooded rice cultivation techniques, yielding an average of 5-6 tons/ha.

**8. Rainfall is highly variable exposing households and the overall economy to hazards (droughts, floods, strong winds, crop pests) which will worsen as a result of climate change.** Dependence on rain-fed agriculture and on pastoralism makes rainfall patterns and levels hugely important. These patterns are changing as a consequence of global warming, but the precise changes are hard to predict. Depending on the model used the predicted average level of rainfall varies from -22 to +25 percent by the 2090s. It is clear that decreases in rainfall will be largest in the north of the country, whereas increases in total rainfall will affect the south-west. Coupled with a progressive increase in temperature (temperatures in Mali have increased by 0.8° Celsius since 1975.<sup>16</sup>), the predicted impact of climate change on livestock keeping and agricultural productivity varies from negligible to very high, with millet and sorghum –the main food staples, being particularly vulnerable.<sup>17</sup> What is clear, however, is that change is happening (it has in fact been happening since the 1980s) and that farmers and pastoralists will need to (continue to) adapt to it.

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<sup>14</sup> World Bank. 2014. Geography of Poverty in Mali.

<sup>15</sup> Aissatou Ouedraogo, Mark Skidmore and John Saatz 2013. Literature review and background report on land tenure in Mali: analysis of the adaptability of land tenure arrangements in regions likely to receive large influxes of rural migrants in coming years. PROMISAM.

<sup>16</sup> USGS 2014. A Climate Trend Analysis for Mali.

<sup>17</sup> World Bank 2014; Background note – Mali SCD.

### Box 1. 1: Mali's livelihood zones

Rainfall is a decisive factor in identifying different rural livelihood areas as rainfall drives the degree of dependence on livestock in certain areas, the use of arable land in others and the degree of dependence on labor and other sources of income such as from remittances or artisanal gold mining. Four broad livelihood areas are identified, which can be further subdivided into a total of 12 rural livelihood zones and one urban livelihood zone, Bamako.

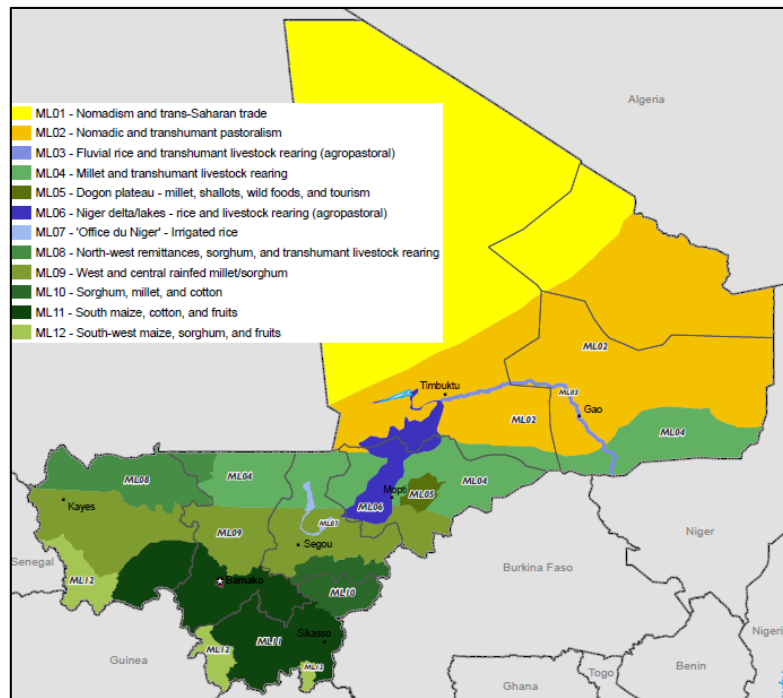
*In the dry area nomadism, transhumant pastoralism and long distance trade are dominant.* Kidal, Gao and Tombouctou lie in this area. Households living in this area have strong commercial and social ties with Algeria, and also with Niger, Burkina Faso and Mauritania (livelihood zones 1 & 2).

*In the transitional area households rely on a mix of income derived from transhumant livestock rearing, remittances from migration and agriculture as rainfall is too low to make a living based on crop income alone.* The further south one goes in this area, the less the dependence on livestock and the greater the importance of cultivation. The location of this transitional zone means that it dominates the north-south commercial axis with grain moving from the south towards the food deficit dry area in the north, and with livestock and seasonal migrants moving from the north towards the south (livelihood zones 4, 5, 8 & 9).

*The agricultural area in the south is where farming is most productive.* Income from livestock is less critical in this area as rainfall is adequate for households to fully depend on income from cultivation. The main crops grown are cereals (sorghum, millet and maize), cotton as well as fruits. It is the area with the highest population density.

*The potential to irrigate defines the last livelihood area.* This area includes the fluvial basin of the Niger stretching from Tombouctou to the international border between Mali and Niger. It includes the delta stretching from Tombouctou to south of Mopti as well as the Office du Niger, a manmade irrigation scheme reclaimed from the Sahel by irrigation canals and dams (livelihood zones 3, 6 & 7).

**Livelihood zones identified for Mali**



Source: FEWSNET 2010.

Source: FEWSNET 2010

## 1.2 Access to services

9. **Access to services is generally poor, though significant improvements have been achieved over the past decades.** In education, for example, primary school gross enrollment has increased from 32 percent in 1980 to some 80-90 percent in 2011<sup>18</sup>. Both secondary and tertiary enrollment rates have also increased substantially (gross secondary enrollment was 45 percent in 2011; tertiary enrollment 7 percent). Nevertheless the proportion of out of school 12 to 17 years old, at about 50 percent, is very high, and adult literacy remains extremely low at 34 percent in 2011, well below the average for sub-Saharan Africa. Access to potable drinking water (defined as reliance on any water source except unimproved wells or “other sources”) improved from 69 percent in 2001 to 79 in 2006 and 81 percent in 2009/10. Health indicators have also shown improvement. Notably, the infant mortality rate has declined (from 161 per 1,000 births in 1980 to 81 in 2011); an indication of improved access to health care. (Curative consultation rates increased from about 20 percent to 30 percent over the 2006-2012 time period), but remains considerably above the sub-Saharan African average.

10. **Differences in population density pose difficult trade-offs between access for all (equity) and efficiency (providing access to as many people as possible for a given budget).** It implies that capital intensive services (electricity, roads) are found in areas of high population density, whereas services requiring less in terms of capital investments (health, education) tend to be more equally spread. It implies that for areas where population density is very low, less capital intensive modalities of service delivery may have to be relied upon and explains why tarmacked roads, piped water and hospitals are found in high density areas like cities, and dirt tracks, wells and clinics in low density areas like rural villages.

11. **Limited access to education and health services has particularly adverse consequences for females and for the poorest.** Access to services is worst for the poorest households. Poor households are disadvantaged in access to all services but particularly with respect to access to electricity, secondary schools and pre and post natal care. Girls and women are also disadvantaged in access to services. Fewer girls than boys attend school and girls are more likely to drop out, in part because of early marriage and pregnancy (in 2004, half of Malian girls aged 5 to 19 were already married) and face very high risks of medical complications or even death following maternity (all the more if poor). High levels of adolescent fertility— 176 children born to every 1,000 young women under 19 - contribute to very high levels of maternal mortality and high levels of lifetime fertility.

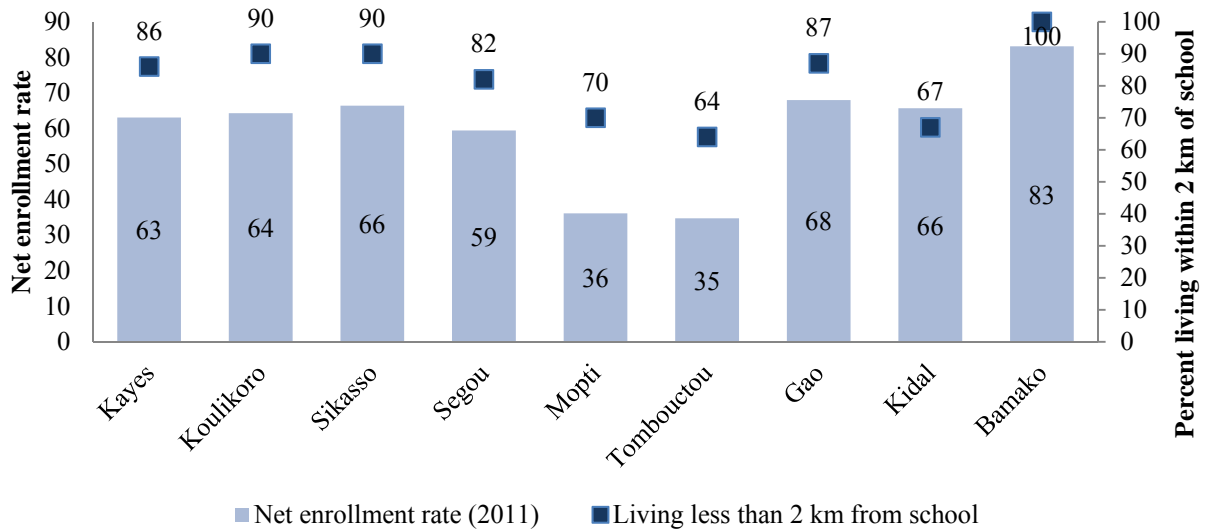
12. **Access and use of services differs across the nation.** This is illustrated for education. Figure 1.2 shows that between 64 and 100 percent of people live within 2 km of a primary school. The vast majority of the population (more than 80 percent) lives within 2 km of a school, but in the regions in the north (Kidal, Tombouctou and Mopti) the percentage is significantly lower. Distance is important for school attendance and children who live further from school have a smaller chance of enrolling. A standard deviation increase in time to local school, for example, decreases the probability of attendance by 13 percent, and one standard deviation in the distance

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<sup>18</sup> Estimates vary according to the source, with administrative and household survey data pointing to a figure closer to 80 percent.

decreases the probability of attendance by 8 percent.<sup>19</sup> This too can be found in Figure 1.2 where one notes that the regions with the lowest enrolment rates are those with least access to schools. But distance is not the only explanation for enrolment. The percent of people living within 2 km of a school is comparable for Kidal, Mopti and Tombouctou, but in Kidal enrolment rates are twice as high as in Mopti and Tombouctou.

**Figure 1. 2: Net primary school enrollment and population living within 2km from school**

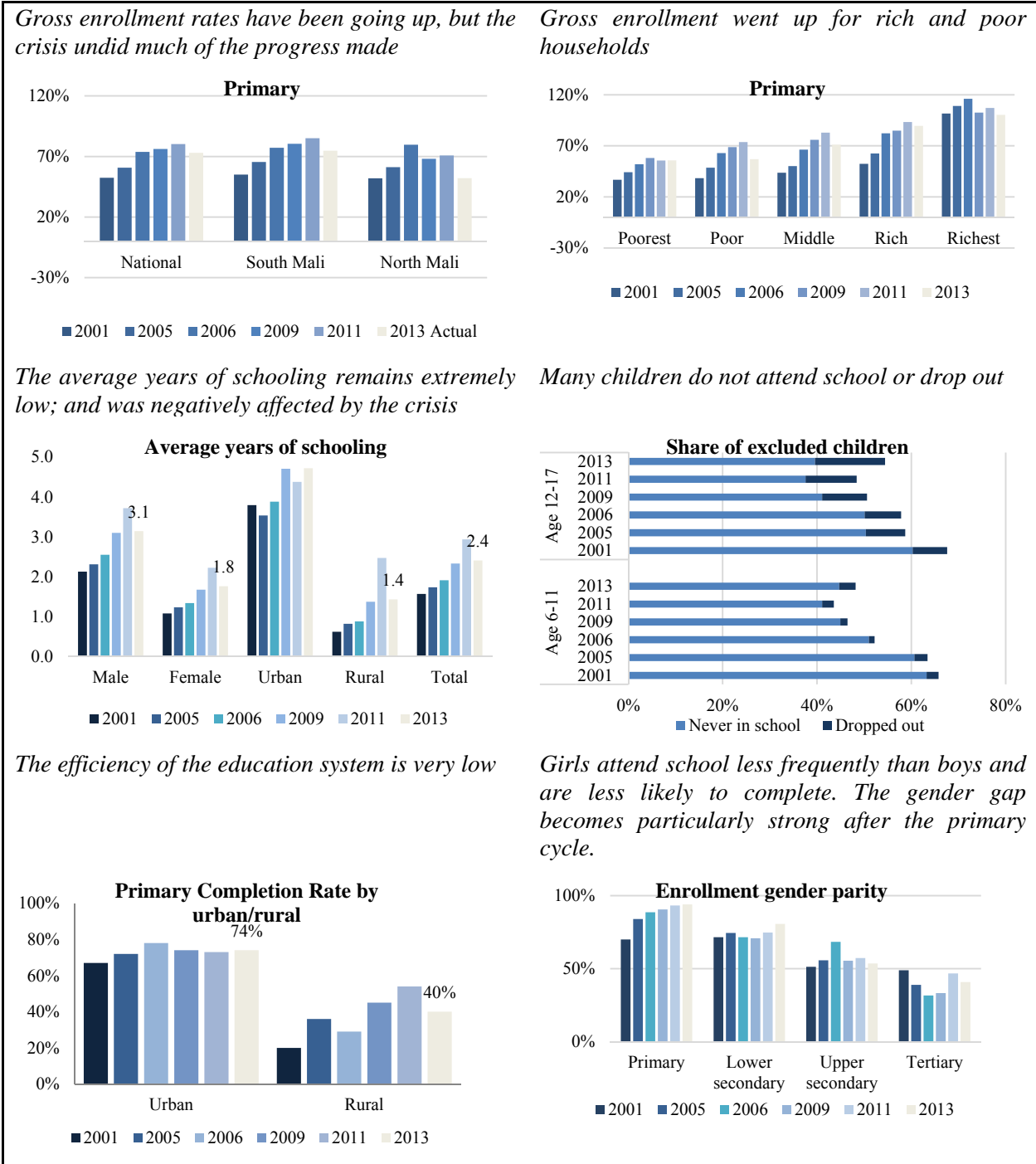


Source: EMOP 2011 (enrollment) and RGPH 2009 (distance).

13. **Access to services is particularly low in the north.** Access to education was already discussed, but access to health care is also worse in the north than elsewhere in the country. As a result, according to the 2012/13 DHS, an average of 56 percent of women deliver in a health facility, but in the northern regions of Tombouctou, Gao and Kidal it is only 27 percent. According to administrative data, in 2011 on average, 58 percent of births were attended by a skilled personnel, but in the northern regions this rate was only of 27 percent. The gap increased dramatically after the crisis, as will be discussed below.

<sup>19</sup> World Bank 2015. Priorities for ending poverty in Mali: education, health and social protection.

**Figure 1. 3: The education system in Mali**



Source: DHS (2001 and 2005), ELIM (2009), and EMOP (2011 and 2013)

14. **Access to safe drinking water and sanitation has improved but remains low.** In 2009, the access rate to safe drinking water was estimated at 73 percent of the population (71 percent in rural areas and 77 percent in urban areas, lower in Bamako), exposing a large fraction of the population to water borne diseases. Only 32 percent of households had access in 2009 to improved sanitation services in rural areas, and 45 percent in urban areas. Since 2001, progress has been

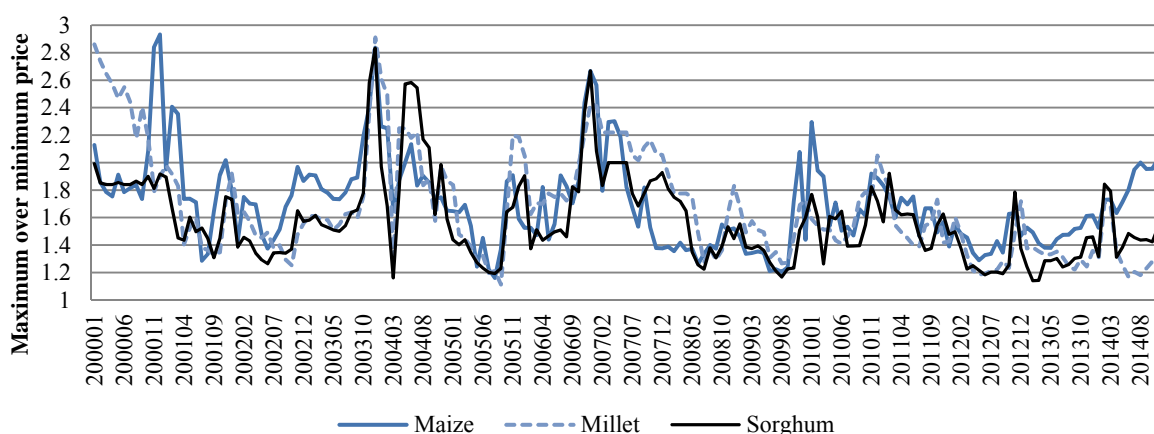
made in expanding access, but the challenge remains. Meanwhile a lack of maintenance and underinvestment put at risk gains made in the expansion of the service. This is evidenced by the large number of rural water systems that are not operational and the insufficient water production and distribution capacity in Bamako.

15. **Road connectivity poses major challenges.** Not only is the distance to the nearest sea ports large, within the country connectivity is limited. Transport costs are high and 90 percent of all goods and people are transported using roads. Over the last two decades major investments have been made to improve the road network. Most investments extended the main roads connecting major cities and offering access to neighboring countries. In rural areas less was invested leaving Mali with one of the lowest road densities in West Africa.<sup>20</sup>

16. **Access to markets is worst in the dry livelihood zones of the north of the country, better in the transitional zones and best in agricultural zones in the south.** Even in the south where access is best (and population density highest), many locations become isolated during the rainy season. Infrastructure built between 1994 and 2007 –in response to the crisis in Côte d’Ivoire, has improved the connectivity between Bamako and Senegal. Beyond that, infrastructure development kept pace with increases in population, but its efficient use is hindered by inadequate maintenance and a high number of road blocks (Mali has the highest number of road blocks per 100 km in the region)<sup>21</sup>.

17. **During the rainy season, many rural roads become impassible** and it is not a coincidence that the difference between consumer and producer prices peaks during this period, and that this difference is much more pronounced in Kayes where rural access is much worse than in Sikasso. Investments in road infrastructure have reduced the differences in consumer prices between the regions. This is illustrated by the differences between the maximum regional price and the minimum regional price, which has been declining gradually, suggesting improved market integration (and connectivity).

**Figure 1.4: Maximum over minimum price between 8 regions (2000-2014)**



Source: Observatoire des Marchés Agricoles 2014.

<sup>20</sup> The Rural Access Index is 16.7 percent, below the average for sub-Saharan Africa.

<sup>21</sup> WAEMU: Observatoire des pratiques anormales, 2013 and CILSS, 2014.



18. **Despite significant progress over the last decade, access to modern energy services remains low, especially in rural areas.** In 2011/12 rates of access to electricity were at about 34 percent nationally (up from 8 percent on 2001), corresponding to an access rate of 80 percent in Bamako, 34 percent in other urban areas and 25 percent in rural areas.<sup>22</sup> Electricity service provision in urban areas is under the responsibility of *Energie du Mali* (EDM), a vertically integrated state-owned utility. Over the last decade, EDM has been able to expand access to electricity and at the end of 2013, EDM served about 300,000 connections, versus 120,000 ten years earlier. Over the past years, the quality of electricity services deteriorated and the number and duration of power shortages has increased mainly due to distribution bottlenecks and old equipment. Load-shedding remains relatively limited, however (around 8 percent during peak time in 2013) as capacity shortages were offset by the use of expensive rental generation<sup>23</sup>. Access to electricity in rural areas is under the responsibility of the rural electrification agency, AMADER. While the progression in rural access has been impressive (a ten-fold increase from about 1 to 2 percent of the rural population, to 25 percent in less than a decade), the large majority of rural households still satisfy their lighting needs by using kerosene and dry-cell batteries, which are expensive and unreliable.

19. **ICT connectivity poses major challenges, but not because of a lack of infrastructure.** Mali benefits from a fiber-optic network that links all major cities to the rest of the world and approximately 82 percent of the population lives in an area covered by a mobile network.<sup>24</sup> Mobile phone penetration stood at 129% at the end of 2013<sup>25</sup> while mobile broadband penetration remains very low at 1.8 per 100 inhabitants in 2013.<sup>26</sup> The combination of potential access with limited broadband use suggests that customers can't afford the service<sup>27</sup>, and is illustrative of the lack of competition in the sector (there are only two functioning operators).

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<sup>22</sup> INSTAT 2013. Consommation, Pauvreté, Bien Etre des Ménages. Rapport d'Analyse EMOP Passages 1 - 4 (avril 2011 – mars 2012).

<sup>23</sup> In 2013 the shortage was the equivalent of 111 MW during the peak period.

<sup>24</sup> Source: Orange Mali and Sotelma, interviews with the management (September 2014)

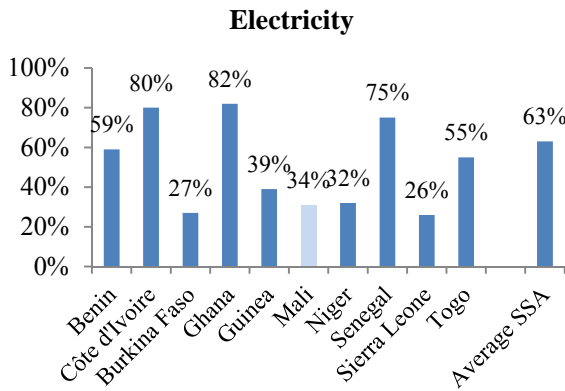
<sup>25</sup> The use of multiple SIMs is very common in Africa so that the total number of connections will overestimate the number of actual mobile customers by some margin.

<sup>26</sup> ITU, 2014.

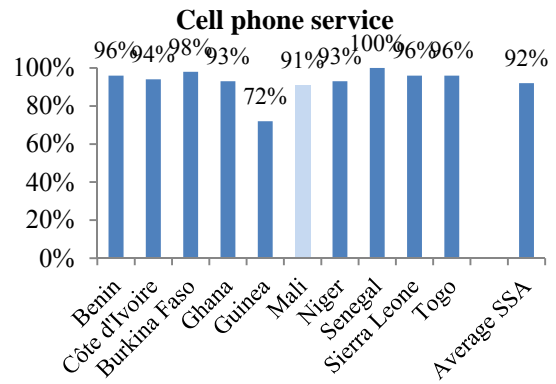
<sup>27</sup> The amount of relevant local content and applications may also be very limited.

**Figure 1.5: Presence of services in a regional perspective**  
**(Enumeration areas covered by service)**

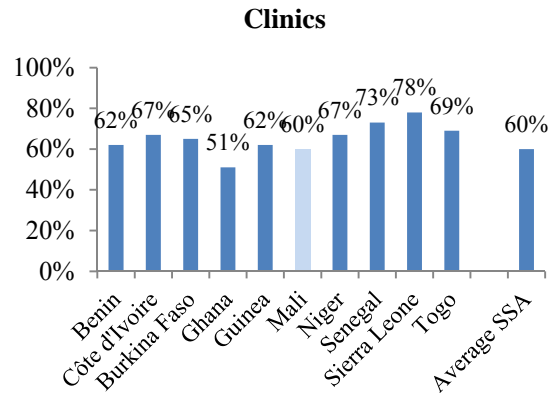
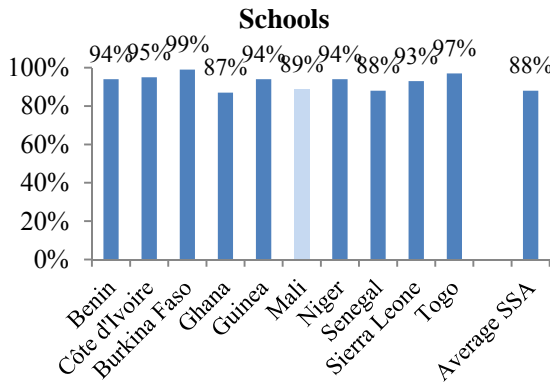
*Access to electricity is worse than in comparator countries in sub-Sahara Africa*



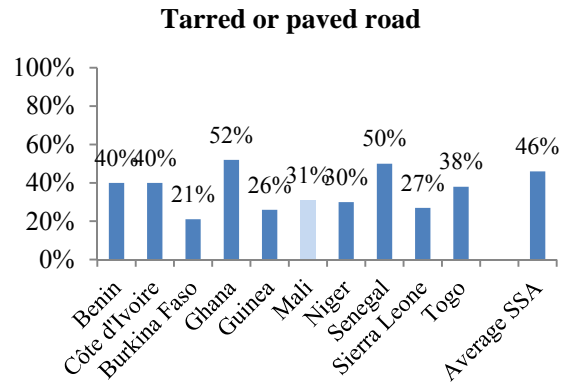
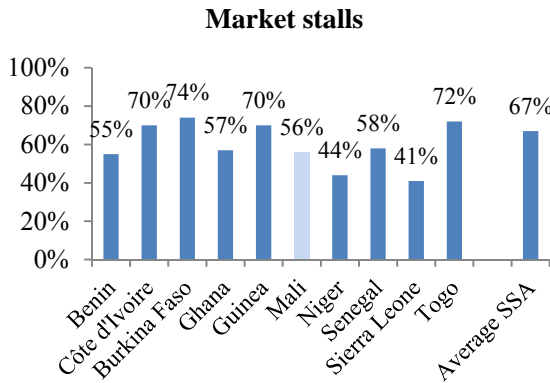
*Access to cell phone services is at par with the rest of Africa*



*With respect to access to schools or clinics, Mali is at par with the rest of Sub Sahara Africa*



*... but with respect to access to markets, Mali does significantly worse*



Source: Afrobarometer, latest survey (2011 or after). Average Sub Sahara Africa is the average of all 35 African countries covered by the Afrobarometer survey).

### 1.3 Economy

20. **With a per capita GDP of USD 480 (2005 constant prices) in 2012, Mali is one of the poorest countries in the world.** The economy is predominantly rural and informal. 73 percent of the population resides in rural areas; 80 percent of jobs are in the informal sector. Of the active population aged 15 and above (approximately 4.4 million people in 2009) 64 percent are employed in the primary sector, 7 percent in the secondary sector and 25 percent in the tertiary sector. In rural areas 78 percent of households are primary engaged in crop farming, 13 percent in pastoralism and 2 percent in fishing and hunting.<sup>28</sup>

21. **The formal economy is highly concentrated and a small number of very large firms makes up most of the formal economy.** These large firms mill cotton, generate electricity, and operate in telecommunications or in mining. Of the 4,648 firms that reported their salary payments to the tax authorities in 2012, less than 1 percent (39 firms) are responsible for 80 percent of all salaries. At the other end of the scale, 94 percent of all formal firms, pay 5 percent of all salaries. The formal sector is lopsided and very few medium sized enterprises exist.

**Table 1. 1: Salaries paid by firms filing a tax return**

	Number of firms	Salaries paid as percent of total salaries paid
More than \$ 20 mln	5	48%
Between \$ 2 mln and \$ 20 mln	34	32%
Between \$ 1 mln and 2 mln	16	3%
Between \$ 500,000 and \$ 1 mln	49	6%
Between \$ 100,000 and \$ 500,000	169	6%
Between \$ 50,000 and \$ 100,000	133	1%
Between \$ 25,000 and \$ 50,000	184	1%
Between \$ 10,000 and \$ 25,000	414	1%
Less than \$ 5,000	3,644	2%

Source: INSTAT 2013; Business census.

22. **Gold production accounts for 7 percent of Mali's GDP and the mining sector contributes directly and indirectly some 20 percent of fiscal revenues.** The adoption of a new mining code in 1999 transformed Mali into Sub-Saharan Africa's third-largest gold producer (after South Africa and Ghana). Mali's gold reserves are estimated at 500-600 tons, and Mali's seven industrial gold mines produced around 46-47 tons in 2012 and 2013. A further 4 tons is produced by artisanal and small scale miners (many of them children<sup>29</sup>). A key issue affecting the gold sector in Mali is the decline in the price of gold over the last few years (\$1,920/oz in 2011 to about \$1,268 in 2014), leading mining firms to either suspend or halt projects. Gold is not the only mineral in Mali, and explorations are ongoing in uranium, manganese, iron ore and petroleum.

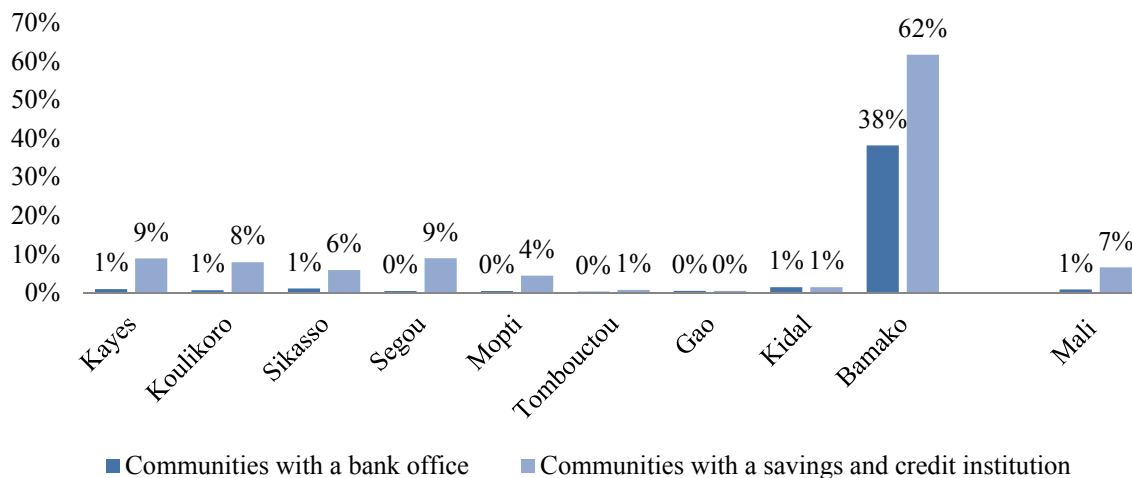
<sup>28</sup> INSTAT, 2004-5 census of agriculture, table 53.

<sup>29</sup> 20,000 children are believed to be working in Malian artisanal gold mines. "A Poisonous Mix Child Labor, Mercury, and Artisanal Gold Mining in Mali," *Human Rights Watch*, 2011. [http://www.hrw.org/sites/default/files/reports/mali1211\\_forinsertWebUpload\\_0\\_0.pdf](http://www.hrw.org/sites/default/files/reports/mali1211_forinsertWebUpload_0_0.pdf)

23. **Cotton is a particularly valued productive sector in Mali.** Mali’s cotton sector accounts for about 5 percent of agricultural GDP and, after gold, cotton is the main export good. In 2004/5 29 percent of all rural household grew cotton; in Sikasso as many as 86 percent did. Cotton has long been upheld as a bastion of poverty reduction and shared development as the vertically integrated value chain managed by CMDT facilitated local community organization and channeled resources into schools, adult-literacy, agricultural extension, clinics, infrastructure and road maintenance. Nevertheless throughout its history CMDT has been plagued by financial mismanagement and producer discontent. The CMDT was due to be privatized in 2002 but the government has repeatedly postponed the sell-off as it fears a collapse in the cotton trading system, which would have a devastating effect on farmers’ incomes. Some reforms were implemented: CMDT sold its cotton seed oil division, the company was divided into four subsidiary public holding companies and the CMDT disengaged from public service provision. Increased producer prices, the payment of arrears to producers and subsidies for fertilizers helped cotton production to rebound from 190,000 tons in 2007-08 to 450.000 tons in 2012/13 and 440,000 tons in 2013/14. Still many lament the decline in rural development activities and the discussion about the future of CMDT is far from resolved.

24. **An emerging economic sector in Mali is hydroelectric power.** Electricity accounts for approximately 1 percent of the national consumption of energy, with the majority coming from biomass (wood for cooking, charcoal). Mali is exploiting only a fraction of its domestic hydropower potential. Only about 60 MW (equivalent to 225 GWh) are exploited at present, owing to the Sélingué and Sotuba power plants, to which additional 131 MW (equivalent to 520 GWh) should be added from the energy share imported from OMVS hydro generation of Manantali and Felou. The hydroelectric potential of domestic hydropower resources is estimated at about 1,000 MW (equivalent to 5,500 GWh during a one-year average), excluding developments associated with the OMVS (along the Senegal River). The government of Mali is keen to tap into this potential. Frontrunner projects, such as the Markala (10 MW) and Kenie (42 MW) hydropower projects are at an advanced stage of development, with the potential of bringing about 50 MW of additional capacity.

**Figure 1. 6: Presence of savings institutions at community level**



Source: ODHD, 2013 commune census.

25. **The financial sector remains highly bank-centric, is relatively stable and profitable but is almost exclusively accessible in Bamako.** As of 2012 there were 13 banks, out of 15 credit institutions, with five banks accounting for two-thirds of assets and over 70 percent of deposits. The banking sector is well capitalized but is insufficiently diversified. Over 50 percent of total resources are in short-term demand deposits, which are highly seasonal, while term deposits accounts for 32 percent. Other financial institutions include 11 insurance companies (of which 3 life insurance companies), 2 financial establishments, and a pension system comprised of a social security and pension fund for private sector employees and another for civil servants. The regional stock exchange based in Abidjan deals primarily with sovereign financing.

26. **Bank intermediation has been increasing, but remains low.** Banks hold considerable excess liquidity in part due to the lack of bankable projects, problems with loan recovery and the extremely shallow interbank market. The ratio of credit-to-GDP has increased from 15 percent in 2000 to 21 percent in 2013, while the currency-to-deposit ratio has declined from 57 percent to 42 percent during the same period, reflecting financial deepening. Interest rates do not appear to have adversely affected bank intermediation, as they seem to reflect cost of doing business. At end-2012, the average spread between deposit and lending rates was about 4.2 percentage points.

27. **The microfinance sector reaches more depositors than the banking sector (Figure 1.6), but the majority of these institutions are in financial distress.** Providing deposits accounts to 1.15 million members, the microfinance sector is fragile, and 92 out of 126 institutions are in financial distress. Recovery of public confidence in the microfinance sector is critical to improving financial inclusion (in particular in rural areas) in Mali. Rapid developments in ICT offer new opportunities for mobile payment systems, mobile saving schemes and even mobile banking. Currently more than 2.1 million accounts exist for the “Orange Money” service launched in May 2010, of which more than 35 percent are active on a monthly basis<sup>30</sup>.

28. **Agriculture (including agro-pastoralism) is by far the biggest employer with 63 percent of all jobs and 86 percent in localities with less than 5,000 inhabitants.** The second biggest sector, commerce, is much smaller and represents 11.0 percent of the total number of jobs followed by administrative jobs (6.7 percent), services (4.7 percent) and manufacturing and crafts (4.1 percent). Trade jobs are found across Mali but the bulk are in Bamako, confirming the important function of the capital city for commerce. The limited importance of manufacturing jobs (even in the big cities) is noteworthy, though not unexpected given Mali’s landlocked status and low education of its work force. In neighboring Senegal, the share of employment in the industrial sector is much higher and had already reached 14.8 percent by 2006.<sup>31</sup> Noticeably, employment in the formal extractive sector has increased since 1998 reaching a total of 35,631 jobs in 2009. Still the sector still represents only 0.9 percent of all jobs in Mali.<sup>32</sup>

29. **Farm households grow a variety of crops and the crops grown vary by region.** In Kayes sorghum and maize are the most popular crops as is the case in Koulikoro where many households also grow millet. In Sikasso, maize and cotton are most popular, but many also grow millet and sorghum. In Ségou and Mopti millet and sorghum are grown most frequently, whereas

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<sup>30</sup> Source: Orange Mali and Sotelma, interviews with the management (September 2014).

<sup>31</sup> Source: African Development Indicators 2012/13.

<sup>32</sup> World Bank 2014. The Geography of Poverty of Mali.

in Tombouctou rice and millet are grown most regularly. In this region, as is the case in Gao many households are not crop farmers but depend on animal husbandry.

**Table 1. 2: Percent of rural households growing different crops, by region**

	Rice	Millet	Sorghum	Maize	Fonio	Cotton	Peas	Bamabara nuts	Ground nuts
Kayes	7%	24%	68%	44%	4%	9%	9%	5%	55%
Koulikoro	13%	61%	67%	41%	4%	31%	19%	5%	58%
Sikasso	26%	55%	63%	91%	7%	86%	17%	5%	54%
Ségou	21%	78%	43%	24%	10%	21%	21%	13%	27%
Mopti	27%	81%	25%	5%	14%	0%	43%	20%	29%
Tombouctou	33%	19%	10%	0%	0%	0%	0%	0%	0%
Gao	40%	12%	14%	1%	0%	0%	1%	0%	0%
Bamako	11%	20%	28%	41%	1%	0%	10%	1%	25%
Mali	21%	54%	46%	35%	8%	29%	19%	9%	40%

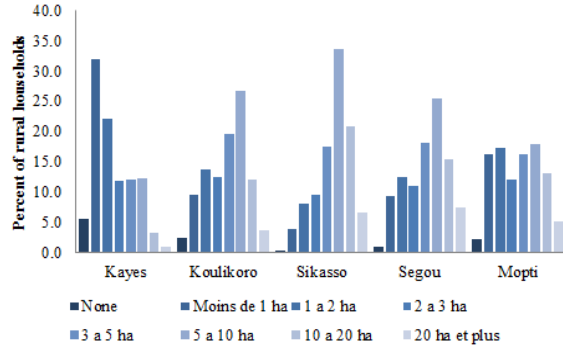
Source: INSTAT: 2004-5 Agricultural Census.

30. **Improvements in agricultural production over the last few decades have principally been achieved through liberalization of the cereal markets, better water management / irrigation and sustained subsidies on inputs (notably in cotton and rice).** The subsidy of importations of fertilizers has played a big role in the increase in production of maize and rice production. Subsidies have increased overall access and predictability in the supply of fertilizers, thus favoring consumption. Under the rice program, farmers paid only 12,500 FCFA/50 kg sack for eligible fertilizers at a time when market prices were in the 17,500 to 20,000 FCFA/sack range (Staatz *et al.*, 2011). However limited access to markets and improved technology (only a small percent of farmers uses improved seed) climate change, including drought, and volatility in primary commodity process have left the country economically vulnerable and have resulted in repeated food insecurity crises.

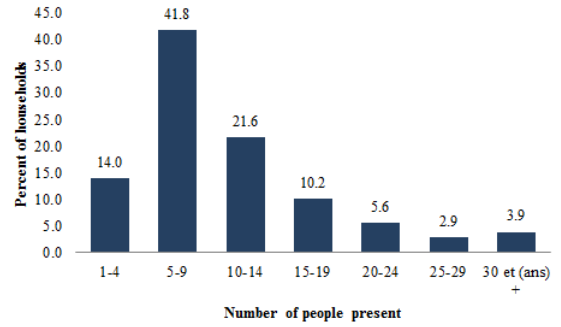
31. **The government has placed the agricultural sector towards the top of its development priorities for several decades.** In 2014, budget allocations to the sector increased from 11 to 15 percent of the total budget. The Government Action Plan (Plan d'Action Gouvernemental) developed in 2013 for the period 2013-2018 reiterates the new government's commitment to the Growth and Poverty Reduction Strategy (Cadre Stratégique Pour la Croissance et la Reduction de la Pauvreté 2012 - 2017 - CSCRP) which was adopted by the Council of Ministers in 2011 prior to the crisis.

**Figure 1.7: Core characteristics of the primary sector**

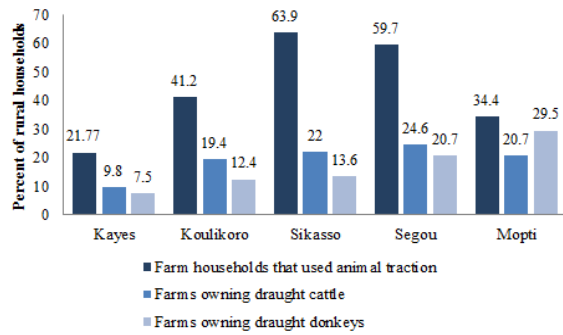
*The distribution of land cultivated varies by region*



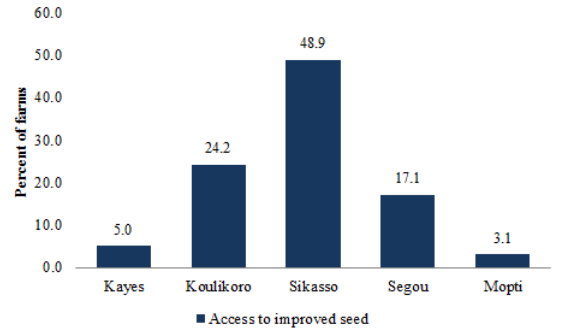
*The typical farm has 5-9 people living on it, but many farms are substantially larger*



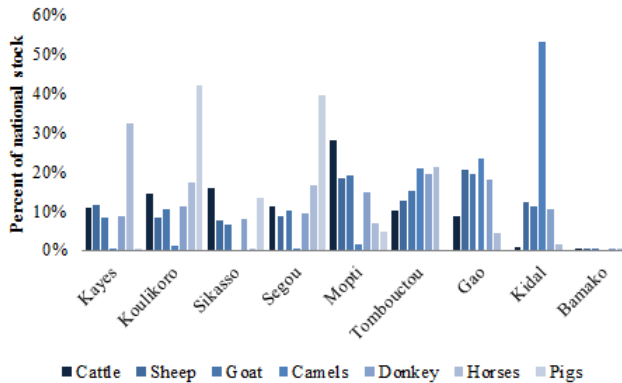
*Larger farms are found in regions that rely more on animal traction by donkeys and cattle*



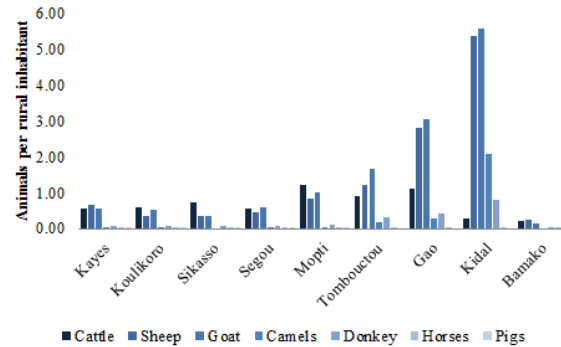
*Access to improved seed is generally low, but varies greatly by region*



*The distribution of livestock across the nation ...*

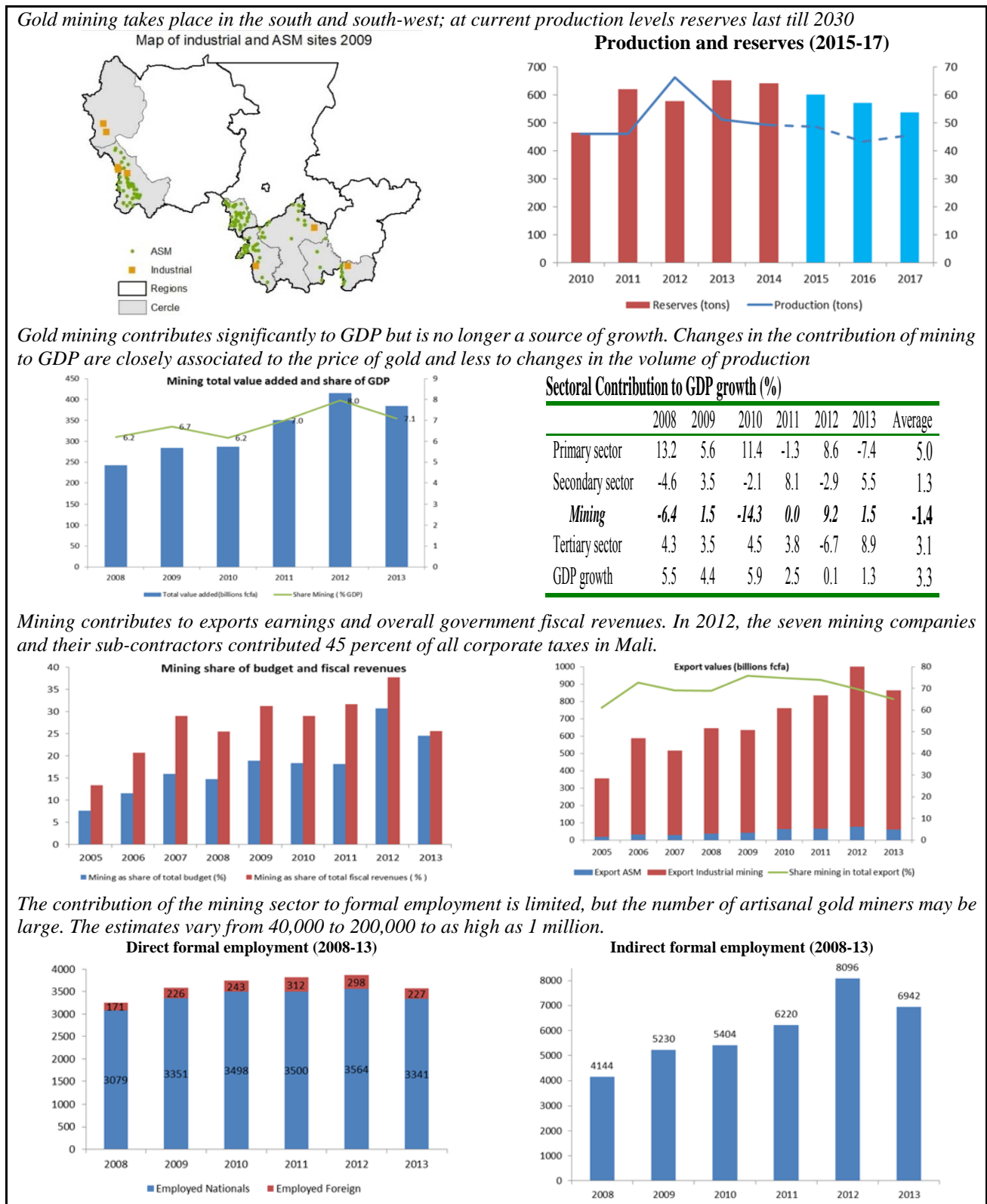


*... shows how agriculture and animal husbandry are closely integrated in the south; in the north households rely more exclusively on livestock*



Source: INSTAT: 2004-5 Agricultural Census.

**Figure 1.8 : Contribution of gold mining to the economy of Mali**



Source: Sanoh and Coulibaly 2014. The socioeconomic impact of large-scale gold mining in Mali



## 1.4 Conflict in the north

32. **The conflict that erupted in 2012 in north Mali and which led to a coup d'état is the last in a series, and is a manifestation of long-standing problems in the country's governance and social structures.**<sup>33</sup> The causes of the conflict are diverse and multi-layered and do not fit the simplified narrative of an underserved region populated by an ethnic group that has been vying for independence ever since the Republic of Mali was formed and that is frustrated about the lack of implementation of past peace accords. What drives conflict in Mali can be traced to a breakdown in the social contract, growing competition over resources (public funds as well as illicit rents), weak institutions, inequality, and underlying social tensions. These drivers of fragility are exacerbated by climate change and population growth that has put people's livelihood under stress, growing access to arms and illicit rent seeking opportunities, and persistently high levels of unemployed youth who are more easily recruited for such illicit activities.<sup>34</sup>

33. **Illegal trade and trafficking fueled and continues to fuel the conflict.** The arrival of highly profitable income opportunities from smuggling cigarettes, drugs, weapons and fuel (from Algeria), from keeping hostages for ransom and from the misappropriation of public funds, led to the emergence of a new set of actors with the means and the motivation to protect their interests through violence.<sup>35</sup> These networks have been able to develop as a consequence of the demilitarization accord granted with the National Pact and Alger Accords, which left the region vastly uncontrolled. The new income opportunities upset traditional social structures and youth found new pathways to economic independence. As the new elite exploited existing grievances to gain legitimacy, matters were aggravated by authorities in Bamako who benefitted from the new opportunities for self-enrichment but who also tried to exert control by favoring certain ethnic groups over others, by coopting selected leaders and by appointing civil servants from the south instead of from the north. This contributed to social instability, high levels of corruption and low levels of service delivery and created space for extremist religious interpretations.

34. **The conflict had very negative welfare consequences.** The conflict disrupted the provision of public services, such as hospitals, pharmacies and schools, as well as infrastructure for the distribution of water and electricity. According to the 2013 Afrobarometer survey, close to one out of three Malians were affected, personally or through family members.<sup>36</sup> Pervasive looting of financial service providers and cereal storehouses by armed groups reduced the capacity to provide credit and mitigated food security in the region. The crisis had dramatic effects on health infrastructure and services as many facilities were destroyed, medical stores pillaged, and vehicles stolen. By mid-2012 only 23 percent of qualified medical staff were still at their posts, and 17 percent of community health centers were still operational.<sup>37</sup> With breakdowns in the supply chain, vaccination rates collapsed in north Mali. The rate of BCG vaccinations for children under the age

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<sup>33</sup> Other conflicts emerged in 1963, shortly after independence, in 1990 and in 2006.

<sup>34</sup> World Bank, 2013. Understanding and addressing drivers of fragility in Mali.

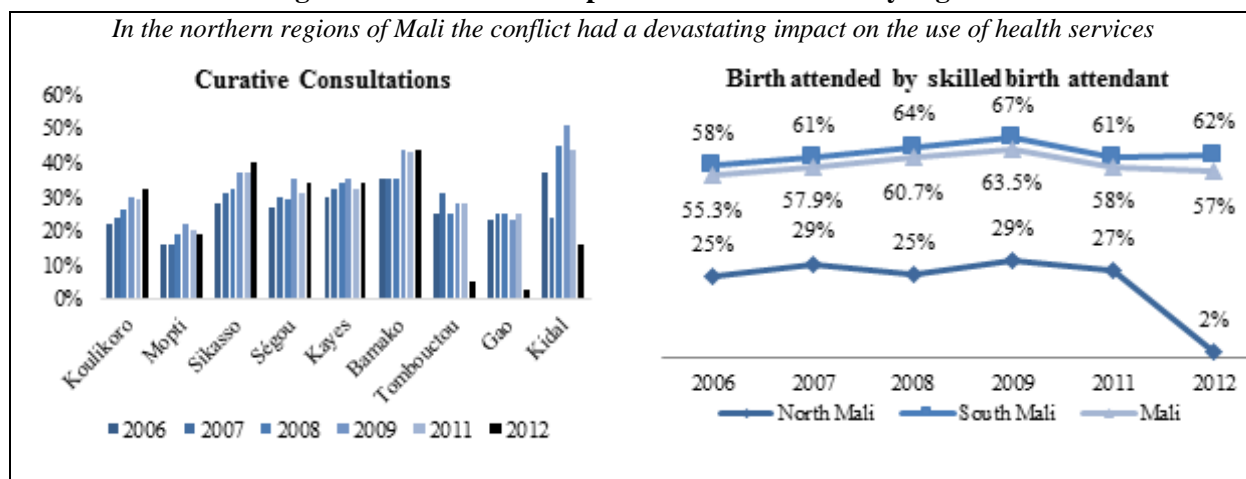
<sup>35</sup> The return of heavily armed fighters from Libya and the possible presence of large mineral deposits (oil, gas and phosphate) in northern Mali are additional complications. Prospecting for oil and gas started in 2004 and there are strong indications of significant oil and gas reserves. However, these reserves are not yet confirmed and the economic viability of extracting them from geographically isolated areas is unclear, particularly amid a resurgence of conflict and lower world prices.

<sup>36</sup> Afrobarometer 2014. Policy Paper 10: Popular Perceptions of the Causes and Consequences of the Conflict in Mali.

<sup>37</sup> World Bank 2014: "Social Protection Strategic Policy Note" - *mimeo*.

of one fell to 8 percent in 2012 from 92 percent the year before. Also the use of curative and prenatal health services declined dramatically in north Mali. Effects were as pervasive in education. Fighters destroyed, looted and occupied over 130 schools in 2012, while over 1,300 teachers had left, reducing local capacities to teach by at least a quarter, and by as much as two thirds in Kidal.

**Figure 1.9: Curative and prenatal consultations by region.**



Source: SLIS 2001-2007, SNIS 2009, and SLIS 2011-2012

35. **The conflict displaced around 353,000 people within Mali, while another 170,000 people fled to neighboring countries**, representing approximately 36 percent of the total population of the north of Mali<sup>38</sup> and leading to overcrowded education and health facilities in areas which welcomed the Internal Displaced People (IDPs) in terms of class size, pupil-teacher ratios and bed occupancy ratios<sup>39</sup>. As of July 2014, the date for which the latest statistics are available, the total number of refugees and IDPs was still around 266,000, and with the latest surge in fighting, this number is likely to have increased again.<sup>40</sup>

36. **Drought and conflict had a negative impact on social services delivered in the south and gains in access made during the previous decade were undone, although there was a partial recovery in 2013.** In the education system, for instance gains in access made during the previous decade were undone. Between 2001 and 2011, primary gross enrollment rate improved by 28 percentage points, going up to 80 percent; gains in secondary education were even higher. After the crisis, enrollment rates fell across all levels of education erasing much of the gains made since 2001 in a matter of two years. For example, had growth in gross enrollment rates continued their trend increase, at the lower secondary level, one would have seen rates of 63 percent in the south and 56 percent in the north in 2013; instead the prevailing rates were 50 percent and 20

<sup>38</sup> Source: United Nations Office for the Coordination of Humanitarian Affairs.

<sup>39</sup> See World Bank (2014): “Education Resilience Assessment” where “overcrowded classrooms” were considered as one of the key aggravated challenges brought about by the crisis by a sample of school community actors. As well as World Bank (2015), Priorities for ending poverty in Mali: Education, health and social protection – *mimeo*.

<sup>40</sup> <http://www.unhcr.org/pages/49e484e66.html>

percent respectively. Enrollment rate data from administrative surveys show a retreat in 2013 in all regions except for Bamako.<sup>41</sup>

37. **Herders, traders and large farms were hit hardest because the conflict reduced human mobility, limited access to markets and led to the theft of assets.** Herders who owned many livestock were forced to leave places of conflict for safer areas in southern Mali or neighboring countries, whereas those who had fewer livestock were forced to raise their animals within their compounds. Traders were unable to move or faced the risk of being attacked and losing their goods and money. The absence of a well-functioning banking system exacerbated the insecurity of traders who had no secure way of storing the cash they had earned. Farmers were cut off from their fields and unable to produce their crops. Others engaged in fishing and subsistence farming, experienced lower levels of disruption during the crisis as their operations were already isolated from support services; their profit margins were also not attractive for marauding rebel groups.<sup>42</sup>

38. **The conflict, which coincided with a drought, also had a negative impact on the overall economy.** There was a serious economic contraction in 2012, mostly for two reasons. The first one was the strong reduction of Official Development Assistance (ODA), following the military coup of March 2012, leading to a slashing of the public investment budget and a large contraction in the construction sector. The second source of economic contraction was the poor security situation, which decimated tourism, increased transport costs and limited the willingness of foreign investors to consider investing in Mali (in the mining industry in particular). As a result, GDP per capita in 2013 (when the consequences of the 2012 drought also were felt –the agricultural sector contracted by 14 percent), was at the same level as it was in 2007-8.

**Table 1. 3: Key human development indicators before and after the crisis**

	Earlier year		Before the Crisis		After the Crisis	
	Data	Year	Data	Year	Data	Year
Literacy rate	27%	2006	33%	2011	36%	2013
Share of labor force with no education	79%	2001	64%	2011	70%	2013
Primary completion rate	32%	2001	58%	2011	48%	2013
Primary gross enrollment	52%	2001	80%	2011	73%	2013
Lower secondary gross enrollment	22%	2001	57%	2011	47%	2013
Gender ratio (primary and secondary)	73%	2001	79%	2011	84%	2013
Children out-of-school 12-17	67%	2001	49%	2011	65%	2013
Proportion of children stunted	43%	2001	27%	2011	29%	2013
Pre-natal consultation	75%	2006	90%	2009	68%	2012
Curative consultations	26%	2006	33%	2009	31%	2012
Maternal mortality ratio per 100,000 birth	830	2008	540	2010	NA	

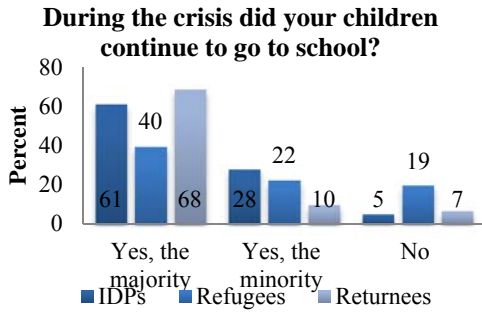
Source: Demographic and Health surveys/WHO Global database on nutrition; Ministry of Education

<sup>41</sup> It is important to note that the administrative data published by the education ministry depicts a different picture at the regional level. At the primary level, administrative data suggests that reductions in the enrolment rate generally happened in 2012 (a year for which we do not have survey data) and recovery began in 2013 in almost every region except for Bamako. Administrative data on secondary is more in line with the survey data for both gross enrolment rates and regional variation.

<sup>42</sup> Mwangi Kimenyi, Jidefor Adibe, Moussa Djire, Abigail J. Jirgi, Alpha Kergna, Temesgen T. Deressa, Jessica E. Pugliese and Andrew Westbury 2014. The impact of conflict and political instability on agricultural investments in Mali and Nigeria. Africa Growth Initiative at Brookings. Working Paper 17.

**Figure 1.10: Consequences of the conflict in the north**

The crisis displaced almost 500,000 people and had negative impact on welfare

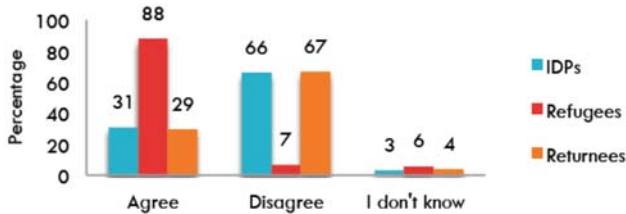


The crisis also led to ethnic sorting between IDPs and refugees

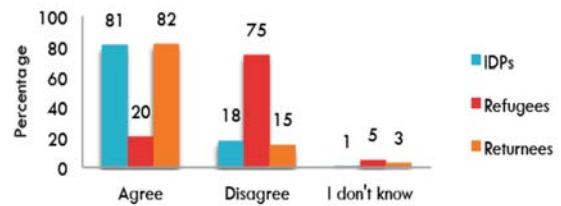
Ethnicity	IDPs in Bamako (%)	Returnees (%)	Refugees (%)
Songhai	75	71	5
Kel Tamasheq	12	12	71
Arab	3	4	21
Peulh	4	6	3
Other	6	7	-

Different populations have different narratives about what happened during the crisis ...

**The army has harmed or hurt the Arab and Kel Tamashek Population in the North**

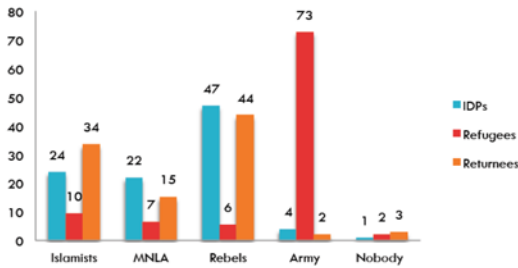


**The rebels have harmed or hurt the black population in the North**

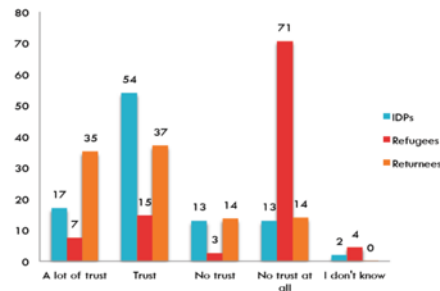


Different populations have different loyalties...

**Who do you fear most?**

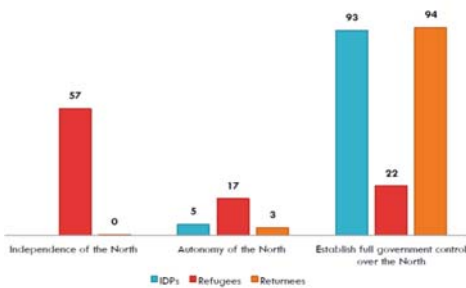


**How much do you trust Government officials? July**



.. different visions for a resolution

**How do you envision the future of Mali?**



... and a remarkable trust in others citizens (except for refugees who trust those from the south little)

**How much do you trust the following?**

Trust	IDPs	Returnees	Refugees
Neighbours	92%	99%	96%
People in your village/town	89%	96%	78%
People from other ethnic groups	87%	92%	68%
Population of the North	92%	97%	68%
Population of the South	82%	89%	27%

Source: World Bank 2014. Listening to Displaced People Survey

39. **While the situation was difficult, Malian society demonstrated its resilience.** Internally displaced persons were taken in by already poor families; schools accommodated the influx of newly displaced students. The children of the displaced families were generally able to register in their host communities. Basic institutions like municipalities, parliament and local councils remained operational – even in some cases in the north. The EITI report was prepared and published and presidential and parliamentary elections were successfully held in 2013. Throughout the crisis the budget was rigorously managed to avoid heavy indebtedness and to ensure macro-economic stability. Starting in 2013, the economy benefited from the rapid resumption of foreign assistance and GDP growth returned to pre-crisis levels.

40. **Since the signing of a preliminary peace accord, north Mali remains insecure and services remain disrupted.** Episodes of fighting are common between the armed groups and the army but also between armed groups themselves. Improvised Explosive Device (IED), rocket and suicide attacks occur regularly. The redeployment of civilian administration and resumption of public service delivery remains limited and, as violence has increased recently, are being interrupted again.<sup>43</sup> Rebel groups have carved out an area, demarcated by the line Lerneb –not far from the border with Mauretania – Tombouctou – Bourem – Gao - Ouattagouna at the border with Niger, north of which they are in control and which they are unlikely to give up. In this area pro-independence forces (amongst whom the MNLA is most widely known) are building their legitimacy by creating basic governance structures, while militant factions (AQMI; Anser Dine; Mujao) use the absence of state control to rebuild their strengths.<sup>44</sup>

## 1.5 Governance

41. **Governance indicators are poor.** Mali's democracy was long hailed as a model in Africa but the crisis changed this perception. Irrespective of the indicator that is selected, its ranking for 2012 is substantially less than it was for 2007. The deterioration cannot only be explained by developments in the north, declining scores for the control of corruption and government effectiveness point to more widespread problems.

42. **Poor generic governance indicators translate into a poor performance on the Doing Business Indicator;** with an overall rank of 155 in 2014 Mali belongs to the worst 20 percent performers. Trading across borders and paying taxes are the areas in which performance is weakest (with rankings of 160 and 157 respectively). On the global competitiveness index, Mali also performs poorly; it was ranked 128<sup>th</sup> out of 139 countries in the 2013-14 report.

43. **Two examples illustrate the consequences of poor governance for the development prospects of Mali.** The first is for education, with an average of 2.4 years of education, Malians aged 15 and above are the third least educated in the world.<sup>45</sup> Addressing such low levels of human capital is a development priority for the government, and approximately 15 percent of the total

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<sup>43</sup> 983 schools have reopened (74% of a total of 1,320 schools before the crisis) and 4,424 teachers have resumed their positions (77% per cent of a total of 5,772 teachers before the crisis). In the health sector, access to basic health services improved in Gao and Timbuktu while the situation in Kidal remains precarious. As of July 2014, some 50 per cent of health workers in Gao and Timbuktu regions were delivering services (SG report, draft August 2014).

<sup>44</sup> All rebel groups benefit from what may be coined the 'economics of insecurity' and are able to finance themselves through illegal trade in weapons or drugs, kidnapping for ransom, or by smuggling fuel and cigarettes.

<sup>45</sup> Data downloaded from [www.barrolee.com](http://www.barrolee.com) (June 2014). Barro, Robert and Jong-Wha Lee, April 2010, "A New Data Set of Educational Attainment in the World, 1950-2010." *Journal of Development Economics*, 104(184-198).

budget is allocated to primary education. None the less, primary school enrollment and the efficiency and quality of learning remain distressingly low. In 2013, 20 percent of students repeated their grade and in rural areas only 40 percent of pupils who started primary school also completed it. In urban areas, completion rates are higher, but at 74 percent, are equally low. Poor efficiency is also reflected in poor quality of learning; of every 100 children who are eligible to go to school, only 63 actually do. Of these, 41 reach grade 5, of whom only 5 (13 percent) are able to analyze a text in French and express themselves in writing.<sup>46</sup> This is in part due to the quantity of instruction; students in Mali received 71 percent of the planned instructional time in 2009-10.<sup>47</sup> Underlying these results are poorly functioning public sector systems. Public financial management is weak and the budget made available for education is not used efficiently;<sup>48</sup> teachers are few, under-qualified and poorly trained.<sup>49</sup> This state of affairs leads to a situation in which many parents – themselves often uneducated – are reluctant to send their children to school, particularly their daughters, as primary school costs money (in unofficial fees) and provides a barely discernible education.

44. **The second example relates to tax policy.** Tax evasion is huge and 80-90 percent of importers and public service providers are estimated to have errors in their tax declarations which means that the state misses 2.8 percent of GDP in taxes. Fiscal exemptions are enormous (4.2 percent of GDP in 2013) and lack a clear rationale.<sup>50</sup> On the other hand, the implementation of the tax system is very imperfect, generating important distortions. For instance the application of the VAT 18 percent rate and other taxes can be costly for small businesses and creates a strong disincentive for small and medium entrepreneurs to formalize particularly if they will have to compete with informal sector firms that escape VAT or those in the formal sector that are exempted. It is one of the (many) reasons for the relative absence of small and medium sized formal firms and the dominance of entrepreneurs who focus on commerce (which has a rapid turnover and is easier to hide from the tax-man) rather than on economic transformation. It also explains why 25 percent of medium sized enterprises and 70 percent of the small ones do not meet their tax obligations and why only 1 out of every 5 formal enterprises is a net VAT payer.

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<sup>46</sup> The results for mathematics are even more devastating. PASEC in 2012/13.

<sup>47</sup> Temps réel d'apprentissage, Ministère de l'Éducation, de l'Alphabétisation et des Langues Nationales, 2010.

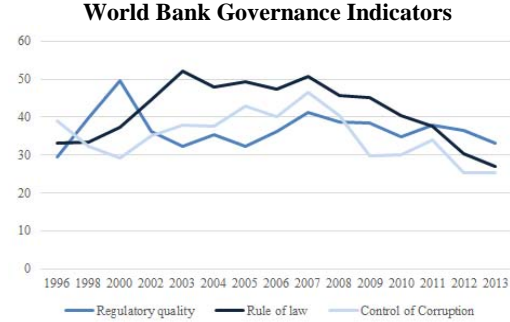
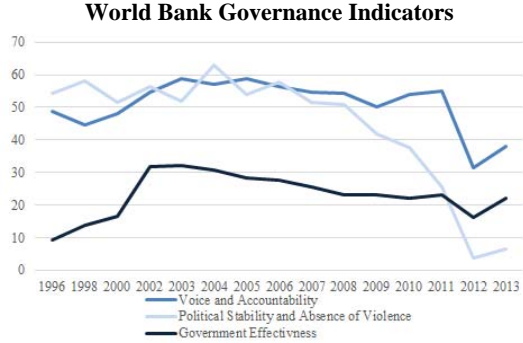
<sup>48</sup> A financial audit of the management of school textbooks and teaching materials in 2008 conducted by the Office of the Auditor General revealed (i) the total absence of textbooks in some schools; (ii) overestimated contract amounts and overcharges; (iii) failure to deliver textbooks under several contracts; (iv) non-existence in most cases of allocative keys; and (v) unjustified commitments of CFAF 2.4 billion.

<sup>49</sup> According to PASEC in 2012/13 33 percent of students are taught by a teacher without any formal pedagogical training.

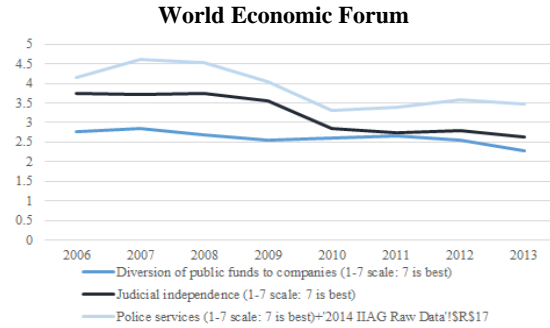
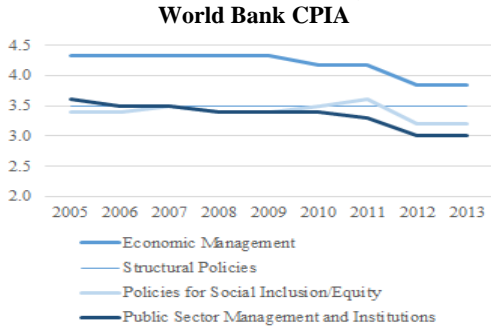
<sup>50</sup> IMF 2014

**Figure 1.11: Governance indicators**

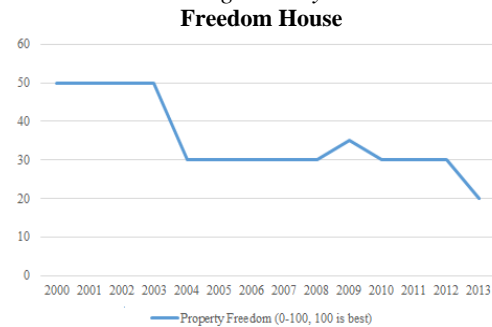
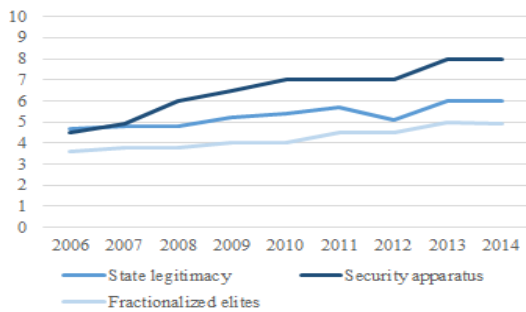
*Government effectiveness and rule of law improved in the early 2000s; from 2006 onwards there one notes a gradual decline in governance indicators, mirroring trends in poverty reduction*



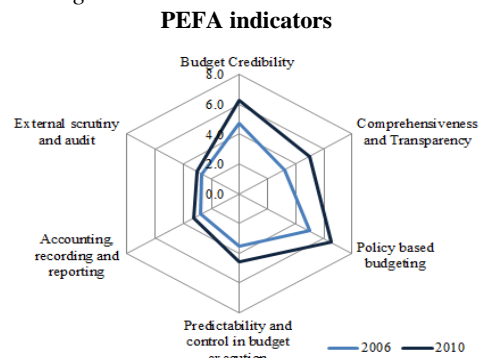
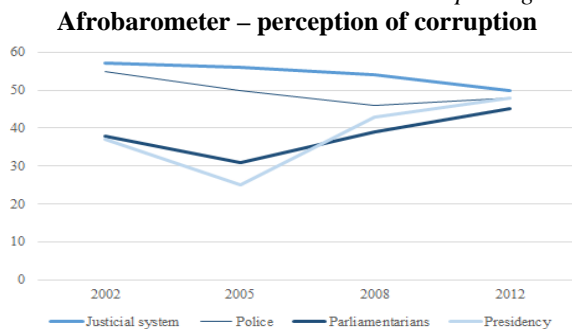
*CPIA and World Economic Forum indicators of governance also show a deterioration starting around 2009; the property freedom indicator (below) puts the nadir around 2003*



*State legitimacy and the quality of the security apparatus have eroded gradually over time*



*The perception of corruption has converged suggesting generalized corruption across the public sector. Meanwhile PEFA indicators show no improvement in predictability of budget execution, accounting and reporting and external oversight*



45. **Governance problems continue throughout the public sector.** The off budget purchase of a presidential plane and non-lethal military equipment under “national interest” or “secret defense” procedures are just the latest illustrations of governance issues that stretch from the petty (long procurement delays and highly bureaucratic procedures; poor targeting of (fertilizer and electricity) subsidies; inadequate distribution of health workers<sup>51</sup>), to serious (corruption in the collection of water fees by the Office du Niger; limited competition in the telecom sector), to outrageous (if confirmed -- claims of the involvement of public officials in drug trade or kidnapping for ransom; the inability to address long standing issues with the quality of education).

46. **The decentralization process has been slowed by governance problems.** Decentralization and local governance reform—a priority for the government since the start of the third republic in 1991, have progressed very slowly. Some formal authority was decentralized in a relatively bottom-up process in the 1990s, but consolidation of decentralized governance has lagged, especially in the areas of local autonomy, fiscal transfers and downward accountability.<sup>52</sup> The central state continues to exercise a significant degree of top-down authority (*tutelle*), despite the fact that sub-national governments are independently elected and have had public service responsibilities decentralized to them. The fiscal autonomy of sub-national governments is limited and accountability is upward and more focused on whether administrative (PFM) rules have been followed and on whether political imperatives are met than on actual performance in service delivery.<sup>53 54 55</sup>

47. **The conflict in the north gives new impetus to the decentralization process.**<sup>56</sup> Its effective implementation will entail major changes and there is likely to be resistance in the central part of the administration (as powers and resources would be devolved). Successful implementation will depend on the ability to build local capacity and to transfer real responsibilities to the local level. The litmus test on decentralization is whether actual resources will be transferred to local entities and whether service provision improves as a result. To date, this test largely fails to be passed.

48. **These governance problems are not new and have been well documented.** Box 1.2 presents an illustration from 2003. In 2005, the Operations Evaluation Department (OED) in an independent review of World Bank support to capacity building in Mali, noted how “efforts to introduce *institutional* change confront challenges not only of patronage in senior public employment but also instability of government structures, lack of clear boundaries among structures, and weak systems of both monitoring and evaluation and checks and balances. [...]. Efforts at *organizational* strengthening confront the tendency to create or maintain redundant

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<sup>51</sup> According to WHO standards Mali has enough health workers but with a large concentration of doctors, nurses and midwives in the capital rural areas area largely underserved.

<sup>52</sup> For instance, communes are required to present their budgets publicly, but rarely do so.

<sup>53</sup> The Bank’s urban development project is amongst the first attempts to create a clear relation between performance and fiscal transfers and it will be worthwhile to study this example more closely and to explore options to more systematically introduce performance based approaches.

<sup>54</sup> See USAID 2010: Comparative Assessment of Decentralization in Africa: Mali Country Assessment Report.

<sup>55</sup> In this regards the government’s initiative to create Agences Rurales de Development reflects a new chapter that needs to be understood better.

<sup>56</sup> This was the outcome of the “*Etats Généraux de la Decentralization*” held in 2013.



agencies to benefit politically influential actors. And *human resource* capacity building is impeded most directly by deficiencies in the National Directorate of Public Service and Personnel—the central agency in charge of strategic planning of human resources, formulation of human resources policy, and management of public servants recruitment and careers.”(OED, 2005, page 5).

**Box 1. 2: The deterioration in the public sector environment: a perspective from 2003**

*Corruption:* Corruption in Mali is systemic. Accusations of corruption contributed to the 1991 coup that ushered in Mali’s democratic ‘Third Republic’. Yet, under the Third Republic, corruption has worsened. Democracy brought a new group of leaders to power, many of whom equated democracy with license. According to economic actors, under the former republic it was only necessary to pay a bribe at one level; now bribes are paid at all levels.

*The relationship between state and society:* The administration is isolated from society and is not governed by the notion of serving clients. Having long experienced an ineffective administration in addressing their needs, Malians expect little from the state. Citizens and economic operators are devoid of political ideology, and they adhere to political parties to access public resources. They typically require from the government and the political system private, rather than public, goods and services, and they sell their political support for meager, immediate, private benefits rather than the investment in public infrastructures: “receiving one dollar today is better than getting a school in the village the next year.”

*The performance of the bureaucracy:* Mali has a political system marked by patronage, whereby public sector posts are filled with those who produce rents for their patron, for the political party and for themselves. The system of human resource management is not objective. Senior posts are filled through connections instead of qualifications; as new political officials are appointed existing senior servants are sidelined often without explanation. The sale of administrative influence often has high pay-offs, and clients exist in virtually all areas of the society. The posts in public administration can be viewed as assets that generate licit flows of income including wages and allowances, and illicit incomes flowing from embezzlement of public property, sale of public influence, and use of discretionary power to get private gains. Those who have the power to recruit and to fire require to be given part of the benefits associated with the posts to be filled or request other personal services. As a result, promotions and vacant posts are filled with incompetent and untrustworthy people, explaining the drop in the quality of the personnel. These practices spread in the administrative hierarchies, widening the circle of complicities, and making it difficult for those involved in the system to get out from the network.

Source: World Bank 2003. “Recommandations Visant à Renforcer le Programme Anti-Corruption”.

## 2. POVERTY AND SHARED PROSPERITY PATTERNS

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*In 2010 and using the dollar a day poverty line headcount poverty was 51 percent. Since that time poverty has increased as a consequence of the 2012 drought and the conflict in the north. Prior to this, between 2001 and 2010, poverty declined very rapidly as growth was pro-poor. The decline in poverty is closely associated with the increase in cereal production, with increased remittances, improved on and off farm employment opportunities (casual labor; artisanal gold mining) and improvements in road infrastructure. The poorest households are food insecure and even though they are primarily farmers and pastoralists, they depend on casual labor opportunities to make ends meet. The poorest households depend on purchased foods and payments in kind to sustain themselves and their welfare is affected strongly (and negatively) by food price fluctuations, health and weather shocks. The poorest households cultivate small areas of land and do not own livestock. The most destitute households have few able bodied household members (widows); they are trapped in poverty and often work for low wages on other people's farms.*

### 2.1 Incidence of poverty

49. **Levels of poverty are high as more than half the population (51 percent) lived below the dollar-a-day poverty line in 2010.** Other indicators of welfare confirm the high level of poverty. On the 2014 Human Development Index, Mali occupied the 176<sup>th</sup> rank (last but twelve);<sup>57</sup> the multi-dimensional poverty index (which uses 10 indicators) puts Mali amongst the three poorest countries in the world.

50. **Poverty is a rural phenomenon, now and in the foreseeable future.** In 2010, 90 percent of all poor people lived in rural areas. Even with rapid urbanization, the vast majority of poor people will continue to live in rural areas. For instance, if levels of rural and urban poverty remain unchanged, and the pace of urbanization continues as it does today, then by 2030, 83 percent of all poor will reside in rural areas. Even under a more optimistic scenario in which poverty in rural areas is reduced to the same level as that in urban areas (i.e. a drop in poverty incidence from 51 percent to 14 percent) and despite a significant number of people moving to urban areas, the majority of poor people (53 percent) would still reside in rural areas by 2030.

51. **Weak statistical capacity hinders the accurate measurement and interpretation of poverty and poverty trends.** Mali has no shortage of household surveys collecting information about household consumption, information critical to the measurement of poverty. Since 2000, representative household surveys were fielded in 2001 (EMEP), 2006 and 2010 (ELIM) and in 2011 and 2013 (EMOP). However each of these surveys is affected by structural weaknesses. Amongst the most critical shortcomings are (i) the separate collection of information on quantities and prices (EMEP and ELIM) leading to low data quality; (ii) the absence of a price questionnaire to collect stratum specific prices; (iii) the change in recall period (from 12 months to 7 days) between ELIM and EMOP and (iv) the change in the way consumption information is recorded (as values only) starting in 2011. As a consequence, poverty trends are not comparable before and after 2010. Moreover by using national (instead of regional) prices to value the basket of goods

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<sup>57</sup> UNDP, 2014 Human Development Report.

used to compute the regional food poverty lines, poverty incidence is overestimated in some regions (surplus food producers with low food prices), and underestimated in others.<sup>58</sup>

### **Box 2. 1: Gender inequality**

At the national level, Mali has established some important legal underpinnings for the promotion of gender equality. In practice, however, there are considerable social, economic and institutional barriers. Men are considered the heads of households and are, in rural areas, the managers of farm activities. Consequently women have limited control over household income and restricted access to other means of production such as equipment, raw material, and technology. This situation marginalizes women into less profitable activities and means that men and women operate according to different incentives and needs. Women spend more time on domestic chores – over three hours per day, compared to 35 minutes for men - and the processing and selling of fish, milk and hides and skins<sup>59</sup>. On the farm, women concentrate on food crop production and small animal husbandry while men own cattle and dominate cash crop production. When activities that women are involved in reach a certain level of profitability, men tend to enter in increasing numbers – this is thought to have happened in the case of shea butter production<sup>60</sup>, and also happens when irrigated plots become more productive.<sup>61</sup>

Social norms contribute to high levels of domestic violence and lower levels of education. Only 25 percent of adult women are literate, compared to 43 percent of men; 89 percent of women believe that a man has the right to beat his wife for reasons like going out without permission, refusing to have sex and neglecting the children. Levels of female genital mutilation are very high, 94 percent. Women face distinct health challenges compared to men; malaria is a serious for pregnant women<sup>62</sup>; and the maternal mortality rate, though decreasing, remains high.

Among women, widows are particularly vulnerable due to their dependence on men for many aspects of their livelihood. Female headed households are 15 percent poorer than male headed households, a difference that is entirely accounted for by marital status, rather than female headship per se. Widowhood causing many women to fall deeper into poverty<sup>63</sup>. This may partly be due to the fact that women's rights in Mali are dependent on men. For example, women's access to land tends to be gained through use rights during marriage, with husbands remaining the sole owners of family property. When a husband dies, only 40 percent of widows receive any assets<sup>64</sup>. Even if female widows remarry they may continue to be at a disadvantage, as they are likely to have a lower status in their new household upon remarrying. Women who are married but previously widowed were found to be more likely to report problems getting permission to access health care and less likely to have the resources to access care. The gender specific impacts of widowhood are not restricted to the widow herself – evidence suggests that marital shocks in Mali lead to greater negative impacts on human capital investment in daughters than in sons.

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<sup>58</sup> Box 4.1 in the Geography of Poverty in Mali (World Bank 2014) discusses how spatial variations (in prices) are not adequately taken into accounting leading to odd patterns in the poverty map.

<sup>59</sup> AfDB, 2011. Mali Country Gender Profile

<sup>60</sup> Government of Mali, 2009. Gender Policy.

<sup>61</sup> The differences in women's and men's main areas of activity mean that there are different incentives and needs driving their actions. This can be illustrated by the findings of a randomized insurance experiment in Burkina Faso and Senegal which showed that female farm managers were less likely to take out weather insurance and more likely to invest in savings for emergencies. The authors speculate that this result is a reflection of the fact that women face risks that are not covered by weather insurance, such as the risks of childbirth or risks to production and income resulting from the need to care for sick children (Delevallade et al, 2014).

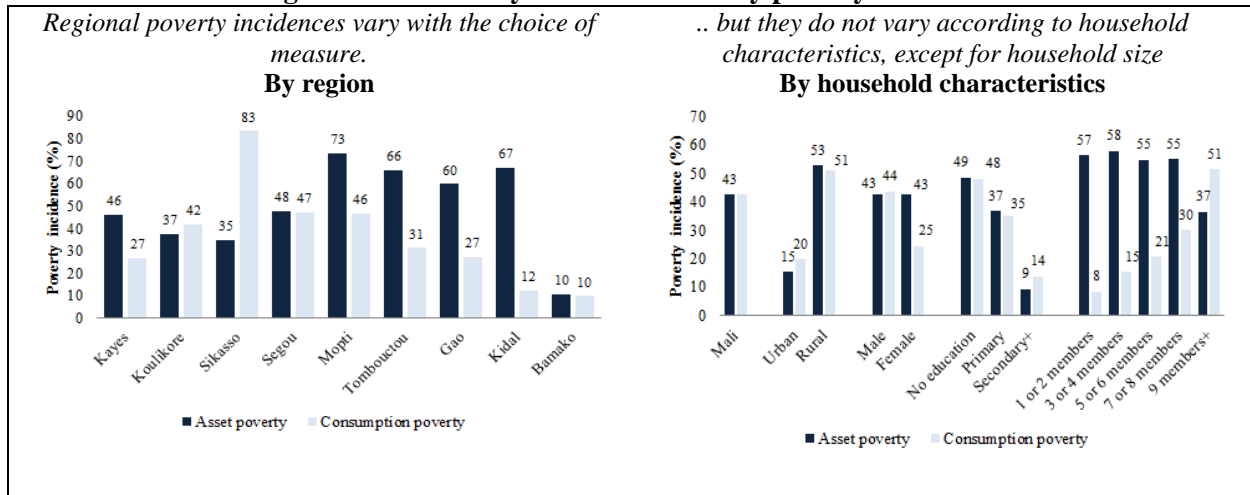
<sup>62</sup> 2012-13 DHS

<sup>63</sup> Van de Walle 2011.

<sup>64</sup> Peterman, 2010. Widowhood and Asset Inheritance in Sub-Saharan Africa: Empirical Evidence from 15 Countries, Chronic Poverty Research Centre Working Paper, Manchester, U.K.

52. **A regional comparison of consumption and non-monetary estimates of poverty illustrates the measurement problem.** Using the traditional (consumption) poverty measure, Sikasso is the region with the highest incidence of poverty (83.2 percent) even though the region is generally believed to have relatively low levels of poverty on account of its agro-ecological potential and its association with cotton as a consequence of relatively good market accessibility and availability of inputs. But when using an asset based measure, which yields the same poverty headcount at the national level as the consumption based measure (42.5 percent in 2010 – using the national poverty line), we find a rate of poverty incidence in Sikasso that is below the national average: 34.7 percent)<sup>65</sup>. The issue seems closely associated with the fact that food prices vary across Mali. Data from the Observatoire des Marchés Agricoles show, for October 2014, that a kg of millet costs 240 FCFA in Kayes but only 187 FCFA in Ségou; for maize the difference was more pronounced: 250 FCFA in Tombouctou versus 128 FCFA in Sikasso. These price differences are not adequately reflected in the food poverty lines, leading to an overestimation of poverty in food surplus regions such as Sikasso, and an underestimation of poverty in the food deficit regions such as Tombouctou, Gao, Kidal and Mopti.

**Figure 2.1: Monetary and non-monetary poverty incidences**



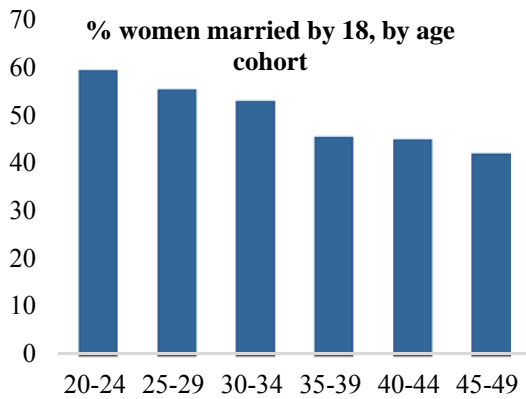
Source: ELIM 2010. Authors' calculations.

53. **In the absence of improvements in the way consumption and poverty are measured, the spatial pattern of poverty is subject to major uncertainties.** A new LSMS-ISA survey which addresses the shortcomings of the aforementioned surveys is in the field and first results are expected for late 2015. This survey will allow reassessing the spatial patterns of poverty as well as the poverty profile and possibly remaking the poverty map. Meanwhile extreme caution has been used when interpreting poverty and poverty trends and combined approaches (consumption poverty, asset based poverty and livelihoods approaches) has been used to construct the narrative.

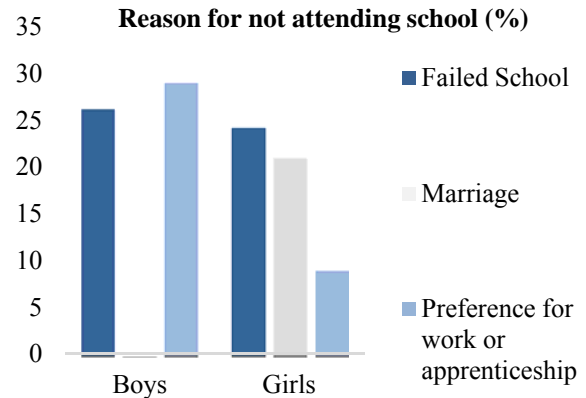
<sup>65</sup> Asset poverty is estimated based on the Multiple Correspondence Analysis from several indicators of the ownership of durable goods (radio, television, landline phone, mobile phone, refrigerator, freezer, computer, air-conditioner, ventilator, time piece, jewelry, land, dish, bicycle, motorcycle, car, cart, canoe, stove, table, carpet, mat, chair, armchair, dressing table, sewing machine, bed, couch, sideboard, wardrobe). The asset poverty line is set such that the asset poverty is equal to monetary poverty at the national level.

**Figure 2.2: Gender aspects**

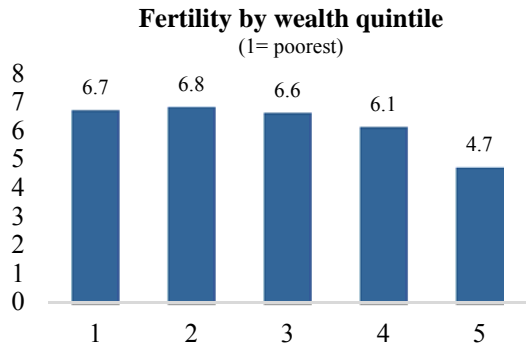
*Rates of early marriage and childbearing are high (especially among younger cohorts)...*



*...and are an important factor behind lower educational attainment for girls*



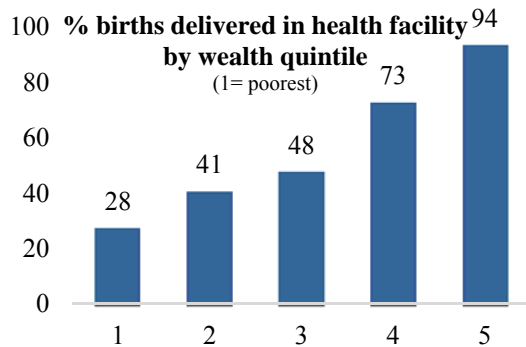
*Throughout their lives, women's human capital development is further constrained by high fertility...*



*...driven by low use of family planning services, due primarily to demand-side factors*

Reason	%
Respondent opposed	22.1
Wants more children	17.6
Sub-fecund, infecund	9.2
Spouse opposed	9
Knows no method	8.6
Health concerns	5.5
Religious prohibition	4.9
Knows no source	4.5
Fear of side effects	4.1

*Health impacts are particularly severe for the poorest women who don't have sufficient access to maternal care*



*Customary/religious law and cultural attitudes and practices limit women's ability to farm their way out of poverty, especially widows*

Productive input	Male	Female	Total
Average plot size (cereals)	1.7 ha	0.6 ha	1.7 ha
Access to agricultural credit	4.7%	0.6%	2.7%
Access to improved seeds	21%	7.0%	20%
Access to chemical fertilizer	31%	14%	31%
Access to herbicides	16%	4.2%	15.6%

Source: DHS 2013, INSTAT 2004/5 Census of Agriculture

## 2.2 Changes in poverty since 2001

54. **Between 2001 and 2010 poverty and inequality decreased rapidly.** Particularly between 2001 and 2006 the reduction in poverty was substantial. Poverty incidence (using the dollar-a-day poverty line) declined from 60 percent in 2000, to 53 percent in 2006 to 51 percent in 2010; the Gini coefficient dropped from 0.40, to 0.39 to 0.33 respectively. Even though the incidence of poverty declined, the rate of decline was too slow to reduce the absolute number of poor which increased by around 360,000 as a consequence of Mali's high population growth.

55. **Since 2010 poverty has increased but probably not by much.** Estimates from a general equilibrium model of the economy suggest consumption declined by 2 percent per capita between 2011 and 2012. If this estimate is followed it suggests that poverty increased slightly since 2010.<sup>66</sup>

56. **Malnutrition trends mirror the poverty trends.** Mali's malnutrition rates dropped considerably between 2001 and 2010. Between 2010 and 2012, malnutrition increased as a result of the food, political, and security crisis, but it began to improve again by 2013, at least in the south.<sup>67</sup> The prevalence of stunting in children under five declined from 43 percent in 2001 to 28 percent in 2010, and then—after a small increase in 2011 and 2012—dropped to 27.5 percent in 2013. Wasting declined from a high of 15 percent in 2006 to 9 percent in 2010, and the percent of children who are underweight declined from 29 percent in 2001 to 19 percent in 2010, with a slight increase in 2011 and 2012.<sup>68</sup>

57. **Ownership of consumer durables follows the same pattern; it increased significantly between 2001 (EMEP) and 2011 (EMOP) and declined thereafter.** Information on the ownership of consumer durables is comparable across the various household surveys. Since 2001 the fraction of households owning fridges doubled from 5 percent to 11 percent, while the ownership of televisions almost tripled going from 14 percent to 37 percent. The increase of mobile phone ownership amongst households is remarkable. It increased from virtually zero in 2001 to 67 percent in 2011, suggesting they are now an essential utility, including for poor households. A similar trend is observed with respect to motor bikes. Over the course of one decade ownership almost tripled from 17 percent to 48 percent. The increase in asset ownership can be attributed to the drop in real prices for many consumer durables and the increase in disposable income amongst the poorest households. Post 2011 asset ownership declined slightly.

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<sup>66</sup> The EMOP data for 2013 are preliminary and it is critical that a final dataset becomes available. It is even more important that a survey is fielded that collects consumption information that is comparable to what was collected by EMEP/ELIM.

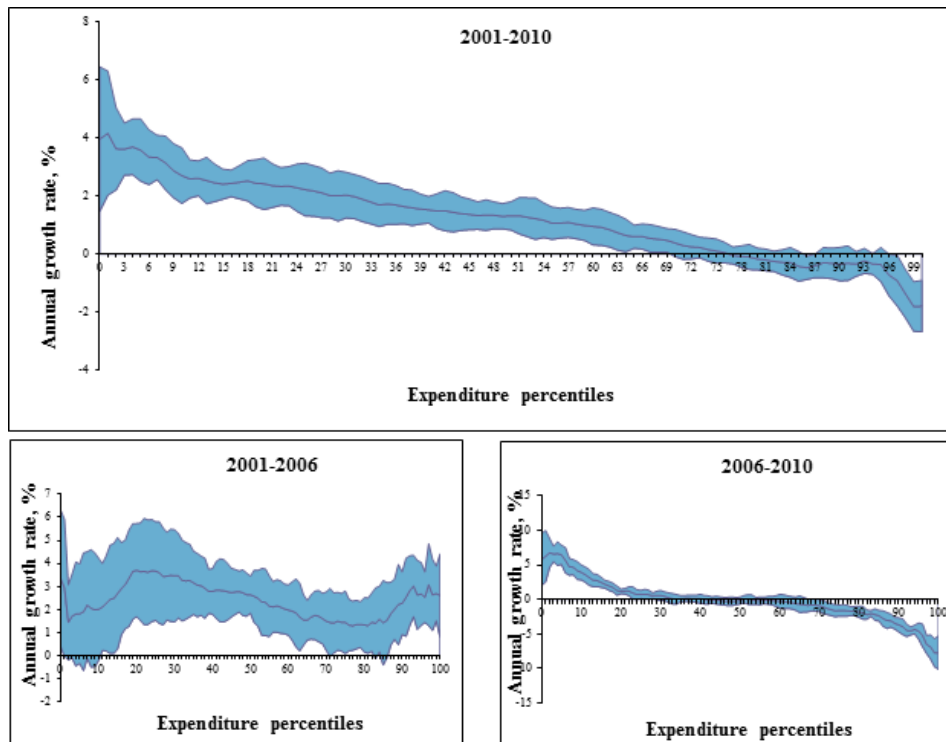
<sup>67</sup> Given that the 2012 and 2013 Standardized Monitoring and Assessment of Relief and Transitions (SMART) surveys did not cover the whole country but focused mainly on the southern regions (where 90 percent of the population lives), we needed to verify how different the trends in nutritional outcomes between the North and the South were before these dates. The analysis shows that, most of the time, the level and trend of under-nutrition are not significantly different between the North and the South, validating the interpretation of the latest trends. It is likely, however, that the 2013 improvement would not be reflected in the data on the North, as also later illustrated by the case of Gao.

<sup>68</sup> These levels indicate a serious problem of malnutrition according to the WHO classification.

## 2.3 Explaining the observed poverty trends

58. **A pro-poor pattern of consumption growth was the main reason for the rapid decline in poverty between 2001 and 2010.** Considering the entire period, consumption growth was higher amongst the poorest households than amongst the richest, whose consumption stagnated or even declined. Because of this pattern of consumption growth, the Gini-coefficient dropped from 0.39 to 0.33. Breaking the 2001-2010 period into two, one notes that between 2001 and 2006 poverty declined particularly rapidly as per capita consumption increased for all wealth groups: poor households benefited about as much as the rich did (the Gini-coefficient remained more or less constant over this period). This changed in the period between 2006 and 2010. Now only the very poorest households experienced positive consumption growth and few were actually lifted over the poverty line (i.e. the decline in poverty was limited). The middle class experienced no growth and per capita consumption for those in the top 30 percentiles declined. Because poor household consume significantly less than the non-poor, average annual per capita consumption growth was negative during this period (-2.0 per cent).

**Figure 2.3: Consumption growth by percentile: 2001-2010(\*)**

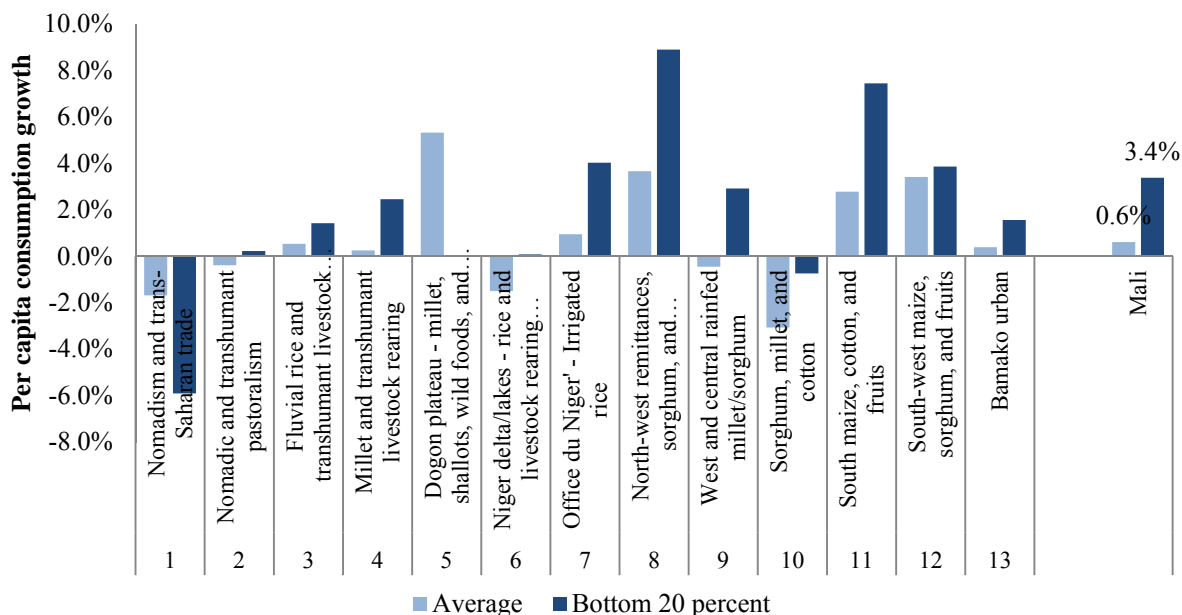


(\*) The band around the line represents the 95% confidence interval.  
 Source: EMEP 2001, ELIM 2006 and ELIM 2010. Authors' calculations.

59. **Even though the household surveys were not designed to be representative at the livelihood zone level, it is possible to calculate per capita consumption growth by zone.** The figure which presents per capita consumption growth at the mean and for the bottom 20 percent of households confirms the pro-poor pattern of consumption growth observed earlier; on average consumption growth for the bottom 20 percent was higher than that for the mean (3.4 percent

versus 0.6 percent). The figure also illustrates how in some livelihood zones, consumption growth amongst the poorest households was considerably higher than that for other households. This holds particularly for zones 7, 8, 9, 11 and 12 in south Mali.

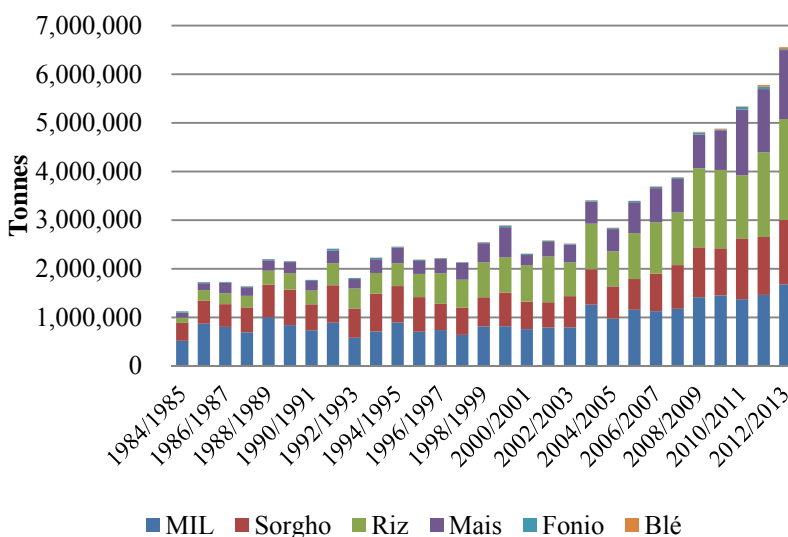
**Figure 2.4: Changes in per capita consumption (at mean and for bottom 20 percent), by livelihood zone**



Source: EMEP 2001 and ELIM 2010.

60. **Increases in consumption are associated with areas where rice, maize and sorghum are grown.** This is unsurprising given that following the liberalization of the food grain markets, food grain production increased rapidly (Figure 2.5). Increase in food grain production have significant positive consequences for poverty reduction for three reasons: (i) increased own production means higher incomes, (ii) increased cereal production leads to more demand for farm labor, and (iii) increased production of food grains exercises downward pressure on (rural) food prices. It is noteworthy that consumption growth amongst households living in the Niger delta (zone 6) was negative (negligible for the bottom 20 percent) – the reason why needs to be explored.

**Figure 2.5: Food grain production 1984-2015**



Source: Ministry of Agriculture 2014



61. **Increases in remittances also explain the rapid reduction in poverty.** This can be concluded from the increase in consumption for households living in livelihood zone 8. Households in this zone have a tradition of international migration (often to France) and their incomes are derived from remittances, sorghum cultivation and livestock rearing (agro-pastoralism). Between 2001 and 2010 there was a three-fold increase in per capita remittances and households in this zone benefited from it.

62. **Increases in infrastructure and new labor opportunities brought about by artisanal gold mining have allowed increases in consumption in livelihood zones 9 (west and central), 8 (north of Kayes) and 12 (south of Kayes).** Newly built infrastructure has substantially improved connectivity between Bamako and Senegal, a response primarily due to the civil war that broke out in Côte d'Ivoire in 2002.<sup>69</sup>

63. **The decline of consumption in livelihood zone 10 (north Sikasso) is noteworthy as it suggests an area with low levels of consumption and negative consumption growth.** One explanation for the decline in consumption in this zone is that whilst it used to be a productive agricultural zone that produced much cotton, this has changed as a result of climate change. As the zone is becoming more arid, its high level of population density can no longer be sustained.

## 2.4 Comparing poor and non-poor households

64. A comparison of better off and poorest farmers reveals four critical facts that are relevant when preparing a poverty reduction strategy

65. **Finding 1: Poor agricultural and pastoralist households earn most of their cash income through casual labor, trade and self-employment.** As illustrated in Figure 2.6 the poorest do not earn the majority of their cash income from the sale of crops, fruits and livestock but from (casual) labor, trade and self-employment. This in contrast to better off rural households who do earn most of their cash from the sale of crops and animal (products). Typical labor opportunities open to the poorest are associated with agriculture. They arise during the planting and harvesting seasons and involve clearing and preparing fields and sowing, weeding and harvesting crops. As peak labor demand is during and after the rains, labor opportunities compete with working in one's own fields. Labor opportunities outside the peak agricultural season are few and involve brick-making or construction. The poorest households also obtain a large fraction of their cash income from trade and self-employment. The options are limited as the poor lack the capital to engage in more remunerative self-employment activities such as trade, commerce or agricultural transformation and artisanal gold mining. Firewood/charcoal and wild food/product sales are the activities in which the poor engage commonly, followed by handicrafts and hay/bourgou sales.

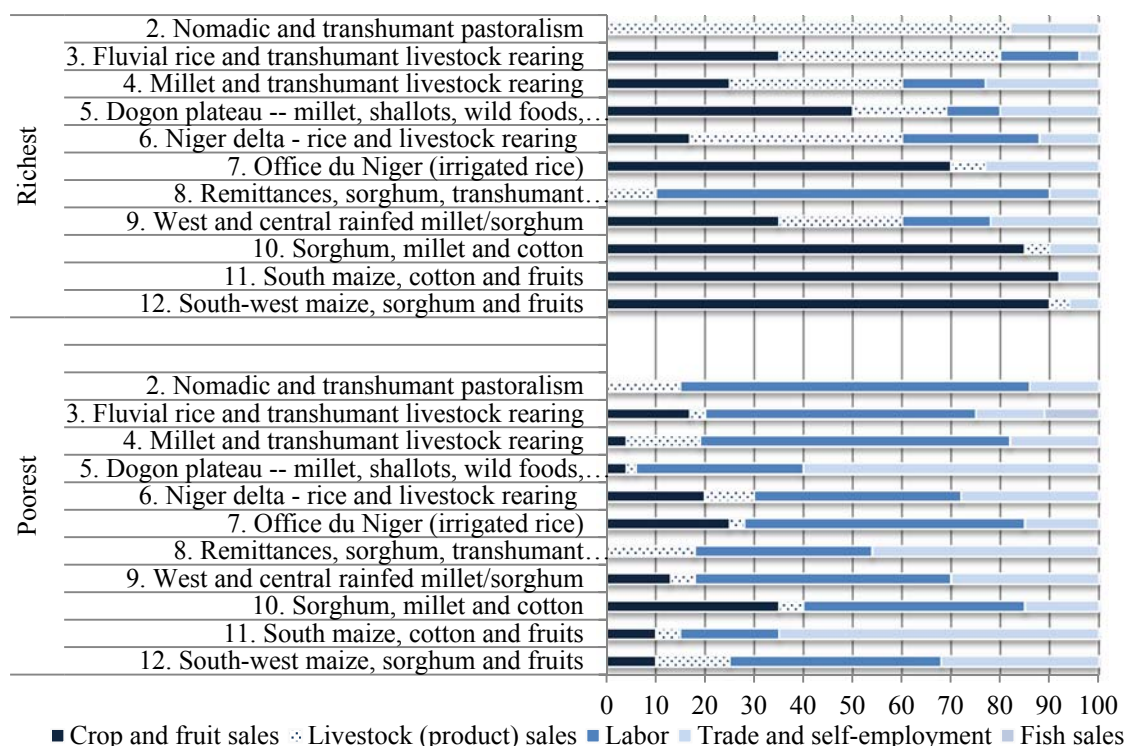
66. **One implication is that additional casual labor opportunities, particularly those that arise after the crop season, would be beneficial to the poorest households.** Policies to facilitate

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<sup>69</sup> Contrary to popular perception the development of industrial gold mining did not drive the improvement in infrastructure. The dependence of gold mines on road or rail infrastructure is limited because gold tends to be shipped out by airplane.

seasonal labor migration could be instrumental to poverty reduction<sup>70</sup> as would be labor intensive public works. In the pastoral zone where most livestock is owned by the better off (Figure E.1) policies that increase the demand for labor from poor pastoralists in, for instance the Office du Niger or in the Niger delta, may be more effective in reducing poverty than interventions aimed at cattle or other large animals which are largely owned by the better off.

**Figure 2.6: Sources of cash income generation by zone and household wealth**

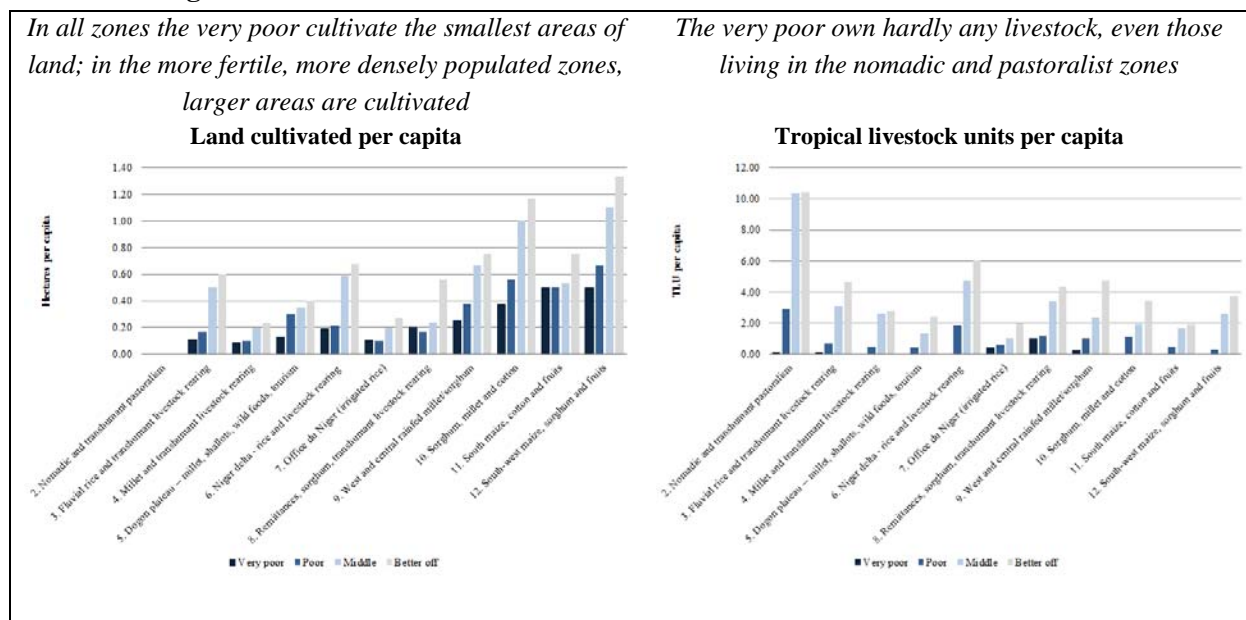


Source: FEWSNET 2010. Livelihood Zoning and Profiling Report: Mali.

67. **Finding 2: Poor households lack the productive assets needed to cultivate substantial areas.** In arid and semi-arid farming systems, timing is everything as the growing season is short. When the time for land preparation arrives, being able to plow is critical, as it allows bringing more land under cultivation. Those who are unable to plow are forced to prepare their land using the traditional daba (a type of hoe) and end up cultivating small areas. Poor households typically do not own traction animals and lack the ability to pay for plowing services. At times they may also lack the time as they may be forced to first work on the fields of wealthier households, before devoting themselves to their own fields. This happens for instance when debts have to be paid off. As a consequence the poorest cultivate small areas of land. This is illustrated in Figure 2.7. It shows that in every agro-ecological zone, poor households grow the smallest areas per capita; poor households are also the ones with the least animals.

<sup>70</sup> The poorest often lack the means to migrate to casual labor opportunities, either because they have too few able-bodied household members or lack the cash to pay for transport. If poor households do migrate they tend to migrate less far than better off households who have the means to pay for travel over long distances. Poor household thus have to forego the most remunerative sources of income open to the better off who may end up working in Ghana, Mauritania, Côte d'Ivoire, Algeria or even in Europe and depend on local casual labor opportunities.

**Figure 2.7: Wealth characteristics of households in selected livelihood zones**



Source: Calculated from FEWSNET 2010. Livelihood Zoning and Profiling Report: Mali.

68. **Finding 3: Poor households are short in labor.** The most destitute households are small and comprise few able bodied household members (widows; those with high dependency ratios).<sup>71, 72</sup> In the absence of productive assets, labor is the primary asset of poor households. The criticality of labor explains the limited demand for family planning services as there is a preference for large families. The precise advantages for large households probably lay in different directions, including the ability to rapidly command labor (for planting) in the absence of an active labor market<sup>73</sup>, more disciplined labor use, more intensive use of costly productive assets and different savings patterns<sup>74</sup>. As human capital is their prime asset, poor health and limited education reduce labor productivity, affecting poor households disproportionately. Those living in a household where the head has no education or is illiterate are much more likely to be poor than those living in a household where the head completed primary or secondary education. Ill health also affects the productivity of households directly. Malaria is an acute source of risk because it is most prevalent when labor demands are highest: during the rainy season. Malnutrition is a more chronic risk: high levels of anemia (in part caused by frequent bouts of malaria and regular infections) and stunting caused by poor diets (poor households rarely drink milk) reduce labor productivity. One implication that follows from this is that improvements in human capital are of direct relevance to poor households.

<sup>71</sup> Van de Walle 2011.

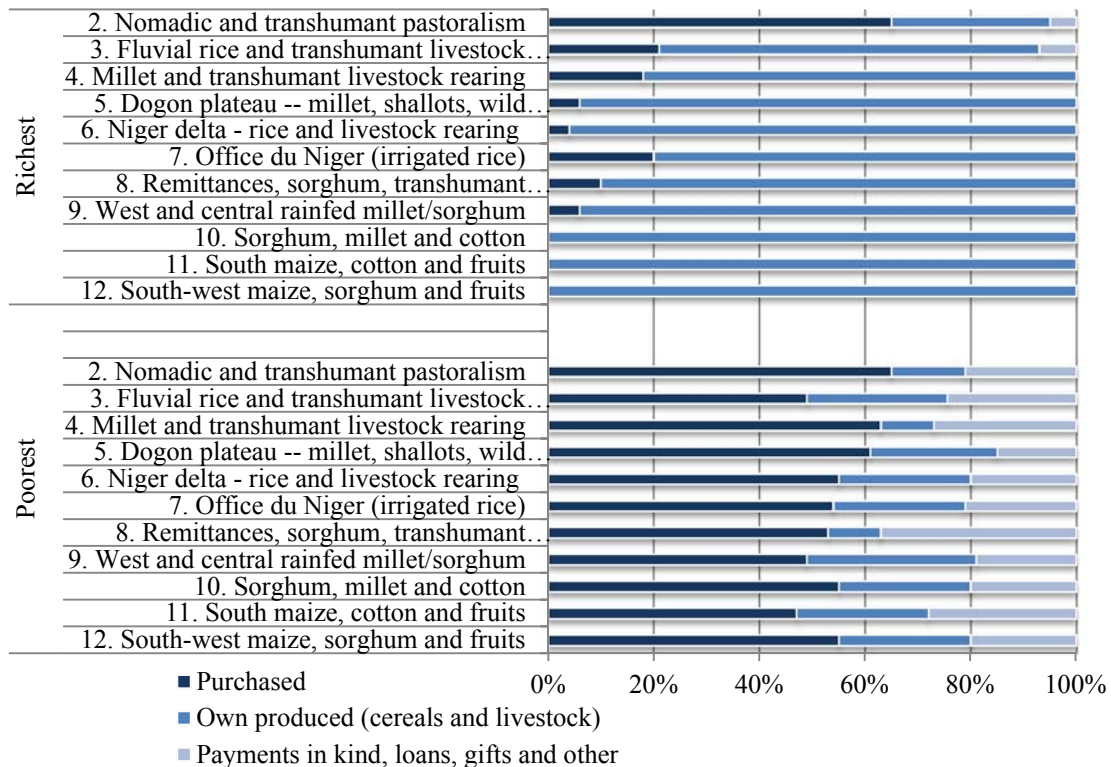
<sup>72</sup> Some poor households seem to become victim to a negative feedback loop between poverty and ‘escaping’ able bodied dependents who spent very long periods on labor migration remitting very little.

<sup>73</sup> Binswanger, Hans P. and John McIntire. 1987. "Behavioral and Material Determinants of Production Relations in Land-abundant Tropical Agriculture." *Economic Development and Cultural Change*, Vol. 36, No. 1 (October): 73-99.

<sup>74</sup> Ann Whitehead 2008. Persistent poverty in North East Ghana. Chapter 6 in *Understanding and Reducing Persistent Poverty in Africa*. Edited by Christopher Barrett, Michael Carter and Peter Little. (Routledge, New York).

69. **Finding 4: Poor households purchase a large share of their consumption needs.** Because poor households cultivate relatively small areas of land and because they lack access to modern inputs which would allow them to intensify their production, harvests tend to be insufficient to cover their needs. Even when harvests are sufficient, the need to settle debts often forces poor households to sell part of their crop after the harvest (when prices are relatively low). As a consequence, poor households purchase a large share of their food needs using cash earned through paid labor. Wealthy households, however, consume mostly what they have self-produced as illustrated in Figure 2.8. One implication from this is that low food prices are beneficial, not only to rural households, but especially to poor rural households.

**Figure 2.8: Source of food consumed by livelihood zone and household wealth**



Source: FEWSNET 2010. Livelihood Zoning and Profiling Report: Mali.

## 2.5 Vulnerability and exposure to shocks

70. **As Mali’s population sustains itself from subsistence agriculture and pastoralism and lives in dry-land areas that are poorly connected to markets and heavily dependent on rainfall, the majority of the population is highly vulnerable to shocks.** Exposure to weather shocks (drought) and shocks affecting productive assets and output (illness, crop pests, animal diseases) can lead to major crises characterized by food insecurity and widespread malnutrition.<sup>75</sup> It is estimated that more than 25 percent (over 3 million) of the population are chronically food-insecure, and that around 1.7 million of people are permanently at risk of hunger.<sup>76</sup> Orphans and vulnerable children, those with reduced physical capacities (people with disabilities and elderly) and those unable to access or use productive assets (widows, those affected by the conflict in the north) are particularly vulnerable. Households are also exposed to significant health risks. The risks associated to childbirth are high given a maternal mortality rate of 368 deaths per 100,000 live births in 2012/3 and an average of 6.1 children per women. The most common causes of death –respiratory infections (16 percent), diarrhea (9 percent), malaria (9 percent), perinatal conditions (5 percent), HIV/AIDS (5 percent), tuberculosis (4 percent) and malnutrition (4 percent), are all preventable or at least treatable.

**Figure 2.9: Covariate shocks and their magnitude in Mali 1980-2013**

	Occurrences	People affected	Of which between 2004-2013
Drought	8	6,927,000	74%
Epidemic	16	24,166	7%
Flood	21	277,327	75%
Insect infestation	5	Not recorded	

Source: World Bank 2015. Mali Social Protection Policy Note

71. **Extreme events and other shocks have negative and long lasting consequences.** Shocks affect the poorest most, forcing families to rely on a range of largely informal, sub-optimal coping mechanisms such as high-interest borrowing, rescheduling of or default on existing loans, reductions in consumption, sale of household and productive assets (sometimes at highly reduced prices), withdrawal of children from school, and, to the extent possible, reliance on family and community support. Opportunities for the latter may be limited however, as covariate weather shocks or conflict affect entire communities, placing a significant financial strain on everyone. Poor households are particularly vulnerable when food prices rise and casual labor opportunities are absent<sup>77</sup>. For pastoralists the worst possible combination is one of falling livestock prices and rising food prices, a combination that typically occurs when a covariate shock (drought, insects, insecurity) affects an area.<sup>78</sup>

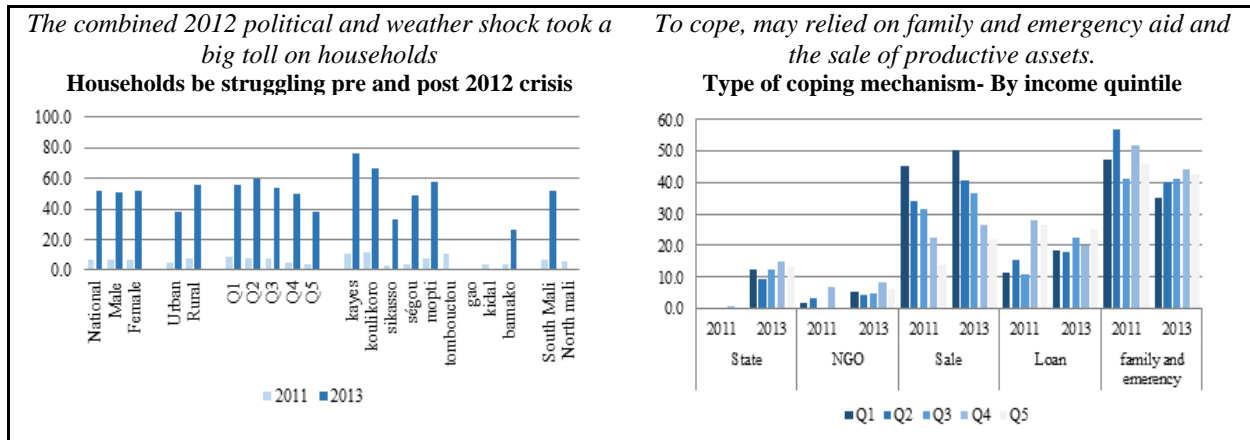
<sup>75</sup> World Bank 2011. La Problématique de la Santé et de la Pauvreté au Mali.

<sup>76</sup> World Bank 2014. Mali Grant Proposal: Sahel TF.

<sup>77</sup> See Nouve and Wodon (2008) on the impact of the 2008 rice price increases on poverty in Mali.

<sup>78</sup> Arnold, Margaret, Alejandro de la Fuente, Charlotte Benson, Daniel Clarke, Xavier Giné, and Ruth Vargas Hill (forthcoming). *Insuring Resilience*. World Bank.

**Figure 2.10: Household vulnerability and coping mechanism**



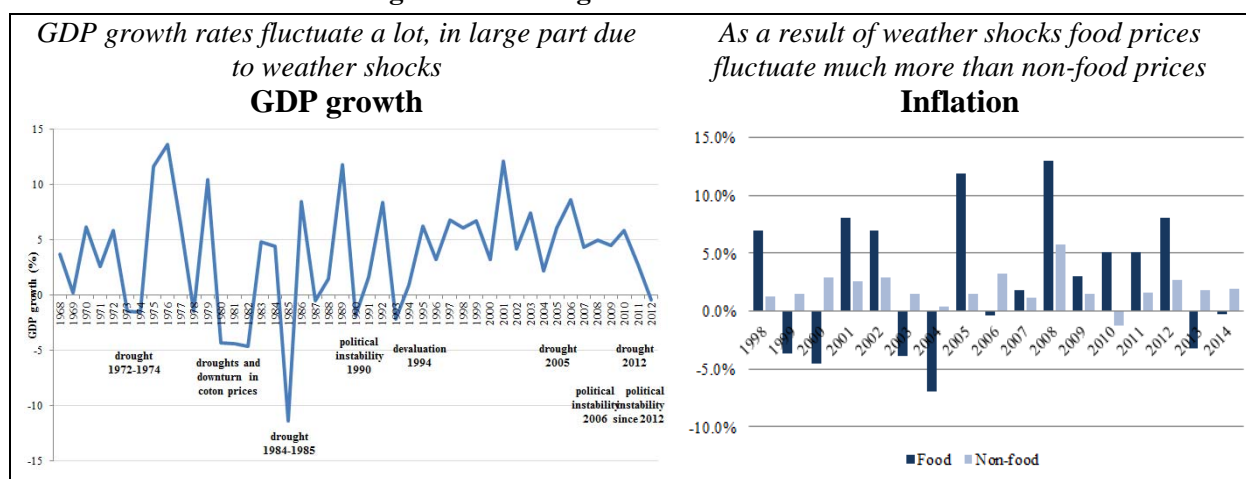
Source: EMOP 2011 and 2013.

### 3. PATTERNS OF GROWTH

Despite the emergence of new sectors such as gold mining and telecommunications, the economy remains geared towards the primary sector. GDP growth has been subject to large fluctuations, another reflection of the vulnerability to weather shocks, and the absence of diversification. A low ranking on the Economic Complexity Index reflects that the economy is mostly capable of producing basic products. In combination with low levels of human capital and high transport costs, opportunities for economic transformation are limited and growth will need to be found by increasing productivity in existing sectors.

72. **GDP growth fluctuates considerably from one year to the next but has, on average, been positive.** Average annual GDP growth was 4.4 percent since 1970 or slightly less than 2 percent per capita. GDP has shown large swings moving from as low as -11 percent in 1984/5 to as high as + 12 percent four years later in 1989. Much of these swings can be attributed to the compound effects of erratic rainfall as the production in the secondary and also tertiary sectors is largely dependent on agricultural output. Changes in world market prices (cotton prices, devaluation) and political instability took their toll too. The large influence of weather conditions can also be observed in the evolution of prices; average rates of inflation are modest (less than 5 percent) but in times of adverse weather huge spikes in food prices can be observed, while prices in non-food are relatively stable.

**Figure 3.1: GDP growth and inflation rates**



Source: WDI 2014 and IMF 2014.

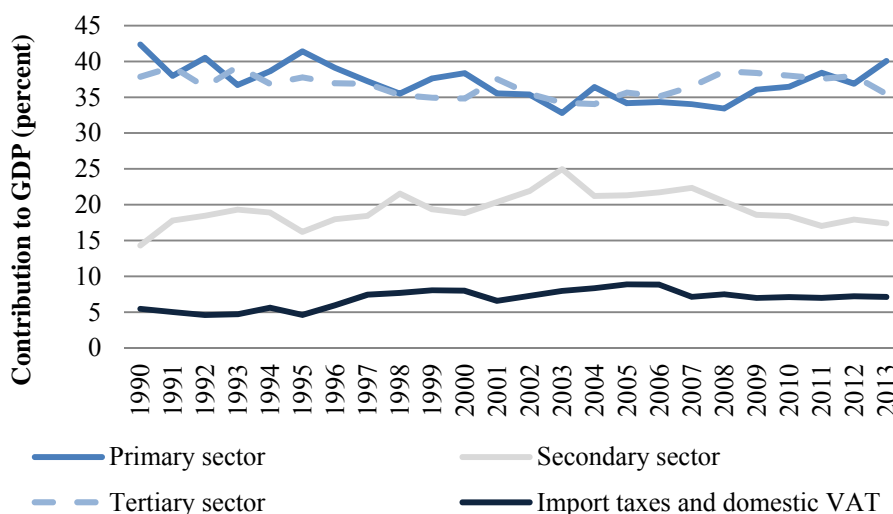
73. **The structure of GDP has remained relatively stable since 1990 with the primary and tertiary sectors each contributing 35-40 percent to GDP and the secondary sector making up the balance.** Some changes in the relative importance of sectors occurred as new activities emerged (gold –including from artisanal producers, mobile telecommunications) and as the fortunes of the agricultural sector changed with the weather. The contribution of the primary sector to GDP, for instance,<sup>79</sup> has varied from 33 percent to 42 percent. Within the primary sector food

<sup>79</sup> We use the IMF series which is longer than the revised National Accounts series produced by INSTAT (2012).

crops contribute approximately 50 percent followed by livestock rearing (25 percent). The cotton sector is relatively less important contributing about 5 percent to primary GDP (and 1.7 percent to overall GDP) but has been rebounding strongly recently.

74. **The share in overall GDP of the secondary sector, which depends in large part on the primary sector for its inputs (food processing, cotton milling) and on the production of gold fluctuated from 14 to 25 percent.** Mali’s industrial sector is tiny (4 percent of GDP) and consists largely of privately owned small enterprises, and a few large enterprises (cotton milling, electricity, and mining). There was a surge in the contribution to GDP by the secondary sector between 2000 and 2006 when the production of gold came on steam and the construction sector was expanding on account of large public investment projects. Since 2006 the contribution has leveled off and by 2012 the contribution of the secondary sector to GDP was comparable to that during the mid-1990s in part because of the reduction in public investments following the 2012 crisis. Within the secondary sector, gold production is the most important activity; it contributes about a third to secondary sector GDP. Other important activities include construction (20 percent), energy (16 percent) and agribusinesses (12 percent) and textile (11 percent).

**Figure 3.2: Contributions to GDP by sector**



Source: IMF 2014.

75. **The contribution of the tertiary sector to GDP is about as important as that of the primary sector (37 percent on average since 1990).** The sector is dominated by commerce, which is at the heart of Mali’s informal economy. Most retail and trading activity takes place in street markets and the modern retail distribution network is limited to shops that are often owned by expatriates.<sup>80</sup> The tertiary sector has increased in relative importance after 2006 as the transport and commerce sectors benefited from improved infrastructure and as mobile telephony took off.<sup>81</sup> The latter is revolutionizing the way certain services are delivered including in banking, health and

<sup>80</sup> EIU, Mali Country Profile, 2008.

<sup>81</sup> Following privatization of the incumbent operator in 2009, mobile penetration rose from 49% in 2010 to 75% in 2011 (Telegeography for subscribers, World Bank for population).



education. Trade is the most important contributor (43 percent) to tertiary sector GDP, followed by transport (22 percent) and public administration (21 percent).

76. **Between 2000 and 2013, the rate of GDP growth was highest in the primary sector (4.9 percent per annum on average) closely followed by the tertiary sector (4.8 percent).** The crop sector did well during this period as it benefitted from the liberalization of the cereal market. Growth rates for rice production and cash crops (tobacco, fruits, and vegetables) were particularly encouraging (around 8 percent) and yields for rice and particularly maize increased rapidly. Growth rates for cotton and livestock were more sluggish and were around 3.7 percent per annum on average. Unlike the primary sector, the secondary sector largely stagnated as the average annual growth rate was 3.7 percent, barely above the rate of population growth. Within this sector, energy production grew most rapidly (9 percent per year) followed by gold production (4.7 percent). In the tertiary sector with an average real growth rate of 4.8 percent, trade and transportation were the sectors with the highest rates of growth (6 and 8 percent respectively). The overall contribution to GDP growth (which is the combined effect of sector size and growth rate) was highest for the tertiary sector, averaging 1.7 percent over the 2000-2013 period, followed by the primary sector (1.3 percent) and the secondary sector (0.8 percent). The crop and trade subsectors alone contributed as much to growth (0.8 percent) as the entire secondary sector.

77. **From a use of GDP perspective, investments increased (from 16 to 22 percent of GDP) at the expense of household consumption which declined from around 77 percent in 1999 to around 68 percent in 2010.** Public sector consumption remained stable at around 14 percent of GDP. Throughout, the balance of payment has been negative (Mali imports more than it exports) with an average of around -8 percent of GDP. In terms of contribution to growth, household consumption contributed around 3.3 percent to GDP growth, and capital formation, 2 percent.

78. **Growth can be decomposed into its components and attributed to changes in the size of the labor force, the stock of knowledge (levels of education), capital goods available in the economy and the efficiency with which everything is put together-total factor productivity.** In Mali growth has been driven by increases in the labor force (accounting for 2.2 percent per year since 1990) and the stock of capital (1.1 percent per year). Increases in total factor productivity (0.9 percent per year) and increases in human capital (0.7 percent per year) contributed less. Because of the volatility of GDP growth, such growth accounting exercises are sensitive to the period covered. For instance, total factor productivity increased by 0.5 percent per annum over the period 2000-2010 and by 1.19 percent over the period 2001-2010. Still the important fact is that total factor productivity remains positive implying that the economy is becoming more efficient.<sup>82</sup>

79. **Since 2000 the economy appears to have been less affected by shocks.** Between 1970 and 2000 huge fluctuations can be observed in GDP growth rates but following the crisis in the year 2000 when cotton producers went on strike, fluctuations in GDP (and TFP) have been less extreme. This is not for a lack of shocks as Mali was affected by the 2002 crisis in Cote d'Ivoire, a locust infestation in 2004, a combined food and financial crisis in 2008, a drought in 2010 and the security crisis starting in 2012. It would be tempting to conclude that the economy has grown more resilient. To some degree this may be correct as liberalization of producer prices and an open

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<sup>82</sup> Soliala and Seker (2011) use ICA survey data to estimate firm level TFP and also find that Mali is a relatively good World Bank: Enterprise Surveys: Enterprise Note Series no. 23.

cereals market, along with successful integrated rural agriculture programs and improved management of the Office du Niger, led to an increase in cereal production. At the same time, the increased resilience is partly due to luck as the negative impact of certain shocks was offset by favorable other developments. For instance, the impact of the 2002 crisis in Côte d'Ivoire was partly offset by the organization of the African Cup of Nations; the 2012 security crisis coincided with a good agricultural season and an increase in gold prices. In 2013 the reverse happened: the positive impact of the resumption of aid was partly offset by unfavorable weather conditions.

80. **Mali's trade in goods has been characterized by large structural deficits.** Export performance has historically been weak, owing to a poorly diversified economy, a lack of skilled labor and a difficult business operating environment that has constrained the development of manufacturing exports. However, export receipts increased considerably from the late 1990s, owing to the significant expansion in gold mining; gold replaced cotton as the most significant source of foreign exchange in 2000. Mali remains heavily dependent on imports for capital equipment. Food imports represent 17-20 percent of total imports in a typical year, while spending on petroleum products weighs heavily on the country's import bill. The trade balance is usually in deficit and is financed by donor assistance and remittances.

81. **Although data on regional trade in food staples and livestock for Mali is not known with certainty due to the largely informal of the trade, anecdotal evidence points toward the sizeable nature of international exchanges and impact on populations engaging in this trade.** Mali is a large exporter of livestock. By one recent estimate (Josser and, 2014), exports of livestock from Mali accounted for \$240 million (in 2013), compared with cotton exports of about \$380 million. Mali exports livestock mainly to Senegal and Côte d'Ivoire, and to a lesser extent to Guinea. There is also overall a surplus at the national level in cereal production. In particular, the more than tripling of the maize production over the past 20 years has been fueled by both an increase in domestic and foreign demand (Staatz, 2011).

82. **Macro and fiscal management do not present a major source of risks.** Mali's fiscal situation and management are sound and its debt is at manageable levels. Commitment to solid fiscal management is such that even during the 2012 crisis strong fiscal discipline was maintained. Faced with an unexpected drop in tax revenue and aid (compared with the Budget Law 2012), the government chose in 2012 to drastically cut public investment expenditures, so as to protect current expenditures (salaries for education and health sectors in particular) and debt service (with a view to facilitate the rapid resumption of aid as soon as political conditions would permit), while limiting its financing on the domestic market to roll-over needs. End 2012, Mali's external and domestic public debt stood respectively at 26 and 4 percent of GDP but due to the vulnerability to changes in gold prices as well as concessional financial inflows, the Debt Sustainability Analysis (2014) put Mali at a moderate level of debt distress.

83. **The exchange rate and monetary policies are firmly set within the WAEMU framework.** In the West African Economic and Monetary Union the monetary and exchange rates policies are independently run by the Central Bank, the BCEAO, which is mandated to ensure price stability. Over its fifty years of existence, the BCEAO has established a strong track record in terms of macro-economic management, keeping inflation under control in the monetary union and protecting countries' balance of payments from major disruptions. Owing to this lack of

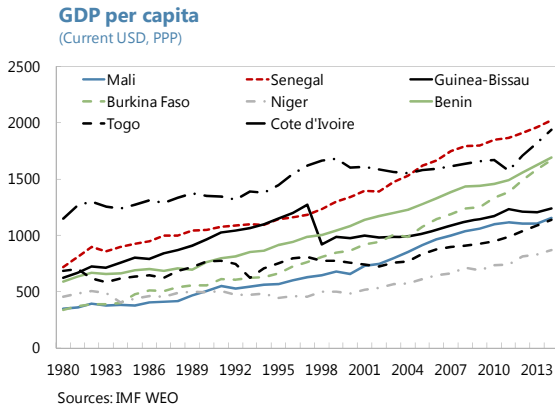
monetary independence, Malian governments rely on fiscal policy as the main instrument for achieving monetary stabilization.

84. **In the longer run a process of economic transformation will need to take place, requiring a gradual expansion of the productive knowledge embedded in the economy.** The economy of Mali remains dominated by the primary sector. This dominance is reflected in the country's low ranking on the economic complexity index. According to this index which was developed by Hausmann and Hidalgo (2008), a country should seek a development path that builds on the knowledge captured in its existing product mix and aim to increase the complexity of the products produced. Country's don't 'jump' from exporting cotton or gold to exporting cars, but gradually build their productive capacities until the economy possesses the knowledge required to move into a complex product area like cars. The Economic Complexity Index captures this processes by measuring the total amount of productive knowledge that is embedded in an economy. The index is calculated by accounting for the number of different types of products a country produces and the complexity of these products as measured by the number of other countries that are also able to make these products.

85. **In the short run Mali should focus on transformation within the agricultural sector.** In 2012 Mali ranked 102<sup>nd</sup> out of a total of 128 countries on the economic complexity index. The low ranking reflects that the economy is capable of producing mostly basic products. In combination with low levels of human capital and high transport costs, opportunities for moving up (or for economic transformation) are limited and the country will need to explore the prospects for growth that exist within the existing sectors. Mali should try to expand towards products that are relatively low in economic complexity and close to what is already being produced: garments and processed food. In addition there are opportunities to capture a larger share of the market for products whose economic complexity is also relatively low and in which Mali has already shown promise: the exports of cereals, tropical fruits, fish and cotton. By gradually expanding the complexity of products that are produced, and by improving human capital in general, productive knowledge is expanded and the foundation for economic transformation laid.

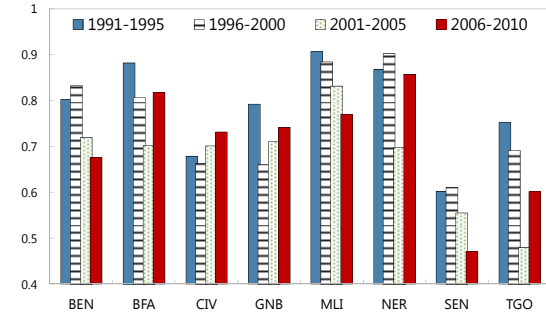
**Figure 3.3: Mali's economy in a regional perspective**

Output growth per capita has been relatively weak over the past two decades on average and in comparison with other WAEMU member states



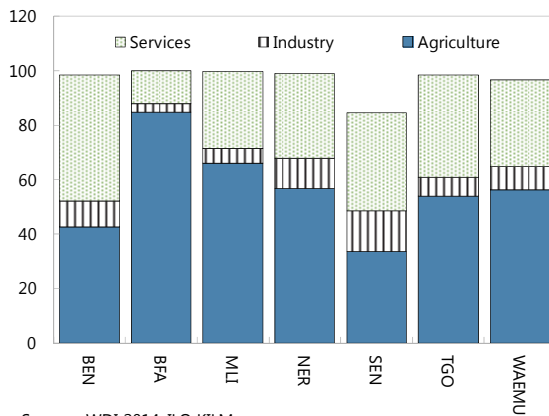
Exports tend to be concentrated in a few major products in the majority of countries.

**Share of Three Major Exports in Total Exports, 1991-2010**  
(Export Product Measured at 2-Digit SITC Level)



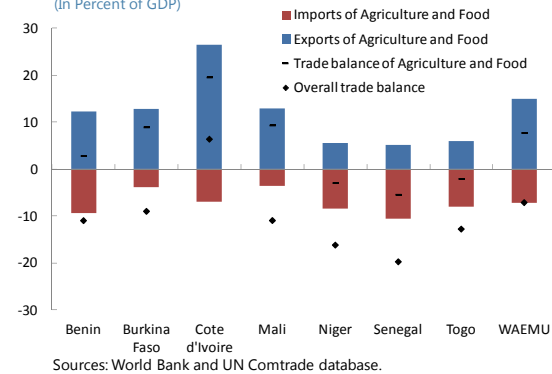
Agriculture remains the main provider of employment

**Employment by Sector, 2011 or Latest Available**  
(In Percent of Total Employment)



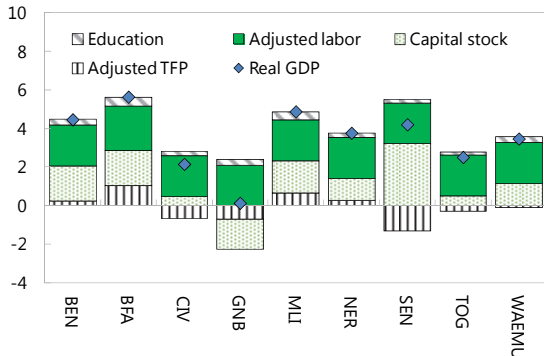
Mali already is a net exporter of food; some of its neighbors (Senegal, Niger) are large net importers

**Agriculture and food trade balance**  
(In Percent of GDP)



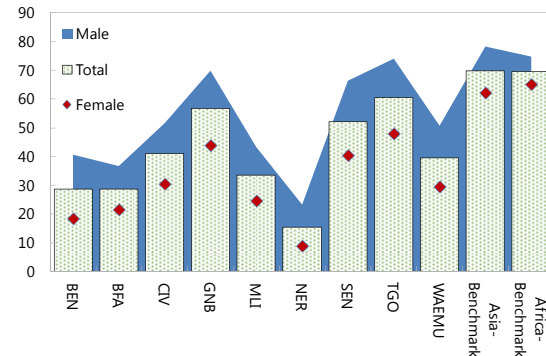
Growth has been driven primarily by labor and capital accumulation over the past decade...

**Average Contribution to Annual Growth Rate**  
(In Percentage Points, 1995-2012)



The prospects for economic transformation are hindered by low levels of human capital ...

**Adult Literacy Rates, 2012 or Latest Available**  
(In Percent of Population)



Source: IMF 2014.

## 4. POVERTY REDUCTION OPPORTUNITIES

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*An analytical framework to identify opportunities for poverty reduction and concomitant binding constraints is presented. Achieving the twin goals is found to be feasible provided a pro-poor growth strategy is put in place. As the conditions for economic transformation are not in place, and the majority of the poor are (and will be) engaged in agriculture, pastoralism and the informal sector, a household based analytical framework has been developed. It starts from the observation that to meet their consumption needs, households face a budget constraint. This constraint can be alleviated through increases in own production, wage labor and through redistribution. Critical building blocks for the analysis are thus identified. They include human capital, equipment, geography but also interactions with the market and the institutional environment. These building blocks are subsequently discussed in detail.*

### 4.1 Analytical framework for poverty reduction

86. **It is feasible to significantly reduce poverty in Mali.** With the majority of the population living in poverty, the task of reducing poverty to 3 percent by 2030 may seem daunting. However, the average poverty gap to the dollar a day poverty line was 16.5 percent in 2010. A poverty gap of this magnitude adds up to a shortfall of \$ 570 million dollar per year to bring all Malians up to the modest \$ 1.25 per day standard of living. This amount is equal to 7.6 percent of GDP<sup>83</sup>, 52 percent of all revenue or about twice the grants received by Mali in 2013. These numbers suggest that it is feasible to significantly reduce poverty in Mali.

87. **Mali already has positive experiences with poverty reduction through income growth and in combination with transfers, poverty could be eliminated by 2030.** Between 2001 and 2010 poverty reduced significantly because, between 2001 and 2006, the incomes of all households (rich and poor) increased while between 2006 and 2010 the incomes of poor households increased while that of everybody else stagnated or even declined (growth was pro-poor). Using the annual consumption growth rates observed between 2001 and 2010 by the poorest quintile (3.7 percent per annum) to project poverty incidence by 2030, we find that poverty can be reduced to 4.4 percent by growth alone. This scenario may be overly optimistic, but a combination of (perfectly targeted) transfers of 2 percent of GDP with 2 percent per capita growth for the poorest households could feasibly eliminate poverty by 2030.

88. **A pro-poor growth strategy will have to raise the incomes of the poor *in situ* by raising the productivity in the primary sector.** The vast majority of poor households lives in rural areas and depends on agriculture and livestock rearing for their income. The primary sector accounts for a significant share of output and external trade and is likely to continue to do so in the medium term. The continued buoyant supply of rural labor (as a result of high levels of population growth), the low levels of formal education and the limited scope to enhance economic complexity by embracing labor intensive manufacturing, suggests that large-scale ‘between-sector’ structural change through a significant shift in the share of workers in agriculture to the manufacturing sector is unlikely to materialize in the short run. A successful poverty reduction strategy will thus need to start by raising the incomes of those involved in the primary sector.

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<sup>83</sup> To compare, in 2010 0.26 percent of GDP was spent on social protection programs (World Bank 2015: Mali Social Protection Policy Note).

89. **Primary sector development cannot be seen in isolation from the development of the secondary and tertiary sectors, or from urban development.** The interrelation between rural and urban sectors is such that one cannot discuss one without the other. Urban areas demand food; the rural sector provides migrant labor. The nature of development is such that urban areas play a critical and often first-mover role: urban areas are the nodes in distribution networks; rural financial instruments will not be developed in the absence of a healthy (urban) financial sector. Telecom services are first developed for urban areas where purchasing power is highest. In other words, well-functioning cities (this includes large cities, but also rural towns) are essential for the development process.

90. **Within the primary sector off-farm growth strategies need to complement farm based growth strategies.** This includes strategies to vitalize small rural towns and district centers. Many rural households depend on casual labor opportunities to supplement their incomes. Others engage in artisanal mining<sup>84</sup> or opt for (seasonal) migration. A large body of literature confirms the importance of employment diversification into non-farm activities as it raises income and reduces poverty, but off-farm economic activities also offer essential services to farmers (transport, commerce and storage services; access to information; repair services).<sup>85</sup> It is probably no coincidence that amongst the zones with the most rapid reduction in poverty are those with substantial off-farm income opportunities from migration (north Kayes), or cross border trade and artisanal gold mining (south Sikasso).

91. **Despite the importance of off farm and urban growth for poverty reduction, increasing agricultural production will be foundational to structural transformation and sustainable poverty reduction.** In this process agricultural (and livestock) sector output continues to grow by expanding the area under cultivation and through productivity gains --powered by the adoption of new technologies (including irrigation). In the process, as the share of food consumers relative to food producers grows (urbanization), markets become more important, the non-farm and agribusiness sectors grow along the food value chain and rural-urban linkages are strengthened. The reallocation of resources from and to agriculture, the adoption of new technologies and the development of new (irrigated) areas are sources of growth within the sector but support economic growth in other sectors as well. The urban poor benefit from lower food prices. The rural poor who farm benefit from productivity gains while non-farmers benefit from spill-over gains. As incomes grow, the stock of human and physical capital increases, leading to further productivity gains and to migration of (now better)-educated people to urban areas (which supports the realization of positive agglomeration effects) and demographic transition as women become better educated and marry later.

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<sup>84</sup> In 2013 20 tons of gold (30% of total exports) came from artisanal and small scale mining (ASM). Because of seasonality, informal, and transitory nature of ASM, exact numbers of miners are difficult to estimate but based on production and census work from other countries in gold areas it is believed to be more than 300,000. The distribution of income varies between different kind of workers in a "pit" (owners, diggers, haulers, loaders, etc.), but an artisanal and small scale miners can earn up to CFA 20,000 per day. This income has helped revitalize farming activities, as the money is often used to purchase fertilizers and pesticides (study on artisanal and small scale mining in Mali (Keita, 2001).

<sup>85</sup> Lanjouw and Murgai, 2009; Christiaensen et al. 2013.

92. **Demand for increased primary production exists.** A growing urban population can be expected to sustain demand for cereals, milk, processed foods as well as animal products, the latter fueling in turn a growing demand for livestock feed. Within the region there seems to be ample scope to benefit from increased demand. Already regions close to neighboring markets have witnessed positive poverty reduction suggesting that access to regional markets might be a factor. The North-West Kayes and South region bordering Senegal (region 8 and 12) have benefitted from the redirection of trade away from the Abidjan corridor following the crisis in Côte d’Ivoire and the improvement of road infrastructure.

93. **A strategy to increase food production would turn high transport costs and a large irrigation potential into a comparative advantage.** Transport cost to the ports of West Africa are notoriously high so increased local food production could substitute imports of rice and wheat (Table 4.1 illustrates that both products appear in the list of 10 most important imported goods) as well as sugar. In the longer run, increased food production in Mali could be exported to food deficit countries in the Sahel.

94. **The scope to increase primary production is enormous.** Despite the increases in production realized over the past decade, agricultural productivity remains relatively low; much arable and irrigable land remains undeveloped and there is substantial scope to substitute imported food stuffs with locally produced food as well as to increase the exports of food and other primary produce (livestock, cotton).

**Table 4.1: Top 10 exported and imported goods (net) –Agricultural products in bold**

Rank	Exports	Value	%	Imports	Value	%
1	Gold	\$1,710,081,949	59%	Refined Petroleum	\$795,207,454	22%
2	<b>Raw Cotton</b>	<b>\$396,931,241</b>	<b>14%</b>	Cement	\$170,651,586	5%
3	Prepared Cotton	\$245,515,276	8%	Medicaments	\$136,057,222	4%
4	Chem. Fertilizer	\$106,538,123	4%	Telephones	\$125,336,013	3%
5	<b>Bovine</b>	<b>\$84,246,146</b>	<b>3%</b>	<b>Rice</b>	<b>\$84,768,861</b>	<b>2%</b>
6	Other Oily Seeds	\$38,418,487	1%	Excavation Machinery	\$74,729,615	2%
7	Construction Vehicles	\$26,498,011	1%	Light Pure Woven Cotton	\$67,012,407	2%
8	Nitrogenous Fertilizers	\$25,264,294	1%	Nitrogenous Fertilizers	\$64,280,974	2%
9	Delivery Trucks	\$23,909,556	1%	Delivery Trucks	\$58,926,758	2%
10	Iron Ore	\$17,842,504	1%	<b>Wheat</b>	<b>\$58,552,980</b>	<b>2%</b>

Source: [http://atlas.media.mit.edu/explore/tree\\_map/hs/import/mli/all/show/2012/](http://atlas.media.mit.edu/explore/tree_map/hs/import/mli/all/show/2012/)

95. **A pro-poor growth strategy would need to be inclusive and adapted to Mali’s different livelihoods.** An inclusive pro-poor growth strategy will need to ensure that production is increased in all major livelihood systems including in the (i) cotton-maize production system found in southern Mali (a system that would need to be made more beneficial to the poor), (ii) the irrigated system used by smallholders as well as large scale farmers in the Office du Niger, the Niger Delta and elsewhere in the country, and (iii) production systems that evolve around the more traditional crops like millet and sorghum. Separate strategies would have to be developed to enhance

productivity in (iv) agro-pastoral and pure pastoral systems of northern Mali as well as (v) in the fisheries subsector.<sup>86</sup> Urban areas (vi) will require their own approach.

96. **To systematically identify opportunities for poverty reduction, the SCD presents a household based framework.** The choice for a household based (micro) approach (as opposed to e.g. a macro-framework) reflects the fact that growth and poverty reduction need to be achieved in the short run through intra-sectoral productivity increases and the fact that most poor are self-employed –either as farmers, fishermen and pastoralists, or in the informal off-farm sector. An approach that puts households, their income generation efforts and their interactions with markets and institutions as consumers and producers of goods and services, seems an appropriate way to identifying critical binding constraints. The framework is summarized in Figure 4.1 and is detailed below. It starts from the observation that poverty can be reduced in globally two ways: by alleviating the (real) budget constraint of poor households through income growth or through a redistribution of consumer goods, assets or income.

97. **One way to alleviate the (real) budget constraint (and hence to reduce poverty) is by making consumption goods less expensive.** The rapid (and welfare improving) increase in the ownership of consumer durables like mobile phones and motor bikes between 2001 and 2010 by poor and non-poor households alike is explained, in part, by the drop in the price of consumer durables as a result of the increased availability of cheap goods produced in Asia.<sup>87</sup> This makes trade policies, and the cost of importing goods of immediate relevance to poverty reduction. The new 2015 ECOWAS Common External Tariff, for instance, raises the tariff to 35 percent for a number of important consumption products and is expected to augment the price of goods consumed by the poorest by over 1 percentage point.<sup>88</sup>

98. **Lower prices for food grains on which poor households spend a large fraction of their budget, matter for poverty reduction.** Households spend a significant share of their incomes on cereals, households in the poorest wealth quintile as much as 26.9 percent.<sup>89</sup> A declining price as a result of increased cereal production is therefore an effective poverty reduction policy.<sup>90</sup> Such a strategy would also be pro-poor as poor households spend more on cereals than better off households it.

99. **Budget constraints can also be alleviated by raising household incomes.** Income is generated from wage labor or from producing goods and services which are auto-consumed or

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<sup>86</sup> Livestock plays an important role in crop agriculture, providing manure and traction services; while livestock products like meat and milk are essential to people's health. There exists an intricate relation between pastoralism and farming in which pastoralists breed and raise livestock which is subsequently fattened and used by sedentary farmers. Such integrated approaches need to be explored more.

<sup>87</sup> World Bank 2014. *The Geography of Poverty in Mali*.

<sup>88</sup> The new tariff structure is also regressive in that the 10% richest are less impacted than the rest of the population (Gourdon and Maur, 2014).

<sup>89</sup> World Bank 2014. Notes on poverty in Mali: *Household consumption profile and redistributive policies*.

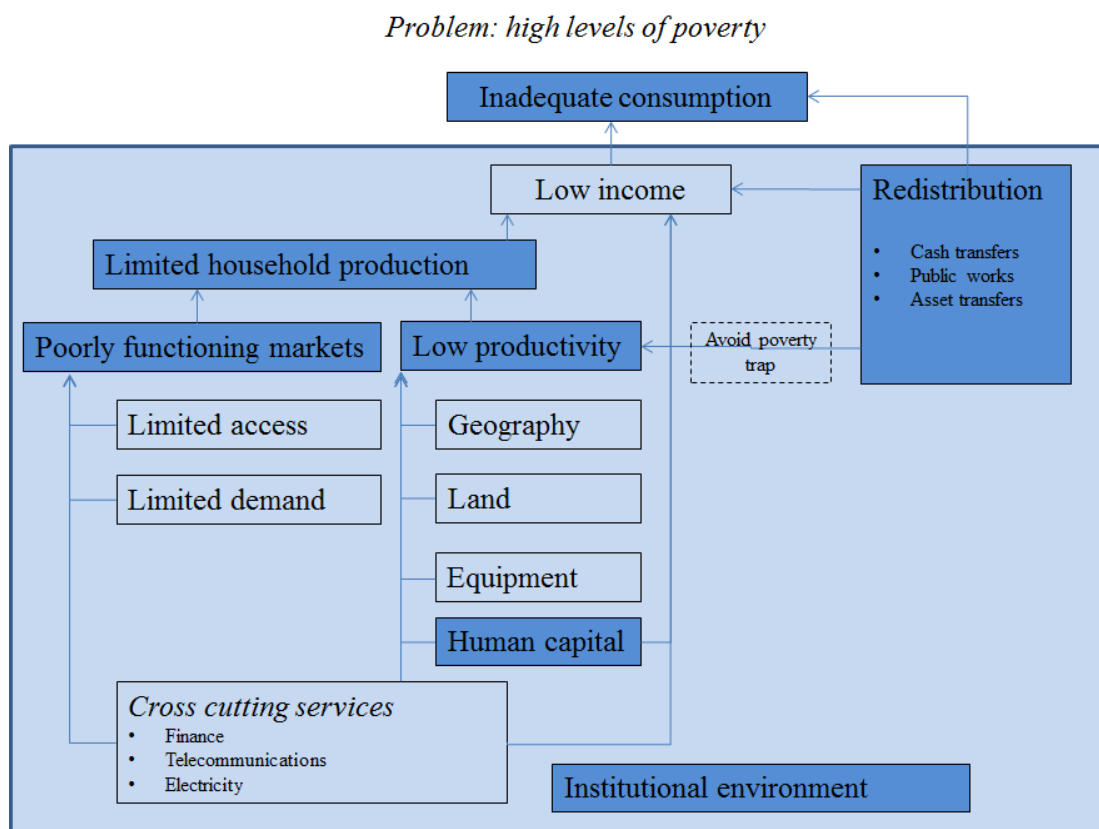
<sup>90</sup> A study by Nogue and Wodon (World Bank 2008), finds for instance that the increase in rice prices as a result of the 2008 food price increase had a significant impact on poverty. The study which presents a CGE analysis also finds that increases in the productivity of rice production have a much greater and even positive consequences on poverty, whereas a reduction in tariffs for imported rice has a much small effect. Kofi Nogue and Quentin Wodon. Impact of Rising Rice Prices and Policy Responses in Mali: Simulations with a dynamic CGE model. Policy Research Working Paper 4739.



exchanged for money and other goods and services. Low levels of own-production can be the result of low productivity (which in turn is affected by a plethora of factors), or could be the result of poorly functioning markets which prevent the fruits of specialization and economies of scale from being realized.

100. **In the presence of poverty traps, safety nets can be instrumental to raising household incomes.** Safety nets can help chronically poor households build their productive asset base, instrumental to structurally reducing poverty. By offering goods or income, they also help reduce poverty directly as they bring the consumption of households above the poverty line.

**Figure 4.1: Analytical framework for poverty reduction**



101. **The entire ‘production function’ is embedded in an institutional environment** which determines whether the household is able to appropriate the fruits of its labor and the presence and quality of public services.

102. **Sustainability is incorporated in the framework in an integrated manner.** Fiscal sustainability is subsumed in the discussion on the institutional environment (PFM in particular)<sup>91</sup>, whereas environmental sustainability –which in Mali is largely related to land and water resources

<sup>91</sup> Section 3 already demonstrated that macro and fiscal management do not pose any serious risks as the authorities are committed to prudent fiscal management. Moreover, with a debt to GDP ratio of 30 percent Mali is only at a moderate level of debt distress. Consequently fiscal sustainability is not discussed any further.

as well as weather variability (climate risk), is integrated in the section on (agricultural) productivity. Worth flagging are the environmental risks associated to mining: these risks are not discussed in detail but are duly noted.

103. **In the remainder of this chapter we discuss the five core components of the analytical framework: (i) the institutional environment, (ii) low productivity, (iii) poorly functioning markets, (iv) human capital and (v) redistribution.**

## 4.2. Institutional environment

104. **A permanent resolution to the conflict in the north of the country is essential for sustainable poverty reduction.** In its absence, violence can be expected to continue, with negative repercussions for welfare for those living in the affected areas. An unresolved conflict will limit interventions to emergency assistance and even this might be ill-advised given the risk of the misappropriation of funds which could prolong the conflict. Continued instability is likely to add to existing (climatic) pressures for outmigration from the north and will have consequences for poverty reduction in the south through the negative spillover effects on investor confidence, aid, the ability to trade with Burkina Faso, Niger and Algeria and increased budget allocations to the security sector.

105. **Peace talks in Algiers have resulted in the signing of a preliminary peace accord between the government and six rebel groups.** This peace accord needs to be ratified following consultation of the rebel groups with their supporters. However not all the active armed groups are party to the negotiations, including the opportunistic armed groups which emerged motivated by possible gains from the peace agreement. The situation is further complicated by the multiplication of auto defense militias. But even if a peace accord is signed– which given the pressure that is exerted on the various actors is not implausible, without credible commitments that the accord would be implemented (requiring deep governance reforms)<sup>92</sup> and the commitment from all armed groups (not just the signatories) to adhere to the agreement, it may not hold in the long run. As long as no sustainable peace is reached, the risk of the conflict spreading remains.

106. **As neither side of the conflict has the means to defeat the other(s) and as a peace accord alone does not guarantee a lasting resolution, the status quo with regular outbreaks of violence and two authorities controlling different territories presents a likely scenario for the future.** If this scenario plays out, it may be expected that the pro-independence forces will aim to create basic governance structures and to contain the militant groups as a means to gain legitimacy. Whether they can do so successfully is complicated by the changing nature of the north itself, due to a combination of presence of criminal and fundamentalist networks, a breakdown in traditional authority, and a rising level of social and inter-communal tension.

107. **A more violent scenario is also a possibility** particularly when the army of Mali intends to retake the north and major clashes break out. This may lead to the forging of a close

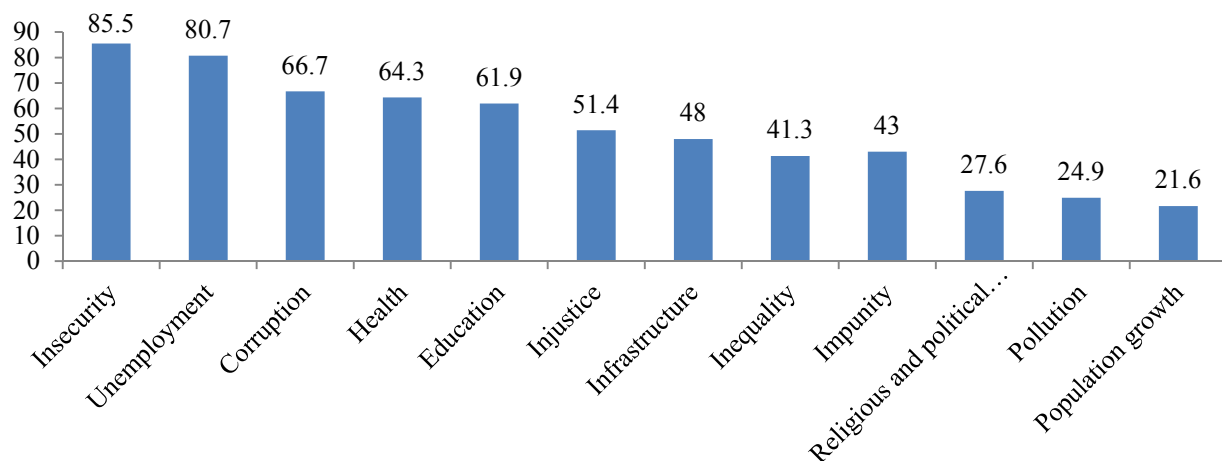
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<sup>92</sup> On the rebel side there are considerable doubts about the government's intention to implement the peace accord, as the five past agreements concluded in the past 23 years were not implemented.

collaboration between those seeking legitimacy for an independent state and the militant groups whose main interests are a combination of financial gain and ideological proficiency.

108. **Both scenarios have the intrinsic risk that they further undermine the legitimacy of the authorities in Bamako though the time frames for this may differ.** An unsuccessful military intervention by the government could lead to the rapid deterioration of the Government’s legitimacy. If a status quo persists, it may give extremists groups the opportunity to recover and regain their strengths which might eventually be used to challenge the authorities in Bamako –as happened in 2012. It also poses the threat of a breeding ground for Jihad, especially because of the financial benefits it may bring the poor. Already insecurity tops the list of issues the government should address (Figure 4.2) and the status quo sends signals to groups in south Mali about the inability of the state to guarantee security, a situation that has already led to violent attacks in different locations across Mali’s territory. A continuation of the status quo in which citizens have limited confidence in the state, opens space for religious leaders to venture into politics, potentially threatening the secular nature of the state.

**Figure 4.2: What are the main problems that the government should address?**



*Source:* Friedrich Ebert Stiftung (August 2014): Mali-Mètre. Opinion poll carried out amongst adults aged 18+ in all regional capitals.

109. **Stability in the north and poverty reduction across Mali’s territory requires addressing deep rooted governance problems.** Mali’s tradition of seeking consensus is an asset when it comes to bringing about reconciliation in and with the north and in identifying pathways to poverty reduction. But the system of consensus politics which has emerged since 1991 saw little in terms of consolidation of state institutions and evolved into a system which critics refer to as a “procedural democracy”.<sup>93</sup> This system systematically buys off potential opposition: public officials through corruption, nepotism, misappropriation of funds; private entrepreneurs by offering tax exemptions, import licenses, opportunities for money laundering and public contracts and civil society through co-optation. This approach to political survival has been at the expense of the decentralization process and has led to deep rooted distrust in officialdom across the nation.

<sup>93</sup> Harmon (2014).

It has also undermined the ability of the police and the army to provide security and of the public service in general to deliver services.

110. **A strong sense of injustice and impunity is fueling a legitimacy crisis that ultimately limits the ability of the state to reduce poverty.** The press (which is relatively free) and the “Bureau du Vérificateur General” have brought major corruption scandals to the attention of the public. But as very little sanctions followed, it added to a strong sense of injustice and impunity.<sup>94</sup> This is aggravated by the fact that criminal networks have been allowed to settle and expand. It made government less relevant as a government that fails to address impunity, to correct illegal transaction, to fight money laundering and criminal behavior in general and which is not able to clear itself from involvement in such actions, quickly loses the confidence of its population. If this kind of impunity is not addressed a further deterioration of the legitimacy of the state seems unavoidable with negative consequences for the ability to bring peace to the north and to undertake developmental activities across the nation.

111. **There is a window to restore state legitimacy but this may be closing, putting the prospects of poverty reduction by 2030 at risk.** The presidential and parliamentary elections of 2013 resolved the institutional legitimacy aspects of governance but the social contract remains weak. After an initial surge in confidence in the presidency just after the elections in September 2013, disillusionment seems to be settling in. One year after the election, in August 2014 confidence in the president had dropped 20 percentage points to 75 percent (Friedrich Ebert Stiftung 2014). This is still high but masks that the percent of Malians with a very positive appreciation of the president declined appreciably from 58 to 31 percent, while those without any confidence in the president increased from 3 percent to 22 percent.

112. A professional civil service, effective and accountable decentralization, improved PFM systems, improved business environment, stronger (social) accountability institutions and greater transparency are critical elements for regaining state legitimacy.

### **Professionalism of the civil service**

113. **Patronage undermines the capacity of the civil service.** As noted in a 2003 report<sup>95</sup>, Mali has a political system marked by patronage, whereby public sector posts are filled with those who produce rents for their patron, for the political party and for themselves. Senior posts are filled through connections instead of qualifications; as new political officials are appointed existing senior servants are sidelined often without explanation. The sale of administrative influence often has high pay-offs, and clients exist in virtually all areas of society. Posts in the public administration can be viewed as assets that generate licit flows of income including wages and allowances, and illicit incomes from embezzlement of public property, sale of public influence, and use of discretionary power to get private gains. (Illustrative of this is the fact that all graduates of the civil service entry exam want to join the customs or tax departments). As a result, promotions

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<sup>94</sup> A survey by the Friedrich Ebert Stiftung in August 2014 found that 72 percent perceives governance in Mali as poor. Most affected are: justice (72 percent), police (68 percent), schools (61 percent), municipalities (58 percent), health services (58 percent and customs (55 percent). Respondents were also asked what they considered good governance. State of law (35 percent), good management of state resources (32 percent), transparent management of resources (31 percent), provide services (30 percent) and fight against corruption (30 percent).

<sup>95</sup> World Bank “Recommandations Visant à Renforcer le Programme Anti-Corruption,” (Washington DC, 2003).

and vacant posts are filled with people whose credentials may be questionable. These practices spread in the administrative hierarchies, widening the circle of complicities, and making it difficult for those involved in the system to get out from the network. Attempts at promoting a multi-racial Mali (through postings based on regional origins) also demonstrate the reality of a country in which the public service's rules and practices reflect a complex political equilibrium which often but not always trumps technical goals, with dire effects on service provision. Because of this, and because of the low quality of the education system, capacity issues are salient at all levels, and are even more acute outside the urban centers: 66 percent of category A civil servants are based in Bamako, and only 0.7 percent in Kidal<sup>96</sup>.

### **Decentralization:**

114. **Decentralization, a flagship agenda for the newly democratic Mali in 1991, has struggled to achieve its dual objective of bottom-up development and peace and stability.** The impetus for decentralization that existed following the democratic transition in the early 1990s dissipated after a few years, and its objectives were not met. Although Mali's decentralization is labelled devolution, it remains a very controlled process, with the territorial administration exercising an ex ante control (*tutelle*) on most important decisions of the Communes. The dual institutional structure in which a territorial administration co-exists with a sectoral deconcentrated administration overseeing the decentralized entities, increases uncertainties and leads to inconsistencies when implementing respective mandates. It also puts pressure on already limited resources (financial and human); fiscal decentralization is very weak, and only fully effective for the education sector. The government of Mali has decentralized significant expenditures at the level of the regions, yet communes receive very little public resources, and are not able to collect much (cases of *incivisme*), partly because the population perceive municipalities as corrupt (although there are strong local variations). Furthermore, some of the resources that are deemed "decentralized" are in fact earmarked for special programs. Capacity (especially outside Bamako and the few urban centers) is very weak, and decentralized entities as well as deconcentrated services, which in theory should support the communes, have little financial and technical means to operate.

115. **Successful decentralization will be particularly important for peace building in the north.** All past peace agreements, as well as the preliminary agreement signed on March 1<sup>st</sup>, feature decentralization as a tool for peacebuilding and increased economic development of northern Mali. In practice it has had very limited success, either because agreements were not followed up or because their implementation mechanisms were contested – see table 4.2. The fact that decentralization did not meet the development promises for the North created resentment and has fueled cyclical rebellions, making it particularly important that this time around it is implemented well and informed by lessons from the past.

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<sup>96</sup> FP 2009 report, October 2010.

**Table 4.2: Peace agreements and programs for development of the north: a legacy of distrust**

	<b>Provisions</b>	<b>Implementation</b>
Tamanrasset Agreement, January 6, 1991	Special administrative status to the North to administer freely their local matters via local representatives elected in assemblies, Increased development efforts	Not implemented for fear of partition, but 1991 National Pact source of decentralization for entire country adopted
Agency for the Development of the North (ADN) created in March 2005	Support investment and development in the regions of Gao, Timbuktu and Kidal	Lower budgetary allocations than announced, claims of corruption and inefficiency, used as cooptation mechanism. Agency operating mostly from Bamako. Out of initial goal to reinsert 10,000 youth over 5 years, as of December 2014, only 700 had been reinserted.
Algiers Accord of July 4, 2006	Establishment of a temporary regional council of coordination and a special investment fund to develop the North. In addition, the agreement renewed the preferential fiscal status of the North that had been granted by the National Pact.	Special investment fund officially created in 2009 to support economic, social and cultural development of the North, and pledged 1.7 billion dollars, worth of financing over a ten year period across 39 development projects in Kidal, Gao, and Tombouctou. No data available on the nature, number, and results of projects implemented by this fund.
Special Program for Peace, Security and Development of Northern Mali (PSPSDN), 2011	US\$65 million program primarily financed by EU to reduce insecurity and increase development in the North. Aimed to establish an administrative presence of the State in eleven strategic sites, with development projects in parallel	Perceived as top-down, invasive, skewed towards security (International Crisis Group). Implementation disproportionately supports the military rather than development projects. Never fully implemented and ultimately abandoned because of population' opposition to it.
Ouagadougou Agreement of June 2013	Article 20 of the Agreement indicates that 60 days after the next presidential elections, a dialogue will be launched between the government and the rebel groups that signed the agreement to discuss the administrative and institutional and organization of Northern Mali, as well as development strategies of territorial collectivities	MNLA refused to participate in the national consultations on decentralization of October 2013 (Assises de la décentralisation), and in the North decentralizations consultations of November 2013 (Assises nationales sur le Nord), which limited possibility to reach consensus on the outcomes. November 2013 consultations on the North agreed (without MNLA) to create Program of Accelerated Development of the North (PDAN)

## PFM systems

116. **Tax revenue, presently about 15 percent of GDP remains below the estimated potential of 20 percent of GDP.** Revenue collection has improved in line with WAEMU guidelines since 2008 but remains below the WAMEU average. Fiscal administration and policies suffer from inefficiencies, with very high levels of tax exemptions, fiscal subsidies, low yield, fiscal evasion and “incivisme”, and a low tax base. Mining revenues, while making up a large share of the budget, could be increased.<sup>97</sup> Aid, which makes up more than half the capital expenditures (2006-14) and unpredictable budget support, are a complicating factors for revenue management.<sup>98</sup>

117. **Distortionary aspects of the tax and tariff system need consideration.** Under the WAEMU external tariff, processed food can be imported after paying an external tariff of 10 percent. Agrobusinesses transforming foodstuffs pay 18 percent value added tax. Imported food stuffs, if sold through formal channels will pay 18 percent VAT, but in practise much of the imports are sold in the informal market where no value added tax is collected. This puts local transformation of agricultural produce at a disadvantage, even more so when importers are exempt (or avoid) paying taxes.

**Table 4.3: Mali public expenditure by function**

	2011	2012	2013	2014 IB	2014 SB	2015
Agriculture	10%	8%	9%	10%	11%	14%
Basic Education	14%	17%	12%	12%	10%	11%
Public Administration	9%	8%	8%	11%	11%	10%
Defense	8%	12%	12%	11%	11%	10%
Mines, Water	8%	4%	7%	9%	13%	9%
Higher Education	6%	7%	6%	6%	5%	6%
Health	8%	6%	5%	7%	6%	6%
Public Works and Urban Development	7%	3%	7%	8%	7%	6%
Social Sector	4%	5%	4%	3%	2%	3%
Transport	3%	1%	1%	1%	2%	1%
Other	23%	29%	30%	22%	21%	24%
Spending in northern regions	3%	5%	8%	8%	7%	8%

Source: IMF 2014

118. **Public spending is broadly aligned with the poverty reduction strategy but is very poorly targeted.** The overall pattern of spending is broadly aligned with the poverty reduction strategy, which puts much emphasis on strengthening the agricultural sector and improving education. The conflict has affected budget allocations and capital investments declined significantly in 2012, but these have since recovered. Spending on the army increased in 2012. Regional allocations have increased over time, with a stable share for each region and an increase in the northern region’s share of overall expenditures. Targeting of spending is an important issue, however: electricity subsidies (\$100 million) and fuel subsidies (\$ 60 million) largely benefit non-

<sup>97</sup> World Bank 2015: Brief on the taxation of extractive industries in Mali.

<sup>98</sup> See PEMFAR

poor urban dwellers; fertilizer subsidies (18 percent of the budget of the Ministry of Agriculture) benefit the better-off farmers. All together it has been estimated that 75 percent of public resources allocated to education benefit the 20 percent wealthiest. The 10 percent most educated appropriate 50 percent of public resources on education; children from the wealthiest quintile consume 18.5 times more public resources than those from the poorest quintile.

119. **Procurement’s prevailing rules and regulations are inoperative.** Procurement planning is weak and procurement processes are excessively long. The average time limit for awarding contracts in 2011 and 2013 was respectively 183 days and 121 days. Such delays increase the chances of frauds and corruption. The consequences of poor procurement systems are dire: completion rates for investment projects managed by country systems reached a low 39 percent in 2010, and 40 percent in 2011<sup>99</sup>. A high share of donor’s projects also suffers from suboptimal rates of execution (56 percent in 2010, 69 percent in 2011). A complex and heavy regulatory system also include provisions that allow for exceptions and waivers with negative effects on planning and transparency – for instance, “gré à gré” procurement processes or the inclusion of “sovereignty projects” (“projets de souveraineté”) without prior feasibility study or financing available<sup>100</sup>.

120. **Internal and external control institutions lack financial and human resources, and their independence is limited (links to presidency).** The creation of the Bureau de Vérificateur General, in 2003 duplicated to some extent existing institutions. Largely based on the Canadian model, it differed in a fundamental way by reporting to the President instead of reporting to Parliament. It has nevertheless brought information on mismanagement and corruption to the attention of the public. In its 2012 annual report, the Bureau identified financial losses amounting to FCFA 49.4 billion of which FCFA 35.2 billion (3 percent of the total budget and 71 percent of identified losses) were related to mismanagement and fraud. Remarkably, most of the mismanagement occurs in areas with significant and often redundant controls including public procurement. Mismanagement thus seems to be the result of the absence of sanctions rather than the absence of control (in fact there may be too many controls)<sup>101</sup>. The fact that the Bureau has no power of sanction and that there is very little follow up on the implementation of audit recommendations underscore the severe problem of impunity.

## **Business environment**

121. **Personalized (as opposed to anonymous) relations characterize the business environment and prevent the emergence of a vibrant private sector.** The bi-modal structure of Mali’s formal business sector with few very large firms, very few medium sized firms, and many small firms is characteristic for an environment where firms either operate under the protection of the state, or try to stay under the radar. The huge tax exemptions accorded to some, the reliance on (import) licenses to favour one firm over the other and the presence of a tax system that is biased

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<sup>99</sup> WAEMU case study

<sup>100</sup> The off budget purchase of a presidential plane and non-lethal military equipment under “national interest” or “secret defense” procedures are just the latest illustrations of governance issues that permeate all sectors and activities: In response to this scandal, the Government adopted the arête No 241-2037/MEF-SG adopted by the government on July 31, 2014 that provides the list of emergency spending procedures (extra budgetary expenditures) “Dépenses Avant Ordonnancement - DAO) and the modalities for regularization.

<sup>101</sup> IMF, 2014 audit of the public expenditure chain.



against medium sized enterprises (high levels of VAT; complex tax procedures) support this view. Low rankings on the doing business indicators for paying taxes (145), trading across border (163) and contract enforcement (128) confirm it. The bias that results goes at the expense of private initiatives, and is one factor explaining the underdevelopment of rural value chains, which depend on many small and medium sized firms to ‘aggregate’ produce.

122. **Difficulties in accessing land for development impairs private initiative.** The land tenure system is characterized by legal pluralism, and the coexistence of different systems (customary tenure systems are combined with European principles of ownership). The lack of transparency in the administration of rules, profound contradictions and inconsistencies between the laws, the splintering in the system of authority and the unregulated plurality of arbitration bodies lead to opportunistic behaviours and elite capture. The lack of clarity on who owns what land and which institution holds jurisdiction when reduces investor confidence. It also decreases the overall efficiency of the economy as land is ‘lost’ to speculative purposes, remains unused or managed sub-optimally (low investments); because of different claimants to the land, it cannot be used as collateral.

123. **Unreliable accounting information for investors, bankers and other economic agents to base their decisions on contributes to the poor investment climate and weak financial intermediation, and is a major constraint to access to credit.** Lack of financial transparency in the business sector, due to lack of strong regulation and relatively weak practices in accounting and auditing affect the ability of the authorities and development partners to deliver development results and ensure that these funds are used for their intended purpose. This also affects the ability of the Malian tax authorities to properly assess and collect taxes.

### **Accountability and transparency**

124. **Effective and accountable decentralization, improved PFM systems and improving the business climate are hard to achieve reforms as they are of immediate interest to the economic and political elites but** approaches to address these issues are emerging. A first approach is to change elite incentives by strengthening accountability and transparency, building on the realization that when poor performance is exposed, publicly or privately, it can motivate service providers to behave better –especially in tight-knit communities at the local level. Greater versatility and flexibility to act decisively when reform opportunities arise, or to adapt interventions using feedback on the success of the intervention is another approach that comes from the literature on successful reform in a personalized competitive settlement.<sup>102</sup>

125. **An increased ability to deliver requires strengthening the power of citizens to demand accountability.** Since 2012, donors appear to have become more attuned to the deep-seated governance problems in the country and are more engaged, to the point<sup>103</sup> where presently the government is held more accountable by powerful donors, while the domestic population’s knowledge and capacities are too limited to hold the government accountable. This places development partners in an influential position but it is a situation that is neither sustainable nor

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<sup>102</sup> Andrews, Pritchett and Woolcock 2013.

<sup>103</sup> The suspension of IMF and World Bank disbursements in 2014 following a corruption scandal involving the purchase of a presidential aircraft and military supplies illustrates this.

desirable. Strengthening civil society is not straightforward however. Not unlike other countries where external aid represents a significant share of revenues, formal civil society organizations in Mali comprise a multiplicity of small organizations with limited membership and representativeness, and poor accountability (or, in some cases, upward accountability to the donors).<sup>104</sup>

**126. Yet there is a strong tradition of dialogue and accountability in Mali, on which one can build.** The Annual Question and Answer Assembly is an interesting example of a modern mechanism based on this tradition – which has been replicated at the level of the municipalities. The indigenous civil society entities, whose own institutions are crafted to incorporate tested pre-colonial institutional arrangements, seem to offer opportunities to build authority, cultivate autonomy, enhance accountability, and capitalize on existing capacity to reinforce governance efficacy at the local level. At the local level, indigenous socio-political institutions but also (cotton)-producer organizations, continue to provide multiple centers of governance at the levels of the village, inter-village geographic areas and significant natural resource units (watersheds, forests, fisheries, pastures). These entities, mostly informal, are controlled by their members, and leaders are accountable on terms widely understood and supported by members; thus they enjoy considerable legitimacy, authority and power. One key indicator of the legitimacy and authority disparities between such institutions and formal state institutions is the facility with which they mobilize members’ funds to implement their activities.<sup>105</sup>

**127. Despite its limitations, decentralized entities have been able to mobilize the population in the definition of local development plans, and to start a process of increased access to services, albeit limited to the creation of social infrastructure (health, education, water).** Interestingly, local elections participation rates are structurally higher than for national elections (43 percent in 2004 and 45 percent in 2009). Supporting stronger accountability mechanisms at the local level, based on existing organic institutions, together with increased human and financial capacities, might go a long way in rebuilding the social contract.

#### **Box 4.1: The annual Question and Answer Assembly**

The annual Question and Answer Assembly (Espace d’interpellation démocratique) was created during the transition to democracy in 1991. Building on a strong national tradition of dialogue, it allowed individuals to bring human rights violations before responsible government officials – including top officials such as ministers.

The day’s events were broadcast on radio and television, creating a strong interface and allowing individuals to bring issues at the forefront of the national debate.

The event lost its appeal because of a lack of follow-up on the issues brought forward. Although government ministers would participate, they did not necessarily answer the questions or followed up with tangible actions.

**128. Accountability can be enhanced by putting citizens in a position of choice.** In many instances citizens are opting out of the public system, providing services themselves – as is the

<sup>104</sup> A recent civil society assessment describes it as a somewhat opportunistic civil society, dependent on external financing, which favors development projects over advocacy. Furthermore, when CSOs support advocacy, there is sometimes a disconnect between the fight for issues at the forefront of the national debate in the capital, compared with issues that matter for the majority of the population.

<sup>105</sup> USAID report 2010.

case with community schools and Koranic schools. In such cases they end up paying for services twice, as tax paying citizens and as consumers buying a private service. But citizens can also be supported in exercising their choice. Voucher systems have successfully introduced in systems varying from education to the provision of extension services, and if designed well, can provide a catalyst for private sector investments in a sector (thus leverage public funds).

### 4.3 Increasing productivity on and off farm

129. **As land for rain-fed farming is still relatively abundant (only 3.2 million hectares out of a total of 12 million with cultivation potential is cultivated)<sup>106</sup> thus the difference between poor and non-poor households in crop farming areas is largely driven by the ability to bring land under cultivation.** In most livelihood zones, access to land is not a limiting factor (although good quality land may be hard to find) but access to labor, to agricultural inputs and to productive assets is. Hence a key difference between wealthier and poorer households is how much land they are able to cultivate.

130. **In addition to this general finding each farming system presents unique opportunities and constraints.** Some more affluent areas have strong potential to reduce poverty through intensification of staple cereal production (crop yields for millet and sorghum are estimated at 0.8 tons / ha, despite the potential to obtain 3.4 and 6.6. tons, respectively<sup>107</sup>) and diversification into high value-added commodities (fruit and vegetables, sesame, fonio etc.) that is oriented towards processing and exporting quality products. In areas of low agricultural potential, poverty reduction is best achieved through approaches that mitigate risk, rather than maximizing production. Assistance transitioning out of agriculture would be important complements to agricultural interventions in these areas.

131. **In all areas, support for research and extension services is essential.** A wide range of studies on the returns to investments in agricultural research and development show that these returns are exceptionally high. A global meta-analysis of 1,886 evaluations of the payoffs to investments in agricultural R&D, found an average rate of return of 81 percent per year, indicative of a widespread and persistent underinvestment.<sup>108</sup> More recent meta-analysis puts the median annual return of agricultural R&D investments at 9.8 percent<sup>109</sup> and 33 percent per annum for Africa.<sup>110</sup> Recognizing the high social profitability of spending on agricultural R&D, members of

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<sup>106</sup> Some caution is warranted before accepting the argument of relative land abundance. Much existing land may not be exploitable due to the lack of sufficient water, or is inaccessible due to insufficient infrastructure. Demographic changes are predicted to increase Mali's rural population density from 18 people per km<sup>2</sup> of arable land in 2010 to 29 people per km<sup>2</sup> of arable land in 2050 (Jayne, Chamberlin & Headey 2014).

<sup>107</sup> Global Yield Gap Atlas, Accessed 10 November, 2014. Available at: <http://www.yieldgap.org/gygamaps/excel/GygaMali.xlsx>

<sup>108</sup> Alston, J. M., Chan-Kang, C., Marra, M. C., Pardey, P. G., & Wyatt, T. J. (2000). A Meta-Analysis of Rates of Return to Agricultural R&D: Ex Pede Herculem. Washington, D.C.: International Food Policy Research Institute. 163 pp.

<sup>109</sup> Hurley, T. M., Rao, X., & Pardey, P. G. (2014). Re-examining the Reported Rates of Return to Food and Agricultural Research and Development. *American Journal of Agricultural Economics*, 1–13. doi:10.1093/ajae/aau047

<sup>110</sup> Alene, A. D. (2010). Productivity growth and the effects of R&D in African agriculture. *Agricultural Economics*, 41, 223–238. doi:10.1111/j.1574-0862.2010.00450.x

the African Union declared in Malabo (June 2014) their target of investing 1 percent of agricultural GDP in public agricultural R&D. At 0.61 percent in 2011, Mali's agricultural research intensity ratio falls well below this 1-percent target. Four public agencies conduct agricultural R&D in Mali. These agencies are dependent on donor funding, their staff is aging rapidly and the relation with extension services is limited, hindering knowledge exchange with farmers. Agricultural R&D performed by the private sector is minimal.

### **High potential rain-fed**

132. **High-productivity semi-arid agriculture in southern Mali has excellent growth prospects.** Cultivated land in this zone is generally abundant but is under-utilised. The large gap between observed and potential crop productivity, even when recommended rates of inorganic fertilizer are used, reflect constraints related to soil fertility and moisture<sup>111</sup>. Although land is sufficiently abundant to permit substantial fallow periods in the crop rotation, there are signs of fertility decline and an increasing acidity level in some soils, sometimes associated with prolonged use of inorganic fertilizers without attention to maintaining organic matter levels. As the application of mineral fertilizer to cereals has declined, due to deteriorating input/output price ratios, farmers are experiencing increasing difficulty in maintaining soil fertility, while weeds such as striga have become more difficult to control. Analysis of nutrient balances in southern Mali's cotton zone show that overall community-level nutrient balances are negative and that nutrient depletion is concentrated in 'hot spots' where the surrounding households also have low soil fertility and limited access to inputs (manure, carts)<sup>112</sup>.

133. **Value chains for fruits (mango, papaya), vegetables (shallot / onion, potato) and other non-traditional products such as fonio have demonstrated their potential export competitiveness in international and regional markets.** Mango has shown great potential for both the export of fresh fruit and processed products (dried mango, mango concentrate). Significant new revenue (25 percent of rural GDP) is derived from this sector, positioning it as an important diversification away from cotton. This sector is already positioned as a base for industrialization of the country. Strengthening the organization of value chains and market access in more productive areas of the country would help to improve the supply of affordable grains, fruits and vegetables to drier, more vulnerable areas.

134. **The performance of the CMDT and the structure of the cotton sector in general is a binding constraint to growth and poverty reduction in Mali.** In contrast to the other cotton producing countries in the region, the liberalization of the cotton sector in Mali has been particularly protracted. Many small producers have left the system due to the crisis of debt and declining yields and soil fertility.

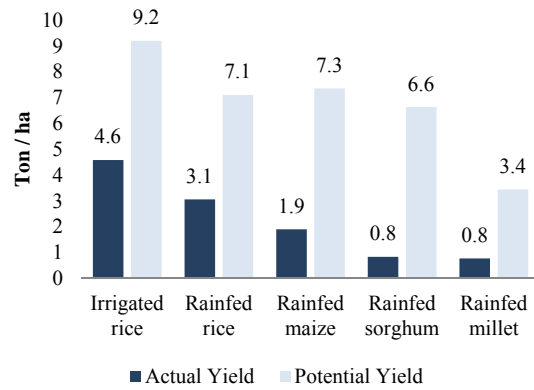
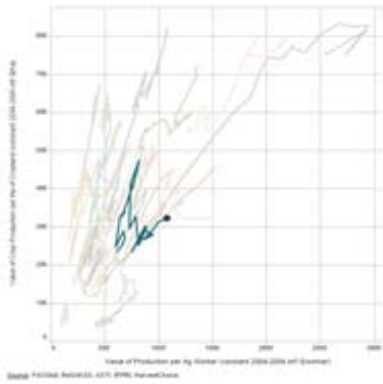
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<sup>111</sup> Jayne, Chamberlin & Headey 2014.

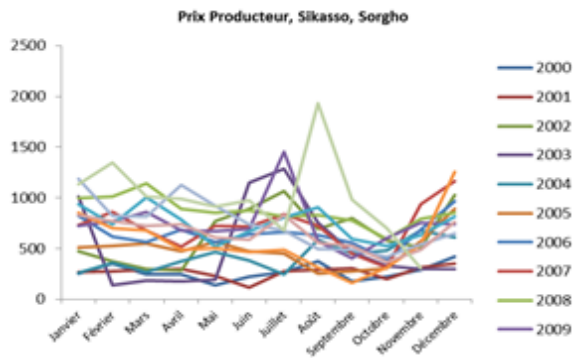
<sup>112</sup> Ramisch, 2005.

**Figure 4.3: Determinants of agricultural productivity**

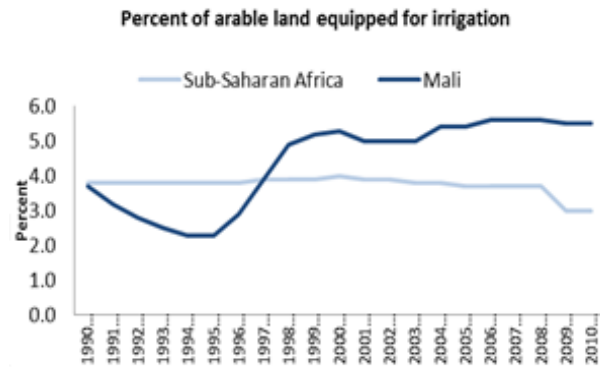
*Malian farmers have experienced stagnating productivity and realize a small fraction of potential crop yields*



*Price uncertainty limits farmers' private investments in agriculture*



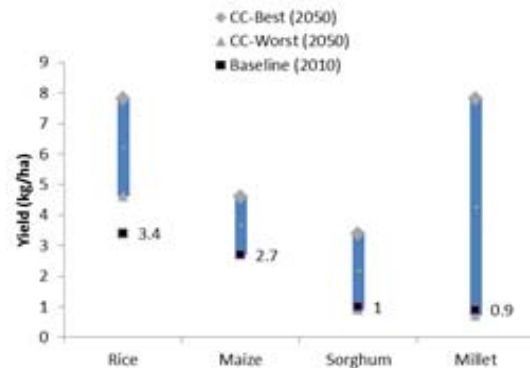
*Most agricultural land is rainfed, adding to producer risk*



*Access to the basic capital for agriculture is low, particularly among women*

	Male	Female	Total
Average plot size (cereals)	1.7 ha	0.6 ha	1.7 ha
Access to agricultural credit	4.7%	0.6%	2.7%
Access to improved seeds	21%	7.0%	20%
Access to chemical fertilizer	31%	14%	31%
Access to herbicides	16%	4.2%	15.6%

*A worst case climate change scenario would erase crop productivity gains in 2050.*



Source: INSTAT 2004/5 Census of Agriculture; Global Yield Atlas 2014; Observatoire des Marchés Agricoles 2014.

135. **Weak producer organizations limit farmers' access to technical knowledge, input markets, and output markets in the current system.** Extension services typically rely on farmers organizations to disseminate research. With regard to output markets, producer organizations

would help to overcome the farm size restrictions of small producers and create economies of scale to help those farmers connect with traders and processors, avoiding income losses due to perishability and poor market access. Access to input markets, including leasing solutions and fertilizer distribution, is also constrained for small farmers who do not have the purchasing power or the credit worthiness of farmer organizations. Successful seed distribution relies on farmers associations. Despite seed sector reform, no certified seed of these crops is sold in local markets; instead, farmers prefer to rely on themselves or each other for seed. Women are mostly excluded from this type of informal seed exchange. Mali's highly structured farmers' associations could play an even stronger role in testing and promoting demand for certified seed, including new approaches to systematically include women.<sup>113</sup>

### **Low potential rainfed**

136. **In semi-arid farming systems, crops and livestock are of similar importance.** The main sources of food are sorghum and pearl millet, which are rarely marketed. Other crops such as sesame and pulses are sometimes sold. Livestock are kept for subsistence (milk and milk products), offspring, transportation (camels, donkeys), land preparation (oxen, camels), sale or exchange, savings, bride wealth and insurance against crop failure. The population generally lives permanently in villages, although part of their herds may continue to migrate seasonally.

137. **Households vary in their food security status.** Upper stratum households are food secure even in most bad years, because they have enough livestock to trade for the grain they lack. Households in the lower stratum are chronically food insecure - in both good and bad years - because they cannot grow enough grain to feed themselves and they have few livestock or other assets to exchange for grain. Coping mechanisms include: (i) growing early-maturing, drought-resistant millet and sorghum varieties; (ii) storing grain from one year to the next; (iii) selling or exchanging small ruminants to buy grain in the hungry season; and (iv) in years when crops fail and where off-farm work opportunities are available, earning off-farm income to buy grain in order to minimize distress sales of animals. The poorest, who no longer have any animals to sell, cope by reducing meals, collecting and eating wild foods, cutting and selling firewood and working for others in exchange for meals.

138. **The main cause of poverty is successive droughts, leading to crop failure, weak animals, and the distress sale of assets.** Typical households take seven years to recapitalize after a shock. Destitution occurs when households have eaten all their seed and lost all their breeding animals, so that they cannot plant or start reconstituting their herds after the drought ends. Apart from drought, typical household problems include: (i) acute dry season water shortage for people and animals; (ii) shortage of seasonal grazing; (iii) physical isolation, lack of roads and market access; (iv) disadvantageous terms of trade for both crops and livestock; and (v) lack of health facilities and schools.

139. **A successful poverty reduction strategy rests on stabilizing yields and reducing risk, rather than maximizing yields.** Agricultural growth potential is modest and climate risk is likely to increase due to climatic changes. A key priority in areas without irrigation potential will be to

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<sup>113</sup> Diakit , L., Sidibe, A., Smale, M., & Grum, M. (2008). Seed Value Chains for Sorghum and Millet in Mali, International Food Policy Research Institute, Discussion Paper No. 749 (February), 34 pp.

reduce the risk of crop failure in drought years through improved land husbandry and water harvesting, in addition to the multiplication of the use of palatable, drought-resistant, early-maturing millet and sorghum varieties. Another important poverty reduction strategy in this region is support for exit out of agriculture.

**140. Wide-spread adoption of sustainable land and water management practices could form the foundation for climate resilience and food security.** There is increasing recognition that raising organic matter, moisture retention, and other forms of soil rehabilitation in addition to greater inorganic fertilizer use are preconditions for sustainable agricultural productivity growth<sup>114</sup>. Soil management practices such as demi-lunes (half-moon-shaped bunds) and stone contour bunds have proven highly successful in Mali, Niger, Nigeria, and Burkina Faso to mitigate water erosion and improve soil fertility. These practices are labor intensive and could lend themselves to pairing with some social protection schemes implemented after the harvest. Other strategies to promote resilient agriculture include soil and water conservation, watershed planning, water harvesting, integrated nutrient management, low tillage, secure biodiversity and agroforestry.

**141. Degradation of the savannah vegetation reduces forage reserves, fuel wood supplies, and agricultural productivity.** Over the past few years, a deforestation trend has been observed mainly due to overgrazing, wood trading, seasonal uncontrolled bushfires, and domestic energy demand; (almost 90 percent of household rely on fuelwood and charcoal for their energy needs.<sup>115</sup> More than 100,000 ha of forest land is lost each year, much more than the annual reforestation rate of 10,000 ha/year.<sup>116</sup> The protection and management of wood species is a low-cost way for farmers to intensify and diversify their rural production systems and increase their incomes. Farmers can support regreening without procuring expensive inputs simply by investing their labor in the protection and management of wood species, which produces much better results at lower costs than tree planting.<sup>117</sup> *Acacia* reforestation would promote the rehabilitation of degraded areas that have become unfit for agriculture. *Acacia*'s powerful rooting system makes it is efficient for dune-fixing as well as wind and water erosion control and its nitrogen-fixing ability improves soil fertility, thereby restoring agricultural productivity. The cost of agroforestry strategies such as natural regeneration of tree cover, live fencing, shelterbelts, and woodlots can vary greatly, from US\$166 a hectare to as much as US\$906. Depending on the technology and local circumstances, the benefit-cost ratio can turn positive after four years from adoption.

**142. Inadequate soil fertility management limits farmers' yields and increases their reliance on expensive inorganic fertilizers.** Combining organic and inorganic fertilizers in strategic amounts, based on certain combinations of crops and agro-ecological zones and coupled with soil and water-conserving mulch, can help farmers adapt to climate variability while also contributing to soil carbon, soil health, and higher yields. Organic fertilization can come from manure, mulch, crop residues, or nitrogen-fixing trees or legumes. Supported by extension, the benefits of this technology can outweigh the costs in the short, medium, and long terms. It can also reduce the financial burden of private and public expenditure on inorganic fertilizer. Fields can be

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<sup>114</sup> Powlson et al. 2011; Snapp et al. 2010; Tittonell & Giller, 2013.

<sup>115</sup> Stratégie nationale de Biodiversité et Plan d'Action, MEA, 2000 ; Problématique des feux de brousse, DNCN, 2008; Stratégie Nationale de Gestion des Aires Protégées, 2011; Politique Nationale Forestière, DNEF, 2012

<sup>116</sup> Politique Nationale Forestière, National Directorate for Water and Forestry (DNEF), 2012

<sup>117</sup> C. Reij, Building on Successes with Regreening in the West African Sahel, IFPRI 2012

considered in terms of three categories: those which are (i) responsive to fertilizer use; (ii) non-responsive but still productive; and (iii) non-responsive and degraded<sup>118</sup>. The third category of fields will require rehabilitation of several years before yields can be improved.<sup>119</sup>

## **Irrigated**

143. **The Office du Niger area in Mali [zone 7] is the largest irrigated scheme in West Africa**, with nearly 100,000 ha currently under cultivation, and the potential for expansion of irrigable cultivation area to cover between one and two, million hectares. The area covers the flat dry lands in the command area of the Markala dam, situated in the interior delta of the Niger River, approximately 250km from the capital Bamako and close to the major town of Ségou.

144. **The Office du Niger area is the most important production area in Mali for both rice (about 60 percent of national production) and sugar (100 percent of national production)**. Mali is among the few West African countries which meet close to 90 percent of domestic needs in rice through national production; the Office du Niger zone provides 87 percent of total supply of rice commercialized outside of the region of production.<sup>120</sup>

145. **High demographic growth rates and declining soil fertility have made the Office du Niger area a particularly prized area for land ownership / occupation**. As the availability of fertile, irrigable land diminishes and demand for access to Office du Niger land increases, the opportunities for profiteering and rent-seeking in the publicly managed land and irrigation scheme have grown. Concerns over ‘land-grabbing’ and speculative land acquisitions by politically well-connected elites and investors have emerged and point to the significance of the area for the consolidation of political legitimacy or control.<sup>121</sup>

146. **The incidence of poverty is lower than in other farming systems and absolute numbers of poor are small**. Crop failure is generally not a problem, but livelihoods are vulnerable to water shortages, scheme breakdowns and deteriorating input/output price ratios. If institutional problems in the Office du Niger can be solved, future agricultural growth potential is good. Poverty alleviation in this region depends on individual households’ continued access to sufficient irrigated land, in the face of demographic pressure and the emergence of large-scale farms<sup>122</sup>.

147. **Other irrigated areas outside Office du Niger also contribute significantly to poverty reduction**. Despite the low rainfall, these areas have and can continue to benefit from the irrigated rice and vegetables along the River Niger (Mopti, Timbuktu, Gao) and along the Senegal River (Kayes). Village-level irrigation schemes along the rivers contribute significantly to self-sufficiency and poverty reduction.

148. **The Office du Niger would benefit from additional private investment funds for the development of irrigation, modernization, and diversified cash crop production**. These private investments could ensure self-sufficiency in rice countries, create export surpluses in the

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<sup>118</sup> Tiftonell and Giller (2013)

<sup>119</sup> (Vanlauwe et al., 2011)

<sup>120</sup> USAid 2009a, Brunelin 2014.

<sup>121</sup> Adamczewski et al. 2013.

<sup>122</sup> Bélières et al. 2011



sub region and promote high potential diversification crops like shallot / onion, potato and other tropical crops such as flowers. The development of this area could lead to increases in the demand for casual labor, strong growth of agricultural GDP and national food security. To realize these opportunities, some pressing governance issues would have to be addressed.

149. **There are four major, interrelated governance challenges in the management of the Office du Niger.** The first governance challenge, which is the most widely covered by analytical work and academic research on the Office du Niger, is the potential for land allocations to become heavily politicized and fragmented – as was the case between 2005 and 2009. Second, weak managerial and technical capacity of the Office du Niger has undermined earlier restructuring and capacity building reform efforts. Third, the lack of effective accountability mechanisms has exacerbated the risks associated with politicized investments in the Office du Niger zone and masked weak governance practices within the Office du Niger. Finally, the absence of a consolidated vision for the Office du Niger zone, has until recently, limited reform momentum.

150. **As in high potential rainfed areas, there is scope to increase the profitability of agricultural production.** Gaps include diversification into higher-value crops, market linkages for inputs and outputs, improvement of product grading and packaging, support for small-scale agro-processing of perishable products, and identification of niche markets - for instance those for organic produce. The promotion of farmer-based seed multiplication should also be accorded high priority in connection with both intensification and diversification efforts. Further priority areas include: promotion of self-sustaining, rural micro-finance systems to cater for farmers' demand for short-term credit for seasonal inputs, hired labor, small-scale processing and produce trading; improving water use and productivity on existing schemes by building the capacity of water user groups for greater participation in scheme operation, maintenance and rehabilitation; strengthening the capacity of farmer associations to buy agricultural advice and market information; and, supporting farmers' field schools in connection with the integrated management of pest control in vegetables.

151. **Farmer-managed schemes and traditional irrigation outside the Office du Niger could contribute to livelihood security, poverty reduction, and sustainability.** Risk of drought-induced crop failure would be reduced by promoting, where feasible and environmentally compatible, extension of the irrigated or water harvesting area through low-cost techniques - such as flood recession and run of river - that build on indigenous technical knowledge. Low-cost and small-scale on-farm water harvesting may serve as both an intermediate technology in the absence of larger-scale irrigation and to increase the efficiency of water use on irrigated farmland. For example, planting pits surrounded by *demi-lunes* act as tiny catchments to direct and hold water in the soil. Some farmers have added termites to these planting pits to increase soil fertility. Where markets exist, the reduction of risk often encourages higher input use and intensification.

152. **The impact of small-scale irrigation investments on household consumption, assets, and informal insurance has been found to be substantial.** Dillon uses a panel of Northern Malian households (1998–2006) to estimate its impact.<sup>123</sup> Access to irrigation increases household consumption by 27–30 percent relative to water-recession and rain-fed cultivators. Dillon also

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<sup>123</sup> Dillon, A. (2011). The Effect of Irrigation on Poverty Reduction, Asset Accumulation, and Informal Insurance: Evidence from Northern Mali. *World Development*, 39(12), 2165–2175. doi:10.1016/j.worlddev.2011.04.006

investigated whether irrigation has secondary impacts on risk-mitigating strategies by reducing covariate risk and reinforcing informal food sharing networks that allow households to insure against idiosyncratic risk. He found that households with irrigation save between 4.5 and 6.4 more tropical livestock units and are 20 percent more likely to engage in informal food sharing with non-irrigators. In a separate paper, Dillon compares the impact of large and small scale irrigation. He concluded that small-scale irrigation has a larger effect on agricultural production and agricultural income than large-scale irrigation.

**153. The water needs of downstream users in the inner delta would be constrained by any large-scale expansion of irrigation infrastructure.**<sup>124</sup> While irrigation takes a fixed amount of water throughout the year, hydro-electric structures store water at peak flood levels and subsequently release it. The hydrological effects of both are felt most profoundly during the dry season and in years with low floods<sup>125</sup>. The Sélingué dam is the only hydropower reservoir in the Upper Niger at the moment but the Fomi dam's is planned to be 2.9 times larger than Sélingué, and it is expected that the impact on the flow during the wet and dry period will be similar to that of Sélingué, yet with a magnitude 2.9 times larger<sup>126</sup>, with profound consequences on agriculture, navigation, fisheries, and biodiversity.

**154. The Office du Niger uses 2.7 km<sup>3</sup> of water per annum, or 8.3 percent of total annual river flow, in order to irrigate more than 700km<sup>2</sup> of the “Delta mort”.** The impact of this water intake on the hydrological regime of the Inner Niger Delta varies from year to year. Because the water intake remains practically constant, annual water use by the Office du Niger irrigation zone declines to 4 percent of total flow in years with high flow, but increases to 15 percent of total flow in years with low flow. The intake ratio also varies seasonally. The Office du Niger takes around 100 m<sup>3</sup>/s of water from August to November and around 60 m<sup>3</sup>/s from December to April. That is equivalent to only a small fraction in the flood period, but up to 50-60 percent of water in the dry period. It is also estimated that the Office du Niger irrigation area increased from 40,000 ha in the 1980s to 84,140 ha in 2009, while the Plan d'Action du Schéma Directeur de la Zone Office du Niger plans a 130 percent expansion in the 2009-2020 period, to 193,394 ha. Since it is increasingly difficult to use the river water during the dry season (March-May) and the required maximum water intake by 2020 during the rainy season is estimated to be 280m<sup>3</sup>/s (compared to 146m<sup>3</sup>/s today), the irrigation practices of the Office du Niger are bound to be largely dependent on more efficient irrigation methods, water released from the Sélingué reservoir in the dry season<sup>127</sup>, as well as a rehabilitation and re-dimensioning of the Sahel and the main adductor canals<sup>128</sup>. The number of people potentially impacted – 1.5 million people are living in the Inner Delta region – and the environmental risks posed by climate change and human activities make the protection of the Niger River one of Mali's most pressing socio-economic and environmental challenges.

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<sup>124</sup> Schüttrumpf *et al.*, 2008; Oakland Institute, 2011

<sup>125</sup> Source: Aide-mémoire of the Mission de pré-identification du Projet de Réhabilitation Economique et Environnementale du Fleuve Niger au Mali, World Bank, 2014.

<sup>126</sup> The Niger, a lifeline – Wetlands International, 2005

<sup>127</sup> The Niger, a lifeline – Wetlands International, 2005.

<sup>128</sup> Etat des lieux du Delta Intérieur, Ministry of the Environment and Sanitation, 2010.

155. **Outside the Office du Niger, where there are fewer governance constraints, broad scope exists to sustainably increase agricultural productivity in irrigated areas.** Other Rice Offices and rice zones have to date received limited external support (Gao, Mopti, and Timbuktu). Vulnerable small scale producers have piloted improved water management systems (initiated by other agencies such as GIZ), but these have not been adopted at scale. Complementary interventions such as access to improved seeds, extension, input markets, farmers associations, and market access are also lacking.

## **Pastoral**

156. **Of the total population dependent on agriculture, a large share – on the order of 80 percent – is estimated to depend at least in part on livestock (including pastoralists and agro-pastoralists).** Arid and semi-arid zones in the North (Mopti, Timbuktu, Gao, Kidal) [zone 1, 2] are classified as pastoral systems. During the driest period of the year, Sahelian pastoralists move south to the higher rainfall zones and they return north during the rainy season. The meat value chain [zones 3, 4, 6], is positioned as a major source of growth in the country in the regions of Mopti, Gao and Kayes. Low productivity (extensive farming, low productivity of dairy, low milk processing etc.) reduces the potential of this sector.

157. **The main source of vulnerability is climatic variability and the high incidence of drought.** Socio-economic differentiation is considerable - many herders have lost most of their animals due to droughts or stock theft. Recent modeling work undertaken in the context of the World Bank regional report on drylands suggests that growth in human population and in herd size is likely to result in the next couple of decades (even without climate change) in a 160 percent increase in the share of animals that will be unable to meet their feeding needs with local grazing resources. In the presence of more frequent droughts that climate change may bring about, the increase may be of 190 percent, and up to 260 percent under a severe drought scenario, exacerbating the pressure on the country's fragile natural resources base and the likelihood of associated social conflicts. The situation in the semi-arid zones is much less acute, stressing the need for mobility.

158. **Poverty reduction in this system rests on securing existing natural rangeland and animal capital, particularly for women.** In conflict-affected regions, smaller ruminants may be a more resilient investment than cattle because they are difficult to steal and can be kept closer to homes. In Mopti, the "*Projet de compétitivité et de diversification agricoles*" is piloting improvement of breeds and production of milk and milk processing. This experience could be intensified and extended to the whole country through the introduction of breed sires and insemination. With respect to rangelands, secured land tenure systems that recognize mobility for resources management are needed to resolve conflicts and protect access to rangelands and water points, particularly in the context of climate change. Complementarities between extensive pastoral systems and semi-intensified agricultural farming systems are under-exploited.

159. **Pastoral systems face a long list of constraints to unlock economic potential of animal value chains.** These include: infrastructure, regional integration, market access development, access to basic social and financial services, and an enabling business environment (strengthened institutions, policies, regulations, and investments) for trans-boundary mobility (people, animal, goods, and services), disease control, and livestock trade facilitation. A major lesson learnt is to

include herders, particularly pastoral communities, in inclusive decision making processes through decentralization. Interventions are most effective within a value chain approach including product distribution to end markets, where public funding should encourage private sector participation.

160. **In summary the main proposal is to (i) improve the ability of poor farmers in all zones to bring more land under cultivation; (ii) to develop the value chains for cereal crops and livestock products across the nation; to (iii) focus in areas of high growth potential on increasing productivity; and (iv) focus in areas of low agricultural potential on resilience.**

#### **Box 4.2: Benefits of Fertilizer Subsidies**

Fertilizer subsidies have helped to close the yield gap in some settings, such as Senegal, that are comparable to Mali. However, reviews of the crop response to increased fertilizer use across all the African programs was generally disappointing, leading most programs to result in a benefit/cost ratio below one (Jayne and Rashid 2013). That is, the programs cost more than the value of the incremental production. Very different responses were found in irrigated areas than in rain-fed areas, yet the latter predominates in Mali. A conclusion of many studies has been that poor and declining soil quality has substantially reduced the efficiency by which fertilizer nutrients are utilized by food crops. Thus, rather than facing all kinds of input and credit market ‘failures’, many African farmers have found it not profitable to use significant amounts of fertilizer on soils which have been depleted from continuous use.

These latter findings may be instructive for Mali and also provide at least a partial explanation for the limited production response from the recent growth in its fertilizer subsidies. Rising land pressures, more continuous cultivation, and soil degradation may be a strong contributing factor. As an alternative to ever more fertilizer subsidies, more efforts could be made to better educate and advise farmers about agronomic practices to rebuild soil organic matter and to practice inter-cropping or crop rotations to help fix nitrogen and otherwise help restore the responsiveness of soil to fertilizer applications. In lieu of fertilizer subsidies, a comprehensive soil fertility management program could be implemented involving soil testing services, more specific fertilizer blends appropriate for farmers’ specific conditions, investment in drainage, and restoring soil organic matter through various conservation farming practices (e.g. minimum tillage; use of green manures). Tying this to better water management (including irrigation) would have an even bigger impact.

Distribution innovations - such as e-vouchers or new operational approaches— could help to increase the economic efficiency of fertilizer subsidies, but the weight of the evidence indicates that the costs of fertilizer subsidy programs generally outweigh their benefits. Findings from other developing areas with a higher proportion of crop area under irrigation and with lower fertilizer prices—factors that should provide higher returns to fertilizer subsidies than in Africa—indicate that at least a partial reallocation of expenditures from fertilizer subsidies to R&D and infrastructure would provide higher returns to agricultural growth and poverty reduction.

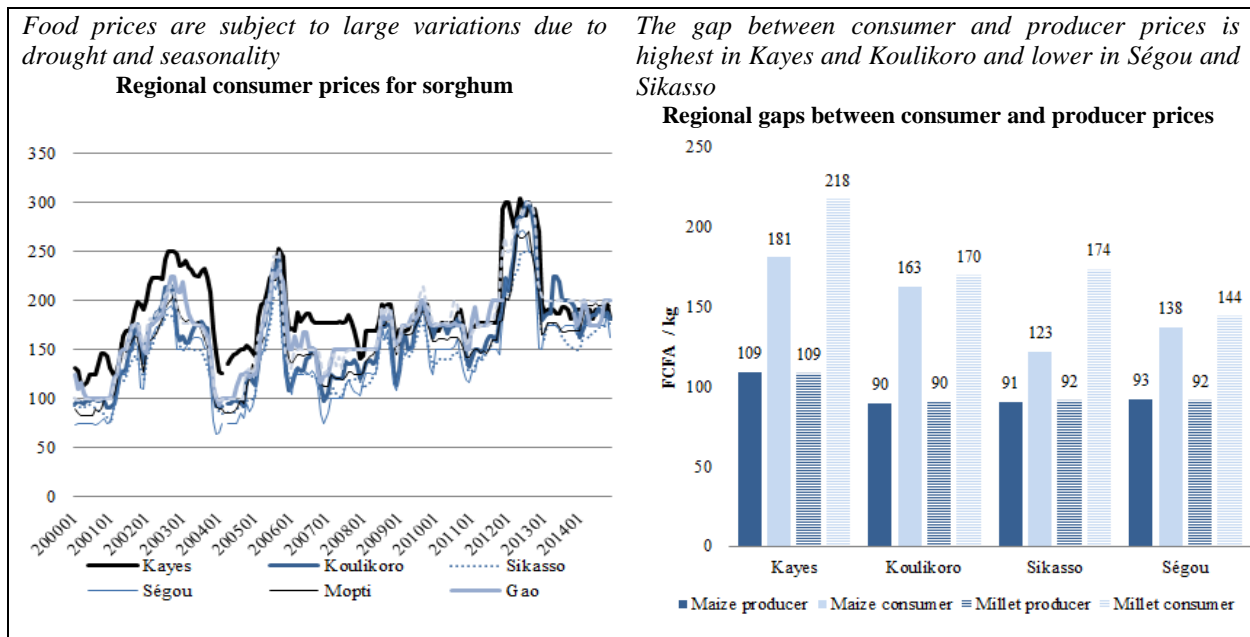
#### **4.4 Functioning markets**

161. **To realize increases in production, to allow for specialization and to benefit from the opportunities offered by domestic and regional markets, the efficiency with which markets function has to be improved.** When transaction costs are high and markets can only be accessed with difficulty the profitability of farm production goes down as the price received for crops sold is lower while the cost of inputs used is higher. Moreover, the price of consumer goods that can be bought with a farm’s profits is higher. As transaction costs rise, the returns to labor (in terms of

consumer goods) thus reduce rapidly, and with it the motivation of households to increase production. The fact that the better off farmers tend to rely on self-sufficiency in terms of food consumption, is an indication of poorly functioning markets which do not offer efficient opportunities for marketing agricultural produce at a profit nor the possibility to specialize production and diversify consumption patterns.

162. **Other indications of the weakness of markets in Mali are the small size of the formal private sector and the fact that much agricultural trade is carried out by one-person businesses dealing in several commodities.** There are less than 500 manufacturing companies registered in the country and the informal sector represents about 80 percent of the country's economic activity. The business environment is such that small and medium sized enterprises are scarce and in rural areas agricultural produce is typically bought by (informal) traders who are mainly self-funded as they have limited access to credit. These traders maximize the returns on their working capital by rapidly turning over small quantities, with little storage. Their quality grades are rarely standardized, nor are the weights and measures they use, making personal inspection by buyers essential. As a consequence, traders travel extensively, increasing transaction costs. Transaction costs are further increased by the large number of layers of intermediaries between producer and consumer.

**Figure 4.4: Gap between regional producer and consumer prices**



Source: Observatoire des Marchés Agricoles, 2014.

163. **Differences in seasonal patterns and in the gap between consumer and producer prices suggest that markets in some regions function better than others.** Figure 4.4 shows the gap between consumer and producer prices for Sikasso, Koulikoro, Ségou and Kayes. Not only is the gap lower in Sikasso, so are seasonal variations. Particularly during the rainy season, when many areas become inaccessible, differences between consumer and producer prices are pronounced. If the gap between producer and consumer prices is taken as an indication of the

functioning of markets, then markets operate best in Sikasso and worst in Kayes and Koulikoro. Ségou takes an intermediate position. This is of limited surprise as Sikasso and Ségou are areas with the highest agro-ecological potential, with relatively high population and market density and with the greatest road density (see Figure E.2 at the end of the executive summary).

**164. High transaction costs and poor market access are brought about by a host of factors.** Defective physical infrastructure is an important reason as it renders many rural roads unusable particularly during the rainy season. Unlike the main roads and regional roads which tend to be well maintained, rural roads are in a poor state. 47 percent is in a poor state and only 5 percent in good condition.<sup>129</sup> Other sources of (transaction) costs are the insecurity that continues to prevail in the north with negative repercussion for trade with Algeria, Niger and Burkina Faso, the lack of competition in the transport market and the poor governance prevailing on the regional corridors. CILSS (2014) roadblocks survey show that the Malian portion of corridors is the one encountering the highest proportion of road blocks: 11 road blocks on the corridor between Mali (Kati Dralé) and Guinea (Conakry) and 9 road blocks per 100 km on the road between Burkina (Bama) and Mali (Kouri). The costs associated with these road blocks are significant, especially compared to neighboring countries, reaching a maximum of 470 USD per 100km on the Malian portion of the Burkina-Mali corridor for the transport of rice.

**165. Efficient markets require institutions, services and support infrastructure that establish grades and standards or provide storage which the objective to improve the quantity and quality of goods.** The availability of these services and infrastructure is limited. The provision of storage for instance is hampered by the absence of a marketable surplus (due to the seasonality and the small scale of production), the absence of quality standards and a tax system which makes it hard for formal small and medium enterprises to compete with informal ones (which do not pay VAT for instance). As a consequence, few storage services are offered. Even in Sikasso, the most developed agricultural region of the country, only 30 percent of communities have a storage facility. Efficient markets will only exist if these institutions, services and infrastructure are agreed upon through an inclusive public private dialogue (PPD) process which has to include disadvantaged communities for economic, environmental and social reasons.

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<sup>129</sup> To improve market access adequate resources need to be allocated to rural road maintenance and to upgrading rural roads to an all-weather status. The policy measures needed to improve rural access are aptly summarized in the 2008 “Strategie Nationale du Transport Rural au Mali”. This strategy recognizes that improved rural access can be brought about in a decentralized and participatory manner, using labor intensive technologies. It requires that adequate resources are set aside and transferred to the decentralized local government entities that are responsible for rural road maintenance –something which is presently not the case. If done and this may require an increase in the fuel levy and tolls which even in the best of circumstances only cover 50 percent of the road maintenance needs, it would make rural access an excellent candidate for public works initiatives. Of essence is that roads are maintained regularly and systematically, that spot improvements of bottlenecks in the road network take place and that this is accompanied by critical accompanying measures to ensure road quality such as the closure of dirt roads after heavy rains or the prevention of overloading. A rural access policy will need to be complemented with a selective extension of the main infrastructure network but a master plan which identifies infrastructural priorities based on the impact on poverty, is not available. Main bottlenecks appear to be the highway to Gao and the border with Burkina Faso (important for exports but also for security purposes), the navigability of the Niger River and the rehabilitation of the railroad to Senegal –representing as large share of all imports and offering an alternative to road transport.

166. **Efficient markets also require the availability of market information keeping farmers and traders attuned to the demands and changing preferences of consumers.** Market information encompasses timely and accurate prices, buyer contacts, distribution channels, buyer and producer trends, import regulations, competitor profiles, grade and standards specifications, postharvest handling advice and storage and transport recommendations. In Mali price information on cereals generally moves from the northern (production deficit) areas of the country to the southern (production surplus) areas. Price information is transmitted to a significant degree<sup>130</sup> but if far from complete.<sup>131</sup>

**Table 4.4: Road type and state of maintenance**

Road type	Length	Good state		Acceptable		Poor state	
		Km	%	Km	%	Km	%
Tarmac roads	5 694	3 164	55.6	1 292	22.7	1 238	21.7
Gravel roads	1 767	894	50.6	739	41.8	134	7.6
Improved rural roads	14 220	669	4.7	6 900	48.5	6 651	46.8
<b>TOTAL</b>	<b>21 681</b>	<b>4 727</b>	<b>21.8</b>	<b>8 931</b>	<b>41.2</b>	<b>8 023</b>	<b>37.0</b>

Source: Ministry of Transport, 2010.

167. **The efficiency of markets is reduced by limited competition.** Even though the government is no longer involved in the day-to-day moving and selling of staple foods (the liberalization of Mali's cereal markets was completed in the late 1980s) and direct government participation in staple food markets is limited to monitoring crises<sup>132</sup>, efficient markets require more competition between agents to ensure efficiency. In the transport sector, for instance, profit margins are large, reflecting a lack of competition in the attribution of road freight.<sup>133</sup> Imports of fertilizers, rice and wheat, are either linked to government programs or are highly concentrated. According to Staatz (2011), Toguna and Yara import 97 percent of fertilizer needs<sup>134</sup>; 85 percent of imports of rice according to World Food Program (WFP) (2010) are done by three operators.

<sup>130</sup> Jeffrey Vitaler and David A. Bessler (2006). On the discovery of Millet Prices in Mali. *Regional Science* vol. 85(1):139-162.

<sup>131</sup> Public market information systems have often been disappointing, with information disseminated too slowly, in the wrong form, or too infrequently to be of real use to market participants. Mali is no exception and the information available from, for instance, the Observatoire du Marché Agricole is very limited. On the other hand, Local FM radio broadcasts of market information and private (or NGO sponsored) market information systems are slowly taking root such as the "Sènèkèla" a mobile phone platform which operates in Sikasso and Koulikoro and which has as many as 154,000 subscribers.

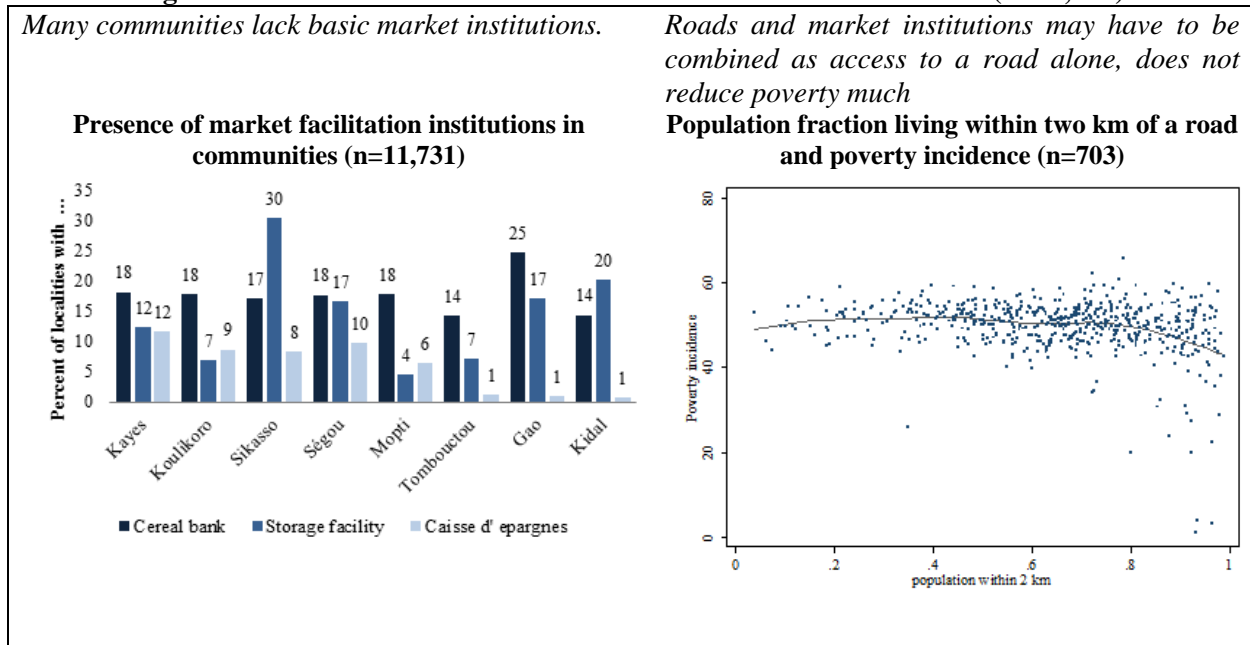
<sup>132</sup> The authorities still interfere in the cereals market for reasons of food security and during the 2008 food price crisis have, for instance, forbidden cereal exports in an effort to try to protect urban consumers. Such policies are ill-advised as they undermine the incentives of farmers to increase production. To shield urban consumers from large increases in cereal prices, social protection mechanism would be preferable.

<sup>133</sup> Terivaninthorn and Raballand (2009) calculate for instance that profit margins on the Tema-Bamako corridor are 80 percent.

<sup>134</sup> Even though the fertilizer subsidy program had apposite impact on raising production, the program also raises a number of questions. The first is the sustainability of current levels of production in Mali, in the absence of subsidized price. Secondly, whether subsidies have enabled or not private sector participation in the distribution of agricultural inputs is unclear (Staatz, 2011). And finally, the program seems to be ill targeted with relatively well-off farmers benefiting most from the fertilizer subsidies.

168. **To improve the functioning of markets, improved access to infrastructure would have to be combined with a plethora of measures varying from improved storage, to improved access to information and finance to improvements in governance leading to enhanced competition and fewer market distortions.** Improving infrastructure hard and software (competition in the transport sector, roadblocks) alone is unlikely to lead to rapid poverty reduction (as the right panel of Figure 4.5 illustrates) and would have to be combined with other measures. However, solving each constraint one by one is unlikely to lead to better integration of the poorest into markets as other constraints would remain. This necessitates an approach that allows addressing multiple constraints at the same time.

**Figure 4.5: Presence of market facilitation institutions in communes (n=11,731)**



Source: ODHD 2013 Commune Census, 2009 Poverty Map, GIS data set on roads for Mali

169. **At the local level stronger farmer organizations can be instrumental in reducing transaction costs and improving market access.** It seems unlikely that individual farmers, even with some degree of assistance, could reach the scale needed to procure services (such as transport, storage, finance, etc.) that would help them to connect to markets. But cooperatives and farmer organizations, once their capacity and governance structures are built, can play the role to aggregate and thus gain the necessary scale that enables the efficient supply of critical products (fertilizers, seeds, etc.) and services (financial, skills, etc.). It follows that interventions which structure and organize (poor) farmers in such a way that they can participate in the agricultural value chains (or parts of the value chain) are necessary to overcome these constraints. This is hardly a new idea: the cotton sector has for years been organized along these lines with farmer associations being the interlocutor with the CMDT and responsible for identifying village demand for fertilizer and for assuring the collection and sale of cotton.



### **Box 4.3: Access to markets and access to equipment help reduce poverty**

In their paper: “Determinants of income diversification amongst rural households in Southern Mali” Abudulai and CroleRees examined the income portfolios of farm households in Southern Mali. They use data from a farm household survey in Sikasso and Koutiala covering three farming years of 1993/94–1995/96. The authors focus on four main activities: food-crop production, cash-crop production; livestock rearing and non-farm work. Their findings suggest that households hold very different portfolios of incomes and these in turn are related to the different levels of income and asset holdings. Poorer households are found to have fewer opportunities in cash-crop production as well as non-crop activities, resulting in less diversified incomes. Lack of capital is found to be a major reason why poorer households have less diversified portfolios.

The authors also examine the determinants of participation in various activities. They find that household wealth has a large positive impact on participation in livestock-rearing and non-farm activities. Moreover households who live closer to local markets are more likely to participate in non-food production activities than those in remote areas, lending support to the notion that households with superior access to markets are in a better position to overcome factor market constraints and develop private marketing initiatives to promote the shift of producer resources into diversification activities.

*Source:* Awadu Abudulai and Anna CroleRees, Food Policy vol. 26(4): 437-452.

170. **At the national level, large producers may have to be supported, particularly when they help establish new value chains or structure existing ones.** Anchor investors can catalyze the development along the value chain from farm to market. They can help create a spatial ecosystem in which large and small producers co-exist, and that is conducive to agro-industrial activities, transformation and agglomeration. Indeed, large scale actors can guarantee a minimum demand for products which would otherwise not be developed (improved seeds, fertilizers, logistical support, cold storage, irrigation)., They can also invest in new transformation initiatives (chips factories, industrial bread) or can access new export markets. Anchor investors are not only the ones with the financial clout to bring this about; they may also have the political access needed to overcome pressing business environment constraints (such as access to land or electricity). The latter is also a key risk to supporting large scale actors. They have the ability and interest to limit the arrival of competitors and could act as a break on market development.

171. **Small and medium scale enterprises are critical to ensuring that smallholder farmers participate in value chains.** Once value chains have been developed, poor households might be able to benefit from them, as wage laborers or, provided the value chains have been set up in an ‘open’ manner, by selling their produce to it. This requires small and medium sized enterprises that aggregate small quantities and provide quality assurance. These functions are typically provided by storage services, but at present such services are largely absent (e.g. there exists only 135,000 tons of cereal storage capacity versus 5 million tons of cereal production). Even for value chains for which large producers already exist, local farmers benefit little. The production of chicken feed is a case in point. Even though all its ingredients are locally grown (maize, soya, groundnuts), supplies are sourced internationally because the national market cannot offer the desired quality and quantity.<sup>135</sup> In the presence of a more vibrant local market with ample small and medium scale firms, this would not happen, but they are not there.

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<sup>135</sup> The same holds for the production of wheat flour. See Competitiveness of Wheat Flour Produced by Grands Moulins du Mali and Food Security in Mali. USAID Mali.

## 4.5 Human capital: health, nutrition and education

172. **Mali's efforts to reduce poverty depend on its ability to increase its human capital.** In an agrarian economy like Mali where initial growth in productivity will need to come from its agricultural sector, investments in health and education are extremely important. The effects of education and health on economic growth are well documented.<sup>136</sup> Healthier workers are more productive, live longer, learn more, are more creative, and can cope better.<sup>137</sup> This is especially true in subsistence agriculture since households usually have a hard time replacing labor lost to sickness.<sup>138</sup> Caloric intake is shown to increase agricultural productivity in Sierra Leone<sup>139</sup>, and wages in rural India<sup>140</sup>, Sri Lanka<sup>141</sup> and Philippines<sup>142</sup>. Similarly, increases in height—signaling lower exposure to nutritional deficits in youth—have positive impacts on wages in Ghana; similar results hold for the relationship between body-mass index and wages in Ghana and Cote d'Ivoire, especially for women in Cote d'Ivoire.<sup>143</sup>

173. **High fertility rates are closely correlated with poverty.** As fertility rates go down, the composition of the family changes with more working-age adults relative to the number of children. With fewer dependents to feed and take care of, people invest more in the education of each child and more adults can move into paid jobs. Positive effects on human capital are reinforced by decreased pressure on social sectors which are otherwise put under great strain by the high population growth. Countries with high age-dependency ratios, like Mali, are generally much poorer and decline in age-dependency ratios typically begin in the richer households leading to a widening in income inequality. In Mali, richer women have fewer than five children whereas women from extreme poverty have 7.6 children during their fertile years. Fertility is also higher among uneducated women than among other women: seven children, against 6.3 children among women with elementary-level education and 3.8 children among women with secondary-level or higher education.

174. **Use of family planning services and greater emphasis on women's education can reduce maternal and child deaths, ease dependency-ratios and improve family wellbeing, and reduce the costs of education and health.** One in three married women ages 15–49 want to

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<sup>136</sup> See for instance Barro & Lee 2010; Krueger & Lindahl 2000; Gyimah-Brempong & Wilson 2004; Becker et al. 1994. The direct relation between education and agricultural productivity is more tenuous among the poorest countries (Reimers & Klasen 2013), but there are reasons to believe that education will have a positive impact in agricultural growth. Education through extension services is important for improve farming techniques, but also generally better education would matter for managing the business of running a modern farm.

<sup>137</sup> The research on the impact of health on economic growth is relatively more recent and somewhat more complicated than research on returns to education since one could measure health in many different ways such as height, calories taken, and productive days. Schultz and Savedoff & Schultz point out two other problems: first, because most measures of health involve self-reporting, measurement errors could be substantial. Second, it is not easy to distinguish between inherited, environmental, and behavioral factors that affect health outcomes.

Difficulties arise because the two sources of variation are not only determined by different factors, they may also exert different effects on labor productivity.

<sup>138</sup> Asenso-Okyere et al. 2011 provide a good review of the literature on the impacts of health on agricultural production and agricultural production on health and nutrition.

<sup>139</sup> Strauss 1986.

<sup>140</sup> Deolalikar 1988.

<sup>141</sup> Sahn & Alderman 1988

<sup>142</sup> Haddad & Bouis 1991

<sup>143</sup> Schultz 2002 and 2003.

space or limit births but are not currently using any method of family planning,<sup>144</sup> yet family planning consultations are rare (around 5 to 6 percent between 2006 and 2011) and use of contraception is around 8 percent, which is less than half the rates in neighboring countries. The main reasons for not using contraceptives suggest demand-side issues, including opposition by the respondent (22 percent) and the respondent wanting more children (18 percent)<sup>145</sup>. In contrast, cost, lack of access, and not knowing a source from which to purchase contraception seem to be less relevant.<sup>146</sup> However, other sources<sup>147</sup> suggest that adequate family planning supplies and personnel to distribute contraceptives, in particular in rural areas, is missing. This suggests that women's education (including education about family planning, also including men), combined with better organization and wider availability of family planning services, are important tools for poverty reduction.

**175. Education has a key role to play for poverty reduction. Returns to education are lower in Mali compared to countries in Sub-Saharan Africa, a reminder of the low quality of education, but they remain nonetheless significant, also in the agriculture sector.** International and national estimates suggest that each additional year of education in Mali increases earnings by about 6 to 7 percent compared to 8 percent in the neighboring Ghana, and 9 percent in Burkina Faso. Estimated returns to completing various levels of education confirm however the significant positive relationship between education and earnings, even though the evidence is less clear in agriculture. Because the average years of schooling among Malian workforce are under 3 years, for upper education levels, the sample sizes are small. Still data show that completing primary school education creates a significant boost in earnings (compared to those with no education). Secondary education, as well as technical and vocational training and post-secondary, also have significant impact on wages, but the graduates are extremely small in number (Appendix to chapter 4, Table 1). Separate estimations within the agricultural sector show that incomplete primary education does not have an impact on earnings in contrast to what is found for other sectors, but completing primary school is a consistently significant predictor of higher earnings in the agricultural sector (by about 40 percent). Technical and vocational training and post-secondary education tend to have positive and significant returns. This is an important finding since it suggests that improving the education of wage workers (with possibly a combination of basic and technical skills) in the agricultural sector could improve productivity and earnings within this sector.

**176. Traditional returns estimates give only a partial picture of the role of education in reducing poverty.** This is because a large percentage of the Malians work in unpaid jobs in agriculture. Rates of return calculated in terms of consumption for urban and rural areas confirm the positive and significant impact of all education levels on consumption growth (showing an increasing effect by education level including TVET education). (Appendix to chapter 4, Table 2). The effect is overall positive and significant for completed primary education but less consistent indicating that other constraining factors may be at play. Finally, and importantly, there is a strong,

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<sup>144</sup> USAID 2011 b

<sup>145</sup> 2006 DHS. The continuing demand for large family sizes may partly be ascribed to culture, but it may also be a rational decision given the lack of mechanization in Mali's agriculture sector and the consequent dependence of farming on family labor.

<sup>146</sup> 2012-13 DHS

<sup>147</sup> The Population Reference Bureau 2011.

although somewhat varying, positive effect of literacy on consumption (with being literate associated on average with between 20 and 40 percent increase in consumption in rural areas).

177. **There is also a strong interplay between education and health.** Education affects health in adulthood; life expectancy affects educational investment in childhood; and the health and education of parents—particularly mothers—affect both outcomes in their children. Youth programs that combine training and education appear to lead to better health outcomes and less risky activities. Children of educated parents are also more likely to receive proper healthcare according to Mali’s data: only about 1 percent of women with no education make use of pre-natal care versus almost 30 percent for women with at least secondary education.

178. **Better health is another key component of a poverty reduction strategy. There is significant international evidence on the costs associated with poor health which also apply to Mali.** Sickesses have high costs for the poor and particularly affect family farmers. Malaria transmission generally coincides with the planting and harvesting seasons making the illness’s impact particularly damaging. Estimates of days lost to malaria vary across Africa and across studies but are generally high—up to a month per year<sup>148</sup>, and in one case 64 days<sup>149</sup>. Days lost to other diseases like TB and HIV-AIDS can be even higher. These estimates are very relevant to Mali where malaria is the disease with the highest incidence (reported by about 13 percent of individuals<sup>150</sup>).

179. **Data from Mali underscore the weaknesses associated with tracking health outcomes especially among the poor, but disparities in the use of health care underpin some of the key linkages between poverty and health.** While under-reporting constrains the interpretation of sickness data, the positive relation between use of health care services and non-self-reported measures of sickness, also illustrated by the fact that as the usage of many health care services decreased with the crisis the reported sickness rates increased, indicates that lower access to health care for the poor and rural populations is a key constraint to poverty reduction. There is also additional evidence that recent consultations to health care facilities are associated with higher household consumption levels in Mali (by about 20 percent), also pointing to the beneficial effect of preventive health care on productivity. Overall, universal health care is a powerful poverty reducer in Mali as elsewhere.

180. **Poor health and malnutrition also impair the households’ ability to invest in/benefit from education and work capacity later.** Both child and parent health problems affect education. Sick or hungry children miss school or cannot learn<sup>151</sup>, and early interventions such as better nutrition earlier in life lead to greater work capacity, especially for boys, and is shown to be linked to better education outcomes. Iron supplementation and deworming drugs have been shown to increase weight and reduce absenteeism, especially among children who were most anemic. The effects also hold through generations, with studies showing that improvements in nutrition and health associated with birth cohort height account for a significant share of the wage growth

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<sup>148</sup> Girardina et al. 2004.

<sup>149</sup> Alaba & Alaba 2009.

<sup>150</sup> And this rate is very likely to be under-estimated because of under-reporting, in particular of the poor.

<sup>151</sup> In Tanzania a recent World Bank study estimated the productivity losses due to anemia to be \$167 billion per year or 0.86% of GDP.

associated with schooling. Overall, children receiving better post-natal care are shown to be healthier and more productive adults later.

181. **Mali's education and health outcomes are extremely poor, however, and gains in health and education are quickly erased in the face of shocks.** Largely this dire situation reflects constraints in both access to education and health care services and quality and efficiency of services, which in turn reflect other more specific constraints. Inequities in access to services between poor and non-poor, urban-rural households and males-females, and quality and inefficiencies issues, were already documented above. Rural households engaged in subsistence agriculture have limited access to basic services in health and education. The coverage of health activities is also systematically lower for the poorest; they are less likely to be immunized, they use fewer antenatal and delivery services, and their children are less likely to use services when ill. Socioeconomic and locational differences have also been shown to be large in attendance and completion of schooling, and widening since the 2012 crisis. Additionally, learning outcomes measured by scores in standardized tests are very low, and poorer children appear to fall further behind as they get older. Moreover, regression analysis shows that while urban and richer households appear to weather learning difficulties by continuing to send their children to school, poor and rural households appear to take their children out. The quality of health care for the poor is also an issue.

182. **Going one step further in understanding the quality constraints, low performance and poorly trained teachers stand out as a key explaining factor of the low levels of education quality.** School performance is low as illustrated by the loss of instructional time due to teacher absenteeism. Schools are open only 70 percent of the official time (122 days of learning during the 2009-2010 academic year out of the 172 official days), sometimes because teacher appointments were delayed and sometimes because teacher supervision is weak and teachers do not show up for work.<sup>152</sup> The total number of teachers is also low as evidenced by the student – teacher ratio for the country in 2010/11: 60 to 1 (45 to 1 is generally considered an upper bound of what is acceptable), constraining both quality and supply. This average hides significant variation, and the student – teacher ratio varies from as low as 35 to 1 in Kidal to as much as 73 to 1 in Bamako. Increasing the number of teachers –or for that matter increasing the number of classrooms as also the number of students per classroom is very high, seems to be a matter of policy priority but only if teachers themselves are qualified. This is an issue. In 2011, only 4 percent of teachers at the primary level and 6 percent at the lower secondary were graduates of some teacher-training program (Table 4.5). Primary school teachers are considered qualified to teach after completing the equivalent of vocational courses, but even with low requirements, the percent of teachers that is considered trained is low, below 50 percent. Teacher trainees do not benefit from a formal mentoring program, and thus may not be getting the most benefits from the required in-class training. The lack of mentoring continues into actual tenure, and new teachers have limited or no access to master teachers who could guide them. Similarly, teachers are not required to participate in professional development activities and there is no targeted professional development. Mali's teacher policies do not match teacher skills and student needs. Additionally, little incentives exist for qualified teachers to take hardship positions or teach in hard-to-staff areas or show up in the classroom.

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<sup>152</sup> Abdazi 2007; The World Bank 2014.

#### **Box 4.4: Do adult literacy programs work?**

With very low levels of adult literacy and numeracy, it may be worth considering adult literacy programs. What is the evidence?

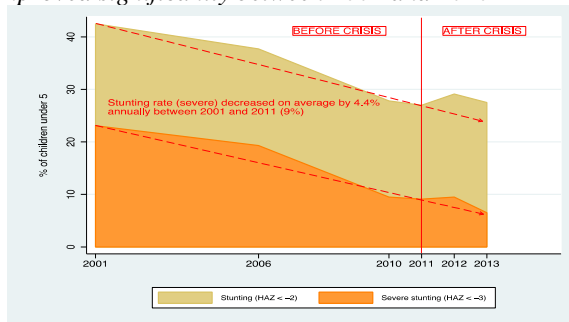
Three World Bank studies considered the rate of return on investment in adult education. From 1977 through to 1999, the government of Indonesia borrowed money on interest-bearing terms from the World Bank to support its national literacy program. In 1986, the World Bank examined the rate of return (ROR) on the investment; it found that the individual rate of return was 26 percent. Thirteen years later, the World Bank did a similar study for the Ghana National Functional Literacy Program, for which the government had borrowed money on interest-free terms. The findings were: Ghana (1999) female private ROR 43 percent; female social ROR 18 percent male private ROR 24 percent; male social ROR 14 percent Two years later, in 2001, in a project it was supporting in cooperation with the Asia Development Bank in Bangladesh, again on interest-free terms, the World Bank found that the private rate of return was 37 percent. These calculations suggest that investment in adult education with literacy is in overall terms as productive as investing in primary, secondary or university education. Investments in adult literacy and numeracy has been associated with the adoption of new agricultural techniques, a sustained increase in savings and investments and improvements in nutritional status and school enrollment.

Evidence from at least three “*total literacy campaigns*” in India shows that only a small minority of adult learners are unable to learn the skills of reading, writing and written calculation. The three campaigns recruited virtually all the non-literate adults of their areas and succeeded in teaching most of them at least enough to succeed at the official “*graduation test*”. They thus tended to vindicate the learning abilities of the average non-literate adult and to justify appropriate learning programs. At the same time caution is needed. Field studies nearly ten years after the campaigns did suggest that many, if not most, of the successful learners had largely forgotten how to read and write. The findings suggested either that the learners had not learned the skills to a “*permanent,*” usable degree (and did not benefit from a “*refresher program*”) or, had no reason to practice their skills.

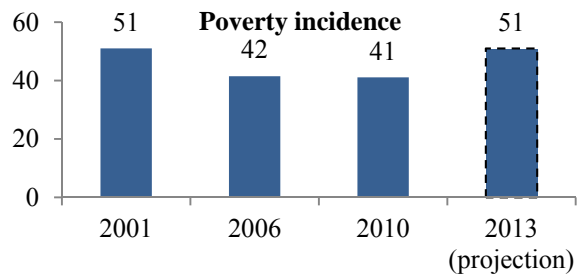
*Source:* John Oxenham: Returns on Investment in Literacy in Training and Education for Adults – Quantitative Findings.

**Figure 4.6: Trends in nutrition and relevant interventions**

Malnutrition rates are high even though nutrition improved significantly between 2001 and 2010

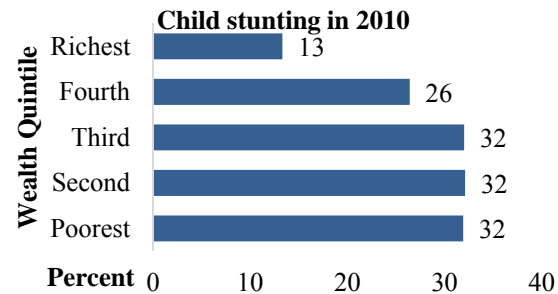
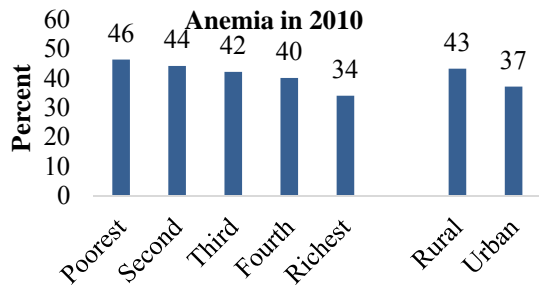


Malnutrition trends mirror trends in poverty and asset ownership.



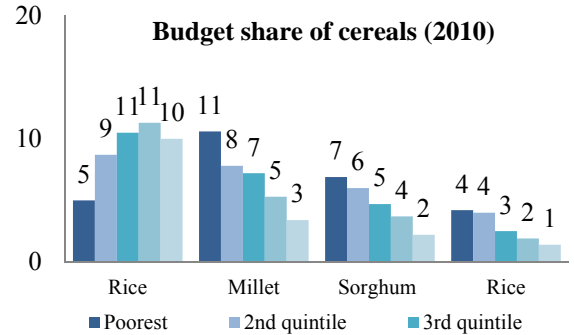
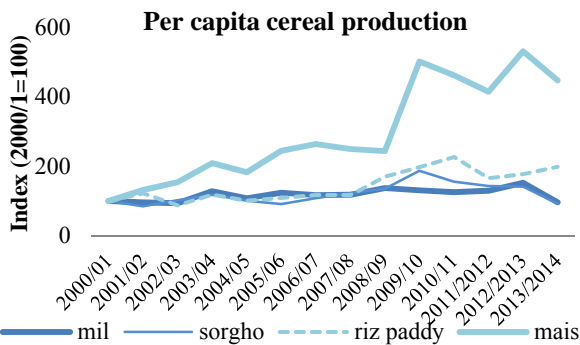
The high prevalence of micro-nutrient deficiencies has negative consequences for health and productivity.

A combination of poor dietary habits, poor health and poor child caring practices cause malnutrition –which is why it persists even among the non-poor



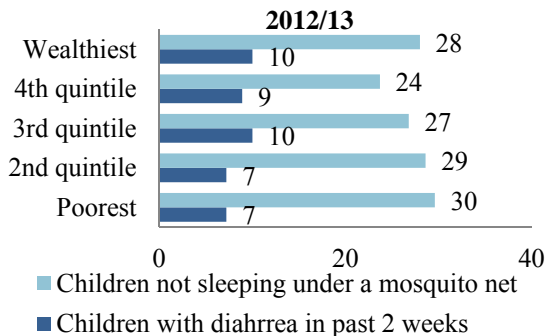
Poverty and malnutrition improved when the production of cereals increased

Improving the production of sorghum and millet (or reducing their prices) will benefit the poorest most



Interventions which reduce the incidence of diarrhea, malaria and infections are good for nutrition

Micro-nutrient and nutrition interventions integrated in existing programs are most cost effective



Interventions	Cost/life saved	Cost/case of stunting averted	Cost/DALY saved
Community nutrition programs for growth promotion (children)	\$ 1,231	\$ 64	\$ 28
Vitamin A supplementation (children)	\$ 222	\$ 10	\$ 20
Therapeutic zinc supplementation with ORS (children)	\$ 732	—	\$ 207
Micronutrient powders (children)	—	—	\$ 7
Deworming (children)	—	—	\$ 8
Iron-folic acid supplementation for pregnant women	\$ 3,051	\$ 630	22a
Iron fortification of staple foods (general public)	—	—	—
Salt iodization (general public)	—	—	—
Public provision of complementary food for prevention of moderate child acute malnutrition	\$ 61,452	\$ 461	\$ 5,034
Community-based treatment of severe acute malnutrition (children)	\$ 1,584	—	\$ 101

Source: World Bank 2014: Mali Nutrition Costing

183. **Mali’s teacher policies need to address the key reasons why teacher quality and performance have remained low.** To the extent possible, potential candidates for teachers’ schools need to be selected among students finishing upper secondary education (and not as largely the case now just exiting grade 9). In-service training needs to be greatly improved, and there needs to be a serious debate on the language of instruction to prioritize teaching in French rather than in multiple local languages on which teachers have not been trained. Mali has not conducted a needs assessment based on subject areas and very little information exists on what subject areas have the largest shortages of quality teachers and what are the key skills teachers need to be effective: implementing such an assessment is critical. At the same time, strategies to strengthen incentives for teachers to relocate across regions and areas (including by building on some of the successful steps that were taken to relocate teachers from the northern regions to the south following the crisis) and to show up in the classroom (such as exploring larger roles for the school management committees in monitoring attendance) should be developed and implemented.

**Table 4.5: Teacher characteristics, 2011**

<b>Training and attrition</b>	<b>2011</b>
Ratio of teacher training graduates to teachers, primary education	4%
Ratio of teacher training graduates to teachers, lower secondary education	6%
Share of primary teachers who are newly recruited	15%
Share of lower secondary teachers who are newly recruited	19%
Share of newly recruited teachers who are trained, primary	46%
Share of newly recruited teachers who are trained, lower secondary	44%
Teacher attrition rate from public primary education	7%
Teacher attrition rate from public lower secondary education	11%

*Source:* UNESCO Institute for Statistics data extract dated October 22, 2014

184. **The performance of public health workers is also very low for reasons similar to those of teachers.** The lack of incentives to provide quality maternal and child care is reportedly linked to low salaries, poor career prospects and limited accountability for performance. Major gaps are reported in the quality of health worker training, in part because of the expansion of unregulated private training institutions.

185. **Access constraints are in part indicative of supply-side constraints that need to be tackled.** Availability of facilities and human resources is an issue in poor and rural areas for both education and health, and made worse with the crisis. Availability and quality of facilities matters because they have a large and strong impact on attendance. A standard deviation increase in time to local school, decreases the probability of attendance by 13 percent, and one standard deviation in the distance decreases the probability of attendance by 8 percent. Girls’ attendance is higher in schools with separate latrines for girls and boys. The marginal effect is four percent higher attendance probability for a standard deviation change in school quality supply. As for education there is a strong relation between time to a health clinic and the consultation rate (concerning all types of consultations). (Appendix to Chapter 4, Table 3). Access to education and health services is worsened by the inadequate distribution of health personnel. The richer quintiles have eight times more teachers per 10,000 residents compared to the poorest quintiles (with evidence that up to 39 percent of teachers’ allocation is not explained by student numbers). In health there is a huge



concentration of doctors, nurses and midwives in the capital, while rural areas are largely underserved.

186. **Actions to improve the deployment of human resources to make it more needs-based have to be taken, and innovative strategies to bring service delivery closer to beneficiaries envisaged, including striving to address the specificities of the north.** In education, attendance has been found to be higher in circles where there is a larger share of community schools, and religious and non-religious private schools. Community school supply is associated with higher attendance, even with extensive controls for family background and region controls, which suggests that this may be a useful mechanism for improving access for marginalized families, together with the strengthening of school management committees<sup>153</sup>. Other strategies would include make further use of non-formal education and training programs for youth and adults. A significant proportion of the population will continue to be left out if skills development and literacy opportunities are not upgraded or redesigned. The existing skills development and literacy programs are small in scale and cannot absorb the growing demand for training. Vocational training schools and centers are characterized by several imbalances: a concentration of centers in Bamako, curricula that do not respond to labor market needs, lack of focus on literacy and other cognitive and non-cognitive skills, and a lack of partnerships with the productive sector. To rectify these shortcomings, existing skills development programs need to be scaled up to absorb the growing demand for training, coordinated with the labor market, and focus on literacy as well as other skills for the agriculture sector. In health, community primary health care centers have shown strong potential to reach out to hard to reach communities and the scope for mobile health teams could be further explored, in particular for the north.

187. **There is a need for more nutrition related interventions.** To address the serious malnutrition levels and avoid its negative consequences for health, human capital formation and the ability to be productive, a two-pronged strategy is needed: it must address the immediate effects of malnutrition with an emphasis on very young children; and it must invest in nutrition interventions that increase the resilience of vulnerable populations (including the poor, farmers, women, children, populations in vulnerable regions, etc.) in the face of ongoing crises, while fostering long-term benefits. Mali needs a combination of cost-effective relevant “nutrition-specific” interventions, largely delivered through the health sector; and multi-sectorial “nutrition-sensitive” interventions, delivered through the agriculture sector and through social protection, water and sanitation, and poverty reduction programs, all of which have the potential to strengthen nutritional outcomes in Mali (Figure 4.6).

188. **Demand-side constraints are also part of the explanation for the access constraints, in particular in health.** Insufficient financing of health by the public sector poses a heavy burden on households as out-of-pocket expenditures remain the main source of health financing and now represent about 60 percent of total health expenditures. Health financing relies heavily on direct

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<sup>153</sup> The community-school management committees can bring parents and other community members to discuss, negotiate, and agree on the role of education in their communities. Discussions go beyond the basic maintenance and administrative issues to include the type of ever-present risks that are aggravated by shocks and crisis, and the resilience factors that can mitigate them. The committees sometimes step in as a corrective force, for example to prevent a family from taking their child out of school for marriage or work, negotiating with families alternatives that will keep the children in schools.

payments by households, and this system inevitably puts a higher burden on the poor. The share of spending on health as a percentage of GDP was relatively unchanged for the 2000-2011 period, but experienced a decline to 5.8 percent of total GDP in 2012. This is mainly a result of the decline in the public health expenditure from 3 percent of GDP to 2.3 percent between 2011 and 2012. Private contribution to health expenditure remained higher than the public share at 3.5 percent of GDP in 2012. Malian households are the primary source of health financing through direct payments, and therefore they are extremely vulnerable to risks of exclusion and impoverishment. Additionally, there is also evidence that the crisis, through its effect on consumption, triggered some households to take their children out of school and decrease consultation rates (as evidenced from a decrease in non-food consumption) suggesting that even as supply gets better, income and consumption may still constrain use of services if not addressed.

189. **Finally, overarching constraints in the governance of education and health also need to be taken into account.** The weak institutional capacity and stewardship capacity of the Ministry of Health (MOH) is a constraint for effective alignment and coordination of health interventions. Numerous changes in the composition of the government, lack of effective control mechanisms and insufficient strategic planning capacity produce ineffective policies and leadership in health. In education, allocative inefficiencies are clear from the biased distribution of resources across education sub-sectors and geographic areas; these are compounded by the weak management of resources and performance at all levels.

#### 4.6 Cross cutting services

##### Finance

190. **Limited access to financial services is a binding constraint for households, farmers, micro-entrepreneurs, SMEs and corporations in Mali.** Without inclusive financial systems, poor people must rely on their own limited savings to invest in their education, manage crops and harvests, or become entrepreneurs – and small enterprises must rely on their limited earnings to pursue promising growth opportunities. Conversely, when financial inclusion becomes more widespread, there is growing evidence that there are significant benefits for individuals. Providing individuals access to savings instruments increases savings, female empowerment, productive investment and consumption.<sup>154</sup>

191. **Mali's population remains financially excluded, particularly in rural areas.** With less than 8 percent of Malians using a formal bank account (compared to 24 percent in Sub-Saharan Africa), less than 4 percent borrow from a formal institution (compared to 11 percent in low income countries), while 23 percent borrow from family or friends (compared to 30 percent in Sub-Saharan Africa). In particular, the poor, the unemployed, young adults, women and those out of the workforce are less likely to have a formal account. Financial exclusion in rural areas is particularly acute. Adults living in rural areas are more than half as likely to be banked as those living in cities. Outside Bamako, access to finance is negligible and rotating savings and credit associations, tontines and borrowing from friends and family remain by far the most informal methods to save and access credit due to a lack of physical presence of either a bank or savings institution.

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<sup>154</sup> Aportela, 1999; Ashraf et al., 2010a; Ashraf et al., 2010b; Dupas and Robinson, 2009; and Dupas and Robinson, 2009.

192. **Financing constraints are also binding for private enterprises.** Credit to the private sector has hovered close to 20 percent for the past several years, and firms are financially constrained. Less than 16 percent of firms use a loan or line of credit, while over 45 percent of firms find access to finance their most binding constraint. Not surprisingly, usage of bank credit is even lower for SMEs and women-headed companies (12 percent and 9 percent respectively).

193. **For households, micro-entrepreneurs and poor farmers, financial access to savings, credit, and insurance products is seriously affected by the moribund microfinance sector.** While this sector is not systemically important, the number of microfinance depositors is actually greater than the number of banking sector depositors (*950,000 versus 900,000*), and it is estimated that over 70 percent of microfinance depositors have lost or are unable to access their savings. In a country where financial inclusion is so low, the complete loss of confidence in all saving and lending institutions geared towards the poor represents a fundamental obstacle to financial access to households, individuals, and micro-enterprises, affecting a major portion of Mali's population at the bottom of the pyramid.

194. **The range of low-income financial services that are available in other economies (micro-insurance, mobile banking, e-wallets, and microenterprise loans) have not yet been developed.** The absence of these services has direct implication for the ability of poor households to generate an income. Absence of access to credit or crop insurance forces farmers to opt for low risk, low return crops (like sorghum and millet) and limits the use of modern inputs which have to be purchased using cash. Following a shock, assets can only be rebuilt through a process of savings and self-accumulation as credit and leasing opportunities are not available. In the absence of a warehouse receipt system poor farmers are often forced to sell at low prices to repay debts; the absence of leasing services hinders access to ploughing services, for example.

195. **Financing constraints are acute for private enterprises, including agri-businesses which often need seasonal credit.** Credit to the private sector in Mali has not passed 21 percent, and less than 12 percent of SMEs have a loan or line of credit. Bank lending is concentrated in T-bills, direct investment into state owned enterprises and large companies. Medium term credit and equity financing are not available, forcing small and medium scale entrepreneurs with business ideas that require substantial upfront investments (such as solar mini-grids) to self-financing. Firms report that most investments (80 percent on average) are financed primarily from internal funds or retained earnings, while only 10 percent come from bank financing. Supplier credit (value chain financing, leasing, factor and other forms of agricultural credit) accounts for less than 5 percent of investment finance and 3 percent of working capital, while less than 5 percent of investments come from equity on average. Less than 3 percent of all bank loans are allocated toward agricultural investments.

196. **The opportunity cost of these missing financial services is significant in the Malian context.** For example, access to micro insurance (crop, livestock, and weather) is tied to better protection for farmers in times of bad weather or disaster, increased take-up of new production technologies, and improved farmer access to credit and financial services due to credit history, better productivity and income profiling, and access to information.<sup>155</sup> The availability of mobile

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<sup>155</sup> Gine, Yang, Dean, 2013.

financial services has been transformative in reducing levels of the unbanked across Africa, but has not yet reached Mali. In Kenya, where mobile money has been available since 2007, 83 percent of mobile users subscribe to various services, including the bulk of the unbanked poor since the introduction of M-Pesa.

197. **For SMEs and rural non-farm businesses, financial products such as factoring, leasing, and warehouse receipts could mean increased productivity and competitiveness,** particularly in manufacturing and agriculture sectors.<sup>156</sup> Factoring plays an important role for SMEs and new firms in emerging markets that often have difficulty accessing bank financing.<sup>157</sup> Similarly, for farmers and rural businesses, warehouse receipt systems can foster higher productivity, higher producer prices, greater access to financial services, and better quality crops.<sup>158</sup> For example, following the introduction of a warehouse receipt system in Tanzania for cashew nuts, farmers doubled both prices and output over a two year period.

198. **The regime for creditors' rights in Mali is a key factor in discouraging private sector credit.** Improving collateral and insolvency regimes are important to investment because they contribute to lender confidence in loan recovery upon default, which encourages more lending and leads to financial inclusion for more businesses. Out of 189 economies ranked by the Doing Business Indicators, Mali ranks 131<sup>st</sup> on the *Getting Credit* indicator, and is 108th for *Resolving Insolvency*. This is reflected in the terms and conditions of the loans for Malian firms. The value of collateral needed to secure a bank loan, for example, is over 200 percent of the value of the loan.

199. **Private sector lending is also constrained by competition from the State.** Bank lending is concentrated in T-bills, direct investment into state owned enterprises, and large companies. Medium term credit and equity financing are not available forcing small and medium scale entrepreneurs with business ideas that require substantial upfront investments to self-finance.

200. **The lack of an array of financial products available for poor people is missing because the microfinance sector is often the industry leader** in developing and delivering these financial services. Even prior to the crisis, however, the sector was fragmented, inefficient, and subject to political capture, and was largely a conduit for subsidized funds or grants to target populations. Without an overhaul of the sector, including consolidation, liquidation, combined with robust supervision and private sector investment, the sector will continue to preclude, rather than foster, savings, credit, and other financial services so critical for Mali's poor.

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<sup>156</sup> Insert definition of factoring.

<sup>157</sup> Klapper, 2006

<sup>158</sup> A warehouse receipts system can allow rural farmers to delay sales of recently-harvested crops by providing them with credit, storage space and market information until the market has stabilized and prices have increased.

## Electricity

201. **Electricity is widely recognized as indispensable for raising households' standard of living and broader economic development.** Access to reliable electricity is a pre-requisite for firms in rural and urban areas. Mali ranks low on the Getting Electricity indicators of the Doing Business ranking 2014 (132 of 189 countries, in 2014), but relatively better than other countries in the region (Capo Verde ranks 133, Senegal 183, Burkina 177, Niger 165). Once households 'electrify' they get an immediate benefit from better household lighting. With brighter light in the home, children spend more hours studying, adults have more flexible hours for completing chores and reading books, and home-based businesses remain open longer in the evenings, producing more items for sale. Rural electrification can also raise productivity and income when small entrepreneurs begin using electric tools and machinery. Access to electricity can be provided in different ways using the grid or non-grid solutions. The most suited way depends largely on economic density, with grid solutions being most appropriate for high density urban areas and off grid solutions for rural areas.

202. **Only selected rural areas can be connected to the grid.** Expanding the national electricity grid to reach a larger proportion of the population requires huge investments in transmission and even more in distribution because the overall population density of Mali is low and the rural population dispersed. For this reason, the national network expansion will remain limited in the foreseeable future and focus on: (i) expanding the distribution network in peri-urban or recently urbanized areas (especially around Bamako), and (ii) connecting to the national grid isolated localities with a relatively high level of demand that live close to the existing grid.

203. **In rural areas alternative solutions for providing access to modern energy services are needed.** A possible approach is the development of rural mini-grids, which has been the primary strategy promoted by AMADER. It is a bottom-up model, driven by decisions from local private entrepreneurs/cooperatives to construct and operate small-scale mini-grids in rural areas based on their perception of the local market. AMADER offers investment subsidies up to 75 percent of the capital investment costs, with local private operators providing an average matching co-financing of 25 percent. No subsidies for energy consumption or operating expenses are provided. Electricity prices in rural mini-grids are typically around 250 FCFA/kWh (50 USc/kWh). In comparison, the average regulated tariff for EDM clients remains on average below 100 FCFA/kWh (20 USc/kWh).<sup>159</sup> More than 60 operators are currently active for about 190 mini-grids. Existing mini-grids are mainly diesel-run and serve about 75,000 households and enterprises.

204. **Still, financing has been a problem for both AMADER and potential operators.** Most of the rural electrification activities are today based on donor contribution, making funding insufficient and uncertain. Potential operators have had difficulty raising equity or obtaining loans for the 20–25 percent share of capital costs not funded by AMADER. A tendency towards concentration of the sector however can be observed. While a large number of single site operators remain, four multi-site companies, with pre-financing capabilities, have emerged with 15 to 20

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<sup>159</sup> The fact that users in rural mini grids are ready to pay CFAF 250 / kWh (as opposed to CFAF 100 / kWh paid by urban electricity users) is an indication of the latent demand for affordable electricity.

sites each. This consolidation appears to facilitate professionalization of the operators, through diffusion of experience and best practices and increased specialization and can contribute, if sustained properly, to the sustainability and the expansion of the rural electrification sector. Given the political and security situation of Mali, local actors are likely to conserve comparative advantages for the management of rural energy concessions, possibly in partnership with foreign firms. Promoting leasing arrangements and instituting a loan guarantee program for Malian banks that would be willing to lend to potential private sector operators have been discussed as methods of reducing financial barriers for operators.

**205. For the majority of the rural population, non-grid solutions, such as Solar Home Systems or efficient solar powered lighting products is a more viable option than grid based systems.** As 0.3 percent of total household consumption is spent on paraffin (ELIM 2010), the market for solar lighting is potentially huge as it offers a cost-effective alternative. Even for the poorest households and without considering the spending on dry cells, car batteries or cell phone charging, for those who spent approximately \$ 5 per capita on paraffin per annum, purchasing simple solar lights is a cost-effective alternative. Solar home systems have been found to increase evening study hours of both boys and girls; reduce fuel collection time of women; and help improve access to information (adoption of TVs, phone charging). These in turn help promote women's decision-making power and information sharing and have also been found to reduce women's and children's morbidity from respiratory diseases by reducing kerosene consumption.<sup>160</sup>

**206. Low awareness of solar lighting technology amongst consumers and retailers and the (relatively) high upfront cost of solar solutions limit the demand however.**<sup>161</sup> Solar lanterns face price elastic demand due to the availability of substitutes (such as kerosene lights) with low upfront fixed costs, but high recurring costs. The successful introduction of solar lights may thus require an awareness campaign but also improved access to finance by households (microcredit; mobile savings) and retailers (supplier credit) as well as the consideration of other financing solutions such as leasing.<sup>162</sup>

**207. Quality of on-grid electricity services is deteriorating as Energie du Mali (EDM) is in financial distress.** The reliability of grid electricity is affected by the fact that EDM faces serious capacity shortages, dilapidated infrastructures and is in financial distress as a result of high oil prices, large efficiency losses, poor management and, most critically, a substantial gap between cost of production and electricity pricing. Electricity tariffs are largely disconnected from costs. For 2013, the sector regulator (CREE) estimated the average cost recovering tariff at 123 FCFA/kWh (US cents 26/kWh), while the average tariff was 96 FCFA/kWh (US cents 20/kWh)<sup>163</sup>. The fiscal resources received by EDM to make up for recurrent losses are large (subsidies reached US\$80 million in 2013, equivalent to the total public health budget the same year) and not targeted to the poor. The underpricing of grid electricity and the underperformance of EDM's management

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<sup>160</sup> Hussain A. Samad, Shahidur R. Khandker, M. Asaduzzaman, Mohammad Yunus (2013). The Benefits of Solar Home Systems: an Analysis from Bangladesh. World Bank Policy Research Paper no: 6724.

<sup>161</sup> Dalberg 2013. Mapping the supply chain catering to the base of the pyramid in Mali

<sup>162</sup> Investment costs for new Solar Home System are estimated around US\$ 700 (although operators implemented a fee-for-service model, by which investment cost is recovered through monthly consumptions).

<sup>163</sup> Recent drop in oil prices may produce positive impacts for EDM if sustained over time.

need to be addressed urgently as EDM's precarious operational and financial situation prevents proper maintenance and discourages investments in much needed additional generating capacity.

## ICT

208. **Improved access to mobile phone services (voice, text, mobile money and banking, internet) benefits households in multiple ways.** Mobile phones can improve access to and use of information, thereby reducing search costs, improving coordination between different parties, and increasing market efficiency. This is the most obvious benefit of mobile phones. As mobile phones have greatly reduced communication costs, they allow individuals and firms to send and to obtain information quickly and cheaply on a variety of economic, social, and political topics. An emerging body of research shows that the reduction in communication costs associated with mobile phones has tangible economic benefits including improving agricultural and labor market efficiency and producer and consumer welfare <sup>164,165</sup>.

209. **Another benefit of mobile phones is that increased communication should improve productive efficiency by allowing firms and service providers to better manage their supply chains and delivery of services.** Fishermen, for instance, who can choose where to land their fish are known to first enquire about prices in different markets before deciding where to sell. As a consequence, findings showed a significant reduction in the dispersion of fish prices across markets.<sup>166</sup> In Senegal, the Manobi platform was created primarily to provide real-time information on agricultural prices in local and international markets, resulting in an increase in certain farmers' incomes by more than 40 percent.<sup>167</sup> Health practitioners remind patients about their therapy or drug schedule.

210. **Mobile phones create new jobs to address demand for mobile-related services.** This is a third benefit of mobile phones. These can be services directly related to mobile phones, such as the sale of airtime or services to repair a phone or to charge a phone's battery. But they can also be indirect services such as motor-taxi services, which can be requested by people living remotely simply 'beeping' the driver. Such services can be life-saving, for instance when someone urgently needs to be taken to a health facility.

211. **Mobile phones facilitate communication among social networks and geographic areas in response to shocks.** Covariate shocks such as floods or drought, but also violence and epidemics routinely affect households clustered in certain localities. By offering the ability to solicit assistance from relatives or friends living in areas not affected by the shock, mobile phones help to cope with households' exposure to risk. For instance, ICT platforms recently played a central role in improving the effectiveness of healthcare institutions and emergency coordination centers fighting ebola in contaminated countries, by improving information flows and electronic payments for emergency response teams as well as the public. In combination with a last benefit of mobile

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<sup>164</sup> Robert T. Jensen (2007). The Digital Divide: Information (Technology), Market Performance and Welfare in the South Indian Fisheries Sector. *Quarterly Journal of Economics*, 122(3): 879–924.

<sup>165</sup> Jenny C. Aker (2010). Information from Markets Near and Far: Mobile Phones and Agricultural Markets in Niger. *American Economic Journal: Applied Economics*, 2(3): 46–59.

<sup>166</sup> Jensen (2007)

<sup>167</sup> Dalberg (April 2013), Impact of the Internet in Africa: 25.

phones, the potential to facilitate the delivery of financial, agricultural, health and educational services, this enhances the resilience of households. In Sierra Leone, World Bank social protection team used mobile payments successfully to issue \$450,000 of payments to 6,000 community workers. In Mali, mobile phone banking for those with a bank account is taking off; even more citizens convert cash to ‘store’ it on their mobile phones or to transfer it to others. As of September 2014, there were more than 2 million subscribers to the mobile money platform. Amongst these, 35 percent used the platform on at least a monthly basis.<sup>168</sup>

**212. The poorest households and communities benefit least from the advantages mobile phones have to offer.** Despite the rapid spread of mobile phone ownership (almost all households now have one mobile phone), poor households are still much less likely to use their phones. Moreover, the poorest communities are least covered by a mobile phone network. Of the 4,229 communities identified by the 2013 ODHD census as very poor, only 32 percent was covered by a mobile phone network capable of providing voice, text as well as mobile money and banking. This compares to a coverage rate of 89 percent amongst the non-poor communities.

**213. Broadband internet remains limited to main urban areas.** Despite its potential to increase business efficiency, expand markets, create new opportunities for jobs and provide an important tool for social connectivity (especially amongst the youth), broadband internet does not reach much beyond Bamako and the provincial capitals. Also within the government, the power of ICT to enhance public service delivery and to expand communications channels for engagement and empowerment of citizens remains largely untapped. Mali ranks 181 out of 193 countries in the 2014 E-Government Development Index<sup>169</sup>, down from 175 in 2008.

**214. A universal access policy is needed to increase access and use of mobile phone services.** A universal access policy will help ensure that poor communities are covered by a mobile phone network too. A policy is needed because progress on mobile phone network coverage has been very slow. In 2008, 198 out of 666 rural communes were not covered by a mobile phone network. By 2013 as many as 108 remained uncovered. This despite a more than five-fold increase in the number of mobile phone subscribers. Other policies may also have to be put in place to ensure access for all including policies regarding financial regulation regarding the security of mobile money, savings and transfer as well as policies to accelerate the roll out of broadband networks.

**215. Increased competition can be expected to put downward pressure on mobile phone prices and foster quality improvements, making access more affordable and more ubiquitous to all households.** With only two companies active in the mobile phone market (Orange and Malitel), competition remains constrained and with it, the incentive to cut prices and improve the quality of service not only for the voice service which is approaching saturation but more importantly for the burgeoning broadband Internet service, where there is an urgent need for a more leveled playing field between the mobile operators and the independent service providers.

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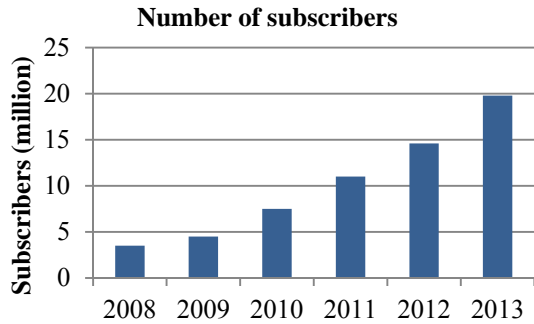
<sup>168</sup> Source: Orange Mali

<sup>169</sup> Source: <http://unpan3.un.org/egovkb/en-us/Reports/UN-E-Government-Survey-2014>

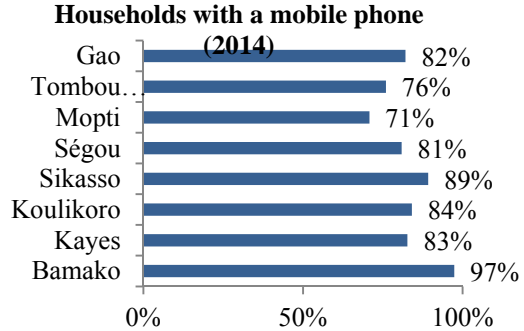


**Figure 4.7: The ICT sector in Mali**

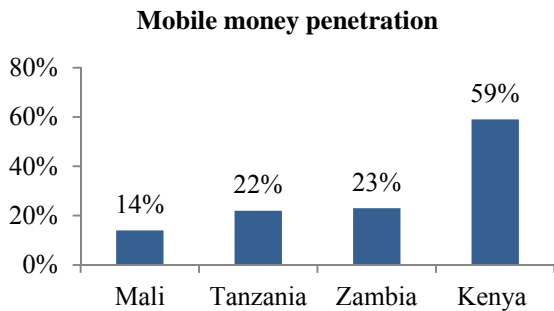
*Mobile telephony has taken off rapidly*



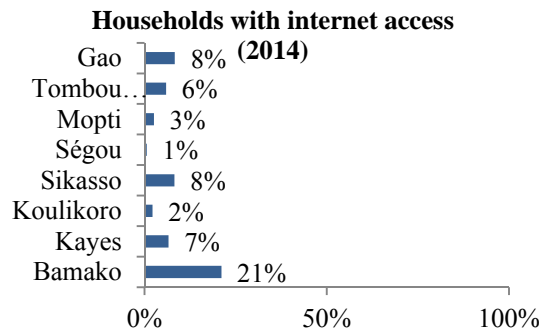
*... and reached households in all regions*



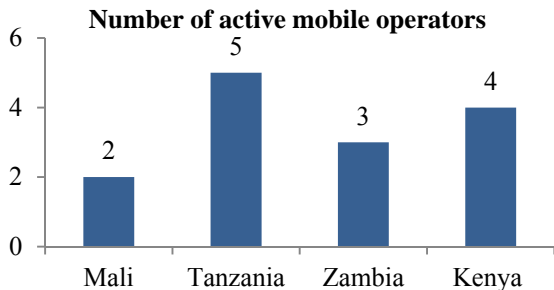
*Introduced in 2010, mobile money is spreading fast*



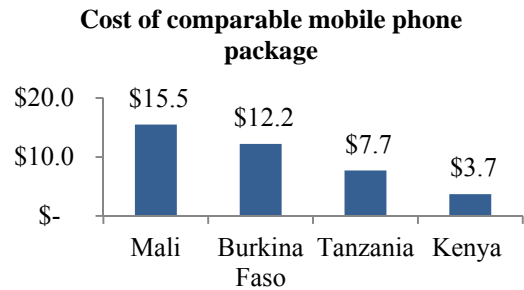
*Internet, on the other hand, remains accessible to few*



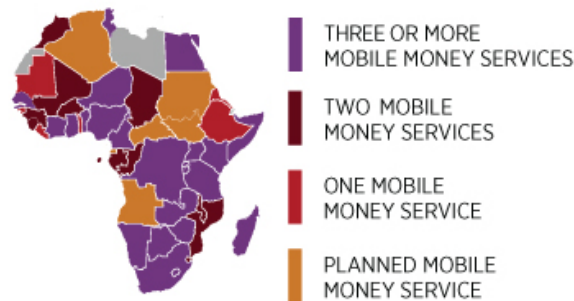
*There is little competition in the ICT market*



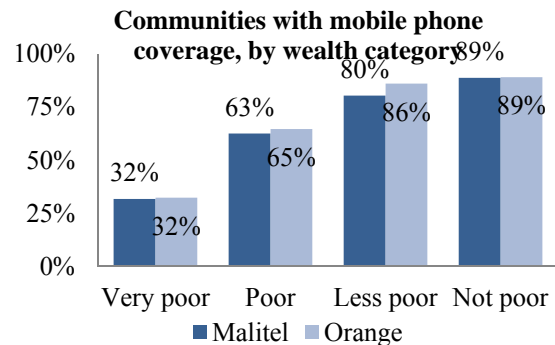
*... and prices are high.*



*More competition is needed ...*



*As are (universal access) policies that ensure poor people and communities benefit from the ICT revolution.*



Source: World Bank 2014. Bilan de la libéralisation du secteur des Technologies de l'Information et de la Communication au Mali et options de réformes sectorielles

## 4.7 Reducing poverty through social transfers

216. **Social Safety Nets (SSNs) programs contribute to poverty reduction in the short-term, directly through transfers of income and consumption goods and indirectly, as well as in the medium and long term by protecting or expanding the productive assets of households.** Social safety nets can be used as short term instruments to help the poor cope with economic shocks, but also as medium/long-term poverty alleviation programs, supporting minimum consumption levels and promoting the accumulation of human and physical capital. Particularly in environments characterized by high prevalence of (weather) shocks, poverty traps and limited access to financial instruments (credit, insurance), safety nets can play an important role in enhancing household productivity.

217. **Predictable, multi-annual social protection support to households has been shown to result in investments in human capital and assets.** When transfers are provided over multiple periods to poor households, they are used to pay off debts, accumulate productive assets or to buy inputs (fertilizer).<sup>170</sup> This enhances productive capacity and resilience such that eventually they no longer require support. Experience shows that these objectives are more effectively achieved when safety net support is combined with investments in livelihoods.<sup>171</sup> Adaptive social protection is one of the tools to be used. It enables beneficiaries to invest in productive assets, stimulates use of basic social services and reduces sensitivity to future shocks.

218. **The choice of safety net depends on circumstance; safety nets need to reflect different livelihoods and require a profound understanding of the binding constraints to poverty reduction.** In areas where the vast majority of households is poor, geographic targeting may be preferred over household specific targeting. In such situations a transfer program that is ‘a mile wide and an inch deep’ may be very effective especially if it prevents households from selling productive assets or from reducing food intake (a common strategy in Mali)<sup>172</sup>. Yet the same approach would predictably be very ineffective in the presence of critical wealth thresholds below which an autarkic savings and asset accumulation strategy is no longer feasible and households are stuck in chronic poverty. In such instances large significant transfers may be more effective than small frequent transfers.

219. **Well-designed safety nets strengthen community resilience.** The capacity of central government to identify the most vulnerable or to design location specific programs is limited. It necessitates an approach that embraces decentralized, local level decision making to identify the types of programs that are needed and its beneficiaries.<sup>173</sup> Such an approach fits well in the Governments stated objective of decentralization and, in a context of heightened and continued insecurity, helps build resilience. At the same time, successful local level approaches require

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<sup>170</sup> See for instance for evidence from Niger: Quentin Stoeffler and Bradford Mills (2014): Households’ investments in durable and productive assets in Niger: quasi-experimental evidences from a cash transfer project.

<sup>171</sup> Even so, for some households, depending on the context, this process can take a long time.

<sup>172</sup> Hoddinot 2008. Shocks and their consequences across and within households in rural Zimbabwe. Chapter 7 in Barret, Carter and Little. Understanding and Reducing Persistent Poverty in Africa (Routledge, New York).

<sup>173</sup> In this regards some lessons can be drawn from the conflict in the north which has demonstrated that some sectors such as fishing and subsistence farming were more resilient than others. As mobility became increasing risky, actors in all value chains moved production closer to home. Investments in small animal production, kitchen gardens and fishing offer options to maintain a minimum livelihood.

central level support: funds have to be transferred, the quality of construction assessed and policies to facilitate the adoption of new technological solutions (such as mobile phone cash transfers) adopted.

**220. Well-designed safety nets can address multiple constraints at the same time.** Labor intensive public works schemes offer such possibilities. By offering guaranteed access to income in time of need (off-season), they induce households to adopt higher risk, higher return activities. By offering a safety net when a shock materializes they help prevent the sale of productive assets and inputs and by creating public infrastructure, they help mitigate weather risks (irrigation), enhance access to markets (maintenance of all-weather roads) or facilitate reconstruction of public infrastructure that has been destroyed by the conflict in the north. For non-able bodied, or in situations where public works programs are too costly, conditional cash transfers offer similar advantages with the main difference being that human capital instead of community assets are accumulated.

**221. Mali's present safety net program has few of the desired features and an overhaul is needed.** Most of Mali's safety nets are concentrated on food support. Food sales at subsidized prices implemented through cereal banks and local authorities, and ad hoc measures to stabilize food prices such as the closure of the border for food exports or the waiver of import duties on imported foods are the main strategies. These are not specifically targeted towards the poor<sup>174</sup> and disturb the effective functioning of the market for cereals. Cash transfers and labor intensive public works programs are implemented only on a limited scale (cash transfers) or in response to crises (public works), while asset transfers programs are not even under consideration. Given the potential of a well-designed safety net program to directly reduce poverty through transfers, and indirectly by increasing household productivity<sup>175</sup> an overhaul of the transfer program is needed.

**222. The fiscal costs of a large scale safety net program are not insurmountable.** In the introduction to this chapter it was noted that the current level of ODA is sufficient to bring all poor households to the poverty line. A transfer of FCFA 10,000 per household over 36 months<sup>176</sup> to 43.5 percent of the population (which constitutes all households that are classified as poor under the national poverty line) would cost approximately FCFA 51 billion (US\$102 million) per year. This is equivalent to one percent of GDP and the same as presently is being spent on electricity subsidies which largely benefit better off urban households. Simulations of the potential impact of such a cash transfer on poverty suggest a 4.6 percent reduction in the poverty rate, a 5.8 percent reduction in the poverty gap, and an over 7 percent reduction in the severity of poverty in the targeted regions, even accounting for targeting errors.

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<sup>174</sup> World Bank 2015. Opportunities for social protection to address poverty and vulnerability in a crisis context. Mali Social Protection Policy Note.

<sup>175</sup> The FAO LEWIE (Local Economy-wide Impact Evaluation) model constructed for the cash transfer programs in Kenya, Lesotho, Ghana, Zambia and Ethiopia generated nominal income multipliers ranging from 2.52 in Hintalo-Wajirat in Ethiopia to 1.34 in Nyanza, Kenya.

<sup>176</sup> A transfer of FCFA 10,000 per month per household (equivalent to US\$20) is: (i) commensurate with international experience (below 15 percent of the poverty line and below 20 percent of beneficiary households' expenditure levels); (ii) likely to have a significant impact on the level and quality of household food consumption; and (iii) likely to reduce food poverty headcount by 4.6 percent and food poverty gap by 5.8 percent.

## 5. CONSTRAINTS TO THE IDENTIFIED POVERTY REDUCTION OPPORTUNITIES

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*The main obstacles to poverty reduction in the short run are insecurity, the low incomes of the rural poor and vulnerability to shocks. In the long run, poor governance and low levels of (female) education need to be addressed to strengthen the foundation for economic transformation and to facilitate demographic transition. To address these obstacles three sets of binding constraints are identified: (i) a **personalized competitive settlement** within which the most pressing issues are: peace; policy reforms leading to improved revenue generation and more efficient pro-poor spending, a resilient and developmentally oriented cotton sector and improved education quality; and transparency and social accountability. In the second cluster of binding constraints; (ii) **low productive capacity by poor farmers and pastoralists** increasing agricultural production (irrigation; seed development; ability to plow; fertilizer and skills; training and extension) and the development of selected value chains are the most pressing issues. In the third cluster (iii) **exposure to uninsured risk** the introduction of safety nets and improvements in the health and education systems are identified as most pressing constraints.*

### 5.1 The prioritization process

223. **The prioritization process took place in three phases. As a first step the characteristics of an environment in which poverty is sustainably reduced were identified.** Desk analysis suggested that for poverty reduction in Mali to be sustainable, economic and demographic transformation are needed. The analysis also noted that the foundations for such transformation to materialize by 2030 are not in place: levels of human capital are too low (chapter 1), the capacity of the bureaucracy too limited (chapter 1), transport costs too high (chapter 1) and the degree of economic complexity too low (chapter 3). This was confirmed during field visits early in the SCD process during which discussions were held with smallholder farmers, commercial large scale farmers, those involved in the value chains of horticultural products as well as with manufacturers working in the agricultural value chain. The review also noted that there are no major long term macro-fiscal concerns (see chapter 3), and identified risks associated to climate change as serious (see chapter 1).

224. **Recognizing that “between-sector” transformation requires a foundation to materialize, the prioritization process then considered, as a second step, the poverty reduction strategy that could yield the largest reductions in poverty by 2030,** in a way that does not jeopardize, but in fact supports, the long run trajectory for poverty reduction. This strategy started from the joint observation in chapter 2 that most of the poor live in rural areas, are engaged in agriculture or pastoralism and that in the early 2000s rapid poverty reduction was achieved through a combination of improved infrastructure, increased remittances, increased off farm income generating opportunities and above all, increased cereal production. On the basis of these observations, chapter 4 explored opportunities for poverty reduction that builds on a process of economic transformation that starts with the primary sector.

225. **The next step in the prioritization process was a two-day country team retreat during which binding constraints were identified, discussed and ranked.** The retreat elaborated on the question *how to increase resilience, and on and off-farm income generation by poor rural households with a focus on cereal crops and selected high value crops (cotton; tropical fruits;*

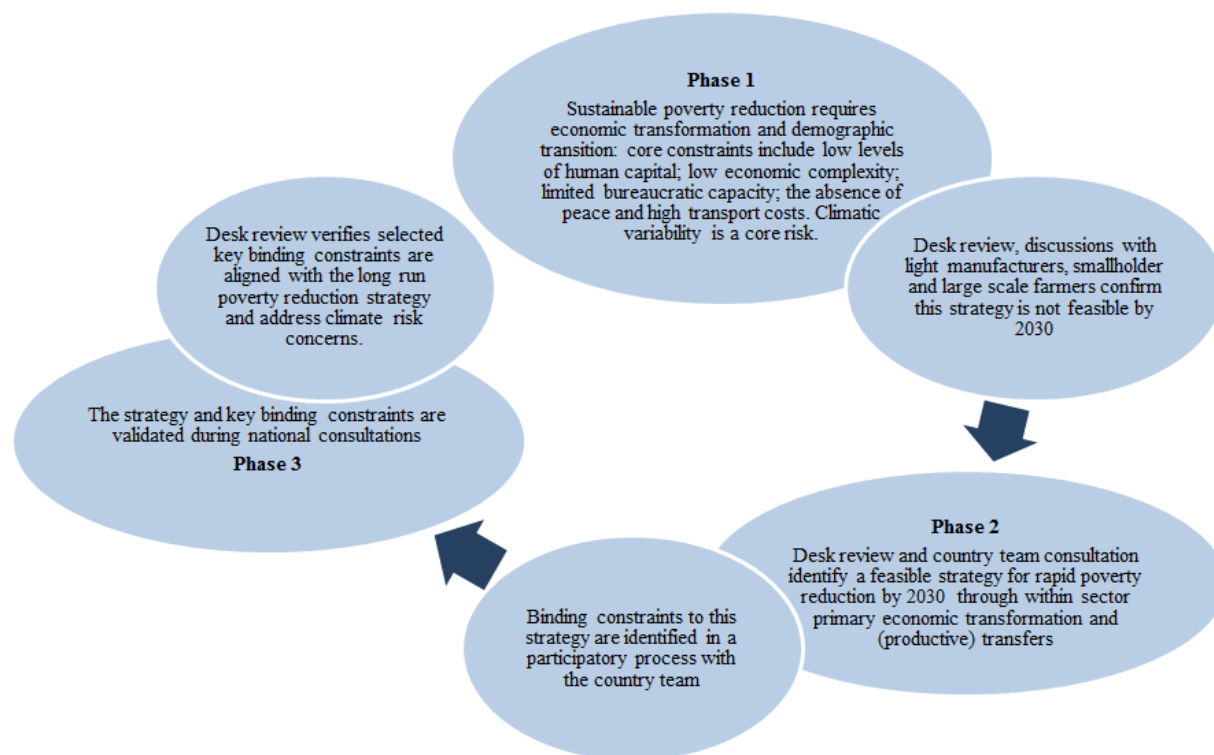
*horticulture*). Prior to the retreat the draft SCD (chapters 1-4) had been distributed to the country team. Participants at the retreat gave presentations on: poverty; human capital formation and transfers; governance challenges; increasing productivity in agriculture and improving the functioning of markets value chains. The retreat identified 54 constraints, which were discussed at length and categorized into 13 challenges. To rank the constraints, retreat participants voted on each of the constraints/challenges using as criteria: impact on poverty reduction (short and long run); feasibility; capacity to implement; cost and evidence base (the list of 54 constraints can be found in the annex to this chapter). Informed by the retreat, the challenges were grouped into 3 “core binding constraints”: a personalized competitive political settlement; low productive capacity of farmers and pastoralists and exposure to uninsured risks. The ranking of the challenges under each of the core binding constraints is presented in Table 5.1.

**Table 5.1: Ranking of binding constraints**

<b>Challenges</b>	<b>Poverty impact, short term</b>	<b>Poverty impact, long term</b>	<b>Feasibility</b>	<b>Capacity</b>	<b>Cost</b>	<b>Evidence</b>
<b>Governance / a personalized competitive political settlement</b>						
Inadequate service delivery	High	High	Low	Low	Medium	High
Lack of accountability and transparency	High	High	Low	Low	Low	High
Poor collection and allocation of public resources	High	High	Low	Low	Low	High
<b>Low productive capacity of farmers and pastoralists</b>						
Lack of scale and aggregation	Low	Medium	Low	Low	Medium	Low
Inadequate market support services (storage, electricity)	Low	High	High	Medium	High	High
Inadequate transport services	Low	High	Medium	Medium	High	Medium
Inadequate access to (adapted) financial instruments	Medium	High	Medium	Low	Low	High
Limited use of technologies for improved productivity (and resilience)	Medium	High	Medium	Medium	Medium	High
Limited access to (irrigated) land and use of equipment by rural households	High	High	Medium	Low	High	High
<b>Resilience / exposure to uninsured risks</b>						
Fragility and inadequate security	Low	Medium	Low	Low	High	Low
Weak farmer organizations	Medium	High	High	Medium	Low	Medium
Limited means for risk management and absence of (productive) safety nets	High	High	High	Low	Low	High
Inadequate human capital (health, education, nutrition)	High	High	High	Low	High	High

226. **The third step of the prioritization process were in-country consultations and a consistency check of the identified binding constraints with the long term objectives of economic transformation and demographic transition.** Consultations were held on February 9<sup>th</sup>, 10<sup>th</sup>, and 11<sup>th</sup> in Bamako with representatives of Parliament, government, and of the administration gathered for the event. Members of non-governmental institutions, associations, research NGOs, universities and representatives of the civil society, and representation of development partners also participated. Separate consultations were held with donors, the private sector, and representatives of Malian youth. Like the country team retreat, consultations were structured around different themes: poverty, agriculture, private sector development, governance and social protection. The three core binding constraints were broadly confirmed, though different accents were expressed. Security of tenure, for instance, was raised as a major concern as was the need to improve data collection and the need for donors to coordinate their actions. Poor governance; low levels of education and inadequate health were seen as main obstacles to growth; private sector development was seen as essential for growth. Following the consultations, the identification of core binding constraints was finalized. Part of this process was to confirm that the “short term” binding constraints were aligned with the constraints to long term development. This process ensured that an identified risk and source of fragility like climate change was fully integrated in the constraints related to increasing the productivity of agriculture (climate smart; sustainable irrigation) as well as the constraints associated to resilience.

**Figure 5.1: Schematic overview of the prioritization process**



## 5.2 Focusing the poverty reduction efforts

227. **The evidence presented in the previous chapters suggests that the main obstacles to poverty reduction in the short run are insecurity in the north, vulnerability to shocks and low off and on farm incomes of poor households.** The focus on incomes of poor households in-situ in rural areas is informed by the geographic location of the poor now and as projected by 2030 (in rural areas); their core income generating activities (primary sector production and casual labor) and consumption patterns (cereals make up a large share of the consumption of the urban and rural poor); the high exposure to shocks (weather, price variation, health, security, violence and fragility) and the limited opportunities for economic transformation by 2030 (landlocked country, extremely low levels of education, low economic complexity). Strengthening selected value chains in areas in which Mali is performing will deepen the productive knowledge in the economy while improving the incomes of the poor will facilitate higher public and private investments in human capital. The latter will also increase resilience thus leading to a virtuous cycle of higher incomes and reduced vulnerability. Together, improvements in human capital and economic complexity are expected to facilitate successful rural-urban migration and to lay a strong foundation for between-sector economic transformation.

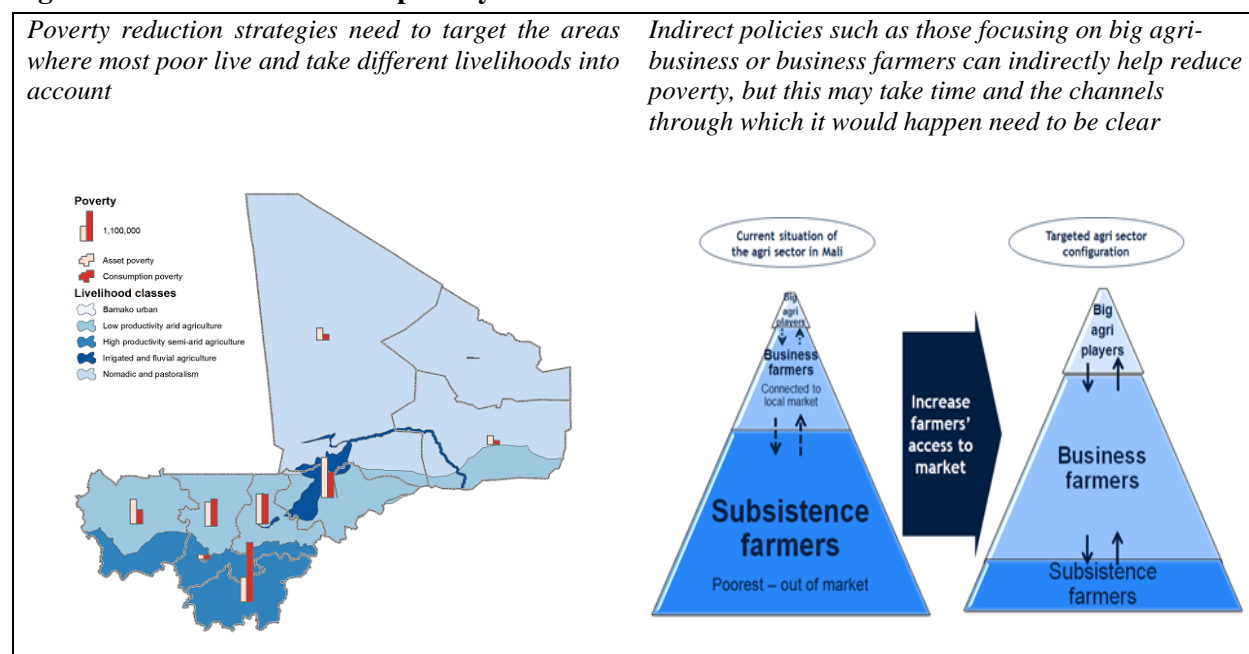
228. **Poverty reduction efforts focused on reducing vulnerability and increasing the incomes of the poor need to be complemented with redistributive efforts.** Safety nets have the potential to reduce the number of poor directly and at scale: less than 2 percent of GDP in perfectly targeted transfers in combination with 2 percent of growth per capita (of the poorest households) is sufficient to eliminate poverty by 2030. Safety nets not only have a redistributive function; well-designed safety nets offer opportunities to enhance household incomes by allowing increased risk taking and by improving the productive asset base.

229. **An effective poverty reduction strategy needs to target the areas where the majority of the poor live and to introduce interventions that are locally adapted.** Population density and the incidence of poverty vary across the territory of Mali, but as the vast majority of the poor live in southern Mali –including Kayes and the Niger Delta, most of the attention would need to go to these areas. And as livelihood patterns and productive potential vary considerably across the nation (from transhumant pastoralism to farming in the high productivity zone), interventions have to suit local circumstances. Interventions also need to take gender into account, for instance, to avoid that productivity improving investments such as irrigation, lead to women losing access.

230. **Policies to reduce rural poverty extend beyond improving the lot of poor farmers (and agro-pastoralists) directly.** Poor farmers participate in the wider economy and benefit from improvements therein. While the on-farm incomes of poor households are low they rely on social networks for resilience and on casual labor opportunities offered by better off households. Poor urban households benefit from reductions in food prices brought about by increased production of business farmers. Poor rural households benefit from technologies and value chains developed for more commercially oriented farmers. As a result, increasing the incomes of the less poor can be an effective strategy to reduce poverty, though its impact on poverty is not direct and its effectiveness needs to be demonstrated.

231. **Three clusters of key binding constraints to reducing poverty have been identified.**

**Figure 5.2: Considerations for poverty interventions**



### 5.3 Binding constraint 1: a personalized competitive political settlement

232. **The personalized political settlement that has emerged in Mali allows the polity to survive politically through elitist, urban policies and spending as well as captured institutions at the expense of adequate public service delivery.** In a personalized intermediate competitive country-type<sup>177</sup>, contending factions are largely unconstrained by formal rules. Political arrangements are organized around personalized interactions and distribution of rents among elites (consensus politics), and between elites and non-elites. The incentives of the ruling elite sustain high levels of favoritism and nepotism, and a bureaucratic culture in which kickbacks and the diversion of public funds are the norm. Consequently dysfunctionality touches all activities and levels of government. Poor governance is behind the conflict in the north and is the primary reason why rural poverty remains pervasive. It explains the absence of progress to address the unacceptably low levels of public service delivery. It also explains the persistence of policies which favor the rich and urban class and the failed attempts at decentralization.

233. **Creating peace and stability in the north take priority.** The existence of a large ungoverned space in the north, and the gradual expansion of the insecure area towards the south, in combination with citizens who are disillusioned with their political class, created space for extremism and popular resentment in the north and the south of the Mali. State legitimacy is low and the situation fragile. Some poorly managed shock (a climatic event, a major terrorist attack, a citizen revolt, coup d'état or a disease like ebola) could profoundly upset the existing political

<sup>177</sup> Brian Levy 2014. Working with the grain. (Oxford University Press).



settlement. If this were to happen it can be expected to derail the prospect for development of the entire nation for a long time to come. Avoiding the spread of insecurity towards the more densely populated areas and restoring security in the north are thus of critical importance. In the short run, restoring security requires a signed peace accord but to be implemented and sustained governance reforms are also needed: to improve service delivery, to reinvigorate the decentralization process and to restore state legitimacy in general.

**234. For poverty reduction those aspects of governance with a direct and negative impact on rural development need particular attention.** Even then the list is long. It includes reform of the cotton sector, Office du Niger, allocation of the Niger river water, fertilizer policies. It covers reforms in the telecommunications sector to improve geographical coverage, innovativeness and cost and in the transport sector to reduce road blocks and increase competition. The financial sector has to be reformed to spur the development of new products relevant to rural households. The land registration system has to be reformed to improve security of tenure and to end land-grabbing and speculation. The tax system has to be reviewed to reduce the bias against small and medium scale enterprises and the collection (mining), allocation and spending (procurement systems) of public resources has to improve. Reforms are also needed to improve public service delivery, particularly those of direct relevance to the poor: education, health, water and sanitation, rural transport, extension and veterinary services. The approach to public service delivery has to be reviewed with an eye to creating more space for the delivery of services by private sector operators. Land policies, finally, have to be addressed to reduce conflict (including between pastoralists and farmers), to increase investor confidence and to reduce land grabbing and speculation. It needs to become clear what type of law prevails in which situation.

**235. In many areas, policy reforms have to be successfully completed before considering major new investments.** Access to electricity was found to be a problem, but investments in additional generating capacity for the grid will have to be sequenced with adequate policy reforms that bring tariffs in line with costs. Investments in infrastructure are unlikely to reduce the cost of transport unless accompanied by reforms addressing the capture of rents at roadblocks and by trucking cartels. Investments in ICT infrastructure have to be preceded by reforms that improve competition in the sector. Low levels of education hinder efforts to reducing poverty both in the short term and in the long term, however the rate of return to formal education will remain low unless effective policy reforms to improve the quality of teaching are enacted. Adult literacy on the other hand, has been found to be strongly associated with lower levels of poverty.

**236. Instead of ranking reforms by priority and attempting to achieve first-best solutions, an adaptive, opportunity driven, incremental, good-enough approach to policy reform is more likely to succeed.** In a personalized competitive country-setting, standard technocratic reform – for example, the introduction of a ‘level playing field’ for business or a meritocratic public sector -- are contrary to the personalized-competitive political logic, so are unlikely to gain much traction. Rather, development gains are likely to come incrementally via a combination of two strategies: a sustained approach to governance reform -- addressing specific capacity, policy and institutional constraints as and when they become binding; and an ‘islands of effectiveness’ approach -- where groups of developmentally-oriented stakeholders co-operate opportunistically to achieve a specific developmental purpose for which they have an incentive to see results. This necessitates flexibility, adaptability and, persistence, and, as resources are limited, the

identification of a small number of policy reforms that are pursued vigorously (in addition to those that occur opportunistically).

**237. Policy reforms to improve PFM systems, the functioning of the cotton sector and to improve the quality of education should take priority.** Stronger, more transparent PFM systems improve fiscal sustainability and are critical for restoring state legitimacy and for increasing the budget envelop. Such a large share of (potential) public resources remains uncollected (from mining companies and through import tax exemptions), is lost through inefficient procurement or is used towards poorly targeted subsidies and tax exemptions. If these issues were to be addressed, 3 to 5 percentage points of GDP could feasibly be generated: money that could be used to improve service delivery (it would be more than adequate to create a large scale safety net). The cotton sector is of importance because it touches the lives of so many farmers and because it has demonstrated its potential to act as an engine of rural development. The quality of education, finally, is critical because if the human capital base is not improved, economic transformation and demographic transition remain out of reach and though investments in education may improve access, they would yield a low rate of return.

**238. Weak (social) accountability and transparency mechanisms create space for the political and economic elites to behave in anti-developmental ways. Strengthening these mechanisms is a priority.** Elite capture happens at all levels and can be reduced by increasing the risk of exposure. Improving the collection of information, the capacity to analyze it and to put it in the public domain are critical. Technological advances provide new opportunities for monitoring and dissemination of findings. Donor agencies, whose resources are the equivalent of 40 percent of the budget can play a catalytic role by insisting on transparency around the spending and results of their own programs and interventions. But it is important to keep in mind that those same donor agencies were instrumental in the emergence of the prevailing political settlement.

#### **5.4 Binding constraint 2: low productive capacity of poor farmers and pastoralists**

**239. Low levels of production keep rural households poor.** Poor rural households lack the capacity to be productive. They have no farm equipment other than the hoe which limits the area that can be brought under cultivation (land is not a constraint in most places)<sup>178</sup>. Rural dwellers are uneducated and illiterate, and their capacity to work is negatively affected by poor health. Consequently they cultivate tiny plots of (unirrigated) land that are too small to sustain their food needs. To make ends meet, the poorest combine agriculture with casual employment. Outmigration is less of an option as people lack the skills or formal education to succeed elsewhere in the economy. Particularly in the low-potential rain-fed zone this is an obstacle as the potential to make a decent living from farming alone is limited.

**240. A first priority is improving access to equipment and irrigated land.** Access to farm equipment (draft animals, plowing services) will facilitate bringing more land under cultivation, while access to irrigated land allows obtaining multiple harvests throughout the year. It requires a multi-sector approach to bring greater integration between farming and agro-pastoral systems, for

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<sup>178</sup> Conflicts about land do occur regularly, particularly in urban and peri-urban areas, in irrigated zone and in areas where the interests of pastoralists and farmers collide. For the majority of farmers, however, land is available as evidenced by the fact that about 3.2 million hectares out of a total of 12 million with cultivation potential is cultivated.

skills development (animal traction; mechanics), the development of adapted financial products (leasing) and the development of a market for farm services. Increased levels of production will also increase the demand for casual labor, thus creating an indirect channel for poverty reduction.

**241. Reducing the yield gap for crops grown mostly by the poor (maize, millet) and by those who engage with the market (rice, maize, cotton, horticulture) is another priority.** The yield gap for crops grown most by the poorest households (sorghum, millet) is particularly high. While closing the entire yield gap may not be realistic, reducing the gap by half implies a doubling or tripling of current production. Closing the yield gap would increase primary GDP significantly (food crops make up 50 percent of primary sector GDP) but necessitates soil improvement, seed development and better access to inputs while enhanced adult literacy and extension services will allow farmers to adapt to changing farming techniques. For the more commercial crops, reforms of the fertilizer market in combination with irrigation are needed. Even though cotton is not grown by the poorest households (they lack the equipment to cultivate sufficient land) cotton is a critical crop for more commercially oriented farmers. A better functioning cotton sector (a crop grown by 29 percent of farm households in 2004/5 and contributing 5 percent to primary sector GDP) will increase demand for casual labor. It will also improve the provision of critical services associated with the cotton value chain (producer organization, access to fertilizer on credit, extension, rural roads and in some instances even literacy programs).

**242. Improving the functioning of value chains for selected crops and animal products is a third priority that requires a multi-sector approach.** The value chains for food grains, chicken, meat and milk as well as those of selected horticultural products need to be strengthened. It means interventions at the village level (stronger producer organizations to facilitate access to inputs, credit, storage, quality control and marketing), the middle-level (small and medium sized traders who aggregate, package, store and distribute) all the way to the national level where large businesses use the produce in their transformation processes or provide access to the urban and export markets. The latter is particularly important to prevent that prices collapse following successful increases in production. Policy reform (discussed in the previous section) is needed to address biases against the proper functioning of value chains (tax policies, export bans, import subsidies). A focus on food grains (and small animals) would benefit the poorest in rural and urban areas alike, as it would reduce price levels and fluctuations for food stuffs that make up the bulk of their consumption. In selected cases other value chains may also be considered: particularly when it concerns for crops that create a large demand for casual labor.

**243. Opportunities for the local transformation and off-farm employment need to be developed.** The farming season is short and the demand for labor seasonal. Off farm employment opportunities are important to lengthen the time during which the rural labor force is gainfully employed. Such opportunities can come from labor migration; artisanal gold mining may be important as are sustainable ways to produce charcoal. When employment opportunities are created by local enterprises they will often enhance the demand for locally produced goods and thus strengthen the local economy. Access to electricity, to finance and to markets, along with skills development are instrumental to realizing such opportunities.

**244. Many of the approaches to address the production constraint are relevant to addressing other binding constraints (complementarity).** Stronger producer organizations are

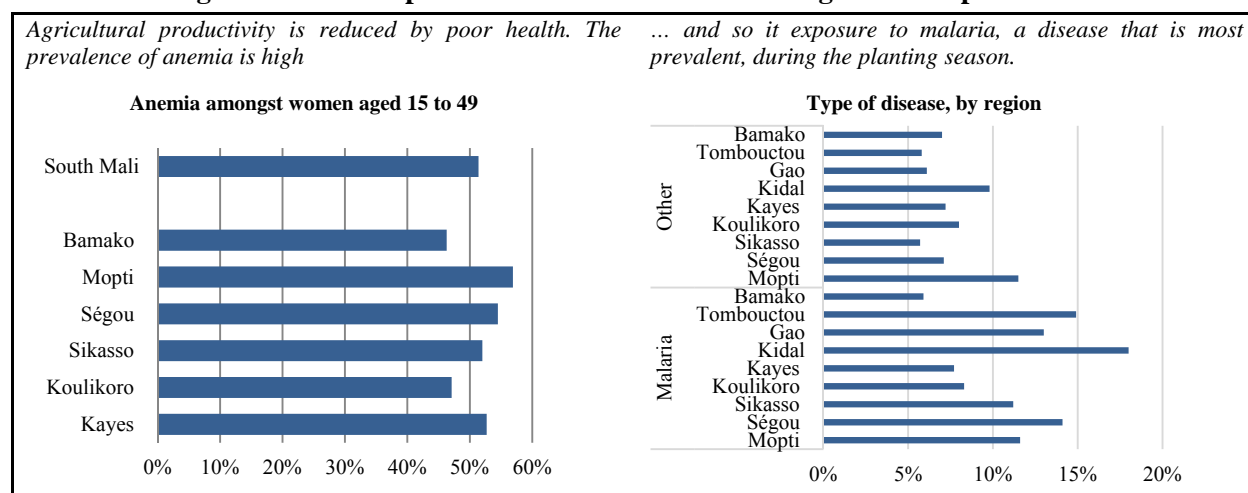
instrumental to enhanced local accountability and increased farm production (viz. the political influence of cotton producer groups). Improved irrigation, better health services, lower transport costs and improved literacy increase rural incomes and resilience. The same holds for better access to adapted financial products (access to equipment and seasonal credit, for crop and seed insurance and for safe storage of money and cash transactions).

### 5.5 Binding constraint 3: exposure to uninsured risks

245. **Exposure to uninsured, exogenous shocks affects poor households directly and indirectly.** Weather variability (aggravated by climate change), price variability and poor health are the main risks affecting poor households directly; in north Mali conflict is another source of risk. Exposure to uninsured shocks takes a big toll on poverty reduction: farmers opt for low-risk, low-return activities. A farmer who falls sick during the planting season, loses his or her income for the year; it takes a rural household who sells his assets to deal with a shock on average 7 years to return to its initial state.

246. **Well targeted transfers (conditional or not) can lift many poor people out of poverty and increase resilience.** Safety nets reduce the number of poor directly and have the potential to do so at scale: less than 2 percent of GDP in perfectly targeted transfers in combination with 2 percent of growth per capita (of the poorest households) would be sufficient to eliminate poverty by 2030 in Mali. Productive safety nets such as public works programs increase resilience by offering access to income opportunities when these are needed most and by improving community infrastructure that help improve productivity (rural road maintenance, irrigation schemes, producer groups). They require multi-sector approaches and can also be used to reduce fragility, for instance as part of the reintegration of ex combatants in support of the peace process).

**Figure 5.3: Less exposure to health risks increases agricultural production**



Source: EMOP 2013

247. **Stronger local organizations are a priority when it comes to increasing resilience.** Mali has a strong tradition of non-formal assistance and organization. Strengthening these local systems—either in the form of producer organizations (cotton), or community based organizations for social

accountability can strengthen risk coping mechanism and act as barrier to elite capture at local level. Making the production systems of poor households more resilient is another priority. Improved (drought resistant) seed and (small scale) irrigation, discussed in the previous section, increase productivity and reduce dependence on the variable weather. Adapted financial products such as crop or seed insurance do the same. Improved markets for livestock will allow pastoralists to better deal with emergency off-take.

248. **Increasing the resilience of individuals through investments in health and education is a priority as it limits the consequences of exposure to uninsured risks.** Healthier, better educated individuals have more options to reduce exposure to risks or to deal with shocks when they arise. Trained farmers are more likely to successfully adapt their farming system, educated girls marry later and have fewer children and educated adults are more likely to migrate successfully when a shock materializes. It is no coincidence that those who fled the crisis in the north were the better educated, for instance. Increasing resilience thus starts by building better systems of health and education. This is a long run strategy that will need to start with policy reforms leading to improvements in performance and staff quality.

## 5.6 Additional analytical work

249. The preparation of this document has allowed identifying some knowledge gaps to formulating and implementing an effective poverty reduction strategy. They are listed below:

250. **Reliable data on household consumption and incomes is needed.** In chapter 2 it was pointed out that the available poverty surveys are not comparable over time and do not comprise information on how (poor) households generate their income. An LSMS-ISA survey is in the field and will address this, but it is important that this survey is repeated regularly. A new agricultural census (the last one dates from 2004/5) should be considered as well. Once available, data from the LSMS-ISA survey should be used to re-assess the geographic distribution of poverty and to prepare a new poverty map that takes account of the wealth of spatial information that exists for Mali.

251. **Analyze the contribution of different agricultural inputs (irrigation, seed, fertilizer, land cultivated, access to markets) to poverty reduction.** The LSMS-ISA survey will facilitate analysis of the relation between characteristics of the production process and poverty outcomes. As such it allows resolving puzzles such as the finding that per capita consumption in cotton growing communities is lower (and levels of malnutrition higher) than in non-cotton growing communities, should further clarify the relation between access to land and equipment and household production, and permit the identification of interventions, or combination of interventions that would be most effective at poverty reduction.

252. **The land question needs to be investigated.** Land in Mali is still relatively abundant –an observation supported by the observation that in the high population density zones, households cultivate larger areas than those in the lower density zones. At the same time, during the consultations, security of tenure was frequently identified as critical to growth and poverty reduction. Various elements were mentioned: the importance of security of tenure to protect against land-grabbing and displacement; to increase (foreign) investment; to avoid speculation and to address conflicts between pastoralists and farmers. The land issue is multi-layered and varies

by geographical location. A study to assess these aspects, and the adequacy of the legal framework and options to address any eventual shortcomings therein, is recommended.

253. **The impact of rural roads on poverty reduction needs to be better understood.** The presence of all-weather roads appears a logical pre-condition for producing and marketing an agricultural surplus. There is anecdotal evidence to support this view and this document has reported a correlation between food price variability and road access. On the other hand, the empirical correlation between road access and poverty incidence was found to be weak. This may be a consequence of poor data, but could also point towards other issues such as the necessity of complementary economic services, the need to address governance constraints to transport (road blocks; trucking cartels) or the poor quality of roads. A better understanding of the impact of improved all-weather road access on poverty reduction, and the conditions under which improved road access is most effective in reducing poverty is pertinent.

254. **How to improve performance and quality in the health and education sectors?** Problems with access, quality and staff performance in the social sectors are well recorded (and have been known for a long time). How to address these issues is less clear. Analysis of the Service Delivery Indicator survey (in the field) will allow a better understanding of the factors driving performance but the degree to which a quantitative survey can provide answers is limited. Additional qualitative analyses are suggested along with a political-economy/governance assessment on how to overcome the obstacles to improved staff quality and performance.

255. **The constraints to the emergence of small and medium scaled enterprises are not well understood.** It was noted that value chains are poorly developed and that most trade is informal. The relative absence of small and medium scale formal enterprises was also noted. The reasons for this absence are not well identified and vary from a lack of skills, lack of access to (medium term) finance, lack of access to electricity and a hostile business climate (regulatory and tax burden; a biased tax system).

256. **The impact of safety nets on poverty reduction.** This report has argued –and shown through simulations, that safety nets implemented at scale are an important vehicle for poverty reduction. A Mali-specific study on the practical aspects of a large scale safety net would facilitate an investment proposition to the authorities. Such a study should cover: sources of funding; scope to rationalize the existing safety net programs; evidence on impact (preferably from Mali); and implementation modalities. A study in this area could be combined with the analytical work to identify the interventions, or combination of interventions that would be most effective at poverty reduction.

257. **How do stronger local organizations contribute to poverty reduction?** It has been argued that stronger local organizations improve resilience to conflict and climate change and can be instrumental to overcoming market-access constraints. Local organizations can be vehicles for literacy programs, or social protection interventions and could strengthen local accountability. How local organizations could do so, what type of organizations might be supported (NGOs; school committees; faith based organizations; farmer groups; savings groups) and how best to support these organizations in ways that avoid elite capture or accountability towards donors instead of members, needs to be investigated.

## 6. ANNEXES

### **Annex to preamble: Background notes and papers prepared for the Mali SCD**

Etang-Ndip, Alvin, Johannes Hoogeveen and Julia Lendorfer: Socio-economic impact of the crisis in Northern Mali on displaced people (World Bank Policy Research Working Paper no 7253).

Grieve, Bronwyn. Governance Assessment of the Agriculture Sector in Mali.

Laurent, Catherine: Education Sector Governance Review.

Sanoh, Aly and Massaoly Coulibaly: The socioeconomic impact of large-scale gold mining in Mali.

Troare, Bakary Fouraba: Rapport de synthèse de lecture sur le Diagnostic Systématique du Mali.

Yaiche, Charlotte: Decentralization as a tool for peacebuilding in Mali.

Raballand, Gaël, Sami Bensassi, Anne Brockmeyer and Matthieu Pellerin: La Normalité de l'informalité: Une estimation du commerce informel entre le Mali et l'Algérie.

Vaillancourt, François and Charlotte Yaiche: Décentralisation au Mali en 2014: mirage ou réalité?

World Bank. Mali: Constraints to light manufacturing.

World Bank. Priorities for ending poverty in Mali: education, health and social protection.

World Bank. FCV. Mali Fragility Assessment-Summary of main drivers of fragility and conflict and risks ahead.

World Bank. Mali SCD Country consultations and country team retreat.

## Annex to chapter 1: Mali selected indicators 1980-2011

General	1980	1990	2000	2005	2010	2011
Surface area (sq. km)	1,240,190	1,240,190	1,240,190	1,240,190	1,240,190	1,240,190
Land area (sq. km)	1,220,190	1,220,190	1,220,190	1,220,190	1,220,190	1,220,190
Agricultural land (% of land area)	26.3	26.3	31.6	33.1	33.6	34.1
Arable land (% of land area)	1.6	1.7	3.7	4.6	5.1	5.6
Forest area (% of land area)		11.5	10.9	10.6	10.2	10.2
Arable land (hectares per person)	0.30	0.26	0.44	0.47	0.45	0.48
Population, total	6,735,247	7,964,066	10,260,577	11,941,258	13,985,961	14,416,737
Population in largest city	489,071	746,382	1,141,913	1,485,842	1,933,356	2,037,766
Rural population (% of total population)	81.5	76.7	71.6	67.9	64.0	63.2
Pop. in urban agglomerations of more than 1 million (% of total pop.)	7.3	9.4	11.1	12.4	13.8	14.1
Population ages 0-14 (% of total)	43.5	46.3	46.1	46.3	46.8	47.0
Population ages 15-64 (% of total)	53.2	49.7	50.4	50.6	50.3	50.2
Population ages 65 and above (% of total)	3.4	4.0	3.5	3.1	2.9	2.9
Age dependency ratio (% of working-age population)	88.1	101.3	98.3	97.5	98.8	99.3
Population density (people per sq. km of land area)	5.5	6.5	8.4	9.8	11.5	11.8
Population growth (annual %)	1.8	1.7	2.8	3.1	3.1	3.0
Birth rate, crude (per 1,000 people)	48.9	47.8	48.1	48.2	47.7	47.6
Adolescent fertility rate (births per 1,000 women ages 15-19)	189.2	192.6	186.7	182.6	177.7	176.6
Life expectancy at birth, female (years)	40.6	46.4	48.7	51.2	53.6	54.0
Life expectancy at birth, male (years)	38.7	46.6	49.4	51.8	53.9	54.3
Life expectancy at birth, total (years)	39.6	46.5	49.1	51.5	53.8	54.2
<b>Health</b>						
Health expenditure, public (% of government expenditure)			8.9	12.4	12.3	12.3
Health expenditure, public (% of total health expenditure)			32.9	48.0	40.9	43.8
Out-of-pocket health expenditure (% of total expenditure on health)			66.5	51.7	58.9	56.0
Fertility rate, total (births per woman)	7.0	7.1	6.8	6.8	6.8	6.9
Mortality rate, infant (per 1,000 live births)	160.5	130.5	116.2	96.9	83.1	81.1
Mortality rate, under-5 (per 1,000 live births)	323.3	254.2	219.9	172.3	137.1	132.0
Maternal mortality ratio (modeled estimate, per 100,000 live births)		1100	860	710	600	
Tuberculosis treatment success rate (% of new cases)				75	77	69
Vitamin A supplementation coverage rate (% of children ages 6-59 months)				66	99	96



Immunization, measles (% of children ages 12-23 months)	43	49	73	76	69	
Prevalence of undernourishment (% of population)		22.3	16.8	8.4	7.8	
Prevalence of anemia among children (% of children under 5)	85.2	84	82.4	80.5	80.1	
Prevalence of anemia among non-pregnant women (% of women ages 15-49)	61.5	63.5	61.9	56.9	55.5	
Prevalence of anemia among pregnant women (%)	64.5	65.2	64.1	61.6	60.9	
Prevalence of HIV, total (% of population ages 15-49)	0.3	1.6	1.3	1.0	1.0	
Improved sanitation facilities (% of population with access)	15.3	18.2	19.7	21.3	21.6	
Improved water source (% of population with access)	28.1	45.5	54.5	63.6	65.4	
Physicians (per 1,000 people)	0.04	0.05	0.04	0.08		
<b>Education and literacy</b>						
Public spending on education, total (% of government expenditure)			15.3	16.3	18.9	19.5
Literacy rate, adult total (% of people ages 15 and above)					31.1	33.6
School enrollment, primary (% net)				61.4	69.6	70.6
School enrollment, primary (% gross)	29.7	29.1	62.2	80.1	90.3	91.7
School enrollment, primary, private (% of total primary)		3.6		37.0	39.8	38.8
Persistence to last grade of primary, total (% of cohort)	36.6		83.4	73.5	75.5	61.6
Progression to secondary school (%)			51.5	59.4	79.2	
School enrollment, secondary (% net)					33.1	34.5
School enrollment, secondary (% gross)	9.4	7.3	18.5	27.6	42.4	44.5
School enrollment, secondary, private (% of total secondary)				25.5	32.1	31.3
Ratio of female to male primary enrollment (%)	57.9	60.6	75.3	79.8	86.8	88.0
Ratio of female to male secondary enrollment (%)	39.6	50.3	56.7	62.7	70.3	71.5
Ratio of female to male tertiary enrollment (%)	13.0	15.2	48.9		42.3	47.1
Pupil-teacher ratio, primary	42.3	44.9	65.3	54.4	50.4	48.5
Pupil-teacher ratio, secondary	20.3		29.0			24.7
Primary education, teachers	7,054	8,405	15,567	27,688	40,052	43,629
Secondary education, teachers	3,880		8,899			33,220
Trained teachers in primary education (% of total teachers)						52.4

Source: World Development Indicators, accessed online on 05 January 2014

## Annex to chapter 2: Share of total number of poor by household characteristics

	2001			2006			2009/10		
	Urban	Rural	Total	Urban	Rural	Total	Urban	Rural	Total
<b>Sex of head</b>									
Male	90.3	95.7	94.9	90.7	96.0	95.9	89.5	94.0	93.6
Female	9.7	4.3	5.1	9.3	4.0	4.1	10.5	6.0	6.4
<b>Total</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>
<b>Age of head</b>									
Less than 30	4.7	4.9	5.0	4.6	3.8	3.8	4.3	5.3	5.7
30 to 39	8.8	13.4	12.9	21.8	16.9	17.6	20.0	15.6	17.3
40 to 49	25.5	23.1	23.7	30.2	28.4	28.6	23.7	19.7	20.3
50 to 59	28.9	24.0	24.5	23.2	23.9	24.0	25.2	22.2	22.1
60 to 69	18.0	18.8	18.5	9.6	15.1	14.3	15.6	19.8	18.8
70 and over	14.1	15.7	15.5	10.6	11.9	11.7	11.2	17.4	15.8
<b>Total</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>
<b>Household Size</b>									
1 to 2 individuals	1.6	1.2	1.5	0.7	0.8	0.8	2.9	1.9	2.2
3 to 5 individuals	11.6	13.3	13.5	20.5	12.1	12.8	17.8	12.1	13.1
6 to 8 individuals	15.9	19.3	19.1	35.5	27.1	27.7	26.3	23.1	23.7
9 to 11 individuals	17.8	19.1	18.4	19.2	21.0	20.5	14.7	19.7	19.0
12 to 16 individuals	20.6	18.9	18.9	12.0	21.1	20.3	14.3	18.6	17.8
17 individuals or more	32.5	28.2	28.6	12.0	18.0	17.9	24.0	24.6	24.2
<b>Total</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>
<b>Education level of head</b>									
No education	74.2	91.4	89.1	61.5	88.5	85.1	73.7	88.3	85.2
Fondamental 1 (n/c)	7.4	4.9	5.1	7.7	6.1	6.2	10.5	7.3	8.2
Fondamental 1	9.5	1.9	3.0	10.4	3.8	5.0	7.2	2.4	3.4
Fondamental 2	1.4	0.3	0.5	2.9	0.6	1.0	3.5	0.7	1.1
Secondary	3.4	1.3	1.5	10.7	0.7	1.7	3.4	1.1	1.6
Tertiary	4.2	0.2	0.8	6.9	0.3	1.0	1.7	0.3	0.6
<b>Total</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>
<b>Marital status</b>									
Never married	1.5	1.3	1.3	0.6	1.6	1.7	5.8	3.2	4.2
Married-Mono	55.5	55.2	55.9	73.1	56.9	58.9	57.9	54.1	55.3
Married-Poly	33.2	38.4	36.8	17.8	36.2	34.5	29.2	36.7	34.4
Divorced/Widowed	9.8	5.0	5.9	8.5	5.3	5.0	7.1	6.0	6.0
<b>Total</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>
<b>Industry of head</b>									
Agriculture	30.2	75.4	67.5	25.4	75.5	70.0	34.2	84.3	74.3
Manufacturing	8.5	1.9	2.9	7.1	2.0	2.7	6.1	2.7	3.5
Construction	6.1	1.7	2.3	8.5	0.9	1.7	3.5	0.9	1.6
Transport/Communication	2.2	0.4	0.6	5.7	0.8	1.2	3.2	0.5	1.1
Trading	12.6	2.3	3.7	18.5	4.1	5.4	24.5	3.2	6.8
Administration	3.6	0.1	0.7	9.0	0.2	1.1	2.7	1.1	1.7
Education/Health	12.2	1.6	3.2	4.2	0.4	0.9	2.4	1.2	1.5
Other Services	1.8	0.3	0.5	4.4	1.5	1.8	4.3	0.1	0.7
Non Working	22.8	16.3	18.7	17.2	14.5	15.2	19.1	5.9	8.6
<b>Total</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>
<b>Employment status of head</b>									
Public	4.6	0.6	1.1	16.1	0.9	2.6	5.0	1.8	2.7
Wage Private	10.3	1.6	2.6	22.4	2.5	4.8	15.0	1.2	3.6
Employer	1.0	0.2	0.3	1.3	0.6	0.6	0.4	0.2	0.2
Self-Employ. Agric.	29.8	72.1	65.3	18.5	73.9	67.6	30.7	83.8	73.2
Self-Empl. Non-Agric.	30.2	9.1	11.7	25.1	7.6	9.2	30.0	7.1	11.6
Non Working	24.1	16.4	19.0	16.7	14.5	15.2	18.9	6.0	8.6
<b>Total</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>

**Annex to chapter 2 Table 2: Determinants of real consumption per capita**

	Urban			Rural		
	2001	2006	2009/10	2001	2006	2009/10
<b>Age Groups</b>						
Age 0-4	-0.245	-0.111	-0.094	n/s	-0.053	-0.066
Age 5-14	-0.131	-0.128	-0.079	-0.075	-0.097	-0.067
Age 15-60	-0.064	-0.034	-0.012	-0.067	-0.026	n/s
Age 61 and over	n/s	n/s	-0.060	n/s	-0.079	-0.059
Age 0-4 squared	n/s	n/s	0.004	n/s	0.004	0.003
Age 5-14 squared	0.006	0.007	0.003	0.002	0.005	0.002
Age 15-60 squared	0.002	n/s	0.001	0.001	n/s	0.001
Age 61 & over squared	n/s	n/s	n/s	n/s	n/s	0.011
<b>Sex of Head</b>						
Male	Ref	Ref	Ref	Ref	Ref	Ref
Female	n/s	n/s	n/s	n/s	n/s	n/s
<b>Education level of head</b>						
No education	Ref	Ref	Ref	Ref	Ref	Ref
Some Fondamental	0.160	n/s	0.095	n/s	n/s	0.054
Fondamental 1	n/s	0.218	0.145	0.271	n/s	0.106
Fondamental 2	0.202	0.213	n/s	0.424	0.177	n/s
Secondary	0.434	0.312	0.224	0.297	0.276	0.243
Tertiary	0.601	0.501	0.372	0.481	0.656	0.429
<b>Education level of spouse</b>						
No education	Ref	Ref	Ref	Ref	Ref	Ref
Some Fondamental	n/s	n/s	n/s	n/s	0.201	n/s
Fondamental 1	0.134	0.176	0.106	n/s	0.264	0.180
Fondamental 2	n/s	n/s	0.171	0.354	0.234	0.327
Secondary	n/s	0.349	0.224	n/s	0.445	0.203
Tertiary	0.304	0.619	0.174	n/s	n/s	0.214
<b>Marital Status</b>						
Married - Monogamy	Ref	Ref	Ref	Ref	Ref	Ref
Never married	n/s	n/s	0.074	0.149	0.184	n/s
Married - Polygamy	n/s	0.121	0.066	n/s	n/s	0.053
Widowed/divorced	n/s	n/s	n/s	n/s	-0.129	-0.092
<b>Industry of Head</b>						
Agriculture	Ref	Ref	Ref	Ref	Ref	Ref
Manufacturing	0.239	n/s	n/s	n/s	0.276	n/s
Construction	n/s	n/s	-0.129	n/s	0.281	n/s
Transport/Com.	n/s	n/s	n/s	n/s	0.532	n/s
Trading	0.246	n/s	n/s	0.257	0.493	0.200
Administration	n/s	n/s	n/s	n/s	0.318	n/s
Education/Health	n/s	n/s	n/s	n/s	0.179	n/s
Other Services	n/s	n/s	n/s	0.267	0.422	0.172
<b>Employment status of head</b>						
Self-Employ. Agric.	Ref	Ref	Ref	Ref	Ref	Ref
Public Employee	n/s	n/s	n/s	0.317	n/s	n/s
Private Employee	n/s	n/s	0.197	0.197	-0.123	n/s
Employer	n/s	0.346	0.330	n/s	n/s	0.275
Self-Employ. Non-agric.	n/s	0.322	0.256	n/s	-0.238	n/s
Non-Working	0.266	0.334	0.152	0.132	n/s	0.107
N (sample size)	1474	1248	3201	3492	3204	5835
R <sup>2</sup>	0.454	0.428	0.391	0.420	0.372	0.452

Source: World Bank calculations using EMEP 2001, ELIM 2006, MICS/ELIM 2009/2010 household surveys.

Note: 'Ref' refers to the 'reference' group against which the other categories are compared.

**Annex to chapter 3: Table 1 GDP per capita in 1987 prices (in “000” FCFA)**

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
<b>Primary sector</b>	<b>34.2</b>	<b>37</b>	<b>34.8</b>	<b>40.3</b>	<b>37.5</b>	<b>38.7</b>	<b>39.1</b>	<b>38.9</b>	<b>42.6</b>	<b>43.6</b>	<b>47.1</b>	<b>45.1</b>	<b>47.5</b>	<b>42.7</b>
<i>Agriculture</i>	<b>18.2</b>	<b>21</b>	<b>18.8</b>	<b>24.2</b>	<b>21</b>	<b>22.4</b>	<b>22.7</b>	<b>22.2</b>	<b>25.8</b>	<b>26.6</b>	<b>29.9</b>	<b>27.7</b>	<b>30.6</b>	<b>25.7</b>
Food crops, excluding rice	11.4	11.4	11.5	14.7	12.6	13.6	14.5	14.9	16.5	16.9	18.7	17.8	20.4	14.7
Rice	4.2	5.1	3.8	5	4.2	4.6	4.7	4.7	6.7	6.9	8.3	6.1	6.5	7.2
Industrial crops, excluding cotton	1	0.9	0.9	1	0.8	1.3	1.3	1.3	1.6	1.6	1.7	1.7	1.7	1.7
Cotton	1.6	3.5	2.6	3.6	3.3	3	2.2	1.3	1	1.2	1.2	2.1	2.1	2
Livestock	10.6	10.6	10.6	10.7	11.1	11	11.1	11.2	11.3	11.4	11.5	11.6	11.3	11.4
Fishing and Forestry	5.5	5.5	5.4	5.4	5.4	5.4	5.4	5.5	5.5	5.6	5.7	5.8	5.6	5.7
Fishing	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Forestry	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.5	4.5	4.6	4.7	4.7	4.6	4.7
<b>Secondary sector</b>	<b>19.6</b>	<b>22.9</b>	<b>26.5</b>	<b>23.5</b>	<b>23.4</b>	<b>24.5</b>	<b>25.7</b>	<b>23.7</b>	<b>21.9</b>	<b>22</b>	<b>20.9</b>	<b>21.9</b>	<b>20.6</b>	<b>21.1</b>
Mining	5.5	9.9	11.8	9.3	7.6	8.8	10.1	8.9	8.1	8	6.6	6.4	6.8	6.7
Industry	8.2	6.9	8.3	7.6	8.7	8.5	8.3	7.1	5.9	5.7	5.6	6.5	6.6	6.7
Agrobusiness	2.8	2.6	3.1	2.8	3.3	3.2	3.1	3	2.3	2.4	2.5	2.8	2.3	2.6
Textile	3.6	2.3	2.7	2.5	2.9	2.8	2.8	2.1	1.4	1.4	1.4	1.8	2.4	2.3
Handicrafts (other manufact., incl. cotton)	1.8	2	2.4	2.2	2.6	2.5	2.5	1.9	2.2	1.9	1.7	1.9	1.8	1.9
Energy	1.6	1.7	1.9	2.1	2.2	2.4	2.5	2.7	2.9	3.1	3.3	3.4	3.2	3.5
Construction & public works	4.3	4.4	4.5	4.6	4.8	4.8	4.8	5	5.1	5.2	5.4	5.5	4	4.3
<b>Tertiary sector</b>	<b>36.2</b>	<b>37.1</b>	<b>36.3</b>	<b>37.7</b>	<b>39.1</b>	<b>39.6</b>	<b>42</b>	<b>44.9</b>	<b>45.3</b>	<b>45.5</b>	<b>46.1</b>	<b>46.4</b>	<b>42</b>	<b>44.4</b>
Transport and telecom	5.2	5.2	4.9	5.3	5.9	6.6	7.4	8.6	9.2	9.1	9.3	9.4	9.2	9.7
Trade	13.5	14.5	13.9	14.7	15.1	14.8	16.4	17.8	18	18.2	18.6	18.8	18.4	19.3
Other non-financial services	7.6	7.4	7.4	7.5	7.9	7.6	7.7	8	7.8	8	8.1	8	5	5.6
Financial services	0.9	0.8	0.8	0.8	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.8	0.8
Public administration	9.7	9.7	9.8	9.9	10	10.4	10.3	10.1	10	9.8	9.8	9.9	9.2	9.5
Production imputed to banking services	-0.6	-0.6	-0.6	-0.6	-0.6	-0.6	-0.6	-0.5	-0.5	-0.5	-0.5	-0.6	-0.5	-0.5
<b>GDP (at factor cost)</b>	<b>90</b>	<b>97</b>	<b>98</b>	<b>101</b>	<b>100</b>	<b>103</b>	<b>107</b>	<b>108</b>	<b>110</b>	<b>111</b>	<b>114</b>	<b>114</b>	<b>110</b>	<b>108</b>
Import taxes and domestic VAT	6.3	7.6	8.4	9.2	9.7	10	8.2	8.7	8.3	8.5	8.6	8.8	8.4	8.8
<b>GDP (at market prices)</b>	<b>96</b>	<b>105</b>	<b>106</b>	<b>111</b>	<b>110</b>	<b>113</b>	<b>115</b>	<b>116</b>	<b>118</b>	<b>120</b>	<b>123</b>	<b>122</b>	<b>119</b>	<b>117</b>

Source: IMF 2014.

**Annex to chapter 4: Table 1 – Log of monthly wage regressions with education levels, 2006-2013**

INDEPENDENT VARIABLES:	2006 ELIM		2009 ELIM		2011 EMOP			2013 EMOP	
	ALL	AGRICULT	ALL	AGRICULT	ALL	AGRICULT	SOUTH	ALL	AGRICULT
<b>Experience</b>	0.01 (0.85)	-0.002 (-0.10)	0.06** (4.61)	0.03+ (1.90)	0.01 (1.53)	0.02 (1.51)	0.02+ (1.73)	0.03** (3.51)	0.03* (2.28)
<b>Experience squared</b>	0.001 (0.18)	0.001 (0.92)	-0.001** (-2.74)	-0.001 (-0.50)	-0.001 (-0.45)	-0.001 (-0.43)	-0.001 (-0.64)	-0.001 (-1.29)	-0.001 (-0.89)
<b>Female</b>	-0.20** (-3.96)	-0.16 (-1.62)	-0.33** (-9.74)	-0.32** (-4.96)	-1.00** (-26.15)	-1.20** (-21.71)	-0.98** (-23.90)	-1.20** (-31.23)	-1.33** (-24.61)
<b>Education level (excluded=none)</b>									
<b>Incomplete primary</b>	0.11* (2.01)	0.01 (0.24)	0.03 (0.17)	0.15 (1.03)	0.19** (3.59)	0.02 (0.22)	0.20** (3.62)	0.11* (2.32)	-0.01 (-0.10)
<b>Complete primary</b>	0.39** (6.79)	0.23** (4.05)	0.67* (2.40)	1.21** (8.76)	0.51** (5.49)	0.37** (2.59)	0.52** (5.42)	0.32** (3.97)	0.35* (2.07)
<b>Completed lower secondary</b>	0.38** (4.83)	0.17 (1.37)	0.50* (2.11)	0.34 (0.51)	0.40** (3.34)	-0.11 (-0.46)	0.41** (3.37)	0.88** (11.41)	0.33 (1.47)
<b>Completed upper secondary</b>	0.62** (13.42)	0.58** (4.62)	1.00** (3.80)	0.68** (2.81)	0.43** (4.90)	----	0.48** (6.85)	0.85** (6.85)	0.32 (1.07)
<b>TVET</b>	----	----	----	----	0.89** (2.90)	1.25+ (1.65)	0.80** (2.69)	1.66** (10.91)	----
<b>Post-secondary</b>	0.73** (8.89)	0.76** (2.92)	0.70* (2.07)	----	0.56+ (1.76)	0.80** (4.54)	0.63+ (1.90)	1.38** (6.21)	2.11** (9.12)
<b>Migration in last 2 years</b>	----	----	----	----	-0.03 (-0.32)	-0.17 (-1.02)	-0.02 (-0.29)	-0.06 (-0.97)	-0.42** (-3.62)
<b>Urban</b>	-0.28** (-8.96)	----	-0.22** (-8.49)	----	0.12* (2.38)	----	0.09 (1.59)	-0.07 (-1.27)	----
<b>Explained variance (R<sup>2</sup>)</b>	0.26	0.10	0.21	0.17	0.27	0.30	0.25	0.37	0.42
<b>Sample Size</b>	3,460	1,929	4,916	2,903	6,028	3,478	5,167	6,116	2,886

Source: ELIM 2006, 2009; EMOP 2011, 2013;

Notes: Coefficients are percentage change in log of monthly wage for adults aged 15-60 who are not currently enrolled in school. For 2006 and 2009 ELIM estimations the sample is restricted to the household head. All estimations are based on weighted survey data structure (clustered at family level), and include region controls (results available upon request). \*\* Significant at 0.01 level; \*Significant at 0.05 level; +Significant at 0.10 level. Mincerian Estimates

**Annex to chapter 4: Table 2 Log of monthly consumption with education levels, 2006-2013**

INDEPENDENT VARIABLES:	2006 ELIM		2009 ELIM		2011 EMOP			2013 EMOP	
	RURAL	URBAN	RURAL	URBAN	RURAL	URBAN	SOUTH RURAL	RURAL	URBAN
Experience	0.002 (0.16)	0.01 (0.51)	0.04** (3.18)	0.08** (3.65)	0.02+ (1.71)	0.06** (3.90)	0.02 (1.53)	0.03** (2.59)	-0.01 (1.03)
Experience squared	0.001 (0.66)	0.001 (0.29)	-0.001+ (-1.79)	-0.001* (-2.20)	-0.001 (-0.63)	-0.001** (-2.76)	-0.001 (-0.50)	-0.001 (-1.27)	0.0001* (2.05)
Female	-0.38** (-5.30)	-0.10 (-1.53)	-0.42** (-10.32)	-0.16** (-2.55)	-0.09 (-1.11)	-0.12+ (-1.72)	-0.03 (-0.33)	-0.20** (-3.82)	-0.01 (-0.30)
Education level (excluded=none)									
Incomplete primary	0.07 (1.06)	0.15+ (1.67)	0.07 (0.50)	0.19 (0.87)	0.24** (5.34)	0.28** (4.71)	0.22** (4.38)	0.09* (2.38)	0.18** (3.99)
Complete primary	0.22** (4.17)	0.35** (5.41)	0.88** (2.62)	0.71+ (1.88)	0.41** (4.38)	0.32** (4.15)	0.41** (4.03)	0.08 (1.15)	0.26* (3.38)
Completed lower secondary	0.40** (3.29)	0.39 (4.04)	0.61** (2.49)	0.33 (1.18)	0.60** (8.03)	0.59** (9.39)	0.59** (7.51)	0.32** (5.28)	0.44** (7.68)
Completed upper secondary	0.61** (7.05)	0.66** (11.04)	0.55+ (1.81)	1.59** (4.01)	0.68** (6.15)	0.66** (3.20)	0.62** (4.10)	0.47** (5.83)	0.35** (4.33)
TVET	----	----	----	----	0.36** (3.02)	0.50** (4.55)	0.34** (2.54)	0.52* (2.37)	0.56** (4.49)
Post-secondary	0.91** (4.66)	0.74** (8.07)	0.75 (1.62)	0.84** (2.82)	1.00+ (8.29)	0.94** (10.65)	1.00** (7.69)	0.66** (5.10)	0.71** (7.72)
Migration in last 2 years	----	----	----	----	-0.15* (-2.05)	-0.21** (-3.75)	-0.15* (-1.97)	-0.07 (-1.43)	-0.01 (-0.16)
Explained variance (R <sup>2</sup> )	0.13	0.22	0.19	0.17	0.15	0.26	0.15	0.17	0.19
Sample Size	2,221	1,239	3,363	1,553	2,759	2,182	2,049	2,194	1,796

Source: ELIM 2006, 2009; EMOP 2011, 2013;

Notes: Coefficients are percentage change in log of total family consumption based on characteristics (education, sex, etc.) of household head. All estimations are based on weighted survey data structure (clustered at family level), and include region controls (results available upon request). \*\* Significant at 0.01 level; \*Significant at 0.05 level; +Significant at 0.10 level.

## **Annex to chapter 5: Binding constraints identified and considered by the country team**

- 1 Poor governance of aspects relevant to the agricultural sector (cotton, OdN, fertilizer subsidies poorly targeted and food import subsidies; telecom)
- 2 Poor targeting of subsidies (fertilizer; electricity)
- 3 Tax system that is hostile to small and medium scale enterprises
- 4 Inefficient and ineffective pro-poor public spending, policies and institutions at national and decentralized level
- 5 Distortionary tax system (import subsidies/VAT) and inadequate mining revenue
- 6 Inefficiencies in the allocation and management of the budget in education
- 7 Erratic and low government spending and poor stewardship of the system in health

### **Inadequate service delivery**

- 8 Inadequate performance of human resources (training, performance and accountability)
- 9 Obstacles to private sector solutions (and preference for public solutions)
- 10 Inadequate civil servant's service quality and quantity – Insufficient professionalism and adherence to quality standards, patronage
- 11 Incomplete and inadequately executed decentralization
- 12 Inability to deliver services in conflict affected north
- 13 Use of different languages in the primary school curriculum
- 14 Inadequate quality and quantity of public facilities (North, girls access)

### **Lack of accountability and transparency**

- 15 Insufficient transparency and dysfunctional accountability mechanisms at national and decentralized level with no sanctions/impunity for corruption
- 16 Poor social accountability (CSOs, schools, service providers etc)
- 17 Lack of reliable statistics on household welfare, assets and sources of income
- 18 Poorly functioning monitoring and evaluation systems (feedback; result based performance)

### **Fragility and inadequate security**

- 19 Lack of security affecting international investment decision
- 20 Absence of sustainable peace in the north puts nation's stability at risk (including through macro ec. Shocks and continued presence of illegal trade and trafficking)
- 21 Inefficient and non-transparent security spending
- 22 Weak security apparatus (army, police) allows fragility to spread in and beyond north

### **Limited access to (irrigated) land and use of equipment by rural households**

- 23 Limited access to irrigated land
- 24 Lack of production because of inadequate use of productive assets, labor and technology
- 25 Lack of access to forage, water, and land for pastoralists
- 26 Lack of access to secure land
- 27 Lack of small scale irrigation investments outside OdN

### **Limited use of technologies for improved resilience and productivity**

- 28 Inadequate use of improved seed (sorghum; millet) and other inputs (fertilizer)
- 29 Low adoption of sustainable land management and climate smart agricultural practices (incl. seed, small scale irrigation, agro-silvo-pastoral integration) in low productivity areas
- 30 Lack of synergies between pastoralism and arid agriculture (in agro-pastoralist areas)

### **Inadequate human capital**

- 31 Limited offerings of non-formal education and training programs for youth and adults (skills training)
- 32 Financial constraints to get access to health and education services
- 33 Insufficient use of family planning services as constraint to lower fertility
- 34 Inadequate access to potable water and sanitation
- 35 Low levels of adult literacy
- 36 Early marriage and prioritizing limited resources for boys as a key constraint to girls' education
- 37 Absence of for cost-effective nutrition-sensitive and nutrition-specific interventions in targeted regions to complement poverty reduction efforts
- 38 Supply and demand of information about good health, nutrition, water etc practises

### **Limited means for risk management and absence of (productive) safety nets**

- 39 Limited access to and availability of suitable financing instruments (crop insurance; warehouse receipt systems)
- 40 Lack of transfers since it should take less than 10% of GDP to overcome poverty
- 41 Lack of ownership, capacity and coordination issues to set up a productive social protection system

### **Weak farmer and local organizations**

- 42 Weak capacity of farmer associations (to enable technology transfer and training, but also to facilitate market access or adult literacy)
- 43 Low capacity of local institutions to negotiate / protect / enforce access to land, water and forage

### **Inadequate transport services**

- 44 Poor rural roads
- 45 Low agricultural productivity due to poor access to markets and lack of off farm opportunities
- 46 Lack of competition in the transport sector

### **Inadequate access to finance**

- 47 Limited access to and availability of suitable financing instruments (credit; equipment leasing)
- 48 Low participation of the banking sector in agricultural investments / limited access to finance / absence of adequate financing solutions for poor

### **Lack of scale and aggregation**

- 49 Quasi inexistent large agro--industrial players
- 50 Limited agglomeration of smallholders into associations
- 51 Mostly small and artisanal processing units



**Inadequate market support services**

- 52 Lack of access to electricity
- 53 Low storage capacity
- 54 Inadequate market information (including telecom)