The role of road networks in addressing fragility and building resilience

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Introduction

The principle of ‘leaving no one behind’ through the development of inclusive societies is at the core of the Sustainable Development Goals (SDGs). But the scale of ambition raises immediate questions about implementation, especially in fragile states, which are the farthest from achieving the vision of progress laid out by the SDGs, and likely to face the hardest road to get there (OECD 2015).

The poor are increasingly, and disproportionately, located in fragile situations in Africa. Poverty rates are projected to be highest in these countries in 2030, double (about 40 percent) that elsewhere (AfDB 2015).

Governments and their development partners have recognized the importance of moving away from a ‘business as usual’ approach in fragile states. This change is epitomized in the “New Deal for Engagement in Fragile States,” which was endorsed at the 4th High Level Forum on Aid Effectiveness at Busan, Korea, in 2011 (OECD 2011a), and SDG16, which emphasizes the importance of peaceful and inclusive societies and was adopted by the United Nations in 2015.

The international community’s understanding of fragility has evolved significantly in recent years, moving beyond a focus on conflict and violence. It is focusing more on the sociopolitical sources, triggers, and both structural and dynamic elements that make it up. In particular, formal and informal political processes, leadership, and power sharing arrangements are now understood to be core-crosscutting issues, as recent examples in Burundi, South Sudan, Somalia and elsewhere remind us (AfDB 2014a). There is a consensus that persistent inequalities between different societal groups, lack of inclusive growth, and structural exclusion are key issues that must be tackled if fragility is to be reduced (see box 1). Only better assessments of the sources of fragility can lead to better, more tailored policies and investments to reduce it, but there is still little experience how to systematically ensure this is done properly (WB 2011).

Investment in transport infrastructure is widely recognized as being crucial to the promotion of economic growth and industrialization (SDG 9), but its importance to reducing inequalities (SDG 10) and promoting peaceful and inclusive societies

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Despite the importance of investments in transport infrastructure, there has been little attempt to systematically integrate thinking about fragility into investments in transport infrastructure. Currently, the decision-making process remains focused on either economic issues or the need to balance various competing interests, especially in view of the limited resources available. There is little regard for the political, societal, and institutional consequences of transport networks. Yet, the location of transport infrastructure spending determines which citizens, businesses, and regions benefit and what trajectory the country as a whole takes. Overall, transport infrastructure financing still seems to be driven on a project basis, rather than on a broader programmatic basis.

The Bank approaches fragility from a multi-dimensional risk perspective to gain a better understanding of the issues and actors in a country and region. This new approach recognizes that structural exclusion—whether in the political, economic, cultural, social, or institutional sphere—is the key driver that must be addressed in most contexts.

Although government policymakers and their development partners increasingly recognize the importance of investing in transport infrastructure and using a fragility lens when making broad policy decisions, there has been little attempt to systematically integrate thinking about fragility into investments in transport infrastructure. Currently, the decision-making process remains focused on either economic issues or the need to balance various competing interests, especially in view of the limited resources available. There is little regard for the political, societal, and institutional consequences of transport networks. Yet, the location of transport infrastructure spending determines which citizens, businesses, and regions benefit and what trajectory the country as a whole takes. Overall, transport infrastructure financing still seems to be driven on a project basis, rather than on a broader programmatic basis (Gutman, Sy and Chattopadhyay 2015). Indeed, while putting social and environmental safeguards in place to ensure a road does no harm from point A to point B is deemed important, using fragility assessments to inform whether the road should actually be going from point A to point C are not.

This brief explores the importance of investments in roads—as the most important component of the transport infrastructure network in fragile states—to political stability, economic inequalities, and institution building, in light of the evolving understanding of fragility. Countries with a recent history of violent conflict face the most daunting challenges, as their (already modest) national infrastructure both suffers from destruction or dilapidation and exacerbates poor economic conditions and the fault lines that caused conflict in the first place (WB 2011). But even investments in stable countries need to be considered strategically to ensure those countries don’t become tomorrow’s fragile states. This brief draws on the examples of Liberia, Mali and China to propose a conceptual framework that can inform government policymakers, regional organizations, and development partners on how to address these challenges.

**Box 1 How the AfDB approach to fragile situations—the key role of structural exclusion**

The AfDB was the first development finance organization to abandon the binary view of fragile vs. non-fragile countries. Under its 2014 Strategy, the Bank recognizes that no country is immune to issues of fragility and that such issues often cross borders.

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**Box 2 Transport infrastructure is an ‘enabler’ to achieve the SDGs**

The transport sector is not represented by a distinct SDG. Instead, it is mainstreamed into the whole 2030 agenda as a cross-cutting issue because of its impact on many of the other areas, most notably food security, health, education, economic growth, and so on.

The economic, social and environmental benefits of transport infrastructure are context-specific and need to be considered by governments, businesses, financial institutions, civil society and other stakeholders.

In Africa, roads constitute the most important component of the transport infrastructure network and thus represent an important piece in their quest to promote inclusive development and achieve the SDGs. Only 34% of Africa’s population has access to roads and transport costs are twice as high compared to other parts of the developing world (PIDA 2013).

**How Roads Can Reduce Fragility and Build Resilience**

Given the new understanding of fragility, with its emphasis on various forms of systemic exclusion as a major cause, five primary channels emerge through which the construction of roads can reduce fragility (see chart 1). Combined, these channels form a framework for assessing the road sector’s contribution to building legitimate states, inclusive economies, and more equal societies (Kaplan 2008, 2013, 2015):

1) Roads improve connectivity and can accelerate the integration of states; in other words, they can create a stronger sense of “togetherness” – social cohesion – among the entire population. Roads give citizens and institutions the ability to connect with one another more easily and more quickly. This strengthens the sense of common identity – an essential element

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2 The chart was prepared by the authors.
in nation building. Greater social cohesion has been shown to reduce the chance of conflict and improve stability, growth, governance, and a whole slew of development outcomes (Ritzen, Easterly, and Woolcock 2000).

2) Roads make it easier and cheaper to travel and communicate, thereby improving the effectiveness of state institutions across distance – the projection of authority – which makes these institutions more equitable and inclusive in the process; the easier it is to move the easier it is to govern, especially in low capacity contexts. Places that are hard to reach and to communicate with are naturally more expensive to service, less likely to be visited by top officials, and more likely to be low on administrators’ lists of priorities. Better qualified teachers, judges, and doctors may not want to work there.

3) By strategically spreading investment across a territory, roads can help develop multiple growth poles, growth corridors and rural regions. This creates the foundation for development that is more inclusive and less concentrated in the capital city or a small number of regions. Such investments are critical to increasing the competitiveness of an economy and maturity of its businesses. While official development financing (ODF) will likely remain the main source of financing for road infrastructure projects in fragile situations, private sector investments in the extractive sector can provide opportunities to expand road linkages in ways that benefit second tier cities and the agricultural sector. Multiple growth poles will also help funnel migration more evenly across a country – into primary, secondary, and tertiary cities – reducing the overflow into the most important city or cities and ameliorating the living conditions many migrants experience.

4) Roads improve the ability of governments to provide equal levels of public services (including security, schooling, health care, policing, courts, and so on) across their territories, making growth more balanced, and enabling the poor to better help themselves. This reduces horizontal inequalities, exclusion, and marginalization, all major sources of grievances and conflict. While some inequities are rooted in prejudice and differences in political power, many are simply the product of weak connectivity, higher costs, and weak public services—all of which can be improved with a better road network.

5) Regional road networks improve connectivity with neighboring countries, improving the capacity of societies and governments to address a wide range of cross-border challenges, such as security, environment, and the marginalization of large groups of people. They enlarge markets, an essential ingredient to enhancing the dynamism of what are typically very small economies. Larger markets can dramatically increase the incentives for investment if combined with other measures to reduce the cost of transporting goods, for instance eliminating road stoppages and improving often corrupt and inefficient customs offices. Economic growth reduces fragility by increasing opportunity and focusing the efforts of ambitious people on moneymaking rather than politics, patronage, and conflict. This will especially be the case in the historically marginalized areas near borders.
In addition, if investments in the road sector are done in ways that catalyze the development of local capacities, skills, and businesses, then the actual process of building roads and railroads can also contribute to state building and economic development.

**Disconnection: The Case of Mali**

Most fragile states in Africa and elsewhere are held back by weak infrastructure that reinforces their social divisions, feeble governance, low connectivity, stark horizontal inequalities, high costs of doing business, poor trade linkages, and imbalanced and exclusive growth. Africa has proportionally far fewer expressways than any other part of the world. Only 16 percent of the continent’s roads are paved. Transport costs are the highest in the world (AfDB 2013a). Perhaps not coincidentally, it has by far the most fragile states and the largest number of poor people worldwide. Yet roads have been one of the least emphasized elements in development, and when roads are built they rarely ever are designed to reduce fragility. Such policies can have severe consequences for the consolidation of states and the wellbeing of people across the continent.

**Mali’s experience in early 2012 is representative of this.** Although it was widely considered a success and had been one of the top scoring countries on AfDB’s Country Policy and Institutional Assessment metric, the country nearly fell apart due to a combination of weak governance and social grievances in the north. Roads, or rather the absence of them, are now recognized as an important contributing factor to these problems (see map 1 and box 3).

**The case of Mali is representative of the underlying risks that persistent exclusion and marginalization of regions and populations pose to the stability of countries in Africa. Since independence, the country has failed to incorporate the northern part of the country into the country’s power structures and economy. Too often, the southern elites that dominate the state have acted in ways that not only exacerbated tensions between the government and people in the north of the country, but also led to their gradual marginalization. This turned what was once a valuable land into a liability, and eventually a security threat for the whole region (Chauzal & van Damme 2015). The grievances that have spurred the existing conflict are a direct result of the exclusion that a group of people has suffered, a vivid illustration of the new way fragility is conceived and addressed.**

In Nigeria, another example, the isolation and limited opportunities in the northeast contributed to the rise of Boko Haram. In the Democratic Republic of the Congo the fact that large parts of the country are forced to fend for themselves without any state presence, contributes to its incessant instability. Indeed, almost all African countries feature stark horizontal inequalities that need to be addressed to reduce fragility and increase economic prospects.

**Strategic investments in the road network of today’s stable countries can reduce the chance that they become tomorrow’s fragile countries.** Road networks are crucial to reducing social fragmentation, horizontal inequalities, growth imbalances, and inequities in public service delivery, all of which

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**Box 3 Getting it right in the Sahel – Mali**

“The problem in Mali remains fundamentally one of security: rebuilding the state alongside a dispensation to deal with local social grievances in the north. […] the distance between Timbuktu and Kidal is [more than 1,000km], […] there is no paved highway, and there are limited opportunities in the northernmost part of the country. That makes it difficult for the administration and for business, but also for a sense of belonging for the inhabitants of those remote regions. But I kept asking myself why no development institution – the AfDB included – has ever tried to fix this: building infrastructure towards the north and creating opportunities there. Was it a case of neglect? Did the previous Governments prioritize this? If they did not, did we ourselves bring this up in our country dialogue? Or was it a case of “bad” economics? I can imagine technicians arguing (wrongly) that maybe the traffic numbers did not justify building a 1,500-km highway at that time. But even if that was the case, connecting the different regions of the country is a case strong enough on its own.” (Kaberuka 2013)
can increase regional or group-based grievances and the chance that these will lead to conflict (Kaplan 2014). Indeed, most of Africa’s conflicts have started in remote areas that are disconnected from the capitals of their countries. Over time, this contributed to the exclusion and marginalization of local populations and provided fertile ground for conflict (see map 2 from Marc, Verjee and Mogaka 2015).3

Strategic Investments: Lessons from China

East Asian states offer many lessons in this sector, as they made the expansion of their road networks a major priority early in their state-building periods. The goal was to stitch together nascent nations, catalyze inclusive development processes, and ensure the state could operate effectively everywhere while promoting economic takeoff. The best example of this is China, whose experience reflects the possibilities of the five channels outlined above. Although it is not a fragile state, the strategic manner in which it has used roads to promote social inclusion and ensure all of the vast country gained from economic progress has many lessons for fragile countries in Africa and beyond.

Investments in roads – and other transport infrastructure, including railroads, airports, and ports - have consistently been emphasized in China’s five-year development plans. As part of a broader development agenda, these investments underpinned China’s economic and social development (KPMG 2009). They increased connectivity, strengthened the national identity, boosted growth, built up new growth pillars, increased the country’s attractiveness to investors, promoted inclusiveness, reduced social exclusion and grievances, increased living standards, boosted investment in lagging areas, reduced imbalances in growth, and spurred exports and trade across borders. All of these steps reduced pockets or elements of fragility - with the possible exception of Tibetan and Uyghur areas (Fan and Chan-Kang 2005, Yusuf and Saich 2007, OECD 2011b).

China’s road and rail networks have played an important role in integrating the vast country and reducing the significant inequalities that sprouted up in the aftermath of reform (Fan and Chan-Kang 2005). By enabling the population to travel easily and cheaply, the road and rail network has helped weave together the continent-sized country, integrating the population in a way that was unimaginable until recently. China had few highways before 1993, but by 2011 its intercity expressway system exceeded the length of the U.S. interstate highway system (see chart 2) (Cox 2011). Similarly, China had no high-speed rail before 2007, but today boasts a network that is longer than the rest of the world’s high-speed rail tracks combined (State Council of the People’s Republic of China 2016). Early on, the massive railroad system allowed rural and inland workers to move to the coast to work at factories being set up there, giving them an immediate stake in the country’s economic opening. Later on, as highways and high-speed trains were built, companies were able to shift production to poorer inland regions, where labor costs were lower, gradually reducing the regional imbalances that had sprouted up.

Investments in roads have also been crucial to reducing poverty and exclusion and boosting the rural sector. The number of people living on less than $1.25 a day declined from 85 percent of the population in 1980 to 11 percent by 2012. Policy and institutional reforms and massive public investments in roads and other key infrastructures are acknowledged as driving this success. Public investments in roads, when combined with increases in education and agricultural research spending have, in particular, been shown to reduce rural poverty and regional inequality (Cevik and Correa-Caro 2015).

China has used massive investment in roads and other infrastructure to advance strategic urbanization, establish regional growth poles, and ensure development is more balanced. All of these, in turn, boost growth, improve the economic potential of poor regions, and alleviate population pressures on its most important cities. More balanced growth leads to a more balanced distribution of people. The country has 89 urban areas with populations over 1 million. Despite seeing its urban population climb from 77 million in 1953 to close to 650 million in 2007, China has few slums, little urban poverty, and relatively satisfactory (according to surveys of the Chinese public) public services. The investment in a road network made more

3 The areas shaded in the map to indicate each conflict system are not based on specific geographic coordinates but instead are meant to serve as a visual representation of the way conflicts cluster across borders.
Cities and regions attractive to businesses and citizens alike than was originally the case. Combined with the decentralization of resources and administrative functions to provinces and municipal governments (which together decide 69 percent of all government expenditures, an extremely high figure for a developing country), such investment gave many more parts of the country the capacity and incentive to drive development forward themselves (Yusuf and Saich 2007).

By lowering the costs and risks of doing business within the country, China’s road network and other transport infrastructure has provided the foundation for the country to take advantage of its well-educated, inexpensive workforce and create the world’s most important manufacturing center. In this context, exports have climbed dramatically, from the 32nd largest total in the world in 1978 ($20 billion) to the largest in 2010 (over $1.5 trillion) (The Chinese Government 2012). It has also helped link inland, historically relatively isolated regions with the country’s Southeast and Central Asian neighbors—increasing trade, investment, and employment on both sides of the border in the process.

Although the state plays a leading role in developing China’s road network, companies are crucial to implementation. In fact, combined with China’s emphasis on nurturing its homegrown businesses, investment in the road network has helped spawn a set of companies that are globally competitive and now active internationally. Chinese companies build roads and other transport infrastructure from Algeria to Liberia to Pakistan, strengthening ties and gaining diplomatic influence in the process. Their success can be traced back to the government’s strong commitment to investing in transportation in ways that achieved multiple goals—economic as well as political, social, and institutional—simultaneously.

Roads and Recovery in Liberia

After decades of conflict, elite domination of the economy, and mismanagement of the country, Liberia had a chance to start over in 2003 when a peace agreement was signed. After two rounds of elections, a new government under the leadership of President Sirleaf-Johnson was inaugurated in January 2006. It recognized that for Liberia to build a successful economy and avoid a relapse into conflict, it could not simply recreate the economic and political structures of the past, which had fueled the conflict. Instead, it had to address the drivers of fragility in the country.

The origins of the conflict in Liberia can be traced to two broad factors. First, significant portions of society were systematically excluded from political institutions and economic resources. The founding constitution was designed for the needs of the settler population, with limited consideration for the indigenous population. Land and property rights were severely limited for the majority of Liberians in the years after the establishment of the country. Later, marginalization was perpetuated by the strong centralization and urban bias of successive administrations. Political power was concentrated in Monrovia and primarily at the level of the Presidency. Most infrastructure and basic services were concentrated in Monrovia and a few other cities. The result was stark economic horizontal inequalities (IMF 2008).

Second, the mismanagement of natural resources and the economy led to an economic collapse, which eventually ignited the crisis. Liberia’s economy posted steady economic growth averaging 4 to 7 percent per year through the 1960s, but most of the gains were concentrated within the elite, and the majority of Liberians saw little benefit. The economy began to unravel in the 1970s due to a sharp increase in world petroleum prices and a decline in the prices of key export commodities. By the latter part of the decade all indicators pointed to a looming crisis. Unemployment and consumer prices, and particularly food prices, all rose at alarming rates, while growth stagnated. Tensions rose sharply, producing the 1980 coup d’état, which heralded the beginning of a long crisis. A decade of poor governance and repression followed, culminating in the outbreak of the first of two civil wars in 1989. The country’s long descent only ended in 2003, with the signing of the Accra Comprehensive Peace Agreement (IMF 2008).

President Ellen Johnson-Sirleaf recognized the importance of investing in roads after she came to power in 2006. The country’s 2008 poverty reduction strategy paper prioritized building roads, considering them necessary to both consolidate peace and foster inclusive economic growth. At the time, the
country was starting from a very low base; its infrastructure was abysmal. The road infrastructure was completely dilapidated. Parts of the country were cut off for months during the rainy season and travel time was prohibitive, despite the country’s small size (Giovine et al. 2011).

Liberia’s strategic approach towards investments in roads in a post-conflict situation has been exemplary. By considering the political, economic, and social dimensions in tandem, the country shows how the new understanding of fragility and five-part framework outlined above can be operationalized (AfDB 2013b).

Promote social cohesion. Limited mobility within the country left communities isolated, depriving them of the slow, yet steady, gains from the consolidation of peace reconstruction witnessed by the citizens of the capital. A devastated road network hindered economic and social recovery, leading to mass unemployment, especially among young men. Building roads has woven the country together, ensuring the benefits of recovery are more widely shared, and provided short-term employment for thousands of ex-combatants and conflict-affected people as well as common citizens, all of which were hired for the labor-intensive construction work. The combination promotes social cohesion by giving everyone a stake in progress and provides a disincentive for ex-combatants to return to fighting.

Establish the base for an effective and legitimate state. The ability of government institutions, peacekeepers, UN agencies and NGOs to provide security and basic (emergency) services was seriously constrained because the treacherous road network left many of the neediest people completely cut off. Connecting the different parts of the country with roads sent an important signal that the state was functional again and that it would curb the exclusionary policies that dominated politics in the past.

Establish growth poles and corridors. Creating linkages between farmers and markets was fundamental to revitalizing agriculture as the bedrock of the economy and increasing the participation of SMEs in traditional sources of growth such as the rubber, mining and farm cash-crop sectors. Improving competitiveness and developing the domestic value chain was impossible without substantial investments in the road network.

Reduce horizontal inequalities. Inclusive growth patterns and more equitable public services are essential to reducing the ethnic and regional inequalities that had long bedeviled the country, fueling the major grievances that caused the conflicts. Both are essential to enhancing Liberia’s resilience, as they directly address key drivers of fragility, but both require good roads to achieve.

Support regional integration and cooperation. Inter-state trade had remained limited in the Mano River Basin due to the absence of a road network linking the three countries as well as insecurity and onerous border crossing procedures. Instead, the conditions facilitated the cross-border movements of armed groups and the illicit trafficking of weapons. Recent investments, such as AfDB’s Road Development and Transport Facilitation Programme (which will develop more than 275km of roads in the Mano River Union area), are working to counter these longstanding trends.

Of course, while progress has been made, the road network continues to fall short of the country’s needs, both in coverage and quality, slowing its transition out of fragility. Liberia also recognizes that investments in roads are not enough, and must be accompanied by parallel measures to address the underlying sources of fragility, notably the country’s lack of social cohesion, limited state effectiveness, persistent inequalities, and marginalization of whole groups of people.

While the country, and the region, has made remarkable progress since 2008, the outbreak of the Ebola epidemic in 2014 showed how much still remains to be done. Even though the international community invested more than USD 500 million in the reconstruction of the roads network to restore a minimum level of functionality, the virus exposed the ongoing challenges that the country faces. The weak intra- and inter-country connectivity and the limited effectiveness of institutions across distance made the country less able to deal with health challenges in outlying areas. The country’s difficult landscape and population geography have hindered progress and made the tradeoff between the long-term need to incorporate outlying areas in an inclusive development process and the short-term need to see a return on the limited funds the government has for investment (Paye 2015).

Conclusion and Recommendations

Investments in road networks can play an important role in reducing fragility and building robust, dynamic states. Countries need to set priorities in a holistic manner such that they consider the numerous competing interests and trade-offs and factor in both short-term and long-term issues. In line with the evolving understanding of fragility as a risk to all developing countries, governments and development partners need to go beyond the traditional “economic lens” when assessing the road sector. The five-part framework discussed in this brief shows how this can be done and also applies to the rest of the transportation sector. While roads represent the most important component, the dynamics of railways, aviation and shipping are very similar.
Governments need to ensure that their transport master plans take into account issues of fragility. If they don’t have a master plan, they should at least use a fragility lens when deciding where to invest resources into transportation. Although every fragile situation has its own unique set of challenges, they all can benefit from taking into account the five channels proposed in this brief. In some cases, this will mean focusing on reducing social exclusion and marginalization. In others, it means developing new pillars of growth or better connecting rural regions to key markets. In yet others, it means investing in ways that better enable government to provide an equal level of public services across its territory.

International development partners need to systematically examine transport master plans and operations through a fragility lens. This means using a broader set of criteria to judge the value of projects, making the reduction of fragility as important as the economic issues that currently dominate policy. This would necessitate providing new financial leverage mechanisms for projects that may have an important role to play in state-building, but would receive insufficient attention if only short-term economic returns were considered.

Regional organizations such as the African Union and Regional Economic Communities are critical to promoting regional cooperation. Technical bodies, such as NEPAD, are important conduits to reduce fragility through a regional approach. Cross-border and regional road networks can reduce fragility and better weave the continent’s complex ethnic and religious mosaic together. Ultimately, many of Africa’s fragility challenges can only be addressed through a strengthening of regionalism.

References

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