

Environmental Impacts of Large-scale Linear Developments.

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Introduction

Notwithstanding the Covid-19 pandemic, enthusiasm for globalisation has continued to grow steadily. One component of this trend has been an escalation of interest in new and rejuvenated infrastructure projects. Many regions have identified corridors as platforms to catalyse and deliver economic growth and development. This is driven by the need to address an enduring infrastructure deficit and, more recently, as contributions to post-pandemic recovery.

Infrastructure programmes can be optimised to deliver wide development outcomes, including economic diversification, regional integration, increased trade, and improved livelihoods. However, in the absence of rigorous planning and impact assessment, these programmes can also result in negative impacts on biodiversity, ecosystems, livelihoods, cultures, rights and communities and development opportunities will be missed. With effective application of environmental planning this situation can be managed to ensure maximisation of positive opportunities and minimisation of negative risks. However, there are indications that the urgency of current priorities is also being accompanied by a relaxation of environmental planning requirements.

IAIA 21 Session 253 brought together experts to address this concern. Their full papers are available in a new publication referenced below and therefore only introductions are provided here.¹ (1. Hobbs and Juffe. 2021)

The Development Corridors Partnership.

Anecdotal evidence (summarised in the 2015 report, “Integrated Resource Corridors (IRC) Initiative: Scoping Study and Business Plan” (2. UK Aid, ASI and WWF, 2015) suggested that many corridors are likely to fail in their full range of development objectives without more attention being given to the protection of environmental and social safeguards. One failing identified was the general inadequacy of application of impact assessment procedures, methods, tools, and techniques in corridor planning. Fundamental principles such as transparency, inclusiveness and inter-disciplinarity were often absent or treated with tokenism. The timing of any community engagement often arose after key strategic decisions had already been made limiting such engagement to reactive comments.

Of greatest concern was that the recommendations of any impact assessment process had little influence or impact on decisions. The ‘national interest’, ‘security’ and, sometimes, the prestige of mega-projects were found to be used as reasons for this cursory commitment to rigorous assessments. It was evident that corridors usually evolved in a fragmented, disjointed, incremental way and pursued independent sector-specific objectives with little reference to cross-cutting development goals. This frequently resulted in policy inconsistencies and overlapping objectives.

Corridors are potentially transformational and may induce major changes in land use, social systems, local economies, cultural values, etc. Yet there is an evident failure to adequately consider the full range of potential risks and opportunities, alternatives, the interdependence between economic, social, and environmental systems, or explain any trade-offs or opportunity costs. It was often assumed that benefits would evolve spontaneously rather than as part of an integrated, systematic approach. When planned

¹ For this reason, detailed references are not provided in this summary of the Proceedings.

appropriately corridors can be effective catalysts for development, but without such planning they can undermine any positive development outcomes. None of these concerns are unique to infrastructure or corridor investments. However, their complexity, linearity, extensive impacts warrant special consideration (for example, to cumulative, induced, and transboundary implications). Yet infrastructure impact assessments sometimes get relegated to secondary importance when linked with the non-linear, mega-projects that they are intended to support.

The IRCI Report also noted that, although there was no shortage of research and capacity building initiatives, the majority of these produced little of practical value to decision makers. This was attributed, in part, to research projects being more supply driven and self-serving than responding to a demand expressed by local corridor planners. This was compounded by a tendency for researchers to operate in institutional and disciplinary silos with the production of a report/ paper being the goal instead of how the research could benefit host countries. Communication between researchers and decision makers was often left to chance, instead of involving a well-considered communications strategy.

These findings helped define the transition of the IRCI into the Development Corridors Partnership (DCP) as a multi-disciplinary, demand responsive *partnership*. Led by UNEP's World Conservation Monitoring Centre and commissioned by the UKRI-GCRF. The DCP brings together universities and institutions in the UK (LSE, Cambridge, and York), Africa (Nairobi, Sokoine, WWF, ACS) and China (NSCS, CAITEC, CAAS).

See: <http://www.developmentcorridors.org>

Aligning Corridor Developments to the UN Sustainable Development Goals (SDGs).

One of the failings of corridor plans is that they do not always effectively explain how they will contribute to a long term 'sustainability vision' for a country or region. In some cases even their rationale is quite nebulous or limited to very discrete objectives and not holistic and integrated development outcomes.

Strategic Environmental Assessment (SEA) is the key process to help define this role of corridor developments in sustainable futures. The UN SDGs provide the internationally agreed goals and targets. An SEA process can provide an effective platform to help with SDG 'domestication' and encourage more integrated, coherent, inter-departmental and disciplinary approaches to corridor planning. An SEA will initially establish if a specific corridor proposal is justified and whether the potential positive impacts will measurably outweigh negative impacts and is in alignment with the SDGs.

Nationally Kenya and Tanzania provide advanced frameworks for SDG attainment and provide regular reviews of their progress towards them. However, there are also gaps. Both countries claim to have integrated the SDGs into their 5 year planning processes although neither explicitly reference their plans to the SDGs and do not address the synergies and trade-offs required of holistic approaches. Implementation of the SDGs at sector level is variable in both countries and integration is a primarily interpreted as a top-down process rather than building horizontal linkages between sectors or departments in a coordinated way. Corridors provide the opportunity to address this need which evidence suggests is not happening in specific corridor developments in either of these countries.

Sector actors in corridors do not have a mandate to link their activities to the SDGs this is left to the higher echelons of government with coordinating roles. However, although corridors may be branded as integrated entities, in practice they are implemented by relatively powerless coordinating authorities who have not produced guiding policies and plans aligned with the SDGs. They are fragmented agglomerations of separate and

independent initiatives working in 'silos' with little policy coherence. Potential synergies and co-benefits are missed, and trade-offs ultimately serve the interests of the more powerful stakeholders. (See Chapter 2 in Reference 1)

Application of Scenario Planning to Strengthen EA Processes: The SGR Kenya.

Scenario planning is a valuable yet underused tool within both SEA and EIA. It can further steer corridor developments and provide a structured and participative process to anticipate the consequences of corridor developments towards sustainable outcomes. Scenario planning generates a wide range of potential plausible, pertinent, alternative futures. It also promotes a holistic and integrative approach enabling shared strategies to be agreed amongst a diverse range of stakeholders on how to either influence the contribution of corridors to a preferred scenario or adapt them to the anticipated negative influences of another. It will also help ensure that unanticipated consequences of a corridor development do not undermine the intended development outcomes.

A DCP study assessed the value that scenario planning could have had as a tool to link projects and strategic choices in the example of Kenya's China supported Standard Gauge Railway (SGR). An initial review of EIAs undertaken for sections of this flagship inter connector project were supplemented by 110 semi-structured interviews, six scenario planning workshops, as well as field visits in 9 counties. The gaps identified in the EIAs included; opportunities for participation (which were limited anyway) took place when key decisions had already been made, inadequate rigour in the scientific baseline information, failure to use available assessment methodologies or provide adequate information to all stakeholders. In addition consideration of alternatives, potential health risks, involuntary resettlement implication and local employment, livelihood, transport, impacts were given little attention as was a comparison of the costs and benefits across sectors.

A scenario planning approach would have strengthened the EIA process and encouraged a more comprehensive process based on impacted communities concerns. It would also have helped make some of the uncertainties more explicit. It would have challenged some assumptions by applying systems thinking and making vested interests more transparent. It would also have provided a better consideration of the linkages, drivers of change and cumulative impacts and their spatially explicit representation.

Scenario planning could also create greater trust between stakeholders with a more transparent, inclusive, integrated, structured and systematic process. Scenario planning is a powerful platform for progressing simple transport corridors into more diverse development entities. (See Chapter 12 in Reference 1)

The Mtwara Corridor, Tanzania: SEA of a Plan.

The Mtwara Corridor in Tanzania has been discussed for many years but remains at a conceptual stage. It therefore represents an opportunity for SEA to influence development plans, rather than retrospectively. The corridor has been discussed since 1982 when the Southern African Development Community (SADC) initiated the possibility, but it was only officially launched in 2014 as a cooperative agreement between Tanzania and Mozambique, Malawi and Zambia. Initially perceived as a tourism focussed corridor, due to the region's rich biodiversity and network of protected areas (including Tanzania's Selous World Heritage Site, and Mozambique's Niassa National Park), the emphasis had shifted to a minerals based 'resource corridor' as the feasibility of coal, iron ore, uranium, nickel, diamonds and gold deposits were realized. The more-recent discovery of offshore natural gas requiring land-based infrastructure added to the corridor's infrastructure components. Mtwara is also characterized by high levels of poverty and poor infrastructure provision with

most transport focused on the Mtwara Port-Mbamba Bay Road linking the Indian Ocean with Lake Malawi. A Mtwara Special Economic Zone is proposed in Tanzania's Integrated Industrial Strategy 2020-2025 but has yet to materialise.

A DCP study identified 23 projects as integral to the corridor's area of influence. They were reviewed to evaluate the quality of any impact assessment processes undertaken and especially the extent to which they considered the implications of plans for maintaining biodiversity and ecosystem services.

Three strategic level studies were reviewed in detail, although none were specifically on the Mtwara Corridor plan. One, funded by Japan, on transport and trade sector plans and two (Mtwara and Ruvuma) on regional development plans. These purport to be "SEAs", so the key questions posed were; (1) Do the studies indicate a strategic framework for future projects? and (2) How were environmental, trans-boundary and cumulative impacts addressed? Tanzania has had SEA Guidelines since 2017 although the studies predated these.

The findings were that the transport sector study had very descriptive and general baselines studies, public participation was limited and recommendations were predictable, mostly about avoiding conservation areas and complying with legal requirements. The regional studies were both similar in their superficiality and did not establish the baseline conditions in a enough detail to be able to assess effects that may impact them. The "SEAs" emphasised the rationale for developments more than impacts of them. The conclusion for all the studies reviewed was that there were objectives set but without details of how they would be achieved and with what impacts - elementary requirements of any impact assessment.

In short, all reports reviewed failed in several fundamental ways. Although elements of the studies fell in line with the SEA Guidelines, they were insufficient to provide many insights into the scope and potential impacts of the Mtwara corridor proposal. They were insufficient to be considered genuine SEAs processes, framed by the mitigation hierarchy. A comprehensive SEA (that looks not only at land-use implications of the corridor but also the policy choices motivating it) should be a priority requirement should the Mtwara corridor continue to be a proposal in Tanzania's national development plans. (See Chapter 8 in Reference 1)

Assessing and Managing the Impacts of Mega Corridors in Kenya.

Impact assessment processes of developments in Kenya, with reference to the previously mentioned SGR and the multi-component Lamu Port South Sudan and Ethiopia (LAPSSET) corridor, were also reviewed by the DCP. Both are considered as flagships in Kenya's development agenda (Kenya's Vision 2030) and important African links into the 'maritime silk road' component of the Belt and Road Initiative (BRI)). LAPSSET includes 7 major infrastructure components (ports, highways, railways, oil pipeline , international airports, hydro schemes and resort cities) but the projects has had sporadic progress.

Both SEA and EIA guidelines exist in Kenya to steer appraisal of policies, plans, programmes and projects on a sustainable path and the DCP has been reviewing their influence on the SGR and LAPSSET. The DCP study interviewed people living up to 10 kms of both developments. Most respondents were, in LAPSSET, business, arid and semi-arid livestock and dryland farming communities and in the SGR pastoralists – the majority were female. Communities affected the projects reflect the tribal diversity of Kenya's people and their livelihoods. The SGR route has internationally recognised protected areas that comprise important elements of a major tourism sector.

The failings are familiar; A lack of effective public participation and timing that precludes meaningful input in spite of Public Participation guidelines existing since 1999 (although a strong and growing civil society is changing this and both projects have seen active protests). Over 70% of the respondents interviewed indicated that they had had no form of engagement in either EIA process. Unsurprisingly the SGR respondents had a greater awareness of the developments' objectives (a railway) than those living close to LAPSSET (multi-functional). Few had participated in a participatory process at any stage of either development (surprisingly the lowest being during the EIA process.) Most respondents said that the projects had a negative impact on land use and water resources- but the overwhelming majority (over 80%) indicated concerns about the impacts on wildlife and ecosystems. The lack of effective engagement was attributed, in part, to education levels and to a lack of awareness but mostly to unfamiliarity with the effective ways consultants and officials need to engage with communities in a Kenyan context. It is clear effective participation is not a part of Kenya's EIA process and influence is skewed to more powerful stakeholders rather than the communities affected. An independent EIA process is needed which is not dependent on those with a vested interest in a proposal. (See Chapter 13 in Reference 1)

Environmental and Social Risks and Safeguards of the Belt and Roads Initiative (BRI)

The China-led BRI is a reinvigoration of the ancient and impactful trade routes known collectively as the 'Silk Roads'. The BRI comprises 8 economic corridors six overland and two maritime (some of which are inter-continental), connecting 71 countries. By 2020, 12,000 kms of road, 31,000 km of rail and 70 port were underway serving as catalysts for further development – primarily high environmental footprint sectors (resource extraction, energy and trade). Since the launch China has signed MOUs with 144 countries to potentially implement infrastructure projects. The World Bank has estimated these investments total about \$600 billion. The 5 publicised BRI priorities are – policy coordination, facilities connectivity, unimpeded trade, financial integration and people to people bonds. Clearly the potential economic, environmental, cultural and social impacts are unprecedented due to its extensive scale and proximity to many of the world's areas of high conservation value that have managed to survive in part due to their inaccessibility. More than 6,000 sq. km of 'critical habitat' (as defined by the International Finance Corporation) are potentially negatively impacted because they occur within 1 km of BRI infrastructure. This, of course, does not account for impacts of an induced or secondary, transboundary or cumulative nature. The negative impacts present business, financial, political and reputational risks.

In line with China's policy, BRI developers defer to the impact assessment systems of host countries. However, a weak regulatory climate often exists and an institutional capacity deficit and lack of political will to implement regulations are often evident, especially with the prospects of prestigious BRI project proposals at stake.

This puts a burden of responsibility on self-regulatory processes to be followed by developers, investors and promoted by their governments. There is no shortage of environmental guidelines, but these are of variable quality, and mostly voluntary and aspirational. The need to translate the rhetoric into implementation is pressing. In a 2018 study 14% of BRI projects 56 countries have reportedly faced significant community protests with developers and financiers facing consequent reputational, regulatory, financial and business risks.

An extensive programme such as the BRI must at least match, if not exceed, the performance standards of the international financial institutions. These have been crafted and improved over two decades through extensive multi-stakeholder consultations and practical experience in implementation. The evidence suggests that the BRI currently falls short of these benchmarks. The extent to which the BRI will genuinely create sustainable *development corridors* will be dependent upon the effectiveness of environmental and social safeguards. (See Chapter 16 in Reference 1)

Further Information.

These reviews are introductions to more detailed papers contained in Hobbs and Juffe-Bignoli. Eds (2021)). This publication contains 22 case studies from Asia, Africa and South America compiled by 50 authors from 26 institutions. It extended the collaboration beyond the DCP partnership. Chapters are included covering lessons learned in establishing and managing partnerships and summarising the key principles needed to improve development corridor planning.

1. Hobbs, J and Juffe-Bignoli, D (Eds) (2021); Impact Assessment for Corridors: From Infrastructure to Development Corridors. (Development Corridors Partnership, Cambridge, UK)
2. UK Aid, ASI and WWF (2015): Integrated Resource Corridors Initiative-Scoping and Business Plan. (ASI London.)