



The New Global Connect: Mega-Infrastructure Projects and Their Local Impacts

New infrastructure developments promise progress, but seldom for local communities

The construction of large infrastructure for rapid and efficient means of transportation or green energy production from large wind or solar farms is often tied to hopes of development and prosperity for local communities. However, often, such developments do not meet these expectations, because local communities are excluded from the decision-making process and lose access to their resource base, their living space and livelihood opportunities. Co-determination is an essential prerequisite for local sustainable development through infrastructure projects. Such a process ensures that due consideration is given to different impacts and consequences, perspectives, power dynamics as well as opportunities for participation. Research is necessary to better understand these important dimensions and how to enable, facilitate and implement effective and equitable co-determination.

What are Mega-Infrastructure Projects and how do they operate?

Mega-Infrastructure Projects (MIPs) encompass the development of large and complex facilities designed to rebuild or expand transport, energy or agricultural networks, for example. In doing so, they contribute to global connectivity and are a central element of today's globalized economy. While MIPs are not new, they are becoming increasingly important. Indeed, in the last ten years, their scale and expansion have grown considerably, including for example China's 'new silk road', coined the 'Belt and Road Initiative' (BRI) or the Global

Gateway Strategy of the EU, both of which are associated with large-scale and intercontinental trade and transport corridors.

The multiple parallel and competing projects to the BRI that currently are being planned and connected, point to the fact that MIPs are also politically motivated constructs within and across different world regions. The planning, development and implementation of such MIPs takes many years. Such ventures also involve a diversity of partners and stakeholders, including states, national and international companies as well as investors, and local elites.¹

The development of MIPs are associated with both opportunities and challenges. On the one hand, they promise better access to remote areas and the improvement of economic conditions for local communities.^{2,3} On the other hand, there are considerable environmental and social challenges associated with MIPs. Such projects can result in increased CO₂ emissions, thereby contributing to climate change. They also lead to exponentially rising land prices, increased urbanization, the loss of traditions and cultural landscapes, the deterioration of ecosystems and declines in biodiversity.^{4,5}

In many instances, MIPs are planned and implemented without local consultation or involving local community members in decision-making processes. Moreover, they often fail to recognise local resource and land ownership practices, policies and regulations. They also tend to ignore local people's visions of future development – or leave little room for these visions to help shape MIPs.^{4,8}

Some scientific considerations around MIPs

MIPs herald global progress and are associated with the promise of development and prosperity. They are also often explicitly linked to the United Nations' 17 Sustainable Development Goals (SDGs).^{2,3,6-8} While new infrastructure projects support the development, for instance, of desired transport and green energy facilities, they also, in many cases, result in the expropriation of land and the private appropriation of

common property (the so-called 'commons'). In addition to wide-spread loss of individual or private property, there is also expansive loss of common property through direct investment has been described as widespread 'land-grabbing' or 'commons-grabbing'.^{8,9} As such, MIPs can be seen as ways to accumulate capital and a new means to assert geostrategic dominance.

As development projects, many MIPs also fail to have the desired outcome – i.e., new work and livelihood opportunities for local communities often do not materialize.^{7,8} Yet, large-scale solar-, wind- and biofuel projects are praised as sustainable endeavours by operating companies and governments. Thus, by placing emphasis on material gains and technical advances providing interconnectivity for all, the current discourse on ecological energy production and sustainable development provides legitimacy for MIPs. Such a discourse, however, also conceals the fact that persistent power asymmetries and capital interests play a key role in numerous MIPs. The negative impacts for local stakeholders and the lack of participation in decision-making are at risk of vanishing from view during the political decisions associated with, and planning and implementation of MIPs. This obfuscation of power asymmetries and political issues through development discourses and technical approaches is also commonly referred to as the 'Anti-Politics Machine'.¹⁰

In this debate, social science studies strive to provide an evidence-based perspective. They focus on research ques-

Box 1: Current research on MIPs in Switzerland

Several research projects focusing on MIPs and associated with Swiss universities are currently underway. They are mostly focused on gathering empirical evidence around the reactions to several large infrastructure projects.

Roadwork: An Anthropology of Infrastructure at China's Inner Asian Borders

This four year SNSF-funded project, based in the Unit of Social Anthropology at the University of Fribourg, aims to assess the impacts of selected roads being built in China's border regions and in neighbouring countries as part of the Belt and Road Initiative (BRI). Undertaken in a diversity of national contexts, the studies show that no road is simply 'good' and brings about 'development'. No road automatically generates wealth for all or equal opportunities and gender equality. Evidence from Pakistan and Tajikistan shows that new, faster roads typically connect urban centers, bypassing rural settlements, markets and villages, leading to the loss of livelihoods associated with the provision of services to the travelling truck drivers, passengers and transported cargo. By further strengthening the position of cities against rural areas, the roads also lead to greater urban drift.

→ roadworkasia.com

Disenchanted Modernities – Mega-Infrastructure Projects, Socio-Ecological Changes and Local Responses

In a new book, researchers from the Institute of Social Anthropology and the Centre for Development and Environment (CDE) at the University of Bern and partners from the Global South and North, describe the important historical, economic, institutional and cultural context to several MIPs in the fields of agriculture, transport and energy. Covering 16 case studies across Asia, Africa, North and South America as well as Europe, the authors provide empirical foundations for the modernity discourse of MIPs as well as the conditions for local responses and the development of alternatives.

→ lit-verlag.de/isbn/978-3-643-80378-8

Engaging with the giant: Community-based initiatives and sustainable development around MIPs

This initiative, led by the Centre for Development and Environment (CDE), University of Bern and partners from the Global South and North, intends to foster transformative research in support of more sustainable development in the context of MIPs. The initiative hopes to support learning processes and practical solutions that enable local communities to co-design MIP. The initiative also aims to develop practical recommendations to inform the policy and regulatory landscape in Switzerland and in selected countries in Asia, Africa and Latin America.

→ cde.unibe.ch/research/cde_series/engaging_with_the_giant/index_eng.html

tions such as who the decision makers for MIPs are, and how their decisions are structured and implemented. Also of interest are questions regarding the impact of MIPs on the environment and local communities; which cultural and social values determine how projects are perceived locally; and whether such initiatives are supported or rather rejected. Using a transdisciplinary, solutions-oriented perspective such studies try to understand which approaches might better incorporate the perspectives of local actors to support sustainable development.

Scientific insights concerning the effects of MIPs and local perspectives

On the one hand, MIPs promise global progress, associated with health concerns. On the other hand, numerous examples show that MIPs often disrupt local economic, political and social systems, thereby leading to additional problems, such as displacement of some of the local population, expropriation and inadequate compensation, as well as environmental pollution and associated health concerns. MIPs can sometimes also cause entire countries to fall into the so called 'debt trap'.

However, in some isolated instances local groups have managed to make their voices heard, to ensure that their situation is recognized and that their needs, wishes, priorities and strategies are taken into account during the implementation of MIPs.

Scientific studies show that well-functioning, democratic political systems are an important prerequisite for successful local initiatives and for improved cooperation between large-scale projects and local communities. For instance, in the mid-sized town of Biel, in the canton of Bern, Switzerland, local citizen groups managed to stop and renegotiate plans for the expansion of a local stretch of the national motorway network. In this case moderate urban development and nature conservation prevailed over mobility gains.

Although federal authorities had not planned for a devolved political participative approach, because of citizens' protest and their successful engagement in the project's decision-making process, the original MIP plans were withdrawn. Instead, alternative road developments, including regarding highway access, were agreed to in a co-determined manner resulting in the preservation of the city scape (i.e., old multi-storey residential buildings and natural forested landscapes in that part of the city).¹¹

Box 2: Future research

- **Research ethics:** Research on MIPS should carefully consider issues regarding research partnership and conflict-sensitive approaches as well as ethical concerns.
- **Methodological approach and quality of data:** Such research should be interdisciplinary, combine and integrate methods flexibly and focus on a mixed-method framework (i.e., collect both qualitative and quantitative data).
- **Transdisciplinary research for sustainable development:** Given the major challenges associated with MIPS, research projects should be transdisciplinary in scope and co-design, -develop and -implement, together with local communities, knowledge-based solutions that integrate different perspectives around local sustainable development, help overcome differences, and respect local land, resource, labour and human rights.
- **Stakeholder diversity and priorities:** Research projects should consider the diversity and heterogeneity of those involved and affected by proposed developments and seek to address their strategic motivations and actions.
- **Power relations and their perceptions:** To understand different forms of local responses to MIPS, researchers should examine perceived power relations and the bargaining power of different stakeholders, investors and the State.
- **Increase the bargaining power of stakeholders:** Research can strengthen stakeholders' bargaining power by analyzing the diversity of impacted stakeholders, their networks, associated power dynamics, legal settings and by identifying relevant mediators. Specifically, such understanding can support stakeholders' role in the decision-making process around MIPS and thus enable them to better defend their land and resource rights.
- **Conflict resolution mechanisms:** Research into conflict resolution mechanisms and their role in specific MIPS can help identify and address some of the negative effects of such projects.
- **Use of local case studies for further research and practice:** Comparative analyses across case studies permit a better theoretical and practical understanding of MIPS and to derive lessons learned from best practice examples.

Conclusions

Local reactions to MIPs are multifold. They range from local support groups to local mediators, spontaneous protests and acts of sabotage, to the establishment of well-organized movements that successfully represent their interests and concerns against states and international investors.

Understanding the diverse local and sometimes creative responses to MIPs and the conditions under which they are possible are key to sustainable development. Such research shows how MIPs might be implemented, by respecting the local environment, ensuring local communities have a voice in decision-making processes, and ensuring different perspectives get to shape local sustainable development trajectories. Such research also provides the evidence base needed to assess not only the economic importance, but also the social-ecological sustainability of large infrastructure projects. However, for research to provide such insights and meaningfully contribute to sustainable development, it must take specific ethical and methodological considerations into account (Box 2).

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SDGs: The UN's International Sustainable Development Goals

This publication of the Swiss Academy of Sciences (SCNAT) contributes to SDGs 8, 9, 10 and 16:

'Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all',

'Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation', 'Reduce inequality within and among countries' and

'Promote peaceful and inclusive societies for sustainable development'.

> sustainabledevelopment.un.org

> eda.admin.ch/agenda2030/en/home/agenda-2030/die-17-ziele-fuer-eine-nachhaltige-entwicklung.html



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