Evaluation and Project Development

China: Ningxia Liupanshan Poverty Reduction Rural Road Development - Poverty and Impact Evaluation, Economic Assessment
Duration: 2015 2016
Customer: Asian Development Bank (ADB)

The Asian Development Bank planned a rural roads project with the goal of poverty alleviation in Ningxia Province. It was the task of Niklas Sieber to perform a comprehensive analysis of the causes of poverty in the project area. The relationship between the anticipated rural road improvements and the range of poverty reduction benefits was assessed and a methodology. An approach to conducting the poverty impact evaluation, including a plan for collecting baseline data and comparator locations was developed. This included the preparation of the evaluation methodology, an implementation schedule, and the TOR for impact evaluation consultants during implementation.

As a second task a methodology for the economic assessment of the rural roads was developed, including cost-benefit analyses for low volume roads.

Cameroon: Ex-post evaluation of the project Rehabilitation of National Road No 5
Duration: 2015
Customer: Kreditanstalt für Wiederaufbau (KfW)

The German KfW supported the Cameroonian Ministère des Travaux Publics MinTP in rehabilitating the National Road R5 in West Cameroon. 15 Years after project kick-off this ex-post evaluation was conducted according to the DAC Criteria: Relevance, effectiveness, efficiency, impact and sustainability were assessed. Additionally the impacts of the road on deforestation n West Cameroon was assessed.

Pre-Feasibility Study on Transport Options and Trunk Road Concepts to Reduce Traffic Crossing the Serengeti National Park
Duration: 2014
Customer: Kreditanstalt für Wiederaufbau (KfW)

This pre-feasibility study examines the transport options for a southern bypass of the Serengeti National Park, Tanzania. Background is the aim of the Tanzanian government to improve access to the Mara Region in North-Western Tanzania.

The Study researches costs and benefits of possible options to circumvent the Serengeti in the South. Additionally, impacts on environment and indigenous people (Hazda) are assessed. The study recommends the conduct of a fully fledged feasibility study.

Rural Roads and Markets in Western and Central Province, Pre-Evaluation Kenya

Working period: 2007

Client: KfW

This programme concept study and needs assessment examines the options for the improvement of marketing infrastructures and agricultural roads. The outcomes are used to develop a new KfW rural roads programme in western Kenya including Thika and Kiambu Districts. The report assesses demographic features, poverty, agricultural production and marketing, transport of produce, needs for road rehabilitation and capacity building. Finally an outline of the future programme including budget is drafted.

Evaluation of the Rural Travel and Transport Program RTTP, SSAfrica

Working period: 2005

Client: World Bank, SSATP

The purpose of this study is to evaluate the Rural Travel and Transport Programme RTTP which is a component of the World Bank's Sub-Saharan African Transport Policy Program. RTTP is a policy development program conducted in 19 African countries from 1992 to 2003, with a budget of nine million US$. The main goal of RTTP is to assist countries to establish appropriate transport policies. The report evaluates RTTP according to the criteria of the Development Assistant Committee DAC taking into account the criteria relevance, impacts, significance, effectiveness, efficiency and sustainability.

Pre-appraisal mission of the Rural Access and Mobility Project RAMP, Nigeria.

Working period: 2005

Client: African Development Bank

The Rural Access and Mobility Project, conceived by the African Development Bank, focuses on the alleviation of rural poverty by improving access of rural dwellers to markets, places of employment and social services. In order to achieve these objectives, the project has the following goals:

- Institutional Strengthening and Human Capacity Building
- Rehabilitation and Maintenance of Transport Infrastructure
- Rural Mobility Improvements

Road Transport Advisor to the Minister, Namibia

Working period: 2003 - 2004
Client: GTZ Germany

Namibia conducted a road sector reform in the 1990s. For the continuation of this programme, Germany provided technical cooperation aid. Niklas Sieber developed the programme for an advisor to the transport minister. The overall goal of the Gtz programme was to improve financing and planning mechanisms, as well as alleviate poverty. The programme had three components:

- Strengthening of road sector institutions
- Improvement of rural accessibility
- Enhance human capacities in the road sector

Pre-appraisal Mission: Rural Markets and Roads, Bangladesh

Working period: 2002
Client: Kreditanstalt für Wiederaufbau KfW

Since 1995 the German government is supporting the Tangail Infrastructure Development Programme, which has the goal to improve the access to and from growth centres for marketing of agricultural and other commercial goods. The mission was conducted in order to evaluate the possibility of such a replication in the four other districts of Bangladesh. The study examined the existing road and market infrastructures and evaluated the demands. It analysed the target group, estimated volume and costs, calculated the economic potential and feasibility and assessed the institutional setting.

Research and Studies

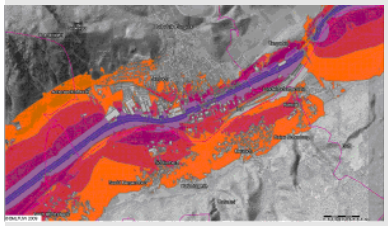
Barrier-free Mobility in Germany
Duration: 2015-2016
Customer: Deutscher Bundestag

This research project was conducted on behalf of Matthias Gastel (German MP, Bündnis90/Die Grünen) and had the goal to assess the legal financial and technical conditions for a barrier-free mobility in Germany. Additionally, good practice examples were collected for the implementation of the BGG law for handicapped persons.

Best Practice in Urban and Rural Transport
Duration: 2016
Customer: Deutscher Bundestag

This research project was conducted on behalf of Matthias Gastel (German MP, Bündnis90/Die Grünen) and had the goal to collect best practice examples for a sustainable and innovative transport in urban and rural areas of Europe. The project covered a large scope of projects from walking school buses, to freight pedelecs and electro mobility.

Reducing railway noise pollution
Working period: 2011
Client: European Parliament

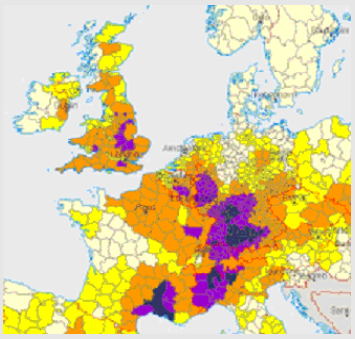


This study analyses the options for reducing rail noise in Europe. The goal is, to provide sufficient material for the EU parliament to decide upon appropriate policy measures to reduce rail noise. The study contains measures such as low-noise brakes (kk and LL), noise dependant track access charges and noise absorbers. Niklas Sieber analysed case studies from Germany and Austria, assessed the external noise costs and calculated the economic effects of noise reduction measures.

WEATHER EXTREMES: Assessment of Impacts on Transport Systems and Hazards for European Regions

Working period: 2010 – 2011

Client: European Union, FP7

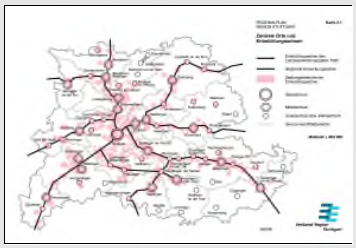


European Union research project on impacts of extreme weather events and hazards on the transport systems of European Regions. The contribution was on the vulnerability assessment for road transport, containing cost assessments of extreme weather events, such as infrastructure damage costs, user time cost, accident costs, costs for snow removal, etc. The relevance of various climate change scenarios for transport was researched as well.

Institutional Study of Metropolitan Transport Planning and Management for India, Germany Case Study

Working period: 2009

Client: World Bank, Washington



This was a case study of the transport planning system in Germany which was used to develop a new institutional set up of urban transport institutions in India. Special emphasis was put on the regional planning processes, which is regarded as the appropriate means for intermodal and integrative transport planning. An example is the Stuttgart Region, which is considered as best practice.

ASSET: Assess Sensitiveness in Transport

Working period: 2008 - 2009

Client: European Union, FP6

In EU research project ASSET analyses the concept of transport sensitive areas, i.e. natural and human environments, being especially sensitive towards transport noise, air pollution, infrastructure and accidents. The task was to define methodologies for the delimitation of sensitive areas and test them in seven European case studies.

REFIT: Refinement and test of sustainability and tools with regard to European Transport policies

Working period: 2007 - 2008

Client: European Union, FP6

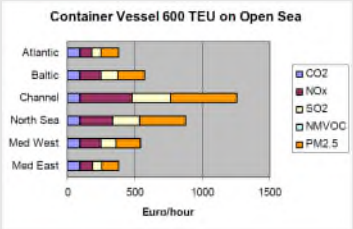
REFIT had the task to improve and integrate modelling tools and methods used to evaluate European transport policy, focusing on sustainability. The project developed new evaluation methods for policy targets and tested methods that address the overall economic, environmental and social impact of transport policies.

Niklas Sieber wrote Deliverable 3.3 on "Assessing Transport Policy Impacts on the Internalisation of Externalities of Transport". For this purpose an indicator on the "level of internalisation of externalities" was developed, which calculates the share of external costs that have been internalised according to the polluter pays principle. The study contained as well a critical theoretical analysis of marginal cost pricing in transport.

GRACE: Generalisation of Research on Accounts and Cost Estimation

Working period: 2008 - 2009

Client: European Union, FP6

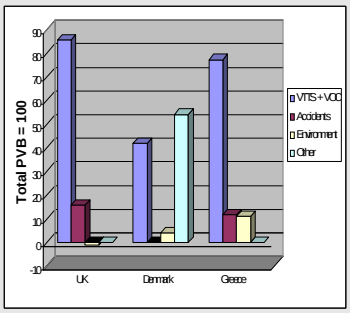


The research project GRACE had the task to investigate marginal social costs for transport, including pricing policy options and modelling of their effects and develop the use of transport accounts to monitor the implementation of transport pricing reform in an enlarged Europe. Niklas Sieber conducted pilot research in attributing environmental cost to shipping on selected maritime and inland water passages in Europe.

HEATCO: Developing Harmonised European Approaches for Transport Costing and Project Assessment

Working period: 2006 - 2007

Client: European Union, FP6

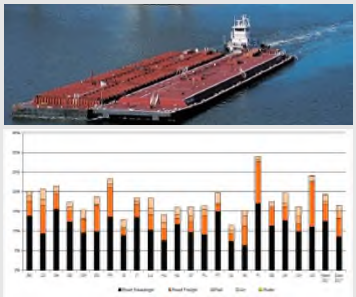


This research project had the aim to develop a set of harmonised guidelines for assessing transport projects and their associated costs at the European level. It reviewed and analysed existing project assessment practices in Member States, especially issues as time and congestion; accident risk reduction; health impact of pollution; and infrastructure costs. The guidelines developed a stringent methodology for the estimation of costs and benefits of planned transport projects reflecting the state of the art. The research contains four case studies in Europe, where the proposed guidelines were tested.

COMPETE: Analysis of the contribution of transport policies to the competitiveness of the EU economy and comparison with the United States

Working period: 2006

Client: European Union, DG TREN



This project researches the competitiveness of the European Modes of Freight transport and compares them with the USA. It examines the impacts of transport policy programmes on the transport sector as well as on the overall economy. The study evaluates the impacts of transport costs; in particular congestion costs; on the productive systems in the EU and the US. It analyses the influence of structural economic changes on the transport systems and the requirements for transport policy imposed by these changes. It estimates the contribution of transport networks on economic development.

Application of Methods for the Internalisation of External Costs, Germany

Working period: 2006

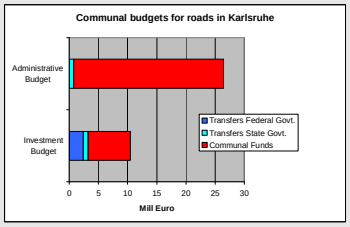
Client: German Environmental Agency (UBA)

This study assesses the options to internalise external costs through public sector activities, such as infrastructure planning, building asset management and public procurement. The study describes practical options to include environmental costs in the economic appraisals undertaken by the public sector for new investments and rehabilitation works.

Financing and Cost Sharing of Local Roads in Germany

Working period: 2004

Client: Public Planning and Policy Studies Inc. Tokyo, Japan



This study has the aim to examine general funding rules for road transport investments in Germany, including a cast study of a selected region in western Germany. The study deals as well with the German system of road financing in giving an overview of the different governmental levels involved in the decision-making and funding process. The chapter also contains a numerical example of the various contributions of federal and state funds for the city of Karlsruhe.

Integrated planning of trains and buses, Germany

Working period: 2002

Client: German Railways (DB AG)

The goal of this project was to assess the options and restrictions of an improved integration of trains and buses in the region of Oberbayern, Germany. This included an analysis of the planning process, the specific framework, transport modelling demand and development of a service concept. The result was recommendations to improve the planning process.

Flexible Service Provision for Public Transport (AMABILE), Germany.

Working period: 2001 - 2002

Client: German Ministry for Education and Research (BMBF)

This project assesses options for alternative public transport services, such as shared taxis and call-buses. The goal is to serve in low demand rural areas. The project assessed their transport options, the legal framework, as well as the economic viability.

Integration of regional planning targets into federal transport planning (BVWP), Germany

Working period: 1999 - 2001

Client: Federal Office for Building and Regional Planning (BBR)

This research project has the goal to find innovative means how to integrate regional planning goals into German Federal Transport Planning (BVWP). Two regional planning goals were analysed:

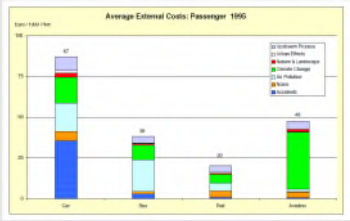
1. Distribution and development: The impacts of transport investments on accessibility of central locations as well as intermodal transport nodes.
2. Modal Shift and relief of areas highly burdened by transport.

The results of the research are integrated in the Federal Transport Plan 2004.

External Costs of Transport in Europe.

Working period: 1995 and 1999 (Update)

Client: International Union of Railways (UIC)



This research project pioneered in calculating the external costs of transport in 17 European countries. For this purpose the environmental, accident and congestion costs are calculated. The environmental costs comprised air pollution, noise disturbance, climate change, nature and landscape and up-and downstream processes. The initial study from 1995 was updated in 1999.

General Transport Plan Baden-Württemberg, Germany

Working period: 1993 - 1994

Client: Ministry of Transport, Baden-Württemberg

The first General Transport Plan in the State of Baden-Württemberg is developed in 1995. It has the following goals

- Safeguard of the individual mobility
- Avoidance of congestion for the benefit of the economy
- Improvement of traffic safety
- Sustainable mobility with respect to the environment

Consultancy in Developing Countries

Rural Transport and the Sustainable Development Goals
Duration: 2015
Customer: Partnership on Sustainable, Low Carbon Transport (SLoCaT)

In 2015 the Sustainable Development Goals SDGs were developed as a successor of the MDGs. The main purpose of this project on behalf of ReCAP was to raise the political priority of rural transport as indispensable component of several of the SDGs. The dialogue evaluated the necessity of promoting rural transport and developed strategies on how to integrate rural transport into the SDGs. Within this project a fact sheet on rural access and a discussion paper was developed, as well as an internet survey on rural access indicators that may be used within the SDGs.

Sustainable Urban Transport Masterplan Windhoek (SUTMP Windhoek)
Duration: 2012 - 2013
Reference of: TCP International
Customer: Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ)
Projectparner: Aurecon

The City of Windhoek (CoW) is rapidly growing and aims to further improve its transport system by establishing an integrated system, where the modes are intelligently combined to form a sustainable transport system that satisfies the needs of all citizens and ensures sustainability in the long run.

As a first step towards a more sustainable transport system, a Master Plan is to be established. For the CoW, this approach for the first time aims at developing a Master Plan going beyond road transport by including public transport, non-motorized modes and even by developing proposals for future integrated land use planning schemes.

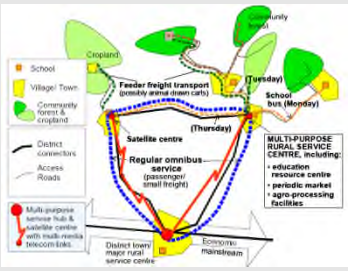
Consequently, the overall objective of the project is as follows:

A structured sustainable urban transport master plan is generated, which allows decision makers to develop an affordable, accessible, attractive and efficient public transport and non-motorized transport system for the next 20 years, including strategies and actions needed to implement the plan, benchmarked with urban transport systems in the world and set a new trend in itself.

The indicator defined measuring the achievement of this overall objective is that the Master Plan is available in May 2013 on broad consensus by the relevant stakeholders and coordinated and approved by the counterparts in the Ministry of Works and Transport (MWT) and CoW.

Further information: www.movewindhoek.com.na

Freight Transport For Development Toolkit, Rural Transport
Working period: 2009
Client: World Bank, Washington



This work is a sub-sector contribution to a major World Bank Flagship publication focusing on the contribution of freight transport as a whole to economic and social development. The paper gives a broad overview on the state of the art in rural freight transport in Developing Countries. It develops new perspectives for rural poverty alleviation by combining issues, such as new agricultural markets, modern logistic chains, low cost means of transport, telecommunication, regional and infrastructure planning.

Poverty and Environmentally oriented Design for Urban Transport Projects
Working period: 2008
Client: KfW, Frankfurt, Germany

This study had the goal to give advice to the German Financial Cooperation KfW on how to adequately design urban transport projects with respect to environmental sustainability and poverty alleviation in Developing Countries. It was compiled in co-authorship with Prof Rothengatter (KIT, Karlsruhe).

National Transport Strategy Saudi Arabia.
Working period: 2006 - 2007
Client: Gtz International Services

الاستر اتيجية الوطنية للنقل
National Transportation Strategy

Advice to the Ministry of Transport in Saudi Arabia in formulating a National Transport Strategy. The task was to develop an environmental strategy using the inputs of various national stakeholders in the transport sector.

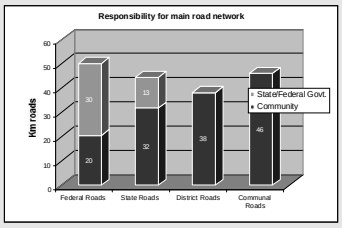
Niger Delta Master Plan, Nigeria

Working period: 2002
Client: GTZ International Services

The goal is to develop a Regional Master Plan for the Niger Delta using a bottom up planning approach. For this purpose a methodology is used which combines the planning of central locations and the accessibility to these locations. While the latter task concerns mainly transport, the first task affects all the other sectors involved in the development of the Master Plan. It is the task of this plan to define and prioritise interventions which fulfil these goals.

Financing Urban Roads, Namibia

Working period: 2001
Client: GTZ, Germany



Organisation and contribution to the workshop on "Urban Infrastructure - Financing and Organisation" held in Windhoek on 16-18 May 2001. The contribution analyses the financing and administration of urban roads in Karlsruhe, Germany. A major issue is the cost sharing mechanisms between federal, state and local government.

PhD Thesis: Appropriate Transport and Rural Development

Working period: 1994 - 1996

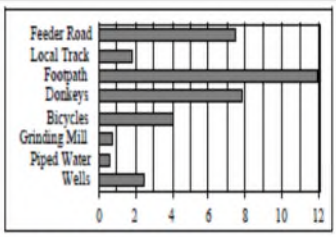


Fig. 5: Benefit/cost ratio

In Makete District (Tanzania) an integrated rural transport project tested labour based construction of rural roads and footpaths, as well as the introduction of non-motorised means of transport, such as donkeys, bicycles and wheelbarrows. The PhD thesis researched the economic and social impacts taking into account agricultural production, marketing, time usage, vehicle operating costs and transport volumes. Cost-benefits ratios showed that measures in the non-motorised sector had at least the same efficiency as motorised intervention. The thesis was accomplished with a system dynamics simulation of the region.

Teaching and Training

Lectures on Innovative Transport Logistics at the Dual High School Stuttgart

Year: since 2016

Client: Duale Hochschule Baden-Württemberg in Stuttgart

This 16 hour lecture has the goal to give an overview on innovative approaches in transport logistics, which aim at sustainable freight transport. The strategies "Avoid-Shift-Improve" are explained and discussed using real world examples. Organisation and management is treated as well as electromobility, as well as non-motorised freight transport and optimisation of conventional vehicles.

Seminars and Lectures on Organisation and Management of Development Projects

Year: since 1992

Client: Karlsruher Institut für Technologie

Institut für Wirtschaftspolitik und Wirtschaftsforschung

Since 1992 regular lectures and seminars are held at the Karlsruhe Institute of Technology, Department of Economics. The course contains the following topics:

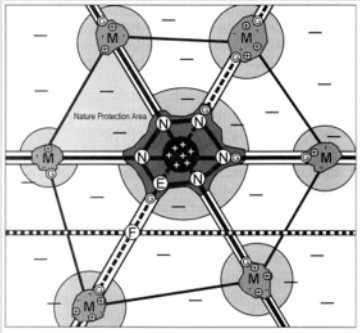
- Economic and social framework for Developing Countries
- Goals and Institutions of the German Development Cooperation
- Principles, policies and Procedures of aid
- Determinants of Development
- The role of infrastructure in the development process
- Sustainability and Development

Seminars are organised annually about selected issues in Development: Paris Declaration, human capacity building, aid effectiveness, budget support, etc.

Online course on Sustainable Urban Mobility in Developing Countries

Working period: since 2010

Client: UNITAR, United Nations Institute for Training and Research, Geneva



Niklas Sieber regularly conducts the online Course on Sustainable Urban Mobility in Developing Countries on behalf of UNITAR. He conceived the course, developed the training modules and elaborated the exams. The course covers the following issues:

- Urban growth and strategies for sustainable development
- Municipal mobility management
- Planning and Organisation of public transport services
- Management, financing and institutions
- Energy and environment
- Safety and social issues

Sustainable Logistic Concepts in Commercial Transport III, SADC

Working period: 2005

Client: InWEnt, Germany

The goal of the mission is the selection of participants for the course Sustainable Logistic Concepts in Commercial Transport 2005. The participants were selected from Tanzania, Zambia and Malawi. Interviews with relevant logistic service providers and recommendations on the contents and scope of the InWEnt training course made.