

# 6 CONCLUSIONS

## 6.1 MAIN CONCLUSIONS

The conclusions of this research are summarised by answering the central research question:

*“What is the impact of contemporary migration of the urban and rural poor on the quantity and quality of urban infrastructure services in Trujillo, Peru?”*

The main answers to the research question are:

- The migration towards the poor areas of Trujillo has led to an increase in the coverage of infrastructure services;
- Migration has not led to a decline in the quality of the infrastructure services provided.
- Migration and rapid development of recent urban areas has led to the implementation of alternative infrastructure services.
- The coverage and quality of the infrastructure services differs greatly; the poorest are sanitation and solid waste disposal services.

Focusing on the process of migration and urban growth, the following is concluded:

- Rural-urban migration has continued to contribute to much of the inter-departmental migration patterns;
- Urban-urban migration towards the poor urban areas of Trujillo has not increased;
- Most of the urban growth of Trujillo is due to internal growth;
- Most of the migration towards the recent settlements is sequential migration;
- The horizontal expansion of the metropolitan area of Trujillo has continued by way of recent settlements, and can be expected to do so over the coming years.

The process of settlement in the recently inhabited areas has the following characteristics:

- Infrastructure services are typically provided as the last step in the process of settlement;
- Squatter settlements are often rapidly formalised by Plandemtru;
- There is still sufficient vacant land for further horizontal expansion of the urban area of Trujillo;
- Reasonably high levels of permanency of the dwelling are reached within three years of settlement, independent of the legal status of the settlement;
- The provision of services depends only to a limited extent on the legal status of the settlement;
- The inhabitants of the recent settlements consider the lack of infrastructure services the most important problem of the inhabited area.

The different infrastructure services that have been considered in this research are those for water, sanitation, electricity, solid household waste, and telecommunication services. Conclusions concerning these services are the following:

- Alternative solutions differ very much in quality, and are often considered poor;
- Alternative solutions are most visible in the provision of water;
- Consumers pay high unit prices for the provision of alternative services;

- Electricity and telecommunication networks follow the poor urban area expansion quickly;
- The electricity provider Hidrandina supplies via temporary networks in the recent settlements, which speeds up the delivery of electricity services;
- It takes about 5 to 10 years before water and sewage networks are installed in recent settlements;
- The provision of alternative technologies via NGOs has stopped, while it used to be important in the provision of water, sanitation and solid waste disposal;
- There are no exceptional difficulties for serving the poor concerning investment recovery, losses due to stealing or reliability of payment when infrastructure services are provided in the poor urban areas of Trujillo;
- The continuous growth of the city has led to the introduction of a new type of telephone technology;
- The collection of waste is dependent on the municipalities only; differences between them are large.

Conclusions concerning the influence of the various actors are:

- The influence of the national government on the developments of the city is small;
- The provincial planning authority is the most important actor in the process of settlement;
- The provision of infrastructure services can be done faster when better interaction between the providers and the planning office;
- NGOs can play a significant role in the process of neighbourhood organisation;
- For obtaining infrastructure services, inhabitants of the poor recent settlements often rely on their local president;
- NGOs are hardly involved in the processes concerning the provision of infrastructure services in Trujillo.

## 6.2 POLICY RECOMMENDATIONS

The research has analysed the impact of migration on the infrastructure services in Trujillo. By including actor involvement and linking this to the recent developments, insights into the possibilities and bottlenecks for local authorities and NGOs were identified. This way, the normative goal of this research is reached.

*“Give recommendations to NGOs and local authorities to improve the delivery of infrastructure services to the urban poor in Trujillo, Peru“*

The most important recommendations for NGOs are the following:

- Supervision and aid with the process of obtaining services helps the inhabitants in recent settlements significantly, and can speed up the provision of the services;
- More involvement in the recent settlement can easily be established by contacting the local presidents;
- The need for alternative solutions for infrastructure services continues to exist, especially shared temporary solutions should be considered;

- Willingness to pay for the provision of infrastructure services is high in the recent settlements, working together with the private sector is possible;
- Documenting and publishing the progress and achievements of authorities and service providers can be a positive incentive for further investments;
- Plandemetru is positive about cooperating with NGOs, and is capable and willing to provide detailed information on developments;
- The municipal management of neighbourhood organisation can be improved via NGO involvement. Bringing together the respective public servants of the municipalities can yield significant synergy.

For the municipalities of the various districts, the following recommendations apply:

- More contact with local representatives is required to organise the process of obtaining infrastructure services;
- The management of the organisation of neighbourhoods at the municipalities can benefit from NGO involvement and contact;
- Contact with other municipalities should be extended to the level of public servants, especially where it concerns the neighbourhood organisation department, and the planning department;
- Private sector involvement should be considered for solid waste collection.
- The levelling of land should take place at an earlier stage, so that infrastructure can be installed more easily and alternative solutions provided.

### **6.3 FURTHER RESEARCH**

The methods used in this research have proven to be successful for analysing the complexity of interactions between migration, urban development and infrastructure services. The surveys that were carried out in the recent settlements provide data for Trujillo that has not been collected before, and can be extrapolated to other Peruvian coastal cities. The interviews with the different authorities, companies, and NGOs provided detailed information on the quantitative processes. These aspects of the research have contributed significantly to the insights and results of this research.

The main limitation for this research was the limited availability of recent data on migration. The publication of the National Census of 2007 will overcome this limitation. Thereby, the data of the three neighbourhoods can be compared with the other parts of the metropolitan area of Trujillo. Furthermore, the developments of Trujillo can be compared with other coastal cities, something that was not possible to do with the existing data until now.

The detailed information from the infrastructure providers Sedalib, Hidrandina and Telefónica allows a highly-detailed spatial analysis of the services in the metropolitan area of Trujillo. Especially Sedalib and Hidrandina are willing to share their data for research purposes. Combined with spatial data from Plandemetru, a quantitative analysis is very well possible. Combined with the Environmental Atlas of Trujillo, this can provide a benchmark for other cities that are yet to experience the processes of development that have taken place in the metropolitan area of Trujillo.

Finally, the involvement of students and staff from universities in field-research has not been significant over the last years in Trujillo. This should change, and possibilities for comparing detailed data with census data are plenty. The collection and carrying out research with NGOs, Plandemetru, Sedalib or Hidrandina can provide a significant learning experience for the students. Most of the scientific research focuses on Lima. Scholars in Trujillo should publish more academic writings, as the developments concerning urban infrastructure services to the poor in Trujillo provide an interesting case in Peru and Latin America.