AREA SPECIFIC PARTICIPATIVE PLANNING (ASPP)

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ABSTRACT

The ideal urban transportation mode is always available, reliable, low cost, does not use fossil energy (thus does not contribute to global warming), does not polute local air and makes no noise. It takes only little space on the road and when parked and is fast for a lot of common trips. And, last but not least, it is healthy to use. This ideal transportation mode is the bicycle and it is astonishing that millions of people living in urban areas never or only rarely use it.

During recent years, a new concept for urban planning has been developed in the Netherlands. It is called “Bundling of Qualities” and combines high quality urban planning and design which specifically favours alternatives for private cars in urban mobility, e.g. public transport and active transport (cycling, walking). The idea of Bundling of Qualities is to use urban planning and design to pull people towards public and active transport as well as – at the same time – to push them from the use of their cars. People make new – non private car – mobility choices because they benefit themselves from those choices.

I-CE is a Dutch NGO that aims to promote the use of the bicycle as a means of transportation in developing countries, by improving the conditions for bicycle use. These conditions include aspects like directness, safety and comfort. Not only riding the bicycle should be attractive, but also parking it (and finding it on the same spot at the end of the day). Cultural aspects, that hinder bicycle use are addressed as well as political and technical aspects. I-ce cooperates with local NGO’s and establishes partnerships with local and regional governments in the developing countries to foster cycling inclusive planning and – most important – transfer Dutch knowledge and expertise to local planners and engineers.

In Brazil I-CE is active in many cities, for instance Florianópolis, Rio de Janeiro, Blumenau, Brasília and Resende. In the latter city I-CE experts and the head of the city’s transportation department developed an interactive workshop method to develop plans and – at the same time – transfer Dutch knowledge and expertise. This workshop method is based on a Dutch

method developed about seven years ago and was adopted to the typical aspects of cycling inclusive planning and Brazilian circumstances and habits.

The ASPP workshop method is a standardized step by step method. It brings together (almost) all knowledge and experience necessary to accomplish the planning tasks by inviting a large variety of participants from the city who together have knowledge of the matter and the area and represent the stakeholder organizations. ASPP is interactive. The most important steps are:

1. Introduction of participants, cycling as a means of transport and the requirements for cycling inclusive planning.
2. Defining the origins and destinations in the area, relevant for (potential) cyclists and establishment of a cycle network in the area.
3. This network is evaluated and changed when necessary. Part of this evaluation is the definition of critical points were interventions are needed to improve safety, comfort and attractiveness for cyclists.
4. Solutions are developed for the critical points and where necessary, detailed designs are made. In the end, the participants conclude which are the best solutions. This way one of the 'products' of the ASPP is support for the results, which is important in the process that must lead to implementation of the plan.

ASPP has been used not only in Resende, but also in Rio de Janeiro and Florianópolis and has proved to be effective, swift and low cost. Participants are always enthusiastic and skeptics are surprised by the results, even if they didn't participate. Result of ASPP is a solid plan that has a lot of support from the beginning.

1. INTRODUCTION

1.1. The context – the poor people loose

Nowadays, more than 50 percent of the global population live in cities. This number is still growing. Also growing is the usage of the private car as a means of transport. During the last decades the investments in urban planning and mobility had emphasis on adding value to motorized personal mobility, either following existing trends or setting trends by stimulating private car use. *Martins et al (2004)* state it as follows:

> "As we start to adapt our cities for the use of the automobile, we forget to maintain the balance between supply and demand of transport without compromising the limits of the capacity of environmental support and financing".

The growth of the automobile industry, in combination with the planning model in which extension of road infrastructure is the solution to accommodate the growth of car mobility, promoted the use of the private car and in consequence, the automobile is dominating the urban space whereas the planning model allows its expansion even more.

According to *Silva (2005)*, this context stimulates a situation in which the rich take more advantage of the transport infrastructure than the poor, just because these last ones have less possibilities – the means to purchase individual motorized mobility – to get access to the opportunities – like jobs, public services and entertainment – that the urban environment offers. This trend has widen the gap between the rich and the poor, the upper class and the lower class, especially in the developing countries. Especially in those countries, the acceleration of social segregation has also lead to an enormous increase in spatial segregation. This is clearly visible in the large urban areas in the countries involved. As a result, the poor live far away from the jobs. 'Far away' is not only to be measured in distance, but also in time and money. For those to whom transportation is most important to earn money, transportation is least available and costs most (in time and money). As a result, the social participation of the poor decreases while it should increase to develop an integrated and stable society. Thus, solving the transportation issues of the poor is vital to develop a sustainable society.

1.2. Liveability and environment are at stake

The growth of the urban population and the growth of private car usage also are a threat to the quality of life in the cities. Moreover, the environmental impact is huge, both locally (noise, air quality) and global (greenhouse gas emission). Moreover, the transportation costs rise when the private car becomes more dominant within urban areas (see figure 1). This vicious circle of negative urban development must be broken, especially the effects in terms of declining urban quality of life. A new sustainable development is needed. We must turn the steering wheel and find another way.

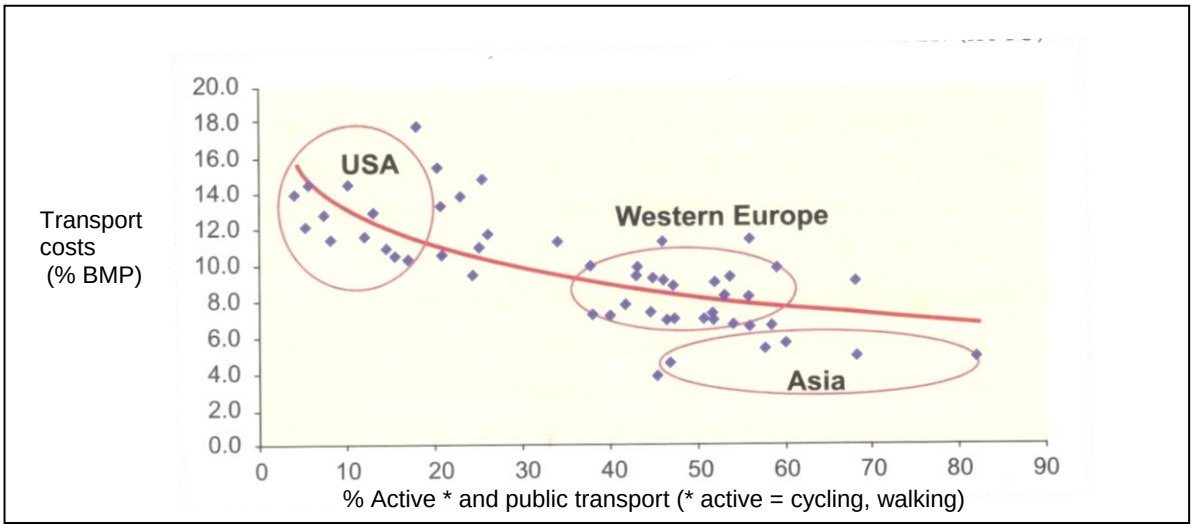

Figure 1 – Active and public transport make that transportation in high density compact cities is less expensive than transportation in low density expanded cities

In the Netherlands, a four year national program called Urban Space and Mobility (Ruimte en Mobiliteit) has tried to find solutions and raise awareness to these problems. In this program, that has ended in March 2008, specialists from, amongst others, urban planning, traffic and

transport, housing and environment concluded that the key action has to be bringing together their expertise in one joint planning effort.

As a result of this 'bundling of expertise', 'bundles of qualities' must emerge on all levels of planning: the (inter)national level and the regional and local level. 'Bundles of qualities' are the physical results of integrated planning that comprised a mix of interventions. There is not one solution to a problem. The key ingredients are:

- Urban planning
- Limitation of the use of the private car
- Stimulation of usage of active * and public transport (*active = cycling and walking)

Both pull and push measures will be needed to bring about the desired changes. These measures often cause intensive discussions, rather hardening decisions on and implementation of measures than bringing them closer to reality. Area Specific Participative Planning is a useful instrument, because it does not only identify problems and solutions, but also stimulates common opinions by allowing every stakeholder full participation in the process, learning and understanding step by step the points of view of the other stakeholders involved.

1.3. Development of Area Specific Participative Planning

One of the methods developed and optimized during the four years of the Urban Space and Mobility Program is 'Gebiedsgericht Benutten' (= 'Area Specific Optimization'). This method was developed to address mobility problems in specific metropolitan areas without the need to conduct broad research first. Although the method was not especially developed to address the problems of social segregation, liveability or environmental issues, it has proven very useful for this purpose too.
During the planning process, stakeholders on the metropolitan level indicate what they want to achieve by using traffic management in the metropolitan area and what instruments will be necessary for this. To achieve this, they make use of a step wise approach in which the situation and trends are analyzed and interventions are indentified and elaborated. Result is a short or medium term comprehensive plan to solve the problems identified. In most cases, this plan contains step by step measures, allowing an evolutionary development.

The Area Specific Optimization is not only suitable for short and mid term planning in metropolitan areas, but can also be used for long term planning and on other all geographical scales (from the continental scale to the neighbourhood scale). The authors of this paper have adapted it to the specific field of bicycle planning in cities and neighbourhoods. Improving the position of the bicycle in urban mobility improves the position of the poor by providing cheap and easy access to jobs and facilities. Moreover, the liveability of cities and neighbourhoods as well as the environment gain because an increase in the use of the bicycle can contribute to the decrease in the use of the private car. It should be kept in mind

that the bicycle is not only a means of transport in itself, but also plays an important role in the use of public transport being a fast and cheap feeder mode.

2. THE WIDENING GAP BETWEEN THE RICH AND THE POOR

2.1. Growth in car use

The growth of the use of automobile in cities has resulted in a situation in which *the rich* take more advantage of the transport infrastructure than *the poor*, just because these last ones have less possibilities – the means to purchase individual motorized mobility – to get access to the opportunities – like jobs, public services and entertainment – that the urban environment offers. (Silva 2005). The Master plan (PDTU) of the Metropolitan Area of Rio de Janeiro (2005) confirms this and shows that people who earn above twenty minimum wages – one minimum wage is equivalent to about US$ 200,- – make almost three times more trips than those who earn up to two minimum wages. The public investments in mobility have resulted in a predominantly unequal mobility distribution in which a few can travel a lot to fulfill their consumer necessities whereas many can only make a few trips since they can consume less. It will be really difficult to continue reproducing this urban productivity model that takes the motorized personal mobility as a starting point, constructing viaducts and express ways to increase the capacity of automobile traffic and thus augmenting the value of its productive chain from producers (the proper automobile) to suppliers (parts and petrol) to service providers (garage etc.). (Lentino, 2005).

2.2. Another approach is needed

In this context the measures that are presented to be solutions to deal with the mobility problems of the Brazilian cities can be considered to be palliative measures. Emergency measures – like traffic flow inversion, “green wave”, increase of road capacity during rush hours, among other measures – are adopted on a daily basis in the great urban centers by the responsible traffic engineers forced to find an immediate solution for the chronicle congestion problem. Porto (2001) explains it as follows:

> “*However, isolated measures are not going to solve the problems of the Brazilian cities. It is necessary to define transport policies that prioritize the most sustainable ways of public transport, cycling and walking. Moreover, to achieve a major effectiveness of mobility it will be necessary that the interventions incorporate a new standard of land use and occupation that encourages more active – or non motorized – dislocations”*.

The integration of public transport with active transport, as a feeder mode, to provide an intermodal door-to-door alternative for the private car is considered as a feasible opportunity.

The Brazilian Association of Public Transport (ANTP, 2008) executed a research to evaluate the quality of public transit in several Brazilian cities with different number of inhabitants. For each type of city - of respectively 100.000-200.000/ 200.000-500.000/ 500.000-1.000.000/ >1.000.000 - several indicators were determined.
The number of Passengers transported per vehicle per day is identified as an indicator for the Return on Investment in the Public Transport operation (ANTP, 2008). Halfway the nineties every bus transported on average about 600 passengers per day whereas this is nowadays about 467 passengers per day although there is a slight trend of recuperation.
The availability of the public transport service is an important element in the evaluation of the quality of urban public transport. Although ideally this availability should be measured in "space accessibility" and "time accessibility" of a person to a PT service these data were not available on an aggregated level. Therefore the quantity of "PT vehicle units" available per 1000 inhabitants was used. The higher this index, the better the availability of PT services. There exists a strong correlation between the index and the population size of a city as is indicated by table
Analysis of the number of passengers per "PT vehicle unit" shows the number increases with size of the city until 623 for cities in the level of 500.000-1.000.000 inhabitants and than drops till 461 passengers in big cities. It is assumed that this is due to the low velocities and congestions that affect principally the big cities. Another explanation might be the fact that there are relatively a lot more busses per 1000 inhabitants available.

Population size of cities	Availability index: PT vehicle units/ 1000 inhabitants	Passengers per PT vehicle unit per day
100.000-200.000	0,34	425
200.000-500.000	0.49	466
500.000-1.000.000	0,64	623
>1.000.000	1,05	461
Total	0,47	467

Table 1 – Relation between city population size and PT indicators (Source: ANTP 2008)

From this data it can be concluded that in smaller cities the integration of public transport with active transport is feasible out of both the perspective of the customer and out of the perspective of the public transport operator. In bigger cities the integration might improve public transport service by improving the feeder trip and thus improving the competitive edge of public transport in relation to other transport modes like paratransit.

According to ITRANS (2003) most people cannot afford using private car or taxi anyway and the price of the fares in the public transport system has grown, this may be an indication that poor people lost mobility in the last decade. ITRANS (2003) observes that poor people make fewer trips and that the bus is substituted by walking. People walk for more than an hour (one way) to avoid paying the bus fare! The ITRANS study shows that as a result, people have fewer opportunities to find work and thus do not have the opportunity to increase their

income. This vicious circle may be broken when bicycle usage becomes feasible for those people.

This combination of public transport with active transport is an effective tool to stimulate social and economic inclusion, which is an important issue in Brazilian cities. However, these cities do not have experience in this kind of planning and their urban planners and technicians lack the know-how to start the process. Silva (2005) illustrates this by indicating that in Brazilian universities the subject of urban development is still little articulated to urban mobility and leaving this matter the responsibility of urban planners (architects and engineers) with little multi disciplinary education. As a consequence, in practice the municipal public administrations continues to divide their workloads in subjects for the secretaries of transport, responsible for the efficiency of road circulation and multi modality and of the secretaries of urbanism or urban development, responsible for the land use and occupation.

2.3. The other: bundling of qualities

Bundling of qualities is the way to go. It means that high quality urban planning and design are accompanied by policies that encourage the use of city and environment friendly modes of transport. Meaning: public transport and active transport. World wide there are good examples of successful implementation of this course. Figure 2 shows that urban quality very much depends on the way urban mobility is organized.

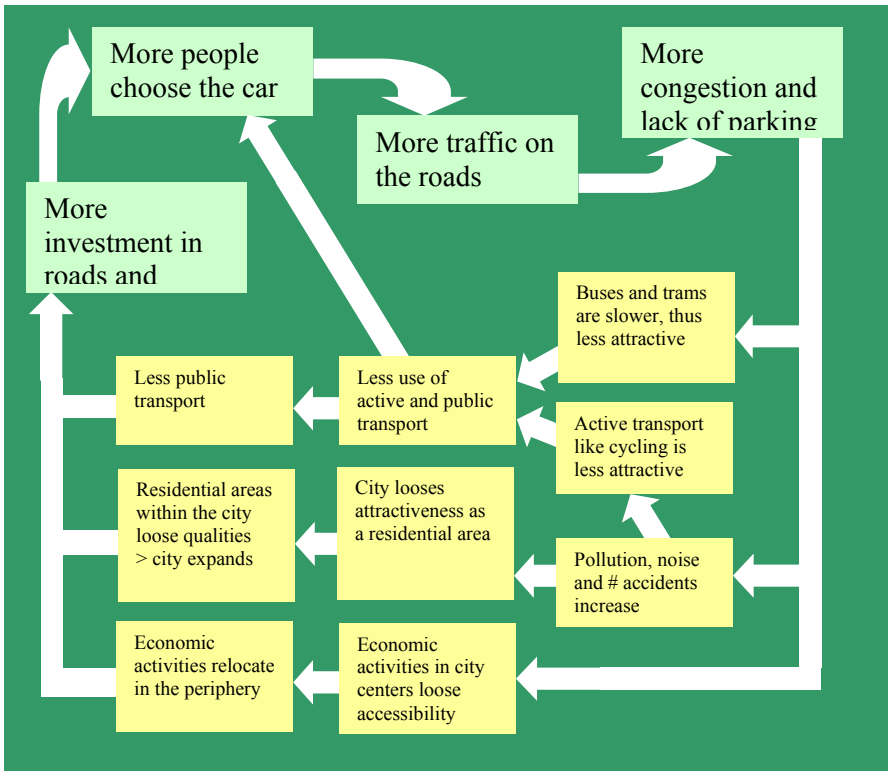

Figure 2 – The negative vicious circle in cities caused by overflowing car mobility

Bundling is part of this organization and comprises:

1. Pull: urban planning and design
2. Pull: stimulation of the use of public (collective) transport as well as active ways of transport (e.g. walking, cycling)
3. Push: reduction of car use

Successful ways out of the vicious circle always include these three elements. It only works if the policy is a mix of push and pull. Other ways, the policy is likely not to succeed. In The Netherlands, the present day policy is aiming at an increase of urban density, preventing the scarce open landscape from being occupied by urban functions and providing opportunities for the usage of active and public transport. It is recognized that to achieve this, a comprehensive approach on national, regional and local level is necessary. A good example for this is the so called regional approach. In this approach all governments and organizations in an area work together towards goals that they set together to start with. This approach however is not a guarantee that they really are going the same way, because often specific interests hinder this. During the Urban Planning and Mobility program it has become clear that a strong vision is needed. This vision should be unambiguous, comprehensive and pointing into one direction and must be constantly communicated to all parties involved.

2.3.1. Pull: urban planning and design

High densities. There is a strong relation between urban density and modal split. Urban sprawl leads to a large share of the private car in the modal split, high urban density to a large share of active and public transport. Public transport requires nearness: a concentration of the high density areas in the vicinity of the stations. The Dutch Railway company (NS) developed a circle rule. This rule is based on the notion that the range of influence of a train or metro station is 600-1000 meters and the range of a tramway or bus rapid transit station is 300-400 meters People living within these distances use public transport than people that live further away. It should be considered that in The Netherlands lot of people use the bicycle to access the stations. The circle rule is used to make an estimation of the future use of public transport when areas are transformed or developed or when new stations are opened in existing urban areas.

Direct access to stops and stations. The shorter the distance between the origin and the public transport station, the more people use public transport. This is not only a function of distance, but also of directness. By providing straight routes between the origin and the station the walking and cycling time will drop and the usage of the public transport will rise. Active transport is much more influenced by the distance to travel than by other efforts to make.

Mix of functions. The more urban functions are mixed, the larger the probability that traveling distances in the area are short. This will stimulate active forms of transportation in that area and therefore decrease the usage of cars. Important functions to mix are housing, work, shops, schools, health centers and other every day facilities.

Concentration of facilities at public transport nodes. Facilities that show high numbers of visitors, for instance hospitals, large educational institutions, shopping areas and large leisure facilities should be located at public transport nodes. As public transport is specialized in the transportation of large numbers of people this is an effective way to reduce the usage of cars.

Reservation of space for public transport. Providing an adequate public transport systems requires that public transport is given the space it needs. Not only for tracks, bus lanes and stations, but also for park and ride facilities, bicycle sheds etc. An ample amount of space should be reserved for extension in the future, when ridership of public transport grows and the capacity needs to be enlarged. This reservation should be included in the site plans but in such a way, that the reserved space is attractive and serves a function until it is needed.

Use the value of real estate to finance public transport. Good accessibility by public transport rises the value of real estate property. This increase of value can be used for the investment in the public transport infrastructure by the real estate companies. In the Netherlands value capturing is not common practice yet, while in Europe more and more successful examples show the benefits. Examples are the automatic metro line that connects the new town of Oresund with Copenhagen and the tramway in the Docklands in Londen. In Japan it is common practice that the private companies develop the real estate and the public transport infrastructure together.

2.3.2. Pull: improvement of public and active transport

Transportation is an important part of our social and economic life. Effective and lasting reduction of car use in urban area's is only possible if alternative modes are available in terms of quality and quantity. Capacities, levels of services, trip times, comfort and safety must meet the high standards most car drivers ask for.

Speed and frequency of public transport services. Increase of speed, frequency and punctuality make public transport more attractive, resulting in increase of ridership and revenues (fares). Moreover, they are key factors to the improvement of the image of public transport In The Netherlands this image is, in general, not very good, especially among those that rarely or never use it (car drivers). Improvement of the image is important to convince them to use public transport. Examples in France (e.g. Strasbourg, Montpellier, Lille), England (e.g. Manchester), Germany (e.g. Karlsruhe, Saarbrücken, Kassel) show how high quality services of public transport can contribute to image, ridership and change in modal split. In South America, Bogóta and Curitiba are good examples. In Curitiba for instance, the public transport system was integrated in the urban planning since the sixties, resulting in high quality and frequent metro-like bus services (expresso). In addition, circular and feeder lines, as well as special direct services complete the system. Moreover, the fare system is integrated, allowing the passengers to ride the whole system on one fare. As most inhabitants find a bus stop at walking distance and travel speeds are high due to an extensive system of free bus lanes, the share of public transport in the modal split is high.

Intramodal complementarity. Public transport should be approached as one system, irrespective of the transport technique (train, metro, tram, bus, boat) or the way of public authorities and transportation companies are organized. These organizational aspects are of no importance to the public. Passengers simply want one system to serve them, with quick interchanges, simple and integrated fares and comprehensive travelers information. The example of Curitiba shows what can be achieved when a systems is presented as one to the public. Until now, public transport in The Netherlands presents itself very fragmentized, making the usage of the services available too complicated for the travelers. The Dutch public transport sector is preparing the introduction of a one fare paying system for all available services, including the national railway system, by 2009. Unfortunately, due to the various interests of the operators and authorities involved, the passenger will face a complicated system with a lot of transactions during one trip.

Intermodal complementarity. Quality of public transport depends for a large part on feeder transport. Therefore it is important that the feeder transport modalities have at least the same quality as the public transport the are feeding. Good and safe Park and Ride parkings at carefully chosen stations are very important, as well as bike shelters at all stations and stops. At transport nodes, guarded bicycle shelters and bicycle rental facilities stimulate cycling as a feeder mode to and from public transport. Public transport itself can play an important role as a feeder mode to main airports, reducing the dependency of the private car and thus increasing accessibility of those transport hubs. For instance London Heathrow and Amsterdam-Schiphol offer excellent train services taking up to 40 % of the airline passengers.

Attractive transport nodes. Changing over from one (public transport) mode to another costs time and trouble and is therefore always a set back in the time a journey takes and in comfort. Lost of time can be minimized by excellent scheduling and punctuality of the services. The discomfort of changing over can be reduced by attractive facilities at the transport nodes. Stations should offer shops and places to get drinks and food. Accessibility should be excellent in any way. Not only in the sense that it should be easy to leave or enter the trains or vehicles. Routes within the transport nodes must be without obstacles and offer escalators and/or elevators for vertical transportation. Additional, the information provided within the transport node should always equally cover all modes available. Signposting in the whole building or area is important to allow people to find the platforms, facilities etc. easily. The more things are made easy, the less discomfort a change causes and the better the public transport system performs.

Image and comfort. Public and active transport often suffer from a bad image. This is not only due to traditional ‘qualities’ like bad schedules and low frequent or slow services, but also to aspects like dirtiness, unsafety and uncomfortable vehicles. When car drivers should be tempted to use public and/or active transport, raising comfort to – as far as possible – car standards is important. However, a bad image is not easily abandoned. Often the image stays bad even when the quality has been dramatically improved. Therefore it is important to

tell you're good when you are and raise the image by comprehensive campaigns, well organized aiming at specific, important target groups.

Active transport. Walking and cycling are important transport modes. In mid-sized cities in the Netherlands, like Groningen, Delft, Enschede and Almelo, the share in the modal split in internal trips (including feeder trips to public transport nodes) are about 15-20 % for walking and 40-50 % for cycling. As a result, these active transport modes take far more than half of the trips within these cities. This is not only good for the environment and the usage of scarce urban space, but also cheap and healthy for the travelers. These kind of huge shares of active transport can only be achieved by comprehensive planning. Facilities like foot and cycle paths, cycle lanes and bicycle shelters should not be added to plans, but incorporated from the beginning, giving them the position needed to serve the travelers in the way they want to be served. Dutch cities have implemented large variety of additional facilities to make walking and cycling attractive and – very important – safe. These include facilities like priority at traffic lights, separated cycle paths at roundabouts, crossings where cars have to give way to cyclists and bicycle racks or shelters at all destinations. Direct routes (where cars have to make detours) are very important to increase the attractiveness – and as a result use – of active transport modes. The Dutch city of Houten is a very good example of this. Although it is possible to go everywhere by car, cars have to make long detours and cycling and (often) walking are faster and more comfortable.

2.3.3. Push: reduction of car use

Only when alternative modes of transport are available ample quantities and qualities, restrictive policies on car use can be successful. It is no use to push if there is hardly anything acceptable to be pushed to. Therefore, in addition to improvements in public and active transport systems, 'push' policies can be developed and implemented. In the follow paragraph the most promising policies in The Netherlands are described.

Restrictive parking policy. Parking opportunities are important elements of car accessibility in an area. If you can't park your car it is useless to go by car. This applies to origin areas (e.g residential areas) as well as to destination areas (e.g. working and leisure areas). Restriction of parking urges people to consider other modes of transport. Restriction policies can include a wide variety of measures. Well known examples are decreasing the number of parking spaces, increasing the costs of parking and regulation by issuing permits. Less known, but also effective is enlarging the distance between the parking facility and the final destination. This way, the car user also has to walk – or cycle – to his final destination, like the passengers of public transport. He may even need to use public transport as an additional mode of transport. This way the difference between usage of the car and the usage of public transport diminishes and more people will choose to use public transport all the way. In The Netherlands, the government started a restrictive parking policy in the early nineties. This policy, that could have been very successful, was abolished by the end of the decennium because it did not have enough support from regional and local governments and other parties involved. This lack of support was due to several circumstances. One important

factor was that local governments did not get the instruments to enforce the rules the policy implied, another was that the sense of urgency was not spread equally between the parties involved. Especially real estate developers did everything they could to avoid a restricted parking policy in the areas where they invested.

Park and Ride. Even when the urban planning policy to increase density and nearness is successful, a lot of people will not live or work near public transport stations. Within cities and suburbs, the bicycle can play an important role to link the origins and destinations to the stations. This is true until a distance of 7-10 kilometers. Beyond this range, the car is the most important means of feeder transport. Specially assigned park and ride stations, with large, comfortable and safe parking facilities facilitate the feeder function of the car. This way it is possible to avoid that at every station a parking problem emerges. Moreover, by offering good facilities, people can be attracted to use the combination of their car and the public transport, in stead of using their car all the way. Park and ride stations should offer frequent public transport services with high quality information, waiting facilities etc. Additional services like shops may increase the attraction, because they reduce the subjective waiting time and give the opportunity to do the shopping that has to be done anyway, thus saving time on the way home.

Car free city center. Many shop owners think that a parking space near their shop is essential for their sales. This is not true. In cities in The Netherlands sales raised 10-40 percent when streets were changed into more attractive pedestrian zones. Recreational shopping plays an important role in the sales in city centers and people nowadays do not want to be hindered by moving and parking vehicles. Build car parks, either multistory or underground, should accommodate the cars to improve the quality of the urban space. This policy also favors the use of active and public transport modes to visit the city center, because car users will have to walk to their final destination, making the use of the car relatively less attractive.

Congestion charge and toll. Pricing the use of the road rather than the use of the public parking space is an interesting method to urge people to use other modes of transport. In the Netherlands cities are, until now, not allowed to apply road pricing. The national government is preparing a nation wide system that should be implemented within the next five years. Foreign examples (e.g. Singapore, London, Stockholm) show that local implementation can be very successful in reducing the number of cars within the cities. In London, within six months congestion reduced by 30 %, resulting in 14 % reduction in trip times (by car!) and more than 50 % increase of public transport usage. In London the revenues of the congestion charge are used to improve the transportation networks, especially public transport. The examples also show that besides improvement of the quality of life in the cities, the accessibility for cars (some car use is inevitable) improves and therefore the local economy benefits from pricing the roads.

3. PLANNING FOR CYCLING

To contribute to the bundling of qualities, especially where active transport (more precise: cycling) is a good transportation alternative for the poor, the Dutch NGO Interface for Cycling Expertise (I-CE) developed a methodology, called Area Specific Participative Planning (ASPP). It aims the design of non-motorized transport facilities and its articulation with public transport. This ASPP method is applied in the city of Rio de Janeiro – to integrate the bicycle with a Bus Rapid Transit project (T5) – and in the midsize city of Resende in the state of Rio de Janeiro.

3.1. Bicycle Partnership Program

The Bicycle Partnership Program (BPP) is an initiative of the Dutch NGO I-CE (Interface for Cycling Expertise) to support local authorities, civil society organizations and other partners in the development or increase of the use of the bicycle as a transport mode. The program understands that by promoting the bicycle use by improving cycle-inclusive urban planning, it is possible to make a significant contribution in the poverty reduction by increasing the urban low cost mobility, augmenting road safety and thus contributing to a better air quality, a more sustainable environment and a higher quality of life. The program acts in developing countries of Latin America, Africa and Asia (I-CE, 2009).
The activities of the program aim on two principal actors: cities and civil society organizations. These actors are enabled to promote policies and bicycle friendly approaches to reduce poverty. The technicians of the partner cities are enabled in bicycle friendly city planning through regular training workshops and continuous long distance support.
The main strategies of intervention are: political influence, qualification of the civil society and poverty reduction.
The political influence has to develop through the mobilization of citizens, politicians, professionals and so introduce the bicycle on the political agenda; the introduction of cycle inclusive laws and rules; and the promotion of knowledge and know-how to include the bicycle in diverse public policies.
The qualification of the civil society includes support strategies for the organizations that promote the use of the bicycle; the development of concepts and support the initiatives form the market for low cost bicycles; research and training of cycle inclusive planning and projects to facilitate bicycle use. The strategies for poverty reduction include reduction of the social and financial barriers to the use of the bicycle; safe accomplishment of innovative production of bicycles at low costs and implementation of safe cycle routes.

In Brazil I-CE is mainly active with the BPP in the cities of Florianópolis, Rio de Janeiro and Resende. The cities of Resende and Rio de Janeiro were pilot cities for the development of the methodology “Area Specific Bicycle Planning”. As an example, the Resende case will be described in the next paragraph.

3.2. Example: the Resende Case

3.2.1. Resende: An introduction

Resende is a city of 117.391 inhabitants, according to CIDE in July 2005, located in the region South Fluminense in the State of Rio De Janeiro, 143km of its capital. Resende borders on the river Rio Paraíba in the South and is crossed by the Highway President Dutra that connects the cities of Rio de Janeiro and São Paulo. Resende is the last city you pass along the highway before you drive into the state of São Paulo. The Military Academy of Agulhas Negras (AMAN) and industries like MAN AG, a metallurgic industry, and the Nuclear Industries of Brazil (INB), responsible for the uranium enrichment for the nuclear plant in Angra Dos Reis are located in Resende.

With a fleet of 33.850 vehicles in the city (DETRAN/RJ, 2007), resulting in about one automobile per 3, 5 inhabitants, the city infrastructure and the urban planning can not deal with the normal increase of motorization and the extra increase due to investments for the implantation of the automotive metallurgic centre in the region, Resende has problems with the circulation of vehicles and a worrying amount of accidents. In relation to the car ownership, 54% of the population does not possess a private car in their family. Concerning the bicycle ownership, 25% of the interviewees do not even have at least one bicycle at home, but on the other hand this means that 75% of the households have at least one bicycle available, see table 2.

Car Possession		**Bicycle Possession**	
0 car	54%	0 bicycle	25%
1 car	41%	1 bicycle	43%
2 cars	4%	2 bicycle	22%
3 cars or more	1%	3 bicycles or more	10%

Table 2 – Car & bicycle possession in Resende families (Source: Study of Urban Mobility of Resende, 2009).

Transport mode	**%**
Public transport (bus)	41%
Paratransit or group transport	2%
Private car	17%
motorbike	1%
Walking	28%
Bicycle	9%
Other (cab etc)	2%

Table 3 – Modal Split in Resende (Source: Study of Urban Mobility of Resende, 2009).

Concerning the modal split a big part of the trips made by the population of Resende is made by bus (41%). The trips made by foot are also sufficiently significant in the transport matrix of Resende, being responsible for 28% of the trips. The car is responsible for 17% of the trips and the bicycle for 9%. The freight transport system is responsible for only 2% of the trips, as can be observed in table 3.
For the development of the master plan the macro zones of Resende were defined. These macro zones are territorial units for the Municipal Managing Plan, see figure 4.

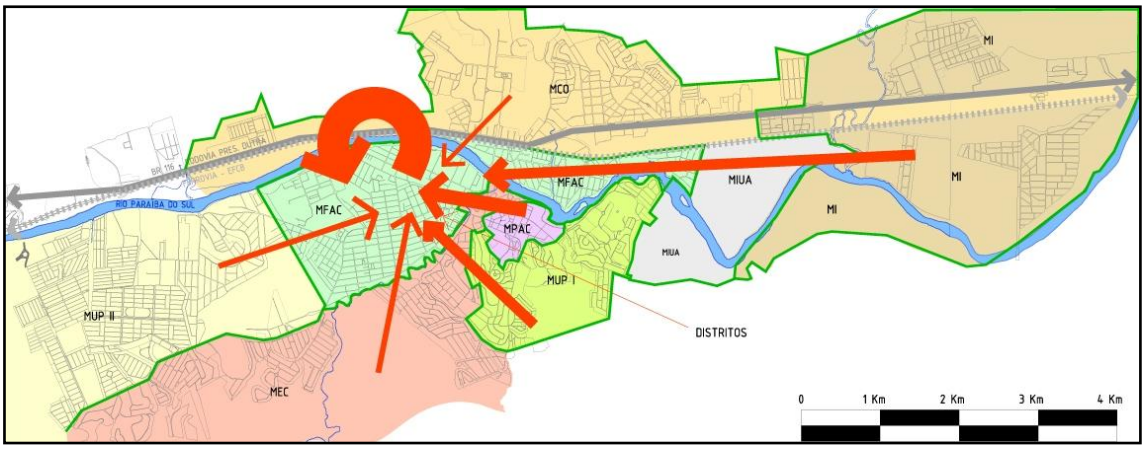

Figure 4 – Macro zones of Resende (Source: Study of Urban Mobility of Resende 2009)

Table 4 presents the trip production and attraction between the macro zones. It is easy to perceive the heavy relation between all the macro zones with the central area, indicated by macro zones MPAC and MFAC.

WORK MOTIVE		DESTINATION MACRO ZONE								
		MPAC	**MFAC**	**MI**	**MUP I**	**MUP II**	**MCO**	**MEC**	**District**	**Outside the city and the industrial center**
ORIGIN MACRO ZONA	**MPAC**	40,0%	29,1%	5,5%	3,6%	3,6%	3,6%	1,8%	3,6%	9,1%
	MFAC	12,0%	55,6%	0,8%	0,4%	9,3%	6,2%	1,5%	0,4%	13,9%
	MI	50,0%	9,4%	21,9	0,0%	0,0%	3,1%	6,3%	6,3%	3,1%
	MUP I	13,6%	43,2%	1,3%	9,7%	6,5%	11,0%	4,5%	1,3%	9,0%
	MUP II	13,1%	30,0%	0,3%	0,0%	28,8%	3,8%	6,1%	3,2%	14,7%
	MCO	13,6%	28,4%	3,1%	0,0%	13,0%	29,6%	1,9%	0,0%	10,5%
	MEC	8,1%	30,7%	3,2%	1,6%	1,6%	9,7%	9,7%	3,2%	32,3%

Table 4 – Production & attraction matrix of trips to work (Source: Study of Urban Mobility of Resende 2009)

Table 5 presents the motorization percentage (the possession of individual motorized vehicles) in the macro zones and the modal split for work trip production of the macro zones. It is interesting to observe that the percentage of motorization of the macro zones corresponds to the level of income of the population of the territorial unit.

The system of urban passenger transport, under direct responsibility of the municipal government, offers good space accessibility, offering public transport in a great part of the urbanized area. However, the system has problematic characteristics: it does not operate with fare integration, presents huge variations in frequency and thus in time availability and there is no integration with other transport modes. This encourages a vicious cycle in which the service level gets worse, resulting in long waiting times at the bus stop in comparison to the in vehicle travel time which makes that people prefer to use the private car or bicycle or end up to make the entire trip by foot.

	% MOTORIZATION	BUS	BICYCLE	CAR	FOOT	CARGO	OTHERS
MPAC	53%	19%	4%	38%	38%	0%	0%
MFAC	58%	30%	7%	41%	18%	3%	1%
MI	39%	47%	12%	24%	18%	0%	0%
MUP I	48%	39%	4%	34%	19%	0%	3%
MUP II	34%	45%	14%	18%	15%	5%	2%
MCO	43%	41%	3%	36%	17%	1%	1%
MEC	81%	25%	3%	55%	6%	9%	2%

Table 5: Motorization* modal split to work (Source: study of urban mobility of Resende, 2009)

3.2.2. Resende: Start situation and potential for cycling

During preparation visits to Resende and Rio de Janeiro discussions with the local city planners were held and visits to the areas that the local city planners considered potential pilot projects were made. In both cities the principal characteristics of the pilot project area were:

- car culture and huge raise of number of cars causing congestion;
- no cycling culture and limited infrastructure facilities to stimulate cycling;
- Already cyclists in the area but no hard data available about the bicycle use and potential use as well as a doubt among decision makers whether investments in bicycle infrastructure will not be a waste of money.

After presentation of table 6 a further analysis in the modal split of Resende was made making use of the average distance between the centers of the macro zones.

Km	0-1 km	1-2,5 km	2,5-5km	5-7,5km	> 7,5km
Car	11%	33%	55%	70%	82%
Train	0%	0%	0%	0%	7%
Public Transport (bus/tram/metro)	0%	1%	2%	4%	5%
Motorbike	0%	1%	0%	1%	0%
Bicycle	28%	45%	36%	22%	7%
Walking	61%	20%	6%	1%	0%
Ohter	0%	1%	0%	1%	0%
	100%	100%	100%	100%	100%

Table 6: Distribution of modal split per distance in the Netherlands in 2005 (Source: www.bovag.nl)

As can be seen in figure 5 below, the shorter the distance, the bigger walking as a mode of transport and how larger the distance, how bigger the use of public transport (PT) for trips made to work. There is not such a significant difference in relation to the modes of bicycle and car.

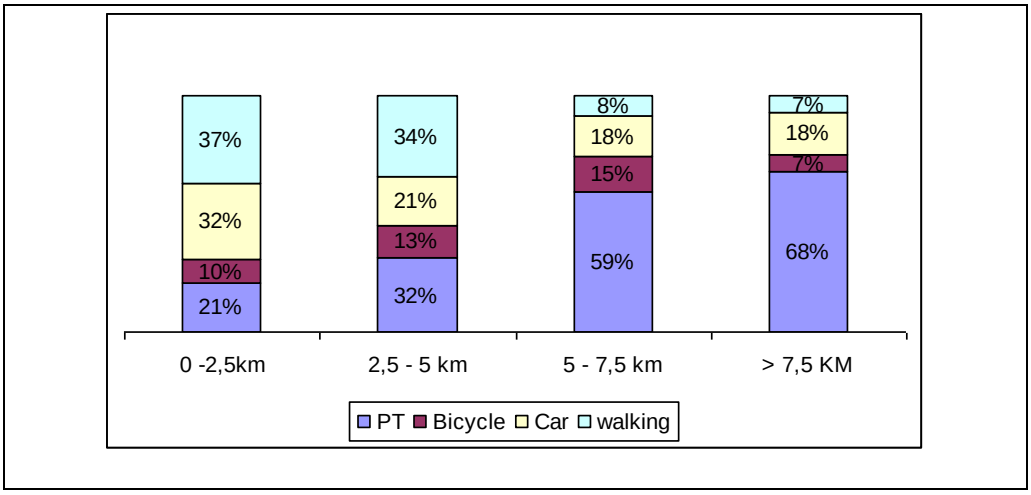

Figure 5 - Modal split to work per distance (km) in Resende (Source: City hall of Resende, 2008).

The characteristics of the city are favorable for the use of cycling as a transport mode since the majority of the trip distances are relatively short, the geography is flat, and there was already bicycle infrastructure available although this was bad signalized and not interconnected. However in the central area, there are no appropriate facilities for bicycle parking, so it is normal to find bicycles chained to the trees, poles and other elements mend for other purposes. This area is the destination of 50% of the trips to work by bicycle. In MUP II, the origin of 49% of the trips to work by bicycle, no special infrastructure for cyclists is available except from some bicycle racks in front of some small commercial buildings. Through their daily experience and the data of the domestic research the local technicians have identified a (latent) demand of people to make more use of the bicycle as a transport mode for various activities. The technicians perceived that it would be possible to diminish the car dependency in favor of more sustainable transport modes. And to contribute in this way to the social inclusion of a part of the population by offering them access to low cost mobility. The technicians recognized the need and the potential for infrastructure for non motorized transport as well as the integration with collective transport especially in the area between MUP II - MPAC/MFAC. But the local team also recognized that they did not have the expertise to accomplish these projects.

4. ASPP – AREA SPECIFIC PARTICIPATIVE PLANNING

The ASPP method is based on two Dutch methodologies and contemplates adaptations for application in the Brazilian partner cities. The two methodologies are:

- Area Specific Optimalization (ASO)
- Design for the Bicycle, for it's specific characteristics as a means of transportation.

These two Dutch methodologies were combined and adapted to the Brazilian situation and the Brazilian culture, resulting in the ASPP method.

4.1. Participative planning: Area Specific Optimization

The Dutch method of urban planning called Area Specific Optimization (*Gebieds Gericht Benutten*) was developed to improve the road circulation, taking in consideration the lack of data, culture and the financing of the investments. This approach was developed initially for the planning of a metropolitan system of traffic control. During the process, stakeholders in the metropolitan level indicate what they want to achieve by using traffic management in the metropolitan area and what instruments will be necessary for this by making use of a step wise approach.
ASO is an appropriate approach for cooperation in a region to deal with operational traffic management and it results in a tool to manage the development and the priority of intervention measures. The input consists of traffic models (if available) and the local and regional (tacit) knowledge of bottlenecks and traffic management measures. These are dealt with in a structured process of problem analysis, discussion and priority setting, creation of solutions and decision making.
The step wise approach consists of the start up (A), the policy statement (B), the interventions strategy (C), description of the reference situation (D), bottleneck analysis (E) and service development and intervention choices (F). In this way it is assured that the process is structured in order to optimize the traffic management.
Some distinguishing characteristics of this method are that it makes use of both hard data (traffic counts etc) and tacit data (knowledge of local experts and planners) and that it starts to address the problem in stead of the solution. Moreover every process step results in an intermediate result that has to be approved by the majority of the participants and that can be presented to decision makers. In this way the decision makers are being involved with the progress and the decisions of the project – and can give feedback or suggest changes – without actually having to participate in the planning process. Another characteristic is the development of various solutions in a short period and at a low cost making use of rapid assessment techniques.

4.2. Design principles: Design for the bicycle

According to Centre for Research and Contract Standardization in Civil and Traffic Engineering (CROW), 1996, the designer of a cycle- friendly infrastructure should be familiar with the technical possibilities and limitations of cyclist and bicycle. The cyclist is driver, equilibrist and power-plant at the same time. This combination of tasks includes a number of more or less conflicting features, which give the cyclist its special position in traffic. The requirements for a good bicycle network can be summarized in five main criteria and three levels of planning. In tabel 7 these five criteria are described and the principal characteristics are mentioned.

CRITÉRIUM	DESCRIPTION	PRINCIPAL CHARACTERISTICS
Coherence of the Network	the cycling infrastructure forms a coherent unit and links with all origins and destinations of cyclists	Visualization, freedom of route choice and quality of the connections.
Directness	the cycling infrastructure continually offers the cyclist a route as direct as possible in which detours are minimized	Speed, delays or waiting and deviations.
Atractiviness	the cycling infrastructure is designed and fitted in the environment in such a way that cycling is attractive	Visibility, landscape, social security.
Safety	The cycling infrastructure guarantees the road safety of the cyclists and other road users	accidents in traffic with victims and confrontations with motorized traffic
Comfort	the cycling infrastructure enables a quick and comfortable flow of bicycle traffic	declivity, quality of the pavement, blockage of traffic, possibility to stop

Table 7 - Criteria for bicycle friendly planning (Source: Cycling-Inclusive Policy Development: a Handbook, 2009).

To achieve a comprehensive design of cycling infrastructure, an integral approach is necessary, taking into account different planning scales and levels of function of a cycle route. The different planning scales are at network level, at connecting level and at facility level. Each level has its specific project problems. The challenge for the urban planner is to find the balance in each level in accordance with form, function and use.

4.2.1. Network level

Integral thinking starts with the planning phase. One basic condition is that the traffic system is designed so that the right elements are deployed in the right place at the right time in order that the external costs (safety, environment) are minimized. The strength of the bicycle lies particularly in short distance journeys and in its use as a method of transport between the home and public transport stops. Analyses of trends in urban areas should show which places are worth investing time and energy in the improvement of the position of bicycles.
The planning of the main structure of the bicycle network involves the desired lines of the possible traffic of bicycles when possible. For this, it is necessary to define the origins and the destinations of the cyclists. New routes are selected from an analysis of the network with limited deviations and crossings with motorized traffic and that promote a coherent network structure.

After the analysis of the network, there is an analysis of the O/D matrix, possibly with some variations. The most used routes in the network (existing or not) must be in accordance with developed criteria concerning the priorities and quality.
During the bottleneck analysis the quality of the routes and crossings are evaluated and the facilities for the bicycle infrastructure are proposed. It is possible to verify alternative layouts. Questions about the routes in commercial streets and pedestrian streets are considered in this phase, and could cause a partial change of the plan.

4.2.2. Connecting level (road sections and intersections)

The system of cycle routes is part of the total traffic system. Many cyclists are travelers by choice and conscious travel consumers. They regularly choose other forms of transport, especially when directness, safety and comfort of using a bicycle are not of appropriate level. Cyclists are not weak road users but they are vulnerable if involved in a confrontation with fast-moving traffic, which requires special attention. Avoiding conflicts between different types of traffic by separating them completely is an extreme, but sometimes necessary intervention. For the road sections the interventions used are bicycle lanes, bicycle paths and mixed traffic.
To improve the quality of the elements of the network, facilities must be introduced like: moderation of the traffic, construction of passages on level, reduction of motorized traffic, construction of cycle paths, adaptation of the intersections, inclusion of roundabouts, improvement of the crossings, improvement of the pavement, construction of parking facilities for bicycles.

4.2.3. Integrated thinking at a facility level

The quality offered to cyclists, should be measured with the same criteria as the quality offered to other road-users. In this context, integral thinking means that traffic is seen as a combined action between parties who in principle are prepared to obey the traffic rules. A condition to avoid conflicts is, for example, that cyclists and motorists can have eye-to-eye contact. A confrontation between two road users who cannot have eye-to-eye contact is by definition unsafe. The planning of the infrastructure strongly influences on the ability to see one another. If one plans for cyclists one should plan parking facilities as well.
Moreover the availability of safe and well maintained bicycles helps reducing traffic safety and especially the use of appropriate safety equipments like bicycle lights. Another important aspect for the integrality of the cycling policy is the fact that it is important to create awareness among politicians and create a cycling culture among both motorized and non motorized traffic users.
It is important that during the whole process one tries to find the balance between the elements of transport (signalization, traffic volumes, confrontations, priorities on the road, etc) and the characteristics of land use (environmental quality, connections with attracting areas and generators of trips, considerations how much of the roads are of commercial character).

4.3. Adaption of method to Brazilian reality

To adapt the two proven Dutch methods to the Brazilian reality of cycle inclusive planning adjustments were made concerning:

- Shift from a metropolitan (or macro) planning level to a local (or micro) planning level;
- Make clear that the method starts addressing the problems and only then the solutions;
- Have quick results and take into account that the participants will change due to other interests.
- Keep in mind that cycle inclusive planning in urban areas is an innovation in Brazil.

4.4. Resulting methodology: ASPP

The result of the integration of the Dutch urban planning methods and its adaption to the Brazilian situation was an interactive series of workshops, the network planning, the intervention planning and the detailed planning. The network planning and the intervention planning are done in cooperation with local stakeholders.
The workshops series are divided in three steps preceded by an introduction day.
These workshops were organized by the City employees with technical support of the Dutch representatives. Between each workshop there was a reflection period (of about two to six months) necessary for the workshop participants to reflect on the lessons learnt and make the matter their own.

The objectives of the introduction visit or introduction period are creation of awareness, evaluation of the political willingness, definition of a preliminary project and the selection of stakeholders that will participate in the workshop.

4.4.1. Network planning

During the first workshop the network planning was dealt with which took two days in Resende (a smaller area) and 4 days in Rio de Janeiro, where the area under study is bigger and more complex. During this workshop the basic principles of bicycle inclusive planning were presented and discussed and the main origins and destinations, critical points and the suggestions for a network were identified. Moreover this stage consisted of technical visits and diverse interactive activities with the participants.
All steps that were executed had one of the following objectives: creation of awareness, capacity building and the design of the network including an estimation of the future demand, integration of the planned network in the existing infrastructure and the identification of the critical points of the network.

4.4.2. Intervention planning

The second workshop series was about the planning of the interventions that would have to be implemented to facilitate cycling in the city. This can be achieved by bicycle paths, bicycle lanes, by traffic calming interventions or by implementing interventions at intersections. This stage, with a tactical character, lasted two days and also existed of interactive technical visits and activities. In this step the creation of awareness was less important since the participants are already more aware and therefore the objectives were capacity building and to agree on the kind of the solutions for the infrastructural interventions in the network.
The second workshop started with the network created in the first workshop. This stage looked at the considerations of the decision makers, reevaluation of the network according to these considerations, definition of priorities and suggestions for the facilities. In order to prepare the participators to plan the interventions a presentation with all kind of Dutch interventions was shown. Although the participators really liked the presentation and understood why the interventions were made it was expected and perceived that the participators would have difficulties in imagining how they could implement this kind of interventions in their own city. Therefore the participators were asked to form small groups and each group developed the interventions for a few critical points. The solution of these critical points were presented and discussed by all participators and as a consequence of the diversity of the local expert group it was possible to make information explicit that is normally intangible (or in the heads of the persons) and it became clear why an intervention would have a high failure rate in one peculiar point whereas there would be no problem in another point. This demonstrated the participants that prefabricated solutions in urban planning are only recommended after a good analysis of the situation. This kind of information collection makes use of Rapid Assessment Techniques (ODA 1995) and makes it possible to obtain information in a short time frame. To obtain the same information by making use of the common data collection techniques a relative long time period involving substantial costs is necessary. In the end the project leader made a summary of the solution for all critical points and explained that the interventions would be elaborated into a detailed project plan and that the results would be presented when the detailed plans would be ready.

4.4.3. Detailed planning

The third workshop consists of the designing in detail of the interventions proposed in the previous steps and the check whether the proposed solutions do really fit in the existing situation. It started with the cycle routes defined by the priorities, and approved by the decision borrowers. Possibilities of layout for diverse sections including facilities have been presented and the project decisions have been made. This stage had an operational character; lasted 2 days and data of vehicle counts had been included in the project. During this step also facilitating programs like education and marketing programs can be thought of as well as the installation of parking facilities.
The planning department could detail and calculate the most important cycle routes, make cost estimations and give continuity to the process.

4.4.4. Lessons learned and results

The success factors of the method are the involvement of the stakeholders and the decision to release operational recourses and staff from the organization to participate in the workshops, the diversity of interested local agents and also the diverse departments of the City hall and the civil society; the previous definition of the principle object to be dealt with during the project and the limitations of the project (in the case of Resende this was cycle route MUP II - MPAC/MFAC); the long term continuity (two years) of the process during which the NGO provided a form of “long distance learning” to back up the local decision makers in their design solutions.

The strengths of the method are the important role and use of the local explicit and tacit (implicit) knowledge which guarantees the involvement of the local technicians with the process and takes partially care of the fact that a lack of transport- and traffic planning data is common in Brazilian cities. Other strength is the gradation of stages from a regional scale to a local scale; the effort to suggest various alternatives for the sections, crossings and bicycle facilities and to definition of priorities with endorsement of the decision borrowers is considered strength.

Points of attention are the duration of the bicycle project in the planning process. It was perceived that a period of two years to achieve a basic bicycle project in this participative process is not practical since the governing period of the Brazilian municipal management is four years and in the end of these periods results are required. The detailed project was developed during the re-election campaign and it was not executed. This was due to the little time remaining for lobby activities with the main decision makers and local public opinion. However, in reality three workshops of only three days each are needed for the development of a consistent bicycle network including the planning of the network and the treatment of the interventions. On the other hand, it must be stated that for the Dutch, bicycle network planning is included in urban and transport planning, whereas for the Brazilian planners, bicycle infrastructure and bicycles are principally used for leisure use. The awareness process in relation to the potential of the bicycle as a transport mode or a feeder mode for public transport required reflection periods in between the workshops.

In Resende the project plan for execution has been approved by the local decision makers and a part of the plan is being tendered while the progress of the planning process in Rio de Janeiro is on schedule and is surprising local decision makers. The project plan that finally approved by the local decision makers and I-CE experts costs only R$ 1,7 million whereas the original plan, before the participation of I-CE experts, would cost about R$ 4,5 million. This reduction in price was due to the use of bicycle lanes in stead of bicycle paths.

In Rio de Janeiro the method is used for the inclusion of the bicycle as a feeder transport mode in the project for a Bus Rapid Transit route. This exclusive two lane bus route, inspired by the Curitiba BRT system, will connect the areas of Barra and Penha. It will provide high speed public transport to high income groups (e.g. in Barra de Tijuca) and very low income groups (e.g. in Cidade de Deus). The route will have a length of 28 kilometres. There will be

38 bus stops of which 8 will be integration stations with the metropolitan train system (Supervia), the Underground (MetroRio) and feeding bus routes. The articulated busses will provide leveled access to the elevated platforms (90 cm high) at the bus stops. The bus system within the zone around the BRT route must be reorganized. Some lines will be redirected to the BRT route, while others will be transformed to feeder lines. In total, 79 lines are affected by this major operation.

The city of Rio de Janeiro recognizes that feeder bus lines alone will not be sufficient to provide enough access to the BRT busses for all people in the area. Therefore the city wanted to encourage cycling by including cycle park facilities at the bus stops and stations and safe cycle routes on access roads.
After the two years of the ASPP the result is that the principal urban city planners are capacitated, that the bicycle feeder transport network and parking integration is developed for the pilot region around Curicica. Moreover despite the last year government change the bicycle inclusion along the T5 project continues and the bicycle feeder networks are right now being planned and designed for the other eight integration stations amongst others around Penha in the densely populated North Zone of Rio de Janeiro where some 3 million people live.

5. CONCLUSION

The merit of the methodology “Area Specific Bicycle Planning” is that it structures the knowledge of the local actors and that it combines strategies that balance the demand for transport and characteristics of land use in the process of city planning. The approach with the Dutch technicians is positive and has great influence on the involvement of the Brazilian technicians that now will bring the concept of cycle paths into the Brazilian context.

The result of the use of the method is that it involves local technicians and civil society and makes them execute the network and intervention planning and give feedback on the detailed planning.
In the network planning step criteria are defined to guide cycle planning, potential routes are planned and critical points are identified. In the intervention planning choices are made about the kind of interventions like bicycle path, bicycle lane or mixed traffic, restrictions for car parking, stimulating bicycle parking, interventions at intersections and other urban design decisions. In the detail planning step the choices made are elaborated until a ready to execute project plan.

The use of the method in both Resende and Rio de Janeiro shows that the method helps achieving the chosen objectives:

- Integrate cycle planning in the municipal planning process and implement (better) cycle policies resulting in a ready to execute project plan reflecting the local influences and habits;
- Capacitate the municipal city planners with cycle inclusive planning knowledge and explain them the advantages and disadvantages of the use of the bicycle as a transport mode.

In both Resende and Rio de Janeiro the participating planners, bicycle users and other stakeholders are the main defenders of the plans and approve the method in their feedback. It is important that the Brazilian experts gain a lot of new technical expertise by participating in the stage wise process of the method and that they combine this with their knowledge of the Brazilian reality. If Brazilian cities start using the method more frequently it should in the long run influence the planning process done by Brazilian cities.

After the successful pilot projects I-CE has decided to adopt the ASPP method as its standard planning approach for the Bicycle Partnership Program in Latin America, East and South Africa and India.

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