IMPROVING COHERENCE BETWEEN URBAN AND TRANSPORT PLANNING IN THE NETHERLANDS: TOWARDS IMPROVED ACCESSIBILITY

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Improving the coherence between urban and transport planning is an ofte
policy makers and planners. Coherent planning provides more and better c
participation and travel (better accessibility) and allows for more
spending.

However, this paper shows that improving coherence is far from straight
an empirical analysis of recent developments in both housing and employ
patterns in the Netherlands, and taking an institutional (policy-oriente
to analysing the current Dutch (national, regional and local) urban
policies, the paper shows how financial arrangements, (formal) regulati
habits prevent better co-operation.

After analysing the most relevant obstacles in the Dutch policy and plan
strategies for improving the coherence between urban and transport plann
and elaborated: increasing proximity; transit oriented development (TOD)
chains and smooth transfers. These strategies can be implemented in the
they can be valuable for urban and infrastructure policies abroad as well

1. INTRODUCTION

Improving coherence between urban and transport planning is an objectiv
policy makers and planners, in the Netherlands as well as abroad. Coherer
more and better choices for activity participation and travel (better acc
financially more efficient.

Increasing coherence is a shared responsibility of urban and tra
However, in the current Dutch practice, urban planners often disregard
their plans create and transport planners tend to focus on infrastructur
with accessibility problems. Their lack of co-operation is not ne
unwillingness. There are simply many habits, regulations and institutio
co-operation.

Lack of coherence can lead to undesired results. Extensive qualitati
studies carried out by PBL in 2013/14 (PBL 2014a, Snellen and Hilbers 2
example that newly developed Transit Oriented Development (TOD) locatio
flourish at the expense of older TOD locations. Investments in new locat

of employment and amenities, but not to growth. Past investments will de
We also found that lack of coherence increases car dependence. Improved
enables scaling up of housing, jobs and amenities markets. People can t
also forced to travel further. Furthermore, we found reduced levels of ac
amenities as a result of a more dispersed urban pattern.

In a recent PBL study, the strengths, weaknesses, dilemmas and problem s
eight strategies for improving coherence between urban and transport
Netherlands were assessed. Furthermore, the decision making processes an
for projects in the fields or urban and transport planning were reviewed.
courses of action to achieve greater coherence were identified. The fi
happen. TOD cannot be realised without urban and transport planners wor
the moment, TOD is not very successful in the Netherlands, most likely du
operation. The second main course of action is increasing the proximity
amenities to enable people and companies to satisfy their needs while req
For this, urban planning is in the lead. However, co-ordination with t
necessary since this type of development sets different requirements for
The third course of action is improving transport chains by improving
modes. For this, co-production between urban and transport planning at
level is crucial.

None of these courses of action are easy and straightforward.
communication and co-ordination between urban and transport planners,
choices by policy makers and administrators and the willingness to act
clear allocation of responsibilities in administrative arrangements and f
support coherent planning.

2. FUNDING AND DECISION MAKING PROCESSES

The current financial and administrative arrangements for urban and trans
support coherent planning in the Netherlands. Part of the problem is the
transport planning and funding for urban planning differ fundamentall
Investments in transport infrastructure are made by government and highly
and regional authorities have to obtain national funding for larger infr
In contrast, urban development is funded almost entirely locally by var
local investors, housing corporations, municipalities and regional org
funding for urban planning has almost completely disappeared. The 'lo
funding is that of hierarchical planning, urban planning is much more dep
funding and market consideration.

The strict separation in funding between urban and transport plan
situation where smart coherent planning is difficult to fund, while su
supported. Examples can be found of local urban planning choices to
locations that result in large amounts of traffic on regional or national
that require large national transport investments in the road network t
Sometimes these locations are chosen over others because their urban dev

lower, for example because of cheaper land acquisition, yet the total transport development may well be much higher.

The Dutch MIRT program (multiannual funding program for infrastructur transport planning) aims to provide more coherence between urban and tr This works relatively well in the strategic agenda setting phase, but pr successful when actual decisions have to be made to fund projects. In thi and benefits of national investments are balanced with national policy urban planning is decentralised to local and regional governments, th national urban planning aims, making it very difficult to justify investm projects. As a result, almost all of the MIRT funding goes to transport transport budgets to help implement urban planning projects that would investments in infrastructure or would improve opportunities for urban difficult: regional or local authorities have to bear the (extra) costs t

In the Netherlands, regional and local authorities only receive revenues. Most of their budget consists of grants from central government a funding program for infrastructure and transport that decentralises bu level. It is an important way to bring infrastructure funding closer to that also makes urban planning decisions. However, the BDU budgets are cover operational costs of public transport, leaving very little mone coherent transport and urban planning. Furthermore, the BDU is managed at of government, while urban planning decisions are made by local governmen

At the local level, the grondexploitatie (land account) is the mai projects. In the land account, municipalities can balance the profits developers against the costs of other elements of area development, such amenities[1]. Infrastructure expenditures can be financed from the benefits of The instrument therefore offers the opportunity for coherent urban and since the costs of both are balanced at the same time. However, the s accounts is limited to the location itself. Often, these developments transport infrastructure other than local roads and these costs are onl equation. Most of those costs are funded by the central government and partners. The profitability of land accounts have been an important driv decisions. However, since not all costs have been taken into account, t have not served as an adequate integration mechanism between transport a at a larger level of scale. For example, developments with high costs for low costs for additional infrastructure, such as developments within exi systematically underrated.

3. PROMISING COURSES OF ACTION FOR IMPROVING COHERENCE

Many strategies for improving coherence between urban and transport plan in academic literature, professional debates and policy documents. In identified the eight most prominent strategies and investigated their pitfalls. These eight strategies were:

- Transit Oriented Development

- Transit corridor planning
- Creating a diverse palette of urban milieus (urban environment typ
- Increasing proximity
- Small-scale and/or incremental urban development
- Providing multimodal access
- Increasing travel speeds
- Improving transport chains

From the analyses of these strategies we derived three most promising c
order to improve the coherence in Dutch policy and practice between infra
developments. The following sections elaborate on each of these, espe
necessary to make them work.

3.1 Proximity: Making Better Use of Existing Infrastructure and Built E

Bringing activities closer together is a very effective way of improvi
example, research has shown that the number of jobs within reach for pe
dependent on the amount of jobs within close proximity than on differe
supply (PBL 2012, 2014a, 2014b, Snellen and Hilbers 2013). In additio
proximity facilitates making better use of existing infrastructure and
and therefore of earlier investments made. Furthermore, it supports e
amenities.

This sounds like a simple solution: just work on urban densificati
developments instead of ever increasing urban sprawl by developing new gr
close to motorways. However, there are some hurdles to jump. Often, ac
developers are under the impression that there is more demand for subu
business parks than for urban living and working. Furthermore, green fie
often easier and cheaper.

Policies aiming for more proximity in the built environment, for
urban densification, can only succeed if the planned supply fits with dem
offices et cetera in the property markets. Recent property market analyse
with urban qualities such as a central location, mixed land use and a re
urban functions close by are most vital (Jones Lang LaSalle and Tordoi
over the past decade, most additions to the property market have been ma
locations often close to motorways. For housing developments urban densi
policy for many years. However, developments have predominantly taken pla
locations. This does not mean that there is no future for urban densific
there are many locations still available in the existing urban areas to b
purposes. Furthermore, research has shown that in the years to come the
demand for housing in urban areas to justify approximately 40 percent of
developed within the boundaries of existing cities and towns. The dema
single-family housing (Bouwfonds 2011). Building this kind of housing w
city is certainly possible. There are many forms of building in higher
single-family housing in green neighbourhoods. When these are develope
proximity of transport facilities such as train stations and light rail

connected for walking and cycling, coherence between urban and transport improved.

In spite of convincing evidence of demand for more urban living and wo proximity will not happen in the Netherlands without extra policy atten office developments will have to be critically evaluated and balanced ag before planning consent is granted. The same holds for new housing devel within the existing urban fabric should be prioritised over suburban or Provinces can play an important role in this process under Dutch pla regulations. Potentially, more small-scale, organic forms of (re)de increase proximity and better utilise existing urban facilities and in Urhahn Urban Design 2012).

Unfortunately, however, the rules and habits in Dutch infrastruc planning funding are not very supportive of urban developments within ex as discussed in section 2. Since 2008, the situation has only deterior balance out costs for infrastructure needs with benefits obtained from p have reduced. The economic crisis has had detrimental effects on the pr developers can hardly make a business case for new projects. It has bec infrastructure investments can be financed from land and property deve Local governments have hardly any funding available to pay for infrast sources. As we have discussed in section 2, budgets for infrastructure a the central and regional level of government and municipalities have opportunities to secure income from local taxes.

Reconsidering the planning and funding processes in order to support inte urban planning is necessary. The current crisis might just be the perf What better time to change direction than when driving ever so slowly. national planning department is rethinking the MIRT procedures. It w investigate how the program could be geared more towards investing in a instead of mainly in infrastructure line developments, and how the progr options for incremental developments.

Furthermore, the departments policy for beter benutten (improving existing infrastructure could be broadened to the urban planning domain, thinking about better use of transport infrastructure and the existing bu time. New developments at well-chosen locations, incremental development demand and risen opportunities, can make optimal use of existing c infrastructure networks and at the same time support the amenities in u enable better returns on previous investments. However, the system of recovery act is constructed for large-scale developments and in some ca development it constraints balancing costs and benefits between transport (Sorel et al 2014).

The fact that local and smaller-scale developments are not the respo government is not a valid argument against national investments in these The national government has a system responsibility for planning: it well-functioning planning system. This means that central government has preconditions for urban development, including a workable set of rule

funding of these plans. Furthermore, if developments take place within e
utilising existing infrastructure, this may well reduce the traffic load
roads, which would fit national ambitions with regard to the performance

A different strategy would be to make regional and local actors, who infl
decisions most, less dependent on national government for funding. One o
decentralise a larger part of the budgets. An important question when co
is what would be the right level of government to decentralise to. The
Dutch situation between the local and provincial level) is generally cons
level for this type of decision making. On this level, funding for both
infrastructure planning could be used for integrated planning decisions.
regional governments would have to be granted planning authority in this
the case at this moment. Moreover, regional bodies will probably soon be

A second option would be to grant provincial and local gover
opportunities to acquire income, for example through provincial and loca
has in the past been suggested by many researchers and advisory groups
2010; Marlet and Poort 2003; Rli 2013; OECD 2014; Rob/Rfv 2005). Althou
mean a drastic change in how government finances work in the Netherlands
an option that deserves serious consideration when aiming for better
infrastructure and urban planning.

3.2 Improving Implementation of Transit Oriented Development (TOD)

TOD is probably the most commonly propagated strategy for improving cohe
urban and transport planning, both in the Netherlands as well as in ma
TOD is a generic term used for different ways of concentrating urban d
public transport stops and nodes. Many policy documents of national, r
governments in different countries show TOD aspirations and expectations
high (Bertolini, Curtis and Renne 2009; Calthorpe 1993; Cervero 1998, 200
Tan et al 2013 and numerous policy documents from national, regio
governments).

However, implementation of TOD proves difficult (Bertolini 2013; Ko
Rutten 2011; Tan et al 2013). The authority for decision making on and t
funding opportunities of different elements of TOD plans lie on di
government or are in the hands of other actors. This hinders coherent dev
it is important to create planning arrangements that enable integrated de

Grosso modo there are three options to bring decision making with re
and transport planning aspects of TOD closer together. The first option
tier of government responsible for both: for instance by making reg
responsible for urban planning decisions in stead of local government. Th
introduce (mandatory or voluntary) co-operation between local/regional
regard to TOD-related decision making. The third option is to create a fr

regulations that places both the transport and built environment inter
market actors.

These options were derived from best practices in different parts
Dutch urban region of Arnhem Nijmegen attempts to implement TOD through
operation between municipalities and the regional body (Stadsregio). I
Danish central government plays an important role, while in Tokyo co
develop both transit and the urban development around the public transpo
the rest of this section the Dutch case of Arnhem Nijmegen is discussed
the end of the section we look at some lessons from the Copenhagen and To

Despite the variation in which party directs the coordination process
similarities between the cases. In all cases, coordination of planning a
the regional level. This is consistent with research into critical succes
shows that this is the most appropriate level of scale for coordinatio
where coordination of planning efforts is most lacking in the Netherlan
Thomas and Bertolini 2014).

The regional body of Arnhem–Nijmegen chose to work on more coheren
transport planning through co-operation within the region (Stadsregio
2007). Its role was to develop a strategy for public transport, roads a
invest in transit and, by working as a broker, bringing actors togeth
planning in the region was mainly geared towards transit provision, part
locations that were already being developed and partly to develop new
aiming for new developments.

This process took place in a complex administrative and financia
regional body operated on a limited budget and with limited authority
making, the latter especially with regard to urban planning issues. Neve
body attempted to take the lead in several ways, an attitude that is cert
come to successful TOD. The regional body stimulated integrated plann
possible by investing in transit, temporarily compensating for losses
transit until urban development generated the necessary amount of patron
administrative agreements to link urban development to transport investme

Most innovative was the attempt to connect transit development, urb
rights near transit stops and the operation of public transport in one
almost succeeded. Market actors were interested and new coalitions were
the differences in planning horizons and timing in implementation be
transport planning sectors and an emerging economic crisis put a spoke
innovative plan (Matthijsse 2013; Mulder et al 2013).

The economic crisis forced the regional body to lower ambitions a
different actors involved to share the burden of sharply declining dema
and offices. However, it struggled with the choices that had to be made.
investments, choices were relatively easy: the number of new stations p
and a planned light rail link was converted into a bus line. However,
planning the regional body had to take the interests of municipalitie
Municipalities had already invested in land preparation and amenitie
locations and they depended (partly) on urban development gains to balanc
result it was very difficult to coordinate limitation of urban de

municipalities and in this case it created enormous pressure to continue areas, whereas locations elsewhere would better fit TOD ambitions.

In the years to come, the abolition of the regional bodies in the N subsequent reshuffling of BDU grants (see section 2) can provide the oppo responsibilities in such a way that transport and urban planning decisio together. Again, this is not straightforward. With the loss of a regio decision making on BDU funding of transport will have to taken either provinces or a level down to the local level. The latter comes with q municipal competition and resulting oversupply of developments and appear option.

Bringing the BDU responsibilities to the provincial level would me will have to become much more actively involved in urban planning policy al 2013; OECD 2014). This would be a major change in the mutual rela provinces and the larger cities.

When rethinking the new rules and regulations for the BDU funds i worth considering to increase the opportunities to use BDU money in a manner, for instance making it possible to use funding for public transpo developments if that increases the cost-effectiveness of public transport

In Copenhagen and Tokyo other options for coordination of urban planning efforts are used and we can learn from these experiences. Due t in the administrative, legal and cultural circumstances foreign best prac transferred to the Netherlands. However, certain elements of the Dan approaches can be translated to the Dutch context.

In Copenhagen the urban and transport policy of the Fingerplan has history. Continuity and clarity of policy are important factors in it adaptations have been made, yet the basic principles of the policy have sixty years now. An important element in this policy is the fact that stimulation of development near transit stops but also includes planning distances. These restrictions are established in national regulations. S are used to obtain the desired results (Hartoft Nielsen 2013a, 2013b).

Despite the enormous difference in density and size comparing Toky cities, we can even learn from their approach to TOD planning (Chorus rules and regulations in Tokyo are such that development at a distan restricted. At the same time the metropolitan government gives market freedom to develop property close to transit stops and even more when the public policy goals. Instead of investing itself, the public secto development, while the private sector submits plans and builds. The same develop and own transport infrastructure and operate public transport ser from urban development. Since public funding for urban and transport pl being reduced in the Netherlands, the Tokyo approach may be an inter investigate. It is not just useful in periods of economic growth. I arrangements promoting transformation and redevelopment. Again, the gove invest, it only facilitates. The framework of rules and regulations en public interests.

3.3 Improving Transport Chains

Transport chains, especially those including public transport, play a
transport yet receive relatively little attention from planners. Transp
locations and in urban areas in general often require multiple transpo
public transport. Smooth transfers between these modes improve accessib
attractiveness of public transport and therefore the return on public
(Henry and Marsh 2008). They increase the number of transport options
quality of transport chains the whole chain of trips leading from ori
only rarely the subject of travel planners policies. Although they claim
as is stated in the national transport policy the focus is mainly o
stretches of infrastructure or transit or on individual nodes and not
chain.

The quality of these transport chains is crucial, since their trave
of time, money and bother for travelling is almost always larger than
People dislike changing travel modes. Time spent waiting and changing m
longer than time spent travelling (Van Hagen and Van Oort 2011; Litm
competing with unimodal trips is therefore very hard. If people can cho
choose multimodal (chained) trips if their destination has limited c
instance due to infrastructure limitations or parking restrictions. For
urban areas, this is relatively often the case. For trips to locations
accessibility, public transport cannot compete with the car.

Since public transport is not equally important in all locations,
selectively in improvement of transport chains. On locations with excell
investments in public transport are less likely to flourish, as are in
transport chains to these locations. However, there may be other legitim
in public transport and transport chains, for instance serving social
transport equity.

Reducing the travel impedance of trip chains requires careful design of t
chain and there is room for cost effective improvements (Brons and Rietve
Klinkenberg 2014). This is not just a transport challenge, since the expe
trip chain also strongly depends on the quality of the (urban) enviro
transfers take place. On a very local level, this requires coherence
transport design. Especially around nodes that are both interchange as we
most TOD nodes are this is a challenging task. Swift and fluent tran
modes in general require different design characteristics than an invitin
in and interact with other people. Designers will need to find quality
these quite different requirements. Especially transfers between car and
between bicycle and public transport set some interesting challenges.

Improving travel chains is not just a design challenge but also requ
planning process. The whole process of planning and decision making in t
design in the Netherlands is currently not geared towards focussing on
chain is nobody s responsibility. A quality interlinking of transport

operation between many actors. This can be challenging since they all
interests an ambitions.

A complicating factor is that in current policy a culture of it s y
developed, which means that actors tend to work independently of each oth
on their own element of the chain instead of working together towards a
culture is most unproductive for obtaining low impedance travel chains a
overcome.

There is a need to formalise the responsibility for the quality of
chains. Simply relying on good links making a strong chain and on the go
work together will not yield the desired quality. Which actor must be mad
whole chain will depend on the situation.

4. CONCLUSIONS

Coherence between Dutch urban and transport planning can be improved in m
of which are neither straightforward nor easy yet worth the effort. Both
planners have a role to play. This research project has led to the conclu
main courses of action. These three differ in the way they focus on
planning, yet they have the intention to strengthen the link between both

Improving proximity of destinations can improve accessibility and ma
of existing urban and transport infrastructures. It requires concentrati
the existing built-up area. This is currently safeguarded insufficient
urban developments in a more dispersed direction. Examples are the way i
are attributed to building plans, the fact that many municipalities and p
invested in land for development outside the current built-up area, and t
the consequences of urban planning choices for transport demand and acce
in cost attribution, selectiveness in where to develop, and a shared resp
transport planning for accessibility are necessary.

Transit Oriented Development (TOD) can play an important role in
coherence between urban and transport planning. However, the large nu
involved and their conflicting interests make it difficult to succesf
Current financial arrangements are obstructing pro-TOD choices and auto
well as intermunicipal competition work in an opposite direction. Furthe
lack of demand for housing, office space et cetera means new TOD locatio
on existing ones. In general, selectiveness and scarcity are important
should keep in mind that every TOD location is different: there is no o
strategy for TOD. With regard to funding, joining budgets previously earm
or urban plans into an intergrated budget for accessibility could be usef

For the success of TOD as well as for offering multimodal access
transport chains and smooth transfers are important. Currently, the trans
no one , making improvements difficult to implement. Also, connecting tr
developing attractive urban environments in station areas not always go t
forward are making choices on what is most important where (combini
developing a high-density urban area is very difficult) and attributing
transport chain to the most appropriate actor.

*** draft version please do not quote without contacting the autho

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NOTES

1 Contrary to regulations in many other countries, Dutch municipalities a profit from buying land, preparing it for development and selling it t period before the financial crisis municipalities generated substantia process.