The role of negotiated developer obligations in financing large public infrastructure after the economic crisis in the Netherlands

Demetrio Muñoz Gielen a,b,c and Sander Lenferink b,d

aInstitute for Housing and Urban Development Studies (IHS), Erasmus University, Rotterdam, the Netherlands; bInstitute for Management and Research, Radboud University, Nijmegen, the Netherlands; cDepartment of Urban Planning, Municipality of Purmerend, Purmerend, the Netherlands; dFaculty of Spatial Sciences, University of Groningen, Groningen, the Netherlands

ABSTRACT

The economic crisis that started in 2009 has negatively impacted in the Netherlands the available financial resources for urban development. Dutch municipalities struggle since then with falling local financial sources, especially since active public land policy, traditionally an important additional financial source, became not so profitable anymore. One supposed effect is the limited degree to which municipalities can nowadays finance public infrastructure that serves wider areas, thus more than one specific development site (i.e. ‘large’ public infrastructure). Until now, however, there are no data available that support this claim. In this paper, we explore this and the role that developer obligations can play as an alternative, compensating financial source. Developer obligations are in many countries a growing popular public value capturing instrument, but in the Netherlands, a relative new phenomenon. On the basis of surveys, interviews and policy analysis, we conclude that at least a quarter of Dutch municipalities use developer obligations to obtain financial sources for large infrastructure. This seems, however, so far not to compensate for the diminishing of other municipal financial sources. The paper ends with some speculation about the future evolvement of developer obligations in the Netherlands.

1. Introduction and theoretical framework

In many countries, the discussions about the legitimacy and practicability of public value capture in urban development are related to a general trend of decreasing public responsibility in the financing of public goods (in the urban development realm, this regards the financing of public infrastructure). The public sector is not anymore expected and/or able to be the only one responsible for paying for them and public bodies do increasingly pursue innovative funding sources, often based on private financing. This can be related to public sector expenditure constraints, and to a shift towards privatization and

CONTACT Demetrio Muñoz Gielen d.munozgielen@icloud.com

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managerial strategies and economic liberalization. Also, the rise of environmentalism, which has concentrated public attention on the impacts of urban development, their limitation and mitigation, fiscal decentralization towards local public bodies, the influence of multilateral agencies promoting public value capture, and other variables like, for example, prosperous real estate markets (or the opposite: real estate markets in crisis as the Dutch case discussed in this paper might prove), have contributed to this fundamental shift (Bailey, 1990, pp. 428, 431; Burge, 2010, p. 183; Callies & Grant, 1991; Crook, 2016, p. 73; Fox-Rogers & Murphy, 2015, pp. 41–43; Healey, Purdue, & Ennis, 1996, p. 144; Kirwan, 1989; Loughlin, 1981, p. 95; Monk & Crook, 2016, pp. 233–234, 237, 252–253, 256; O’Neill, 2010, pp. 5–6; Peddle & Lewis, 1996, pp. 131–132; Smolka, 2013, pp. 10–12).

This paper focuses on whether and how developer obligations (a sort of public value capture tool) are used to pay large public infrastructure (i.e. roads, parks, green areas, social facilities, affordable housing, landscaping and sustainability measures that serve wider areas, i.e. more than one specific development site) and the influence in this of the recent economic crisis in the Netherlands. The conclusions, that support on surveys, interviews and policy analysis, describe the struggle to finance large public infrastructure and the results of these policies. Before addressing these topics, this section introduces first the concept and sorts of public value capture instruments internationally and second, the evolution of developer obligations in the last decennia in a country with a long tradition of using them: England. By contextualizing the Dutch public value capture system within the international experiences, this paper contributes to the literature on this topic (see Sections 1.1 and 1.2). This contextualization inspires later in the conclusions (Section 5) some speculation about the possible future evolution of the Dutch developer obligations.

1.1. Public value capture in urban development

Public value capture refers to a government capturing part or all the economic value increase of land and real estate. With this goal, governments can use different sorts of instruments (Alterman, 2012, pp. 763–766, 775–779; Muñoz Gielen, Maguregui Salas, & Burón Cuadrado, 2017, pp. 126–127). See Table 1 for an overview of the categorizations mentioned in the next sections.

1.1.1. Categorization of public value capture instruments: direct and indirect

‘Direct’ instruments seek to capture all or some of the value increase under the explicit or implicit rationale that this value increase belongs to the community and not to the owner. We call this a ‘direct’ rationale, hence the term ‘direct instruments’. Direct instruments are considered wealth redistribution instruments and are thus often applied as taxes that need explicit and detailed legislative support at the regional and/or national level. They can be charged at any time, i.e. independently from the moment at which land-use regulation decisions are made (‘capital gains tax’ on land or real property, a ‘tax upon transfer of title’ or an ‘annual property tax’). They can also be charged at that specific moment (‘betterment taxes’, to be levied most of the times on the one who asks for land-use regulation decisions). Besides as taxes, direct instruments can also be shaped as ‘developer obligations’, which are levied only at the moment at which land-use regulation decisions are made. As
Table 1. Overview categorizations of mentioned public value capture instruments (those between inverted commas are the Dutch instruments).

| Direct rationale: landowner does not deserve value increase, community does | Developer obligations | Indirect rationale: landowner should internalize negative externalities development |
| --- | --- | --- |
| **Taxes and charges** | **Non-negotiable** | **Negotiable** | **Public and public–private land assembly and development** |
| Required detailed regulation in legislation | Require detailed regulation in legislation and often also in local policy | Require only basic regulation in legislation | 
| **Developer obligations** | **Public and private land assembly and development** |
| **Taxes and charges** | **Non-negotiable** | **Negotiable** |
| **Capital gain tax** | **Cesionones (SP)** | **Compromisos complementarios (SP)** |
| **Tax upon transfer title** | **Sale of development rights (e.g. CEPAC’s BR)** | **Nationalization, expropriation or voluntary acquisition of land + public or public–private land development (e.g. ‘Dutch active land policy after WW2’)** |
| **Annual property tax (‘OZB, in the Netherlands’)** | **Compromisos complementarios (SP)** |  |
| **Direct rationale: landowner does not deserve value increase, community does** | **Negotiable** |  |
| **Charged independently from moment land-use regulation decision** | **‘Baatbelasting (NL)’** |  |
| | **Erschließungsbeitrag (GER)** |  |
| | **Opłaty adiacerńskie (PL)** |  |
| **Charged at moment land-use regulation decision** | **Impact fee (U.S.) Community Infrastructure Levy (ENG)** | **‘Negotiated Exploitatiebijdrage and Bijdrage ruimtelijke ontwikkeling (NL)’** |
| | **Tax d’aménagement (FR)** | **Compromisos complementarios (SP)** |
| | **Cargas de urbanización and reservas de suelo (SP)** | **Costes adicionales (SP)** |
| | **‘Exploitatiebijdrage prescribed in Dev Contributions Plan (NL)’** | **Exactions (U.S.) Development charges (CAN)** |
| | **Compulsory dedication or inclusionary zoning Transfer of development rights** | **Planning gains and obligations (U.K.) Participation (FR)** |
| **Charged independently from moment land-use regulation decision** | **Impact fee (U.S.) Community Infrastructure Levy (ENG)** | **‘Negotiated Exploitatiebijdrage and Bijdrage ruimtelijke ontwikkeling (NL)’** |
| | **Tax d’aménagement (FR)** | **Compromisos complementarios (SP)** |
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| | **‘Exploitatiebijdrage prescribed in Dev Contributions Plan (NL)’** | **Exactions (U.S.) Development charges (CAN)** |
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long as instruments are motivated by the rationale that the increased value belongs to the community, they can be categorized as direct value capture instruments. In academic literature, there exists a relative large evidence base on direct value capturing tools. Perhaps the best documented experience regards the vicissitudes in the U.K. with the betterment tax and similar instruments since the Second World War (e.g. Alterman, 2009, pp. 8, 15–17; García-Bellido, 1975; Oxley, 2006, p. 104; Spaans, Golland, & Carter, 1996, pp. 302–304).

‘Indirect’ instruments are more pragmatic and seek to capture economic value increase under ‘indirect’ rationales, i.e. rationales different from the above-mentioned direct rationale. The most common indirect rationale is that owners and developers should internalize the costs of mitigating the impacts of their building plans, i.e. to pay the public infrastructure and social housing needed to support the new developed (or re-developed) areas. The value of these impacts represents the social costs or compensation that can be exacted by the community that bears such costs (Bowers, 1992; Webster, 1998). A first sort of indirect instruments are contributions to be paid by property owners who benefit from a public investment in infrastructure, regardless of whether or not they are developing their land and regardless of land-use regulation decisions, for example, ‘baatbelasting’ in the Netherlands, ‘Erschließungsbeitrag’ in Germany and ‘opłaty adiaceńskie’ in Poland (when used to charge landowners that benefit from public infrastructure works – Havel, 2016; Osso-wicz, 2017, p. 6).

A second sort of indirect value capture instruments consists of contributions in money, land or construction services to be paid by property owners or developers in exchange for land-use regulation decisions of any kind. Public bodies require these contributions when owners and developers want to modify the use and/or building possibilities of their land and buildings, i.e. when they ask for a public decision on land-use regulations that will increase the value of their properties. We follow Alterman (2012) here and name these contributions ‘developer obligations’. Most of them belong to the category of indirect instruments, but some, if based on the rationale that the economic value increase belongs to the community and should therefore be paid back to the public, belong to the direct category. And sometimes there are instruments with ambiguous rationales, for example the Spanish ‘compromisos complementarios’, which can be based both on direct and on indirect rationales.

Because indirect developer obligations do not always require a detailed prescription in regional or national legislation and are based on less ideological rationales than direct tools, local public bodies are often relatively free to prescribe and frame them, i.e. they can be easy to introduce. This is why developer obligations enjoy increasing popularity in practice. Sometimes they can operate without almost any legislative authority. This being said, developer obligations require a minimum regulation and policy framing because legal and policy legitimacy is needed to prescribe requirements on landowners and other private parties when they develop their land.

1.1.2. Categorization of developer obligations: non-negotiable and negotiable
There are two sorts of developer obligations: non-negotiable (N-NDO) and negotiable (NDO). N-NDOs have a statutory character, i.e. they are prescribed in national/regional legislation, and/or in legally binding local policy and can, in theory, thus be prescribed without negotiation: for example, ‘impact fees’ in the U.S., the ‘Community Infrastructure Levy’ (CIL) in England, the ‘Tax d’aménagement’ in France, ‘Cargas de Urbanización, cesiones’ and ‘reservas de suelo’ in Spain, ‘exploitatiebijdrage’ (prescribed in a
Development Contributions Plan) in the Netherlands, and in many countries ‘compulsory dedication’ or ‘inclusionary zoning’ and ‘transfer’ or ‘sale of development rights’. These N-NDOs support on regional/national detailed legislation that regulates their scope more precisely with detailed legal standards and categorizations, and can be prescribed and/or detailed in legally binding land-use regulation decisions or in other local policies. As a result, N-NDOs have less of a local character than NDOs.

NDOs are only vaguely regulated in regional/national legislation. For example, Dutch and Spanish NDOs (negotiated ‘exploitatiebijdrage’ and ‘bijdrage ruimtelijke ontwikkeling’, respectively, ‘costes adicionales’ and ‘compromisos complementarios’) support on some basic government regulation, but it is the municipality that should (but in practice does often not) regulate them in detail (see Section 3.2.4 and (Muñoz & García, 2016) for details about the Dutch, respectively, Spanish NDOs). Other examples are ‘exactions’ in the U.S., ‘development charges’ in Canada, ‘planning gains’ and ‘planning obligations’ in the U.K. and ‘participation’ in France.

1.1.3. Embedment of public value capture instruments in active and passive land policy regimes

Most land policy regimes fall into one or more of these: (a) nationalization of all land and public land development, (b) public land banking and development, (c) public–private land development, (d) private land development and (e) statutory land readjustment. Depending on the role of public and private actors, there are two main different forms of governance. In the first, public bodies develop the land and assume direct financial risks (policy regimes (a), (b) and sometimes (c)). In the second, private bodies develop the land and assume the financial risks (policy regimes (d), (e) and sometimes (c)) (Alex- ander, 2001, pp. 758–759, 2014, p. 538). A similar categorization distinguishes among ‘active’ and ‘passive’ land management approaches (Hartmann & Spit, 2015; Van der Krabben & Jacobs, 2013, pp. 775–776). Active forms of governance in urban land development involve public bodies nationalizing or purchasing and assembling land, financing its preparation and development and providing the infrastructure, and finally disposing it to real estate developers who build on them and sell the built property. Dutch municipalities traditionally applied active approaches (policy regimes (b) and lately (c)), but because their profitability is under pressure, they are increasingly applying passive approaches (policy regime (d), see Section 2.1). Passive approaches involve that public bodies regulate the use of land and subsequently let private bodies acquire the land, develop and build it. Of course, these are extreme models and practice shows a wide variety of mixed formulas.

It is in passive approaches that almost all the above-mentioned public value capture instruments are deployed. In active approaches, public bodies capture the value increase simply by selling serviced building plots. Although active approaches are as such not often mentioned as a public value capture tool in the literature, they often unmistakably serve as such. Also, in-between public–private governance approaches can perform as a distinctive value capture instrument when public bodies assume risks in the acquisition and/or development of land and in exchange agree with the private parties a share in the value increase.

The specifics of the land policy regime where the public value capture instruments are embedded influence their effectiveness. For example, in private land development (regime (d)), a developer could agree with a public body that the developer constructs the public
infrastructure or that the public body constructs it and the developer pays for this. But in any case, as the municipality does not own the land, the achievement of this agreement depends on the will of both parties. In public land development (regimes (a) and (b)), and sometimes in public–private approaches (regime (c)), when public bodies own the land and can choose among different developers (who must compete which each other to become selected as developing partner), public bodies might be in a stronger negotiation position.

1.2. Evolution of developer obligations in England: generalization and regularization

The British NDOs (initially called ‘planning gain’ and then ‘planning obligation’) are based on an old legal prescription\(^4\) that explicitly entitles local governments to enter into negotiations with property developers (Moore, 2005, pp. 345–346). In addition, central legislation allows municipalities to condition land-use regulations decisions to negotiated contributions, so municipalities can refuse to rezone the land if the developer does not want to contribute. Initially, this provision was not used often, but they increased in popularity since the 1970s because they offered the opportunity to obtain in buoyant property markets larger contributions than the statutory, non-negotiable ‘planning conditions’. Also, the growing managerialist neoliberal strategy of the British government in the 1980s towards public–private relations favoured the use of NDOs instead of the more regulated N-NDOs.

In the 1980s and 1990s, the increased use of NDOs led to an intense debate about their lack of transparency, the risk of abuse and corporate bribery, and the costs, uncertainties and slowness of negotiations. The debate often focused on the need of regularization, homogenization and previous prescription of the obligations, and of publicity about the negotiations. Since the 1980s, this debate led to regularization of the scope of obligations through policy guidance and local policies. The use of NDOs evolved thus from a poorly regulated, non-transparent process with lack of accountability into more regulated and framed negotiations. Presently, development agreements are public and often available online, and most English local authorities have introduced formal policy on planning obligations. This has resulted in a generalized increase of contributions. This process of regularization led ultimately, in 2010, to the introduction of an N-NDO, the ‘Community Infrastructure Levy’, which presently coexists with the older practice of NDOs (Bailey, 1990, p. 431; Barker, 2004, p. 66; Booth, 2003, pp. 4, 113–115; Campbell et al., 2001; Campbell, Ellis, Henneberry, & Gladwell, 2000, pp. 760, 763–764; Campbell & Henneberry, 2005, pp. 41–42; Corkindale, 2004, pp. 13–14; Crook, 2016, pp. 68, 71–72, 84–97; Crook & Monk, 2011; Crow, 1998, pp. 366, 369–370; Department for Communities and Local Government, 2006, pp. 3–4, 6, 17, 19–20, 41–42; Ennis, 1997, pp. 1935–1936; Gallent & Tewdwr-Jones, 2007, pp. 211–213, 257; Healey et al., 1996; Loughlin, 1981, pp. 96–97; Ratcliffe, Stubbs, & Shepherd, 2002, pp. 140–159). Similar processes of generalization and posterior regularization of NDOs are noticeable also in other countries (Muñoz & García, 2016).

Section 2 focuses on describing the recent changes in the financial resources of Dutch local authorities in general. Section 3 introduces which value capture instruments are used in the Netherlands, and the recent evolution in the use of developer obligations. Section 4
Section 5 draws conclusions about the possible evolution of developer obligations in the near future, and whether and under which conditions could they improve the financing of large public infrastructure.

2. The impact of the economic crisis and the trend towards urban regeneration on how Dutch municipalities finance large public infrastructure

Sections 2.1 and 2.2 analyse how the evolvement of public active land policies and the trend towards urban regeneration are weakening municipal financial sources. Also, Section 2.1 briefly addresses the Dutch debate about the profitability of public land policies.

2.1. Increasing financial risks of public active land policies since the 1990s and specially since 2008

After the Second World War, Dutch municipalities started ‘en masse’ to apply an active land policy: they bought land meant for development, provided public infrastructure and sold serviced building plots to property developers and social housing associations (land policy regime (b), mentioned in Section 1.1.3). These serviced plots were mainly meant for social housing, rented or sold. The income generated from selling these plots, together with subsidies of the central government, provided the necessary resources to finance the required public infrastructure, including large public infrastructure. At the end of the 1980s and the beginning of the 1990s, the central government dramatically diminished the subsidies but at the same time lowered the minimum requirement for social housing to be built (Muñoz Gielen, 2010, pp. 2–5). From that point onwards, municipalities could sell building plots for free market housing instead of social housing. This provided larger revenues for municipalities and thus made urban development a profitable economic activity, even without subsidies from the central government. As a consequence, since the 1990s, Dutch municipalities were able to continue their active land policies, obtaining profits that could be used to subsidize large public infrastructure.

The increased profitability of land development stimulated a renewed interest of private parties in buying developable land, which in turn increased pressure on the land markets. Dutch municipalities were not anymore the only parties buying developable land, also private parties started to buy raw land because they pursued the opportunities of a much more profitable land development (Buitelaar, 2010, pp. 352–353; Needham, 2007, p. 193; Van der Krabben & Jacobs, 2013, p. 780). As a consequence, prices for undeveloped land gradually increased, the financial risks associated with land development increased too (due to augmented pre-investments in land acquisition) and its overall profitability became more dependent on the increase in housing prices. From the second half of the 1990s until 2008, housing prices indeed increased significantly, causing municipalities to still obtain profits from developing land. However, we think that the higher land prices, the accompanying higher financial risks and the fact that municipalities were not the only ones developing land anymore, gradually limited the possibilities of
municipalities of using the profits from land development to pay for public infrastructure. This was clearly the case in the growing number of sites developed by private parties (land policy regime (d), mentioned in Section 1.1.3) because a proper system of value capture was lacking there, especially for large public infrastructure.\(^5\) Regarding those sites still developed by municipalities or in public–private coalitions (land policy regimes (b) and (c), mentioned in Section 1.1.3), many soundly state that they still provided significant profits (e.g. Korthals Altes, 2010, p. 935; Raad voor de financiële verhoudingen [Rfv], 2015, p. 21), but many also doubt that profits were enough for municipalities to keep investing in large public infrastructure as they did before the 1990s (e.g. Raad voor de Lee-ояomgeving en Infrastructuur [Rli], 2017, pp. 62–63; Van der Krabben & Jacobs, 2013, p. 780). We think that it is conceivable that before 2009, revenues from active land policies proved insufficient to subsidize necessary investments in large infrastructure and that municipalities or other public bodies were detracting sources from other policy areas. Certainly, without the large central government’s subsidies in the so-called Vinex development sites,\(^6\) problems would have arisen in the financing of the necessary large public infrastructure in these sites.

As a result of the increasing difficulties to finance public infrastructure, since the 1990s, a more or less continuous debate is held in the Netherlands about the consequences of the transition from active to passive approaches (e.g. Priemus & Louw, 2003; Van der Krabben & Jacobs, 2013). Among others, there was growing concern about the need to improve the contributions from private land developers towards public infrastructure (Muñoz Gielen, 2014, pp. 5–6). In 2008, after more than 10 years of preparation, the national government introduced a new Physical Planning Act ('Wet ruimtelijke ordening'). A new section of this act was exclusively meant for improving developer contributions from private land developers.

So, it becomes clear that long before the last economic crisis, the financing of public infrastructure was increasingly seen as a problem. In any case, after 2008, active land policies turned out to be a financial nightmare for many municipalities. From 2010 till 2012, Dutch municipalities suffered a total loss of €3300 million and in 2013 of €700 million. A further loss between €300 and €2100 million is expected in the 5-year period till 2018 (Deloitte, 2014, pp. 13–14; Ernst &Young & Fakton, 2015, pp. 5, 9). Since 2013, these losses have moderated and the outlook on the next years has improved (Deloitte, 2014, pp. 13–14; Korthals Altes, 2017), but many municipal budgets have not yet recovered and municipalities take a more critical stance towards deploying active land policies. Many think that there is a real chance that this can lead to a definitive reorientation towards private land development governance approaches (e.g. Buitelaar & Bregman, 2016). Others bring nuance to this conclusion by pointing out the advantages of active land policies (the possibility of capturing land value increase and of influencing urban development mainly) and also that municipalities still own large amounts of undeveloped land (Rli, 2017, pp. 59–62).

### 2.2. Trend towards regeneration of urban areas and diminishing central government’s transfers to municipalities

There is a trend in Dutch planning policies from greenfield development towards regeneration of existing urban sites, which have higher land development costs (of which higher
land prices are a prime component). Ambitious goals were introduced by national government for urban regeneration (between 25% and 40% of new housing should be built within the existing cities, Buitelaar, Segeren, & Kronberger, 2008, pp. 12, 34–40) and provincial governments are critical before allowing municipalities to develop outside urban areas. Perhaps even more relevant to the shift in focus to urban regeneration might be the fact that many of the ‘easy’ (e.g. cheap and/or politically feasible) greenfield development sites are already developed. Together with the higher costs of urban regeneration, also general budgetary cuts at the national level during the economic crisis have led to lower financial transfers from the central government towards municipalities.

The resulting diminishing of local financial resources raises the question whether public value capture tools, meant for obtaining financial contributions from private land development, can provide necessary financial resources for investments in large public infrastructure. In Section 3, we explore first the Dutch public value capture tools and focus then in Section 4 on the use and effects of developer obligations.

3. Public value capture in the Netherlands: legal instruments

This section addresses which public value capture tools are used in the Netherlands.

3.1. Almost no direct public value capture in the Netherlands

In the Netherlands, the Civil code prescribes a full enjoyment of the owned property and there is no legislation giving to the public any right to the value increase of privately owned land. Hence, any value increase, caused by a change to the permitted land use or otherwise, falls to the landowner (Needham, 2007, pp. 154–155). The prevailing legal principle is that landowners have the right to the future development value. In 1977, an attempt failed to modify the Expropriation law to base compensation sums on the former use instead of on the future ones (De Bekker, 1977; Parlamentair Documentatie Centrum). Attempts of municipalities to charge any share of this value increase are consistently punished at the courts (Zeilmaker & Hagelaars, 2016). The Dutch legislator has regulated several times (the last one in the 2008 Physical Planning Act, ‘Wet ruimtelijke ordening’) the possibility of capturing land value increase, but only for the sake of ‘cost recovery’, i.e. the recovery of those costs of public infrastructure and facilities that benefit the owner and are necessary because of the building on his property, an indirect rationale thus. The actual legal possibilities of public value capture in the Netherlands are thus limited to cost recovery.

When public bodies deploy active and public–private land governance approaches (land policy regimes (b) and (c), mentioned in Section 1.1.3), they can capture the future development value, but this is because they own the land or at least share the financial risks together with private parties. If not, the only possibly exemption to the ban on direct public value capture in the Netherlands might be the property tax (‘onroerende zaak belasting, OZB’). The property tax charges a share of the market value of built property and it can be discussed whether it could be considered a direct tool because it does not explicitly support an indirect rationale. The property tax provides presently around 8% of the total municipal incomes. However, its utility for financing public infrastructure is limited: maximum tariffs are limited, revenues cannot be labelled for specific
infrastructure (with rare exceptions, see Section 3.2.2), it cannot be applied differently for specific properties (so it is not possible, e.g. to charge higher tariffs on those properties benefiting from land-use regulation decisions) and when revenues increase (e.g. due to new buildings), central government’s transfers diminish.

3.2. Public value capture instruments in the Netherlands

Besides the mentioned property tax and active and public–private land policies, there are other four public value capture tools in the Netherlands. All four were purposely designed to finance public infrastructure. Three of them are regulated in public law and are almost not used in practice: profit tax, property tax in Business Investment Zones and Development contributions plan (a sort of N-NDO). There is a fourth, very popular instrument that is regulated mainly in private law but also partially in public law: development agreements (a sort of NDO).

3.2.1. Profit tax
The first public law instrument is the Profit tax (‘Baatbelasting’), a tax that municipalities can charge on landowners when public infrastructure is constructed that directly serves their properties. It regards local, site-specific, on-site public infrastructure. Large public infrastructure, especially if located off-site, cannot be charged through this tax. There is no connection with land-use regulations decisions, all landowners which profit from the public infrastructure must pay, whether their properties regard consolidated urban uses or become developed into new real estate. This Profit tax is used only very rarely. It is unanimously characterized as too complex, risky and an insufficient way of financing public infrastructure, even local infrastructure (Sorel, Tennekes, & Galle, 2014, pp. 40–41).

3.2.2. Property tax in Business Investment Zones
The second public law value capture instrument is based on the Experimental Act on Business Investment Zones (‘Experimentenwet BI-zones’), which allows the property tax (mentioned before) to be increased in a specific area and the revenues of the extra contribution to be labelled for public infrastructure in that area. So far, it has not been applied often, maybe because it requires a majority support of the business in the area (Schep, 2012, pp. 305–306, 499).

3.2.3. Development Contributions Plan (N-NDO)
The third public law value capture instrument is an N-NDO embedded into the Development Contributions Plan (‘Exploitatieplan’), which was introduced in the 2008 Physical Planning Act. When land-use regulation decisions rezone land (e.g. from agricultural to any urban use or from industrial to housing) and/or increase the building possibilities (e.g. from single family dwellings to an apartment building), and provided that there are costs to be made for public infrastructure which have not yet been secured, the municipality ‘must’ approve a Development Contributions Plan together with the land-use regulation decision. The 2008 Act and the 2008 Physical Planning Decree (‘Besluit ruimtelijke ordening’) regulate in detail the costs that can be included in a Development Contributions Plan and charged to landowners: mostly local, site-specific, on-site public infrastructure. Large public infrastructure, especially located off-site, can only to a
limited extend be charged to the landowners. There are examples of municipalities charging these costs to landowners through a Development Contributions Plan, but judicial scrutiny is limiting this practice so as to allow only charging a relative small share of these costs (Buitelaar et al., 2012, pp. 63–65). Besides, especially in urban regeneration areas, the evaluation methods of land prescribed in the 2008 Act and Decree often further diminish the amount of costs that are charged to landowners and might even end up forcing municipalities to grant subsidies to the landowners.9

Once the costs that can be charged to landowners have been calculated, and once the Development Contributions Plan is approved together with the new land-use regulation, municipalities can make granting the building permit conditional on a contribution. This is the first time in the Netherlands that planning consent (only the granting of the building permit, not the previous modification of the land-use regulation) can formally be made conditional on paying a contribution. After a landowner receives a building permit, he must pay the contribution, otherwise the municipality can withdraw the building permit. In this sense, municipalities can compulsorily charge these costs on landowners: if landowners do not pay, they cannot build. Because municipalities can unilaterally impose this charge, which is not negotiable, this contribution is an N-NDO.

In practice, Development Contributions Plans are not providing significant resources for financing large public infrastructure. First because, as said, the possibilities of charging the costs of off-site, not site-specific large infrastructure, are very limited. Second, because this instrument is not used frequently, the last available figures show that up to July 2010, municipalities used it in only 3% of the building plans (Buitelaar et al., 2012, p. 62). No signs since then suggest any significant increase in their use. Actually, many municipalities show disappointment with their results, which suggests that their use might actually even diminish.10 Instead, municipalities prefer to recover the costs of public infrastructure through negotiated development agreements.

3.2.4. Development agreements (NDO)
The fourth option for public value capture, and the most popular, is the possibility of negotiating developer obligations in a development agreement. Here, the municipality and the land developer agree who is going to pay for the public infrastructure. This contract (‘anterieure overeenkomst’), voluntarily negotiated and sealed before the approval of the new land-use regulation, rely mainly on private law, but its contents are to some extent also regulated in public law: the 2008 Act and Decree provide rather vague indications about the scope of contributions and about which sort of policy the municipality should introduce to support these negotiable contributions. In addition, during parliamentary approval of both Act and Decree, some discussions took place that made clear that the meaning of the law was not to negotiate contributions towards educational and sanitary facilities. But this legislative and parliamentary framework still leaves much room for negotiation, so there are larger possibilities to charge large public infrastructure through negotiated development agreements than through the Development Contributions Plan. Up to now, there is no jurisprudence and there are no governmental directives.

Interpretations of this legislative and parliamentary framework state that local policy should at least prescribe in a transparent way which infrastructure is charged, how much it costs and how these costs are allocated in an equal way to each development
However, there is neither much writing nor unanimity on what the contents should be of this policy and how municipalities should negotiate.

Summarizing, provided that municipalities introduce specific policy that properly underpins the contributions (although it is not entirely clear what ‘properly’ means), they are allowed to negotiate with property developers a contribution for large public infrastructure far more generous than allowed if a Development Contributions plan is approved (see, for an overview of which costs can be recovered through development agreements that cannot be recovered through Development Contributions Plans, Muñoz Gielen, 2010, pp. 228–234). This is one of the reasons that explain why in practice municipalities approve so few of these plans (in total, 120 from July 2008 to July 2011; Buitelaar et al., 2012, p. 62) and prefer ‘en masse’ to use development agreements.

Following the Dutch rule of law, property developers cannot be obliged to contribute using such contracts, and public bodies do not have the statutory powers to refuse modifying the land-use regulations only with the argument that the developer is not willing to negotiate. The lack of statutory powers to formally condition land-use regulation decisions to the developer signing a development agreement sets the Netherlands apart from other countries. For example, in Spain and the U.K., public bodies can modify the land-use regulations under the publicly prescribed condition that later on, within a certain period of time, the developer will commit (in a development agreement) to a contribution. Because of this Dutch particularity, in the Netherlands, municipalities do not dare to modify land-use regulations in an early stage because once they are modified, municipalities have no leverage anymore. So, municipalities wait first until the development agreement has been negotiated and sealed. In practice thus, municipalities do often condition the land-use regulation decisions to the developer agreeing to contribute through this contract. Up to the moment in which the land-use regulations are brought into the public, formal decision-making process, not much, if any, publicity is given to the details of the developer’s initiative and the negotiations (Buitelaar, Galle, & Sorel, 2011, pp. 938–940; Muñoz Gielen, 2010, pp. 241–242). This behaviour is sometimes explained as the consequence of higher steering ambitions of Dutch municipalities, when compared to other countries (e.g. Buitelaar & Sorel, 2010), but we believe that the mentioned Dutch legal peculiarity plays a more relevant role.

4. Practical use of NDOs for large public infrastructure in the Netherlands

In the previous section, we saw that in the Netherlands, it is allowed to compulsorily charge a basic package of infrastructure through a Development Contributions Plan (N-NDO), but also to negotiate this package or even a larger package in a voluntary development agreement (NDO). Dutch municipalities massively use NDOs instead of N-NDOs, but does this help to finance large public infrastructure?

There are almost no available, generalizable data about the captured value through negotiations. There is some agreement about that municipalities are succeeding in capturing the basic package of on-site, site-specific local infrastructure (Buitelaar et al., 2010, 63, 2012, pp. 62–63). Development is not possible without this infrastructure and its costs can often be compulsorily charged through a Development Contributions Plan,
so it seems reasonable to conclude that development agreements are including at least this minimum.

What about large public infrastructure, which goes further than the basic package? As said, municipalities, provided that there is a policy base, are allowed to negotiate contributions to large infrastructure. This suggests that at least those municipalities that count on specific policy for this do actually negotiate contributions for large infrastructure.

4.1. Data sources

In order to assess the number of municipalities that have introduced specific policy documents to support the negotiation of contributions towards large infrastructure, we rely on two sources.

First, a survey of BVH Ruimte bv (2013). This survey took place during the summer of 2012, and focused on studying those municipalities that introduced Structure Visions (a sort of strategic master plan) to ask contributions meant for two specific sorts of large public infrastructure (‘bovenplanse kosten’ and ‘ruimtelijke ontwikkelingen’). This survey is based upon a briefing to all 415 Dutch municipalities at that time, of which 176 participated in the survey. We have analysed the data provided in this survey.

Second, we conducted own research at the fall of 2015 to specific policy documents in 49 municipalities,11 documents that are meant for asking contributions towards any sort of large public infrastructure, so not only those two specific sorts studied in BVH Ruimte bv (2013). These policy documents are much more detailed than the Structure Visions studied in BVH Ruimte bv (2013).12 Some of these 49 municipalities have also a Structure Vision, so they are also studied in BVH’s report. These 49 municipalities were selected based on intensive online research and on our network.13 We studied all municipalities of which we knew that dispose of such specific policies.

We are confident that both sources together are robust enough to allow a quite generalizable picture of which municipalities have introduced policies towards negotiating contributions for large public infrastructure.

4.2. Municipalities with policy base negotiate more contributions

4.2.1. Municipalities with specific policy do often negotiate contributions for large public infrastructure

Table 2 summarizes the findings of the two first mentioned sources.

Based on both surveys, the next conclusions can be made. In total, there are 95 (60 + 35) municipalities that have introduced structure visions and/or specific policy to ask property developers contributions towards large public infrastructure, and that actually ask such contributions. This is 23% of all 415 Dutch municipalities. The amounts asked vary from a couple of Euros per square meter of the new building (land or gross building space) to €50 or more. Regarding the quality of all the studied policy documents (both the 73 Structure Visions and the 49 specific policy documents), it is questionable whether most of them meet the minimal legal requirements. Dutch municipalities seem, in general, not to be well equipped to develop this relatively new sort of policy.14 Shortcomings regard, for example, that the studied policy documents often do not provide transparent information, mix up different sorts of infrastructure and have a
poor understanding of the legal framework (see an analysis in Muñoz Gielen, 2013 and 2015 and in BVH & Vreman, 2014). A reason for this is, as mentioned, that the legal framework is vague and there are no jurisprudence or directives from central government that could help in this.

4.2.2. Other municipalities do only sometimes negotiate contributions for large public infrastructure

Regarding the municipalities that, based on our both sources, do not dispose of specific local policy (at most 77% of all 415 municipalities15), we need to distinguish among (1) large infrastructure directly related to specific development sites, (2) large infrastructure not related to any specific development site and (3) nature and landscape improvements advocated by provincial governments. Regarding the first, there is regularly notice of municipalities charging on one or two developers a share of the costs of large infrastructure directly needed, but not exclusively, for their sites. These municipalities do not dispose of specific policy.16

Regarding the second situation (municipalities charging the costs of large infrastructure on a multitude of development sites, which have a less direct link with the infrastructure), it seems reasonable to conclude that municipalities without specific policy are not obtaining from developer obligations significant resources towards large public infrastructure. At least they are formally not entitled to ask such contributions: there is notice of some municipalities negotiating this sort of contributions without any policy supporting it. We think, however, that they are not relevant: if large public infrastructure is not directly needed for specific (smaller) developments, and there is no specific policy inventorying why is it

| Table 2. Surveys to the use among Dutch municipalities of NDO to support the financing of large public infrastructure. |
| Source: survey to all 415 Dutch municipalities, BVH (2013) (summer 2012) | Source: our survey to 49 municipalities with specific policy that allow asking contributions for large infrastructure (fall 2015) |
| **Sample** | 130 of 176 participating municipalities in survey (of a total of 415 Dutch municipalities) approved Structure Visions (SV, sort of strategic master plans) |
| | 21 of our 49 belong to the group of 130 municipalities with a SV |
| **Municipalities asking contributions towards large public infrastructure** | 73 of those 130 have SV that prescribe asking contributions for large public infrastructure: |
| | • Of these 73, 40 have specific policy documents that allow asking contributions, perhaps additional to those included in SV |
| | 60 of those 73 actually ask contributions towards large infrastructure to developers (the other 13 do not): |
| | • Of these 60, most of them are in the South of the country, with an accent in the province of Limburg |
| | 13 of our 49 belong to these 73 |
| | 48 of our 49 actually ask contributions towards large infrastructure to developers (1 does not): |
| | • Of these 48, 35 do not belong to those 60 |
| | • These 48 are pretty well distributed through the country, with an accent in the province of South-Holland (West of the country) |
| **Actually obtained contributions** | 41 of those 60 actually have included contributions towards large infrastructure in development agreements: |
| | • Of these 41, 26 managed or will manage to actually obtain the contributions, about €8.5 million. It is uncertain whether the other 15 will actually manage to obtain the contributions |
| | 60 of those 73 actually ask contributions towards large infrastructure to developers: |
| | • Of these 48, 35 do not belong to those 60 |
| | • These 48 are pretty well distributed through the country, with an accent in the province of South-Holland (West of the country) |
| | Not known |
needed and how much does it cost, it is in practice not easy for municipalities to foresee it and thus ask for contributions. Also, in case municipalities use internal inventories, their lack of any policy status weakens their relevancy. To our notice, if such contributions are negotiated without any policy base, they mostly regard modest contributions of no more than a couple of Euros per square meter. Therefore, it seems reasonable to conclude that in case there is no policy base, negotiations tend to include only directly related large infrastructure, or the minimum enforceable package of local, on-site infrastructure.

Regarding the third situation (nature and landscape infrastructure advocated by provinces), some municipalities do negotiate contributions relying on provincial policies. These provincial policies are meant to compensate the externalities of new developments (Janssen-Jansen, 2008; Van der Meulen & Dieperink, 2011). We think that these provincial policies are of some relevance for the scope of this paper (whether and how public bodies negotiate contributions towards large public infrastructure from private land developers), but there is still need of further research on this.17

A first conclusion is thus that in a large share of Dutch municipalities (at most 77%18), developer obligations are not playing any role to compensate the diminishing of other local financial sources in the financing of large public infrastructure. However, it is not known how developer obligations perform in those 23% of municipalities that adopted policy to support negotiations towards contributions to large infrastructure. Have NDOs in this 23% of municipalities contributed as far to compensate the diminishing of other local financial resources over the last years, and helped to finance large public infrastructure?

4.3. To what extent do developer contributions, if municipalities negotiate them, compensate the diminishing of other local financial resources to finance large public infrastructure?

In order to explore this, we conducted in the summer of 2014 in-depth interviews with 11 of the 49 municipalities that have introduced specific policy supporting contributions towards large public infrastructure and were studied in previous Sections 4.1 and 4.2. These 11 municipalities were selected for interviews based on their geographical location; we aimed to achieve a geographical spread of the data. This strengthens the chances that, if there are regional and provincial differences in the choice for and the use of NDOs, these would become clear. In addition, the 11 municipalities formed a convenience sample in the sense that they were willing to discuss in semi-structured interviews the formulation and application of their policy.19 The external validity or generalizability of the conclusions must, however, as usual in qualitative research based on reduced samples, be interpreted cautiously.

In the interviews, the public officials indicate that developer obligations finance only a small part of the large public infrastructure. Large public infrastructure is mainly paid for by the general municipal budget, other governments (regional and provincial) and through subsidies. The public officers indicate that developer obligations do, however, play a crucial role in closing the budget. In addition, they feel that the opportunity to capture value, even if it is only a small amount, should not be disregarded.

Despite this positive role of developer obligations, they seem, however, not to be large enough to compensate for the diminishing of other local financial resources. As a result of
this diminishing, the investigated municipalities have, on average, cancelled between 20% (e.g. municipality of Dordrecht) and 40% (e.g. municipality of Tilburg) of the large public infrastructure projects. Besides cancelling, more than half of the projects was also delayed considerably. The main reason for both cancelling and delaying investments in large public infrastructure is that the housing projects or business estate developments that should benefit from the infrastructure were also put on hold, downsized or cancelled. This meant that the developer contributions as a result of the development agreements became available later, were smaller, or did not become available at all. Cancelling infrastructural projects poses a dilemma to the municipalities: should they also pay back a part of the developer contributions as part of the development agreements? For now, the interviewed municipalities chose not to do so and will deploy the money to finance other public infrastructure.

4.4. Increasing support on subsidies

It seems thus that developer contributions from private land developers have so far only played a marginal role in compensating the diminishing of other local financial sources. As a result, municipalities are forced to cancel or delay investments in large public infrastructure. In order to test this latter conclusion (that diminishing of local financial sources leads to cancelling or delay of investments in large public infrastructure) for all municipalities (thus not only for those 11 that negotiate contributions for large public infrastructure), we performed additional research to the Greater Amsterdam Region by interviewing two other municipalities (Amsterdam and Heerhugowaard), a province (Noord-Holland) and a city region (Stadsregio Amsterdam). The interviews showed that municipalities are now more dependent than before on subsidies of the regional and provincial governments, which seems to confirm our latter conclusion. Also, the municipalities feel that, as a consequence of the financial crisis, subsidies play a different role. Municipalities structurally try to involve regional and provincial governments in the financing of large public infrastructure. They do so by positioning the large public infrastructure projects in a way that stresses their integral character as much as possible. In other words, municipalities try to incorporate nature and water into the large infrastructure projects to increase the appeal of the investments to both the general public and the subsidizing governmental bodies. In addition, regional and provincial governments are involved earlier in projects.

5. Conclusions

The decrease in the local financial sources since the economic crisis and the shift from greenfield development towards urban regeneration reinforces the need to improve the financing of large public infrastructure at the municipal level. With this aim, a discussion is being held in the Netherlands about the improvement of value capture instruments. Several recent reports discuss the need for profound legal modifications, for example, the possibility of expanding the municipal fiscal instruments (Raad van State, 2016; Rfv, 2015; Rli, 2017; Sorel et al., 2014, pp. 48–50) or the possibility of improving the Profit tax (Hobma et al., 2014, pp. 147–150). As a reaction, the central government is considering some minor expanding of municipal fiscal instruments (Rli, 2017, p. 84), but there are so far no signs of actual profound legal modifications.
While profound legal modifications might eventually come, we expect that in the meantime municipalities will increasingly use the existing legal possibilities of NDOs to finance large public infrastructure, for several reasons. First, the elaboration on the use of NDOs presented in Sections 1.1 and 1.2 suggests that they are increasingly popular to finance large infrastructure because they are relatively easy to introduce. Indeed, in the Dutch context, any of the other discussed measures will require major legislative changes and thus years of discussion and preparation, while enlarging the use of NDOs from financing only local, on-site infrastructure to financing too large infrastructure is much easier: there is no need for legal modifications. All Dutch municipalities do negotiate developer obligations towards local, on-site infrastructure, and in 2015, at least 23% of them also for large public infrastructure. This despite the economic crisis at that time (which discouraged municipalities to ask much contributions from developers, in order not to hamper the development) and despite the lack of clear legal prescriptions and governmental directives. A second reason for the expected increase in NDOs is because it is questionable whether municipalities will ever deploy public active land policies as extensively as until the crisis, and whether these active policies will provide as much profits. A third reason is that it will take time before central government’s financial transfers to municipalities recover. The fourth and maybe the most important reason is that the recovery of real estate markets (which started with a recovery of the housing markets since 2014) offers possibilities: land and property developers can increasingly afford larger contributions. The same as in England and other countries, buoyant property markets can trigger in the Netherlands an increase in the use of NDOs.

This parallelism with the British experience (see Section 1.2) raises the question whether the Netherlands too will work towards a further regularization of NDOs. We think that Dutch municipalities need guidance and stimuli to improve the transparency and the quality of their policy on developer obligations. Perhaps the situation nowadays in the Netherlands differs from England in the 1980s and 1990s because the use of NDOs to finance large public infrastructure in the Netherlands is not so widespread. This might explain the fact, however still remarkable in our opinion, that the central Dutch government, since the introduction of the 2008 Act and Decree (which give very vague regulations), has not yet intervened to clarify further the use of NDOs. This relatively simple measure (there is no need for legal modifications) can improve the amount of private contributions for large public infrastructure. However, it seems that this is going to change soon. Since the Summer of 2015, the Dutch Federation of Municipalities (‘Vereniging Nederlandse Gemeenten’) is advocating for clear guidelines that support municipalities in this field, and at the end of that year, the central Dutch government announced to issue guidelines soon. These guidelines should help municipalities to introduce and implement such policy and clarify the scope of NDOs (Ministerie I&M, 2015, p. 18). Recently, the central government started preliminary talks towards such guidelines.

Additionally, we think that NDOs should be made more transparent and accountable. This can be achieved through legal modifications that allow municipalities to openly condition land-use regulations decisions to the developers agreeing in a development agreement to contribute, and to subject this practice to publicity. At the moment, these agreements are, formally speaking, voluntary, which has caused municipalities to be afraid of too soon modifying land-use regulations. As a consequence, they delay land-
use regulations decisions until the development agreement is sealed. This is not contributing towards a transparent decision-making process. In addition, it does not help private developers in their search to ensure predictability and risk-control for their investments. The uncertainty about whether the municipality will modify the land-use regulations, and under which conditions, does not help to arrange the necessary financing (and for sure makes it more expensive, as banks and investors require higher interests and profitability when risks are higher). This measure (being able to condition land-use regulation decisions to obligations) can be introduced in different ways. A relatively light legal modification would not alter the negotiable nature of contributions, but at least clarify the public requirements before negotiations take place (and hence improve transparency and give some certainty to developers), similar to the actual practice of planning obligations in England. A more profound legal modification towards further regularization would give a statutory character to these NDOs and hence turn them into N-NDOs, similarly to the English transition from the negotiated planning obligations only towards a combination with the statutory CIL (see Section 1.2). Summarizing, the Dutch legal planning system should recognize that urban development has in practice evolved towards more negotiations, and regulate these negotiations instead of ignoring them.

Notes

1. Some use the term ‘neoliberalism’ to characterize this trend, e.g. Fox-Rogers and Murphy (2015).
2. There is agreement that ‘land value capture’ refers ‘not’ to the capture of value created by the efforts of the landowner himself because this value belongs to him. Land value capture refers thus first to the capture of the value created by efforts of public bodies. It could be discussed whether land value capture refers too to the capture of the value created not by public bodies but by other private parties than the owner. There is agreement too that land value capture refers to the capture of ‘land’ value increase, excluding thus the capture of the increase in value of buildings (Ingram & Hong, 2010, pp. 4–5; Smolka, 2013, pp. 8–9, 21). This paper does not elaborate on these discussions and uses the generic term ‘public value capture’ (excluding thus the term ‘land’) to include all instruments that capture all possible increases of the value of land and buildings.
3. Land-use regulation decisions are those that modify the land-use regulations to allow the new use and building possibilities. Often, these decisions precede the granting of building permit, but sometimes both take place at the same time.
4. Introduced by Section 34 of the 1932 Town and Country Planning Act.
5. See Muñoz Gielen and Tasan-Kok (2010) for a comparison of the collected contributions in privately developed land in the Netherlands, England and Spain.
6. A governmental programme of large-scale greenfield and brownfield developments that hosted most urban growth since the 1990s. Most sites were implemented through public and public–private development.
7. There is a distinction in European continental law systems between ‘public law’ or ‘administrative law’ and ‘private law’ or ‘civil law’. The first ones regulate the actions of public bodies by which they impose their actions on others, e.g. expropriation law and planning legislation. Private law regulates obligations between equal actors, no matter whether they are public or private, e.g. the Civil Code, that sets the rules by which disputes between equal actors must be resolved (Needham, 2006, pp. 24–25; Verhage, 2002, pp. 160–161).
8. Costs are ‘secured’ when there is certainty that there is, or will be, financial means available to pay them.
9. These evaluation methods presuppose that landowners bought their land for the market value of the future, more profitable building and use possibilities. This translates to the presumption that landowners already made large investments in land, even though they actually bought the land long beforehand for a much lower price. This creates an ‘artificial’ deficit, and as municipalities are not supposed to pass financial losses to the landowner, they must subsidize the costs. Thus, municipalities may be forced to subsidize the costs while landowners collect a substantial share of the land value increase.

10. We base this conclusion on regular participation in meetings of Dutch municipalities organized by the Dutch Federation of Municipalities to address this and related topics.

11. These 49 municipalities are: Aalsmeer, Albrandswaard, Barneveld, Bergen, Bodegraven-Reeuwijk, Bronckhorst, Castricum, Cranendonck, Dalfsen, Deurne, Doetinchem, Dordrecht, Dronten, Gennep, Giessenlande, Halderberge, Hellevoetsluis, Hendrik-Ido-Ambacht, Hollands-Kroon, Kampen, Katwijk, Langedijk, Lansingerland, Nederweert, Olst-Wijhe, Oud-Beijerland, Peel en Maas, Pijnacker-Nootdorp, Purmerend, Rijnwoude, Roermond, ’s-Hertogenbosch, Schagen, Schouwen-Duiveland, Sittard-Geleen, Soest, Tilburg, Veghel, Venray, Waalre, Waddinxveen, Wageningen, West Maas en Waal, Westland, Woerden, Woudenberg, Zaltbommel, Zuidhorn and Zutphen.

12. The Structure Visions address the contributions much more briefly than the specific policy documents studied in our research, and often, they do not offer enough information to actually ask contributions to developers. Usually they need to be detailed in specific policy.

13. We regularly participate in meetings of Dutch municipalities organized by the Dutch Federation of Municipalities dedicated to this and other related topics, and in a specific working group set up by this Federation to specifically address how municipalities negotiate contributions towards large infrastructure.

14. Before the 2008 Physical Planning Act, Dutch municipalities also introduced policy documents meant for collecting contributions towards large public infrastructure. These documents were often meant for gathering contributions from the own municipal public land development companies, and only sometimes for gathering contributions from private property developers. There was at that time no clear legal framework, and because municipalities were most of the times asking contributions to themselves, there was at that time not much scrutiny to this sort of policy. It was mostly meant for internal justification and use. The 2008 Act changed the legal framework considerably and this previous practice did not provide anymore a solid reference for further policy-making.

15. The method of data gathering does not exclude the possibility that some other municipalities than the studied do also dispose of specific policy on developer obligations that allow negotiating contributions for large public infrastructure. See later the case of municipalities asking contributions towards nature and landscape infrastructure based on provincial policy.

16. In case municipalities charge directly related infrastructure only on one or two development sites, it could be discussed whether there is need for specific policy. It might be enough when municipalities share with the developer internal inventories about necessity of infrastructure, cost allocation and so on. The situation is different when municipalities charge costs on a multitude of developers. Here, there is the risk of untransparency and unequal treatment of different sites.

17. The best example of this sort of provincial policies is the Limburgs Kwaliteits Menu, of the Southern province of Limburg (Provincie Limburg, 2014; Rongen, 2017; Van der Meulen, 2017). Under this provincial policy, 23 municipalities in this province have introduced in their own local policy (a Structure vision anyhow, and sometimes also specific, more detailed policy) the possibility of asking to public, non-profit and private developers in rural areas contributions towards improvement of natural and landscape qualities located off-site, serving large areas. Of this 23, 12 are included in the mentioned survey of BVH Ruimte bv (2013) and our own research (fall 2015), but 11 are not. This means that 11 municipalities, besides the previously identified 95 (see Section 4.2.1), do also dispose of policy allowing contributions that might be characterized as large public infrastructure. These data are, however,
not ‘hard’ enough because the sources do not clarify whether these municipalities do actually ask and obtain contributions towards large infrastructure:

- The contributions are often meant for other sorts of investments than large public infrastructure (e.g. demolishing houses in areas with saturated housing markets or demolishing agricultural livestock buildings). However, from 2003 till 2013, 241 small development sites in rural areas (mostly related to agricultural activities, the rest to housing, business areas, public infrastructure and facilities, etc.) agreed contributions in kind or in money towards improvement of natural and landscape qualities that could be categorized as large public infrastructure. In total, they provided 197 ha of new natural areas
- These contributions were often charged on public or non-profit developers, but sometimes also on private developers, which suggests that these practices might have some relevance for the scope of this paper.
- Similar policies have been introduced too in at least the provinces of Zeeland, Noord Brabant, Flevoland and Overijssel, but there are no available data that indicate whether they are relevant for the scope of this paper.

18. But probably a bit lower percentage, if we consider the provincial policies mentioned above.
19. These 11 municipalities are Barneveld, Doetinchem, Dordrecht, Halderberge, Hendrik-Ido-Ambacht, Lansingerland, Purmerend, Tilburg, Waddinxveen, Wageningen and Zutphen.
20. Recently, public officials of the central government are exploring together with experts the possibilities of regulating in public law contributions towards large public infrastructure that go much further than the actual scope of N-NDOs. These new N-NDOs would include some of the contributions towards large infrastructure obtained nowadays through negotiations.

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ORCID

Demetrio Muñoz Gielen http://orcid.org/0000-0001-6863-2336

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