

TPM

Territorial Performance Monitoring

Annexes

Monitoring Systems in NRW

Targeted Analysis 2013/02/13

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This report presents the interim results of a Targeted Analysis conducted within the framework of the ESPON 2013 Programme, partly financed by the European Regional Development Fund.

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Table of contents

1. Characteristics of existing monitoring systems.....	5
2. List of existing monitoring systems on different spatial levels.	5
2.1. NRW/state-level	5
2.2. Districts and Regional Planning authorities	7
2.3. Sub-regions	8
2.4. Municipal level	10
3. Requirements for the usability of monitoring instruments.....	10

1. Characteristics of existing monitoring systems

There are several monitoring instruments in North Rhine-Westphalia, which cover various topics. Their spatial coverage, however, varies a lot – some of them cover the entire federal state of NRW (NUTS 1). Other systems instead relate predominantly to the level of the districts (NUTS 2), to the level of the regional planning authorities, to the counties or even to single municipalities. The majority of monitoring instruments that cover the entire federal state concentrate on natural-scientific topics, for example climate change and biodiversity. Monitoring systems that cover the area of spatial planning are normally found on lower levels. This is due to the federal system in Germany and the associated decentralisation of decisions. An important principle of the German spatial planning – the mutual feedback principle – states, that within the development and structuring of the sub-regions requirements of higher levels have to be taken into account. At the same time, the interests of the sub-regions have to be considered by higher planning authorities. According to this principle the lower planning levels concretize the guidelines of state spatial planning. In order to meet these competences, current and continuous information of regional developments on the level of the districts as well as on lower levels are needed. As a consequence, there are a lot of monitoring systems which exist on regional or even lower levels.

The residential area monitoring systems, which are implemented by the regional planning authorities, only exist at the regional level. As will be explained later, due to problems concerning the comparability of the monitoring results, the state spatial planning is discussing an NRW-wide, standardised system at present. These efforts, however, only apply to the residential area monitoring system. It is not the intention of the state spatial planning to standardize and harmonize other monitoring instruments on the state-level. This is, as already explained, due to the distribution of competences between the different levels of spatial planning and explains the presence of a number of monitoring instruments on regional or even lower levels in NRW.

The existing instruments are mostly narrowly focused on specific topics, with this made clear by a number of examples: industrial site monitoring, biodiversity monitoring, water quality monitoring, etc. Integrated monitoring instruments are not found.

2. List of existing monitoring systems on different spatial levels

2.1. NRW/state-level

Residential Market Monitoring

The residential market monitoring in NRW exists since 1992, when the Ministry of Construction in NRW engaged the 'Wohnungsbauförderungsanstalt' to implement a state residential market

monitoring (since 2010 a department of the 'NRW.Bank' is responsible for the monitoring). The objective is to provide an information basis of the housing market for decision makers in politics, administration and housing industry. Within this continuous monitoring system different information from several data sources are combined. The residential market monitoring contains two elements: (1) within this survey of housing associations information about stock, rent levels, vacancy and rent arrears are requested once a year; (2) the 'Wohnungsbarometer' doesn't record 'hard' data, but moods and subjective assessments of housing market experts of actual and future developments in the housing market in NRW via questionnaires. The indicators used in the residential market monitoring are normally part of the official statistics. In the case of the absence of (current) data, the NRW.Bank conducts its own inquiry.

Biodiversity monitoring

On the basis of the Rio Convention, the biodiversity monitoring of the State Agency for Nature, Environment and Consumer Protection observes and documents systematically and **permanently changes of biodiversity in NRW**, especially in the light of changing use and environmental change. It consists of **different parts**:

Ecological area sample (being based on a representative net of 170 study areas of 100 hectares which were selected randomly. This monitoring collects data of (1) all biotopes with structural parameters; (2) all vascular plants; (3) occurrence of breeding birds; (4) genetically modified organisms etc.

- Habitat monitoring (observes the development of endangered or rare types of habitats; similar to the ecological area sample this monitoring collects data of (1) all biotopes with structural parameters; (2) state of preservation of FFH-types; (3) all vascular plants etc.
- Evaluation of contractual nature conservation and agri-environmental measures (the aim is to update and optimize funding guidelines and measures ; relevant agri-environmental measures in terms of biodiversity are (1) organic farming ; (2) diversified crop rotation ; (3) waterside areas etc.
- Environmental monitoring in the forest

Climate-sensitive species, e.g. dragonflies, shall be integrated into the biodiversity monitoring in NRW as well.

Water Quality Monitoring

The water quality monitoring in **NRW** is carried out according to the European Water Framework Directive and **identifies and assesses the ecological and chemical status as well as hydromorphological parameters**. Within this monitoring system, surface water as well as ground-water is examined. The first examinations took part in the year 2008, the second monitoring cycle is between 2009 and 2011. In the future, the water quality monitoring should be carried out **every three**

years. Responsible for this monitoring system is the State Agency for Nature, Environment and Consumer Protection. It includes different **indicators**: (1) invertebrate small animals; (2) plants and algae; (3) levitating algae as well as (4) fishes.

Humus Monitoring Agricultural Crop Land

The Humus Monitoring Agricultural Crop Land of **NRW** shall analyze the **consequences of climate change on the concentration of humus of agricultural crop land** during the next 15 years. The concentration of humus is measured **every year** since 2009 in 45 areas of three sub-regions in NRW. This monitoring system was initiated by the State Agency for Nature, Environment and Consumer Protection, but is implemented in cooperation with the University of Bonn.

Energy Agency NRW

The Energy Agency NRW collects data about electricity consumption, regenerative energy, energy prices, etc. since 1970. The analysis is based on quantitative statistical data.

Climate Impact Monitoring in a cross-sectored environmental monitoring

The Ministry of Climate Protection, Environment, Agriculture, Nature and Consumer Protection in NRW is **planning** to establish a climate impact monitoring system in **NRW**. In addition to direct **changes of precipitation and temperature** their **consequences for nature and environment** shall be analyzed as well. The objective of the monitoring system is to identify the effects of climate change at an early stage. Thus, future impacts of climate change can be pre-estimated to react in time and in an appropriate way. Thereby, damages shall be avoided or reduced and chances can be seized. Following the European Environmental Agency (EEA) **indicators** were selected which cover the following themes:

- atmosphere and climate (temperature, precipitation, snow etc.)
- water (groundwater, water temperature, surface waters runoff characteristics etc.)
- biodiversity (spread of common and rare plant species; length of the vegetation period; change of climate sensitive biotope types etc.)
- land (soil temperature, organic carbon etc.)
- agriculture (beginning of the apple blossom; sowing of corn and winter wheat etc.)
- forestry (risk of forest fires; phenology of beeches etc.)

2.2. Districts and Regional Planning authorities

Residential area monitoring

By virtue of an amendment to the NRW state spatial planning act dated 16 March 2010 the regional planning authorities in NRW are under the

statutory obligation to carry out so-called residential area monitoring systems. In the light of the objective of space-saving residential and transport area development, which is established in spatial planning in Germany, the residential area monitoring serves primarily to **record and observe municipal building land development**. By providing an **overview of the actual development of residential areas**, it facilitates the purposeful organisation of municipal and regional planning, thus serving as a basis for political decisions with regard to identifying and availing of unused areas or re-using existing or brownfield sites. Except for the administrative district of Münster, where residential area monitoring is still being worked on, **all the regional planning authorities** have such an instrument at their disposal. The residential area monitoring is updated by the different regional planning authorities in divergent cycles. What is **problematic**, however, is that a collective comparison of building land development and area needs in the individual regions is not possible on account of different recording criteria and the diverging allowance of the reserves imposed in the context of determining requirements. An NRW-wide, standardised system is therefore being discussed at present.

Besides the monitoring of residential areas the regional monitoring in the district of Düsseldorf covers four other themes or components:

- saving of raw materials
- retail
- free space
- transport

Beside the residential area monitoring, all regional planning authorities carry out analyses on the development tendencies in the areas of population, settlement, transport and economy. In the state of Düsseldorf the results of this analysis are published in the series 'Datenmosaik'. In order to address topical themes, this serial isn't published regularly and its main topics vary from each other. Other regional planning authorities do not publish the results of these analyses.

2.3. Sub-regions

Monitoring of commercially and industrially used areas in the Metropolitan Region Ruhr (ruhrAGIS)

The ruhrAGIS provides information about commercially and industrially used areas in the Metropolitan Region Ruhr. It includes information about address, scope, economic sector and the de facto land use of the different areas as well as information about type, scope, availability and quality of still available areas in the region. In combination with other digital spatial information (e.g. aerial views, maps, municipal planning data) qualified statements about structure, density, location and distribution of branches and firms in all of the 53 municipalities of the Metropolitan Region Ruhr are available. The monitoring system is independent from spatial and municipal borders and responsibilities. Therefore, it guarantees a standardized database as well as actuality of data. Responsible for the

ruhraAGIS is the business development of the 'metropole ruhr'. This is an association of eleven independent cities and four counties of the Ruhr region.

Regional Residential Market Monitoring

In cooperation with the NRW.Bank regional as well as municipal residential market monitoring systems have been established beside the state-wide system. Since there were no information about the character and the consequences of the interrelations between the residential markets in different municipalities, a regional residential market monitoring was initiated in the **eastern Ruhr area**. The objective of this monitoring system is to **examine regional interrelations on residential markets** as well as to **create incentives for cooperation between different municipalities**. The cities use this monitoring tool to analyse and compare their residential markets. Methodical wise it is based on **quantitative analysis** and is very similar to the system on the state level.

Dynaklim

Within this project a monitoring instrument for the continuous assessment of the impact of climate change in the **Emscher-Lippe-Region** (within the Ruhr region) shall be implemented. Moreover, the objective is to **monitor and evaluate the regional adaption capacity to climate change** and its **impact on the water balance** as well as the **efficiency of technical and non-technical adaption measures** via significant indicators. As a consequence, Dynaklim includes (1) interdisciplinary projects about the impact of climate change on the regional water balance, (2) pilot projects to test flexible adaption measures as well as (3) the preparation of implementation-oriented solutions of all technical, economic, political and social aspects in the area 'regional adaption'. A reconciliation with the Climate Impact Monitoring NRW shall be done. On this basis, regional adaption processes can be coordinated. Dynaklim is one of seven projects within the program 'Climate change in future oriented regions (KLIMZUG)' financed by the national Ministry of Education and Research (BMBF) between 2009 and 2014.

Monitoring within the evaluation of the program 'Soziale Stadt' in NRW

The monitoring tool is part of the evaluation of the program 'Soziale Stadt' in NRW. The evaluation concept was developed jointly by the involved partners (cities, City Network 'Soziale Stadt', partners from research and practice etc.). The objective is to **achieve deeper insights and knowledge about program results** as well as cause-effect relationships. At the same time the gained information about possible improvements of the project management shall be used to **stimulate learning processes in the city districts**. Therefore, **standardized indicators** are collected **once a year** in the involved cities. These indicators shall describe the socio-demographic and socio-economic situation in these areas and shall enable a comparison with the whole city, parts of the city as well as the entire program area. These indicators cover the following areas:

- population (age distribution; old-age and youth dependency ratio; birth and death rate; family structures; non-German population; migrations etc.)
- aid moneys (gender and age-groups of welfare recipients; non-german welfare recipients)
- school and education (transition rate of secondary school (Gymnasium))
- safety (traffic accidents)
- labour market (unemployment and gender, age-groups and citizenship; long-term unemployment; youth unemployment, employment etc.)
- land-use (land use structure)
- buildings, housing stock (subsidized housing; supply of living space, period of residence etc.)
- children and young (children care offers; youth welfare)
- health (preventive medical checkups; dental diseases; mortality)
- voting behavior (turnout)

2.4. Municipal level

Municipal Residential Market Monitoring

Beside the state-wide monitoring system, municipal residential market monitoring systems were initiated as well. They hardly differ from the state system; the most important difference is the **use of municipal and small-scale data**. The **indicators** are also very similar. Nevertheless, the **municipalities** decide on their own about the level of detail of their monitoring systems. This normally depends on municipal interests and needs, but also on personal resources.

Statistical Atlas

Some **municipalities** (e.g. Gelsenkirchen, Dortmund) in North Rhine-Westphalia have a statistical Atlas. These publications comprise demographic data, educational data, etc. It is an instrument for continuous and systematic observation of the previously mentioned cities.

3. Requirements for the usability of monitoring instruments

Problems sometimes occur with the access and compilation of monitoring results from the regional level by the state spatial planning. Cited as being problematic in this regard are the **different criteria and standards** on which the collection of data is based and which consequently sometimes

prevents the **comparability** of such data or makes it considerably more difficult. This applies not only to the residential area monitoring systems. But in this case, the state spatial planning department is aware of the need to standardise the data and is making endeavours in this respect. In addition to the problem of standardised statistical details and recording criteria, the question of **what developments are to be recorded** at all are of particularly great importance. These have not yet been compiled in a systematic manner; nor has it been determined what data are needed at all. It would be meaningful to collect management-relevant data, though it must also be clear in this regard what developments spatial planning would really like to control and monitor. The main areas addressed in this context contain residential housing, energy and the extraction of raw materials. Although use above and beyond this is assessed as desirable, it would appear to be outside what staffing capacities would permit. The **expense and workload** required to operate and update a monitoring system, for example, can become a problem. The main workload associated with a lot of monitoring systems, e.g. the residential area monitoring, will fall squarely on the shoulders of the municipalities which, like other administrative levels, are suffering from substantial **personnel constraints**. Especially within the residential area monitoring the active participation of the municipalities is the biggest problem of the regional planning authorities. There are municipalities which do not want to participate in the monitoring. Reasons for this are mainly personnel constraints. Other reasons are the **unwillingness to share internal data** as well as worries about a restriction of their local planning authority due to the disclosure of municipal data. Added to this is the fact that, apart from the regional spatial planning data, for example, the use of data from other departments of the district administration is often difficult. Linking with the data records of other departments would be of particular interest in this regard in order to observe how different developments influence each other, thus making it possible to manage them better in overall terms.

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