THEORETICAL FOUNDATIONS OF MUNICIPAL SPORT INFRASTRUCTURE DEVELOPMENT CONCEPTUAL PLANNING

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It is not possible to create modern municipal sport infrastructure unless the newest scientific findings are used. Kinesanthropology and other closely related scientific disciplines (mostly biomedicine, sociology, economy and urbanism) offer an important insight into the problem. Next to the above mentioned the proposed theoretical basis of municipal sport infrastructure conceptual planning is also based on the findings published in the “Sport and sport education development conception” documents for selected regions and towns within the Czech Republic, on various conference papers and on other countries’ case studies. The method proposed in this article represents a new perspective of the demand oriented sport infrastructure planning, differing from the traditionally recommended way of sport infrastructure planning on the basis of urbanistic norms.

Keywords: Conception, municipal conception, sport infrastructure, grant policy, communal recreation.

INTRODUCTION

Sport infrastructure and other kinds of municipal leisure infrastructure represent one of the basic conditions to be met in order to let the local residents satisfy their collective and individual needs related to sport and exercising (Hodaň, 1997; Dohnal, Hobza et al., 2007). During the last twenty years, developed west European countries have been systematically developing their sport infrastructure, being aware of the great impact it has on the life of the community, of the very complex set of functions it fulfills (Felderer et al., 2006; Weber et al., 1995; Howard & Crompton, 2004 and other), of its role as a health influencing factor (Nearly, 2002; Oja, 2004; Pate et al., 1995; Philips et al., 1996) and a factor determining the degree of citizens’ contentment and their other needs. In developed countries, the basic sport infrastructure has been built according to standards and norms different for each country. Despite the different norms the countries are now facing an identical set of issues – full use is not made of sport facilities because of the recent shift in customer demand, driven by newly emerging sports. From the economic point of view, this has a common impact – unpleasant repercussions on municipal budgets – loss generated by the unused facilities have to be covered.

Western countries have lately been developing new development conceptions to be able to respond to citizens’ needs while using the already existing facilities. Urbanistic norms still being used, the core main tool governing the leisure infrastructure development are now extensively elaborated capacity calculations.

The article talks about ways to use, to its full extent, the municipality’s potential to provide for sport (and other leisure) infrastructure.

METHODOLOGY

Municipal sport infrastructure conception planning is based on analyses of the current development of municipal polities, on an analysis of the Czech Republic’s legislation and its budget, on the ongoing expert and scientific discussion on the non profit sector grant policy and on expert discussions on urbanistic norms related to municipal social infrastructure.

The issue being mostly an economic and conceptual one, we used mostly qualitative research methods. Analysis and synthesis of primary data, gathered in the researched municipalities (regions, towns and villages) helped us to model optimal variants of sport infrastructure development. We then compared our model with the German one (used in eastern Europe) and drew up a theoretical basis of a municipal sport infrastructure conception. The final capacity calculations were based on demand oriented calculations by the Bundesinstitut für Sportwissenschaft (Federal Sport Science Institute, BISp) (BISp, 2000).

Differences in the way different municipalities (regions, towns and villages) conceive the support granted to sport infrastructure development

Regions, towns and villages base their development of sport activity conceptions on a very similar basis.
of the sport infrastructure conception development in regions, towns and villages and documentation backing them.

**Relationship between the sport development conception**

**Documents with other conceptional documents**

Sport development conceptions have, like any other ones, a systematic inner structure and are linked to a number of other conceptual materials related to sport, mainly to the following:

- European Union’s Conceptions (European Sports Charter, 2002; Sport and EU, 2004; White Book on Sport, 2007, etc.),
- the Czech Republic’s conceptions worked out by various different ministries (Act No. 115/2001, on the support granted to sport activities and the following resolutions),
- conceptions worked out by the Ministry of Education, Youth and Sport’s expert committees (directives and methodical instructions),
- conceptions worked out by local self governments,
- other kinds of scientific papers and findings (see bibliography).

Mainly the analytical part of the conception develops theoretical foundations, serving as a basis for final project conclusions. Particular sport and sport education trends are defined within the proposed grant policy and are linked to the basic orientations of the regional development programme and its individual parts (“Human resources”, “Tourism development”, and “Service development activation”).

Simultaneously, a link is proposed to the approved territory planning documentation; investment plans and operations subsidies are dealt with according to the subsidiarity principle, i.e. within the region, town and village development areas, and for individual domains (culture, sport and leisure, education, health care, etc.) by an independent and target oriented grant policy. The grant policy is linked to current budgeting processes as well as to planned regional development. The complex and diverse character of the theoretical foundations underlying the conception is shown on Fig. 1.

The main chapters of the currently developed “Sport and sport education conceptions” are usually structured as follows:\(^1\):
Fig. 1
Sport and the sport education conception in regions – theoretical foundations

| Demography, natural, historical and cultural conditions | Government and local self government documents on sport and communal recreation |
| Development of linked conceptions (sport and sport education, territory development, etc.) | Sport services demand and offer analysis (including commercial offers) |
| Current life style trends, health promotion, economic growth promotion | Urbanistic norms |
| Economic principles and customs, budget constrictions, support by grants | System of the putting into practice of chosen conceptions (grant and non grant support) |

Factors directly influencing the sport and sport education conception in regions

I. **Analytical Part**
   1. Region defined.
   2. Conception documents outlined (sport in the EU, in the Czech Republic and on the given territory). Current local (mainly tourism) conceptions analyzed.
   3. Inhabitants value orientations analyzed.
   4. The state and level of the given sport, sport education and recreation analyzed.
   5. Sport, sport education and sport recreation offers on the given territory analyzed.

II. **Structured overall SWOT analysis** of the conditions necessary to introduce sport programmes within the region.

III. **Action plan** aiming at sport, sport education and sport recreation development.

IV. **Grant policy**, time schedule and financial restrictions.

**Regional grant policy scheme: Grant policy proposal**

As we have already mentioned in the previous chapters, the current regional subsidy policy applied to sport activities comprise grant as well as non grant support. The two differ significantly, not only they rely on different kinds of decision making processes (from which are derived the sums allocated to individual subjects) but also by the way that links them to sport and sport education conceptions. Meanwhile the grant policies take into consideration different factors and are developed on an analytical basis (Fig. 2), the decision making on non grant policies is direct, carried out by regional representatives. In this group are mostly included decisions on support granted to significant sport clubs, large regional as well as international events, etc.

The sport and sport education conceptions are related to a number of fields promoting physical activities development. They are not solely oriented to sport and sport organizations, neither do they concentrate solely on leisure time activities. We have already specified that
they comprise the development of different kinds of activities, listed below as priorities:
- creating sport and sport education infrastructure,
- a good quality of services being offered in the field of sport and sport education,
- human resources development in the field of sport and sport education,
- marketing and marketing communication in the field of sport and sport education,
- creating a sport and sport education management system.

Regionally appointed committees recommend concrete priorities picked from the above mentioned list, taking into consideration sport and sport education development orientation as well as financial restrictions, e.g. the Infrastructure programme might be given priority over the Service quality programme, or vice versa. The grant attribution procedure on the regional level is finished by their communication and assessment and allocation of means and control.

Grant policy scheme in towns and villages: Grant policy proposal
On the local level (towns and villages), sport and sport education promotion follows principles similar to the ones used at the regional level. Differences among the regional and local approach can be summarized as follows:
- towns and villages, unlike regions, dispose of their own sport infrastructure, and are therefore more oriented towards their own property,
- towns and villages dedicate, on average, two (or more) times more budget resources to sport and sport education than regions. Investment related budget repercussions evidently influence their future budgets,
- towns and villages vary to a very large extent in their plans related to sport and sport education (unlike the regions). They emphasize not only sport and sport education but also communal recreation, development of sport activities organized by local clubs as well as leisure activities related tourism,
- support granted to local sport clubs may often be provided in a hidden way, e.g. by free or cheap leasing of local sport facilities,
- towns and villages (unlike the regions) also take into consideration space organisation rules, as defined by urbanistic norms. On the other hand, they do not take into consideration capacity calculations, according to which an expansion or reduction of current sport facilities capacity may be recommended.
Towns and villages also do prepare their sport development conceptions but, unlike the regions, their conceptions often fall under other ones, for example under the communal recreation conception, leisure activities conceptions, tourism and sport development conceptions, etc. Most of the towns above 20 thousand inhabitants, however, do prepare independent sport and sport education conceptions.

In the Czech Republic, three basic conception trends can be distinguished. According to these, sport and sport education shall be developed through:
- town and village owned facilities,
- direct grant and non grant support of sport and sport education, and
- a combination of the promotion of municipal owned sport infrastructure and grant and non grand support of sport and sport education.

The basic framework governing sport and sport education development at the municipal level is given by the creation of sport and sport education development conceptions. These conceptions usually have the following structure:
- legislative and organisational conditions,
- needs and demand analysis (for all population groups),
- current offer of sport activities, sport education and leisure activities within the given territory analysis,
- demand and offer assessment, comparison with other municipalities and norms,
- capacity calculations,
- SWOT analysis,
- action and conception plan,
- specifying the development fields,
- developing municipality’s own assets for sport and sport education,
- proposing financial and realizational limits, grant policy.

Municipalities more and more often prefer building their own sport infrastructure, including leisure facilities, to using leased facilities. This is also why the grant policy becomes rather a complement to the overall sport and sport education conception.

The basic scheme governing the grant policy in towns and villages does not, methodically, differ from the regional schemes. However, it has some specific features – a municipality’s own facilities and tradition of concrete, local favourite, successful and traditional sports. Sport based recreation is usually provided for by local sport facilities owned by the municipality, performance oriented sport and recreational sport are organized mostly by clubs and associations which are supported by the municipality’s grant policy. Municipalities not owning any sport facilities usually work on the basis of a full grant system.

Non grant policy (i.e. budget subsidies, provided without tender), is applied mainly to support performance oriented (professional) sport and will probably always be a part of political and interest related decisions.

Fig. 3 shows the way grant policy is created on the municipal level. It demonstrates clearly that grant procedures do not concern the development of the municipality owned facilities.

Urbanistic norms represent one of the tools helping to equip municipal areas, including the implementation of sport infrastructure. Nikodym (2001) partially updated the norms, which have, however, been going through more revision and consulting – another reform is being expected. TABLE 1 describes the situation.

<table>
<thead>
<tr>
<th>Activity</th>
<th>Exercising surface (m²/inhabitants)</th>
<th>Usable surface (m²/inhabitants)</th>
<th>Inhabitants (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Organized sport education</td>
<td>1.99</td>
<td>2.88</td>
<td>6</td>
</tr>
<tr>
<td>School sport education</td>
<td>1.79</td>
<td>2.22</td>
<td>19</td>
</tr>
<tr>
<td>Non organized sport education</td>
<td>1.31</td>
<td>2.14</td>
<td>75</td>
</tr>
<tr>
<td>Total</td>
<td>5.09</td>
<td>7.24</td>
<td>100</td>
</tr>
</tbody>
</table>

Defining needed municipal sport infrastructure through capacity calculations

It is possible to define the ideal recommended need level of sport and recreational facilities for the community by comparing current citizens’ needs, local sport product offers and urbanistic norms with capacity calculations. The following case study illustrates the way capacity needs in the municipal sport equipment infrastructure are calculated. This kind of calculation has not yet been applied in the Czech Republic, they are currently being tested – it is assumed that, as a result of a changing population’s demand and its orientation to new sports, significant changes have been and will be happening in the way current sport infrastructure is used. A need has arisen and will continue arising to reconstruct the current infrastructure not only according to the population’s demands, but also on the basis of healthy life style stimulation initiatives.
According to the German example (see the case study), financial support in the field of sport infrastructure (sport grounds, sport halls, swimming pools), rendered by the municipalities, can be conceived of as support of infrastructure available to all citizens interested in sport activities, according to their preferences and based on their demands. Until the 1990’s, the sport facility equipment rate was based in Germany on the so called “Golden plan for health, games (sport) and leisure” and, step by step, applied and put in practice on the entire territory of the Federal Republic of Germany – common methods and defined urbanistic norms were used. In the 1990’s, however, the population’s demand for sports and recreation started to change (Opaschowski, 2000). Meanwhile, as a result of the improved sport infrastructure, the number of members of the sport active population in Germany rose to as much as 75% of the population, the highest increase being represented by older population groups. At the same time, there was a fundamental change in people’s motivation – sport started being perceived as an activity of a non-competitive character, performed rather to keep oneself healthy, to entertain oneself and to relax. New kinds of sport and sport activities were created and some of the old, previously highly popular sports became less favoured and less widespread. In the general perception, sport on the communal level is no longer perceived as a performance oriented competition activity, but rather as a game, as entertainment and relaxation for an active majority of the population. As a result of this opinion shift, a lot of commercial facilities were created – they were able to respond very flexibly to the population’s new needs and added to the traditional offers furnished by both traditional sport clubs and new communal sport facilities. The newly created communal sport infrastructure became gradually less and less used and effective, its creation not having been demand driven and not having taken into consideration the population’s prefer-
ences (neither the previous nor the current ones). As a result of these circumstances, the BISp created and recommended new methods. Their application is based on scientific findings and on a recommended set of procedures – a study on all population groups’ needs in the field of sport designing the proportions of new sport infrastructure, closely linked to its current state (BISp, 2000; Bach 2001; Bach, 2005; Nagel, 2006).

Since, in the Czech Republic, no verified capacity calculations have been used so far, that would enable sport infrastructure dimension planning. We refer to an abbreviated case study that can illustrate the aforementioned.

Case study
Town of Rottenburg/Neckar, Germany.

Demand oriented requirements on sport infrastructure: Basic procedure
The basic question to be asked when developing demand oriented sport infrastructure is: “How many citizens within a community practise exercise sports, what kind of sport activities (sports) are exercised and how much time is spent on them?” (BISp, 2000). The answer defines the basic needs in the field of sport infrastructure (its volume, i.e. units of sport facilities as well as its configuration). This is a four step procedure:
- sport offer, including sport activities offering a survey,
- a sport facility related population’s needs survey,
- a sport facility current state analysis,
- sport equipment’s current state and a population’s needs balance.

School sport is not included in the planning. The result of the procedure represents an assessment of capacities (facilities) – it says which ones are redundant or not used, which ones are not sufficient and what kind of them should be added.

Capacity calculations
The total sport facility need (KSZ) is calculated as follows (BISp, 2000):

\[
(1) \text{KSZ} = \frac{E \times QA \times fpr \times F \times T \times ft}{Bd \times Kw \times fa}
\]

E - number of inhabitants living in the community
QA - actively sporting inhabitants ratio
Fpr - preference factor for particular kinds of sports
F - frequency of sport activities per week
T - time consecrated to sport
Ft - allocation factor (sport allocated to a particular facility)

Bd - capacity load factor
Kw - technical utilization capacity of the facility per week
Fa - utilization factor

Definition of the scope of sport facilities is done in three steps:
a) First, the number of sport exercising citizens, actively using the sport facilities by practising exercise and sport activities (Esp), is calculated for all kinds of sports.

\[
(2) \text{Esp} = E \times QA \times fpr
\]
b) Based on the number of active sports practising and exercising citizens (according to individual sport activities) and the average of sport exercise done per week and the average length of sport exercise in the particular facility, the “sport facility need, Ksp” is calculated.

\[
(3) \text{Ksp} = \text{Esp} \times F \times T
\]
The F and T parameters are defined separately for each kind of sport and for the summer and winter seasons.
c) In the end, the sport ground needs are calculated according to the following formula: Faculty of Education.

\[
(4) \text{KSZ} = \frac{\text{Ksp} \times ft}{Bd \times Kw \times fa}
\]

Individual sport activities are assigned to various sport facilities. Therefore ft represents an accumulation of sport activities within one type of sport facility. The principle of different summertime and wintertime use of these facilities is respected. According to methodical rules, weekends are used for matches, therefore the Kw indicator takes into consideration 5 days in a week only of use. The real utilization factor depends on specific circumstances influencing the way the particular facilities, sport grounds and type of sport function – switch over times, cleaning and maintenance pauses, etc. (For example, in the case of grass playgrounds, the fa indicator is set at the level of 0.3 only – it wears down rather easily.) The final result attained by the aforementioned methodical procedures is put into a table showing – the current state of the facility – defined (detected) need – difference. For a concrete example, please see the aforementioned Rottenburg/Neckar (Germany) case study (Nagel, 2006).

The balance shows a surplus of sport halls and sport grounds (even if sports are accumulated in one facility) and a lack of swimming pools, mainly the indoor ones. When the demand was analyzed, the demand considerably exceeded the offer, mainly during winter4.

TABLE 2
Current state vs. needs balance - sport facilities and playgrounds (in facility norm units)

<table>
<thead>
<tr>
<th>Sport facilities</th>
<th>Current state</th>
<th>Need</th>
<th>Balance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sport halls</td>
<td>37.00</td>
<td>28.24</td>
<td>+8.76</td>
</tr>
<tr>
<td>Sport grounds</td>
<td>38.00</td>
<td>30.27</td>
<td>+7.74</td>
</tr>
<tr>
<td>Indoor swimming pools</td>
<td>1.69</td>
<td>3.49</td>
<td>-1.80</td>
</tr>
<tr>
<td>Outdoor swimming pools</td>
<td>2.48</td>
<td>2.83</td>
<td>-0.35</td>
</tr>
</tbody>
</table>

CONCLUSION

The current stage of any municipality’s development is characterised by a continuous improvement of their technical and social infrastructure and transport. Municipalities, helped by subsidiarization decision-making processes and a linked financial decentralization, have, more often, both the competency and financial opportunities to decide on their development, including resource allocation. Social infrastructure covers both sport and sport education infrastructure, which becomes increasingly important (after the completion of the municipality’s technical infrastructure (technical, transportation, etc.). The Department of Recreology works on Sport and Sport Education Development Conception projects for regions, towns and villages. It has, therefore, sufficient experience working on these projects at different levels of state administration and local self-government. These conceptions are based on local conditions, they show however some general regularities, on the basis of which it is possible to create a scheme of generally-applicable steps, leading to the creation of a system-based, demand-oriented conception, applicable in practice. The theoretical foundations of these conceptions are based on an interdisciplinary view of the physical culture and healthy life-style and enriched by the experience provided by our own research as well as by foreign countries’ experience, which also works with capacity calculations.

REFERENCES


Usnesení vlády č. 718/1999 k zásadám komplexního
zabezpečení státního sportovní reprezentace.
Usnesení vlády č. 17/2000 k národnímu programu rozvoje
sportu pro všechny.
Usnesení vlády č. 114/2001 o zásadách vlády pro poskyt-
tování dotací ze státního rozpočtu ČR nestátním nezisk-
vým organizacím ústředními orgány státní správy.
Usnesení vlády č. 673/2003 ke směrům státní politiky ve
Zákon č.115/2001 Sb., o podpoře sportu.

TEORETICKÁ VÝCHODISKA KONCEPČNÍHO
PLANOVÁNÍ ROZVOJE SPORTOVNÍ
INFRASTRUKTURY V MUNICIPALITÁCH
(Souhrn anglického textu)

Současná etapa rozvoje municipalit je charakteri-
zována stálým zlepšováním a zdokonalováním jejich
technické, dopravní a sociální infrastruktury. V rámci
subsidiarizačních rozhodovacích procesů a s nimi
související decentralizace finančních prostředků mají
municipality více než v dřívějších dobách možnosti –
kompetenční i finanční – rozhodovat o svém rozvoji
včetně alokace zdrojů. Do sociální infrastruktury patří
sportovní a tělovýchovná infrastruktura, která po do-
budování technické infrastruktury obce (technické, do-
pravní atd.) v současné době nabývá na významu.

Katedra rekreologie na základě veřejných zakázek
zpracovává projekty koncepce rozvoje tělovýchovy
a sportu krajů, měst a obcí, má tedy dostatek zkušeností
ze zpracování těchto koncepcí na různých stupních stát-
ní správy a samosprávy. V koncepcích, které vycházejí
z místních podmínek, je možno specifikovat obecné
zákonitosti, na základě nichž lze vytvořit schéma obecně
platných postupných kroků, vedoucích ke zpracování
systémově založené, poplatkovo orientované koncepce,
uplatnitelné v praxi.

Teoretická východiska zpracování těchto koncepcí
vycházejí z interdisciplinárního pohledu na tělesnou kul-
turu a zdravý životní styl člověka, jsou však doplněna
o zkušenosti z vlastního výzkumu a ze zahraničí, kde
jsou nавíc aplikovány kapacitní propočty, vedoucí
ke stanovení potřebné infrastruktury jako podmínky
k potenciálnímu rozvoji předmětné oblasti podle přání
a potřeb místních obyvatel.

Klíčová slova: koncepce, municipální koncepce, sportovní
infrastruktura, grantová politika, komunální rekreace.