Abstract

Affecting the stability of local societies in the long term, socio-economic and safety risks in an area are a vital topic these days. One such risk is the use of illicit substances. So as to identify this risk, modern IT-based technologies of data collection can be used. In addition, an effective solution of this approach requires a connection with other entities of territorial administration. This paper presents an example of strategic management and the application of the knowledge of social-economic processes within a local area using modern technologies. These will be practically presented on the example of the “DRAGON2 – From measuring to solving” project. It aims to create an integrated strategy to tackle the use of illicit substances in seven cities most beset with this issue in the Moravian-Silesian region, which is a high-risk area from the social perspective in the Czech Republic. The main contribution of DRAGON2 is the application of acquired data, by adding monitoring strategies which will facilitate tackling the issue of illicit substances and drug addiction, and which will combine public territorial administration (regions, municipalities) with organisational units active in the given area (the Police, health institutions, etc.).

Key words: city-level drugs policies, strategic management, social and safety risks, spatial analysis.
Introduction

We live in a time of major transformation processes which are not only influenced by a transition towards a market-orientated economy, but also have much deeper causes resulting from shifts of the social structure of the population. One characteristic feature of modern society is marked differentiation of lifestyles and concomitant individualisation of society, leading to a reduction in and intensity of interpersonal bonds. What takes place is a socio-spatial segregation, i.e. a division into „social worlds“ which bottle up by ceasing to communicate with one another. Elimination of social bonds and social structures built up over long time results in the spread of social risks which embody a host of current major problems of modern society (Keller 2010).

Current socio-economic changes in society and significant migration of the population, associated with an instability of housing and a decomposition of social groups (families, communities, neighbourhoods), bring about (repeatedly, from the historical perspective) an increase in social risks. Consequently, traditional social institutions and professions are degrading, and economic polarisation of the society is increasing, which results in the rise of regional differences, at the urban level, in particular, by an increase in excluded areas – ghettos, the number of people living in hostels, the occurrence of homelessness, low-income households (mainly the elderly and single mothers), the occurrence of criminogenic factors, social tension, indebtedness, poverty, insecurity (Hruška 2012).

Safety risk is defined as a threat to an individual’s integrity or a social formation as a whole with an act of crime. It involves not only an objective occurrence probability of a specific event threatening a person, health, property and similar entities, but also a probability perceived subjectively (Buriánek 2001). The population’s feeling-of-threat model stems from a whole host of factors (see Pecháčková et al. 1998). It is a combination of objective reality markedly influenced by the way presented by the media, and personal qualities, such as vulnerability (the ill and the elderly) combined with by-standers’ indifference during an assault. Also, it is defined by people finding themselves in risk areas, mainly unclear areas (parks, underpasses, uninhabited public places) or areas with high occurrence of potential perpetrators of crimes (pubs, gambling halls, areas in the vicinity of hostels/hotels).

Presently, crime is being perceived as an increasing problem, historically more spread in industrial urban areas and agglomerations, mainly in the Moravian-Silesian and Ústí nad Labem region. The Czech Republic has seen a decline in the crime rate. By contrast, industrial cities, such as Ostrava, Karviná, or Orlová have been recording rising crime rates, in particular since 2005; besides, a major issue in these areas is a significant rate of unreported crimes. These processes have to be intertwined with a rise of the aforementioned social risks and their impacts, specifically with the reduction in purchasing power of whole segments of population, with an increase in unemployment and a rise in homelessness.

The risks can’t be assumed to decrease; in fact, suffering from the impact of the recession, the risks are bound to increase. One of the key social risks is considered the loss of one’s home, which could be caused by a divorce, an illness or a loss of one’s job. Both the unemployed and low-income employees face rising problems associated with the costs of living, as housing is becoming unaffordable and thus dilapidated. Groups
most afflicted are the elderly and single mothers. The current issue regarding hostels is merely one demonstration of this process; for instance, in 2013, there were 37 hostels in Ostrava, with 5,471 clients, of whom approximately 2,000 were receiving housing benefits (Hruška et al. 2013). Another example of the increase in risks can be seen in the deteriorating state of public places, in the increase of pathologic phenomena in the society, and the feeling of threat, observed in the elderly citizens in the risk areas.

Another risk factor is an increase in the users of illicit substances, who belong to the most frequent perpetrators of crimes against property; for illustration, drug users amounted to 75% of thefts from vehicles, and 54% of aggravated robberies, out of captured offenders of the crime in question (Hruška et al. 2015).

1. Integrated approach as a solution to safety and social risks

A specific tool of the EU regional policy and community planning for implementation of the territorial dimension are integrated approaches, whose particular benefit is a higher quality of strategic and community planning, management and a more effective allocation of resources to individual areas. They are based on a factual (appropriately and logically intertwined, and necessary thematic/sector interventions), spatial (interventions within an geographically and economically appropriate connected territory) and temporal (realistic schedule, and temporal and factual harmonisation of interventions) complexity of interventions, implemented on the basis of a good-quality territorial-development strategy. At the same time, they are a strongly promoted manner of fund implementation in the development of regions and municipalities by the EU.

In crime prevention, integrated approaches represent a tool to reach a better quality of planning within a territory, management, and a more effective allocation of financial resources. In general, integrated approaches require temporal, territorial and causal complexity of each type of intervention. Integrated principles of strategic management, which connect concepts of housing, crime prevention plans, community planning and other strategies, are, if data is gathered, evaluated and applied properly and if analyses are created and adequately used, a suitable means to reduce social and safety risks. A necessary condition to ensure a functional integrated approach is maintaining the complexity of competencies through organisations at each administrative level and in each administrative entity.

1.1 Integrated approach for solving drug issues

ACCENDO – Science and Research Centre in conjunction with T. G. Masaryk Water Management Institute, have been in charge of two projects dealing with the occurrence of illicit substances in sewerage system:

- The DRAGON project: “Defining the amount of illicit substances and their metabolites in communal sewage – a new tool to supplement data on drug consumption in the Czech Republic”. The project aims to improve statistical methods of evaluating drug use and to obtain new information about the use of illicit drugs in the Czech
Republic, using these to implement an integrated, prevention-based strategy. Official figures about the spread of illicit substances in the society are mainly based on surveys of drug users, medical reports, crime statistics and observations of the production of drugs. These information provide an approximate image about the use and consumption. This is the reason why experts started seeking other possibilities of quantifying “real” data on illicit-substance consumption.

- **DRAGON2**: from measuring to solving: Using a new instrument to measure the occurrence of illicit substances in cities of Moravian-Silesian region through an integrated strategy for state agencies and public administration. Objective: to connect analytical methods of measuring and socio-economic processes within a territory as an extension to current strategies, resulting in a unified integrated approach.

Such unified integrated system is based on developing new analytical methods and processes in measuring illicit substances in sewage; the crucial activity is measuring and evaluating socio-economic processes within a territory through qualitative and quantitative methods of research, including an interpretation of outcomes, using multi-criterion analyses and predictive models. This approach can make use of tools for mapping crime and other socio-pathological phenomena, including social- and safety-risk prediction (using IBM SPSS, ORACLE, ESRI – ArcGIS software); the mapping process requires field data gathering carried out by social workers, addictsologists, medical and law-enforcement agencies (the Police, metropolitan police).

**Current loopholes in the application of an integrated approach**

1. ambiguous global objectives of anti-drug policy,
2. resulting vagueness of measures to be applied by anti-drug agencies,
3. each group pursues different objectives, which leads to fragmentation, misunderstandings and a low effectiveness of all activities,
4. this situation is enhancing the expansion of drug users and dealers,
5. entities of anti-drug policy fail to possess a clearly defined authority that would lead towards attaining a global objective,
6. the current situation leads to mutual conflicts and clashes of wills during fulfilment of specific objectives.

Entities of anti-drug policy are financed mainly from the state budget, from the tax-payers’ money. They are established by the government or belong to the non-profit sector. These entities have to bear in mind the global objective of the national anti-drug policy, thus subjecting their specific tasks to this idea, so as to support their own reason for existence. The global objective for all citizens of the Czech Republic has always been to reduce the number of drug users, to enhance preventative activities, i.e. to reduce supply of and demand for illicit substances, which needs to be accompanied by an increase in repressive measures, similarly to other countries of the EU. The definition of the global objective needs to be based on the document with the ultimate legal power: the Czech constitution, with the following preamble: *We, the citizens of the Czech Republic in Bohemia, Moravia and Silesia, at this time of the reconstitution of an independent Czech State, true to all the sound traditions of the ancient statehood of the Lands of the Crown of Bohemia as well as of Czechoslovak statehood, resolute to build, protect and develop the Czech Republic in the spirit of the inalienable values of human dignity and freedom as*
the home of and free citizens who are aware of their obligations towards others and of their responsibility to the community, as a free and democratic State founded on respect for human rights and on principles of civil society, as a member of the family of European and World democracies, resolute to protect and develop their natural, cultural, material and spiritual heritage, resolute to take heed to all the well-proven tenets of law-abiding state, have adopted this Constitution of the Czech Republic through our freely elected representatives.

As yet, the objective of Czech citizens has not been to avoid having a large community of drug users, addicted to drugs since an early age. When setting up the global objective, prediction of the drug-addicted society’s development should be considered, in other words not the current goal, but the challenges to be faced. A prediction needs to be carried out about the effects this approach will bring, which social values will be irretrievably destroyed (what is usual and unusual) and how it will impact on the society, for instance by reducing the adult and young population’s ability to work, by reducing the population’s motivation to develop their area or by reducing the population’s motivation for further education. The question is whether this is a process that is sustainable for the development of the society and to what extent it is in line with the social sustainable-development principle, which is one of the main objectives of the EU policy.

We need to create a way and an environment that would protect mental and physical health of the society. We need to adopt necessary laws, to define financial means, set up global and specific objectives, and require their fulfilment by entities enforcing the anti-drug policy. We should make use of arguments and possibilities in applied research, which reflects on the needs of the public interest, without any personal bias. The fundamental rule is based on a factual approach towards these factual issues.

Consequently, the global objective of the anti-drug policy has to be to reduce the number of drug-users, which needs to be the objective of strategies in the individual regions and cities. So as to reach this objective, drug-consumption will have to be monitored, which will be based on all available data on the drug situation.

1.2 Integrated approaches towards public policing

Originally, police activity was following “reactive, incident-driven ‘standard model of policing’” (Goldstein 1979). Hence the police were more focused on the immediate problem rather than its causes. This situation called for a shift in the mindset, which gave rise to three innovative approaches towards public policing, namely intelligence-led policing, problem-oriented policing, and evidence-based policing based on analysis, more than a direct response (Chainey 2015).

Intelligence-led policing (ILP) involves using intelligence to inform police decision-making, rather than a purely responsive police strategy, e.g. tackling the problem of repeat offenders (using intelligence) rather than just responding or reacting to offenders. ILP involves systematic analysis through the generation of intelligence products to identify patterns, with a focus towards developing analysis on people (offenders and victims) and places (locations, buildings, and facilities). ILP also involves the sharing of information and collaborative work with partner agencies, such as local government, the fire
service, corrections service and health service (to tackle drug and alcohol misuse, for instance) (Chainey 2015).

**Problem-oriented policing** (POP) involves ensuring that any crime or public safety issue that is causing concern is properly understood, with a focus towards dealing with its causes, rather than just reacting to individual events. POP involves being crime specific by breaking the problem apart into smaller and more manageable pieces, influencing decision-making with good analysis, recognising the importance of the immediate situation, temptations and opportunities in determining offending behaviour and vulnerability, thinking through how a given response will work, and then measuring response impact (Chainey 2015).

**Evidence-based policing** (EBP) primarily involves determining what is effective. Practically, it involves the generation of evidence and the use of evidence. By *evidence*, this does not refer to evidence from a crime scene to assist a prosecution, but evidence in the scientific sense that explains how a particular initiative works and what its impact is. Generating evidence involves conducting empirical research that uses robust evaluations of police activity. Using evidence involves drawing from robust scientific evidence on the outcomes of police work to guide police activity. EBP can involve the generation and use of evidence on specific crime problems (e.g. burglary), on improving practices (e.g. hotspot policing), and improving policies (e.g., offender rehabilitation). EBP not only involves applying effective methods, but also requires police decision-makers’ determining in what ways (i.e. conceived, implemented, and sustained) in order to shed light on why the methods were effective. Also, it also involves a thorough understanding of the problem to ensure that “the aspect of effectiveness” is translated into the context into which it is to be applied. In turn, this can help police-decision makers understand what is likely to work (particularly if there is limited evidence-base) (Chainey 2015).

1.3 **Analysis of the drug situation at the city level**

Knowledge of the current drug situation is a key part of an effective anti-drug strategy, which is also what realised other cities that developed their systems to monitor the situation: Amsterdam, Bergen, Frankfurt, Bordeaux, Lille, Marseille, Metz, Paris, Rennes, Toulouse (EMCDDA 2015:12). Their systems combine data sources (both qualitative and quantitative), using ongoing and ad-hoc methods of evaluation. The following qualitative and quantitative data sources were used in mapping the drug situation in seven cities in the Moravian-Silesian region in terms of the DRAGON2 project:

1. **Youth’s approach towards drug use** A survey of attitudes and experience with the use of illicit substances,
2. **Data on users** Semi-structured interviews with participants in the drug situation (field workers, metropolitan police officers, etc.),
3. **Intravenous drug use** Metropolitan police Ostrava – collecting of used syringes within the city of Ostrava over 2008-2013 + data from Renarkon,

Samples of raw sewage automatically collected in each city on a 24-hour basis, not necessarily only the sewage in the purification plants. The method of on-line SPE-LS-MS/
MS provided the concentration of drugs. From these values, daily consumptions were back-calculated. The following drugs and their metabolites were observed:

1. 3,4-methylenedioxymethamphetamine (MDMA – Ecstasy),
2. Amphetamine (AMF),
3. Metamphetamine (MAMF – crystal meth),
4. Cocaine (kokain),
5. Morphine (opioids),

Drugs used most frequently in all seven cities (Table 1) are marijuana and crystal meth, both of which considerably exceed the consumption of other illicit substances. The highest consumption of marijuana was recorded in Bruntál; of crystal meth in Ostrava. The lowest consumption of crystal meth was in Bruntál (910.1mg/1000 residents).

Table 1. Consumption of illicit substances in cities [mg per 1000 residents]

<table>
<thead>
<tr>
<th>Area</th>
<th>Period</th>
<th>Marijuana (THC)</th>
<th>Crystal meth</th>
<th>Amphetamine</th>
<th>Opioids</th>
<th>Cocaine</th>
<th>Ecstasy (MDMA)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ostrava</td>
<td>September 2-15, 2014</td>
<td>4818,72</td>
<td>4040,14</td>
<td>422,64</td>
<td>85,15</td>
<td>99,22</td>
<td>71,83</td>
</tr>
<tr>
<td>Havířov</td>
<td>2.-9. 9. 2014</td>
<td>3791,31</td>
<td>3685,58</td>
<td>335,55</td>
<td>34,65</td>
<td>50,38</td>
<td>39,71</td>
</tr>
<tr>
<td>Frýdek-Místek</td>
<td>2.-9. 9. 2014</td>
<td>2557,86</td>
<td>3105,51</td>
<td>392,08</td>
<td>77,46</td>
<td>10,19</td>
<td>42,35</td>
</tr>
<tr>
<td>Karviná</td>
<td>2.-9. 9. 2014</td>
<td>4123,20</td>
<td>2665,59</td>
<td>377,04</td>
<td>8,15</td>
<td>24,70</td>
<td>25,52</td>
</tr>
<tr>
<td>Opava</td>
<td>2.-9. 9. 2014</td>
<td>3086,79</td>
<td>1769,61</td>
<td>413,32</td>
<td>101,36</td>
<td>16,80</td>
<td>42,03</td>
</tr>
<tr>
<td>Nové Jičín</td>
<td>2.-9. 9. 2014</td>
<td>4020,65</td>
<td>2117,08</td>
<td>383,40</td>
<td>50,56</td>
<td>0,59</td>
<td>86,00</td>
</tr>
<tr>
<td>Bruntál</td>
<td>16.-23. 9. 2014</td>
<td>4888,76</td>
<td>910,14</td>
<td>166,07</td>
<td>3,42</td>
<td>4,48</td>
<td>16,22</td>
</tr>
</tbody>
</table>

Source: TGM Water-management Institute.

Note: In the city of Ostrava, consumption of the selected illicit substances is indicated as an average value of two weekly surveys (September 2-9, and September 8-15, 2014); THC is the pure substance, not the volume of marijuana; Opioids expressed as morphine - including both metabolites and morphine proper - without conversion - including prescribed medicine. The outcome can’t be expressed as a consumption of an illicit substance!

Weekly consumption progressions reach minimal values on Friday; during weekend (Saturday and Sunday), rise in consumption is observed in amphetamine, crystal meth and THC. Ecstasy shows the most significant swings, ranging from the minimum 2.14mg/1000 residents (Thursday) to the maximum of 12.49mg/1000 residents (Sunday). It can thus be considered a “weekend drug”; meanwhile, the delay between the consumption proper and excretion needs to be taken into account.
In Ostrava, similarly to other cities, crystal meth is the most frequently used illicit substance. Measured concentrations of other observed drugs are lower, and the volume of their consumption reaches the European average. Unlike other cities, sampling was carried out on 10 gathering sites, which enables tracing the occurrence of drug-users across city boroughs. Localisation of these sites is shown below.
Crystal-meth metabolites reach the highest values in southern part of Ostrava-Zabřeh, captured in gathering site 10 (U Výtopny street). This data will enable the Police to focus attention to this area, including enhancement of drug prevention at schools in the vicinity. Also, agencies will concentrate on hostels and low-cost flats, found in this area. Another vital source of information about the users’ behavioural trends and the occurrence of used syringes in the city is Ostrava metropolitan police.

Figure 3. Intensity of thrown-away-syringe occurrence in years 2008 and 2013

In 2008, a large occurrence of used syringes was observed in Ostrava-Dubina (as much as 155 used syringes per year), an area densely covered with blocks of flats. In 2013, a significant rise in used syringes was observed in the city centre, with a higher density of restaurants, bars and dance clubs. Ostrava-Dubina still remains a borough with a high occurrence of used syringes found in public places.

Outcome of these drug-issue analyses in the individual cities of the Moravian-Silesian region is a general tree of problems that identifies the key issues and is an appropriate material for defining goals of the anti-drug strategy of the whole region. Interpretive problem tree (using a causality chain) is a key component of results-based management. Its design makes use of the methodology by Morra Imas and Rist (2009). Problem trees make it possible to create a structured outline of the main weaknesses of a system, including their causes and possible consequences and impacts, a failure to address the mentioned issues might lead to (Figure 4).
The reasons can be expanded on according to the stated areas:

**Socio-economic issues**
1. Lack of job opportunities, high unemployment, rise in part-time job contracts, etc.,
2. Growing poverty, indebtedness,
3. Social insecurity, low living standards in hostels, growth of socially excluded areas, homelessness,
4. Loss of motivation,
5. Loss of the possibility of a future – social exclusion, i.e. "people without a future”.

**Shift of life values, destructive lifestyle of the youth and children**
1. The youth’s and children’s spending time with a devastating impact on their future life and social integration,
2. Drug use = a “fashionable” trend, a perverted view of the youth’s system of values,
3. Growing numbers of a separated group of people with socially deficient attitudes, which is becoming a permanent burden to the society.

**Insufficient interest of children and the youth in leisure-time activities and sports**
1. A low level of performing planned activities, with a low feedback rate, small benefits: (children’s and the youth’s disappointment with childish and flat animation, creators’ underestimation of the target group, creators’ low professional
competence, profit-focused activities, an extensive selling of refreshments is superior to a poor, rather boring program, frequent failures in organisation),
2. Engagement of a small part of population - selective programs,
3. Insufficient system of information, absence of a concentrated information support for individual target groups.

1.4 Anti-drug policy strategies

As has been stated, anti-drug policy’s main objective has to be a reduction of drug users. Agencies of public administration have to collaborate in order to achieve this goal, from self-government representatives, through the department of social matters, education, health-care, to police forces, which have to focus on a repressive form of drug-supply reduction. Strategy of anti-drug policy of the Moravian-Silesian region for the 2015-2020 period comprises the following aims:

– an effective primary prevention of addictive behaviour,
– reduction of risks accompanied with drug use and addictive behaviour,
– optimisation of health- and social-service network for individuals exposed to various addictions,
– an effective coordination of all parties engaging in the anti-drug issue in the Moravian-Silesian region.

Further aims include:

– gradual coordination of inter-agency collaboration,
– development of follow-up activities to reach continuity in the life-style support in addicts, leading to elimination of addictive behaviour,
– emphasis on quality of delivered services and follow-up activities.

The main activity of the anti-drug strategy has to be primary prevention. To render primary prevention in schools effective, it has to be complex and ongoing. It is essential to begin working with primary-school students; some programs focus even on pre-school students. Primary prevention needs to be set up in schools across the board by coordinating regional and school prevention methodologists. Also, collaboration with the Police, medical institutions and other organisations is essential. In addition, drug use and absence of motivation for fully fledged social integration (receive education, find a job) has been on the rise in the younger generation. Preventative-program efficiency has to be implemented and its on-going evaluation (scheduled during the implementation of the program/strategy for generating better results)

Due to fragmentation of resources, regional information system with educational competencies has to be established for the sake of a complex prevention of socio-pathological phenomena in children and the youth. This regional information portal will provide centralised and regularly updated information for each city/borough and target group. The activities will be coordinated according to the type of target group (age, personality type) with an appropriate timing, for example using libraries as community centres and venues of the Police events. It is necessary to combine information on the Internet and in print (newspapers) - the level of information literacy is uneven
Impacts of the use of illicit substances are underestimated by not only the public, but also politicians, head teachers and teachers. A long-term PR campaign should be launched in conjunction with doctors, which would introduce and visualise the consequences of the use of illicit substances.

With the behaviour of individual groups of illicit-drug users having been mapped, it is possible to specify the targets of the integrated strategy, which will render the prevention-program instruments more effective. At the same time, selective strategies for target groups, mainly for students and young offenders, can be created, which from the long-term perspective belong to the crucial groups. Outcomes of the projects serve to the Police and other actors involved in the particular territory.

Conclusions

The use of illicit substances represents one link in the chain of threats to the society in the long term. Tackling of this issue is therefore of vital importance. The combination of IT-based technologies and a collaboration of different entities of territorial administration allow for an applied approach towards locating the spots of the use of illicit substances. Having been implemented in selected locations of the Moravian-Silesian region, the Czech Republic, the DRAGON2 project has supplied the data which were provided in this paper. Whilst from the narrow perspective, the outcomes could contribute to the reduction in the drug use in the beset areas, from a wider perspective the whole society could benefit from lowering of the threat, and thus a potential elimination of some potential risk factors.

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