

LONG TERM AIRPORT PLANNING ISSUES

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Abstract – *The paper focuses on problems and conflicts during the development of airports. Former practice however, still used in many states, to plan an airport system expansion in 20-30-year horizons – so called 'long term' plans – is confronted with the experience from the Slovak Republic of airport planning for very distant or 'unlimited future'. The principles of land expropriation in public interest, definition of public interest and the socio-political factors influencing the 'ideal' planning period are discussed. Planning for 'unlimited future' could be practical in countries with high Human Development Index, high Democracy Index, high ranking in Worldwide Governance Indicators and in high population density regions. Research results are presented.*

Key words – 'long term' plans, expropriation, public interest,

Motto: *Historical examples provide the best kind of proof in the empirical science. This is particularly true of the art of war.*

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BACGROUND

Development of transport infrastructure after wars and conflicts always required radical decisions and prompt planning which were, in those circumstances, appropriate. In those circumstances the improvements of road, rail and airport infrastructure were highly welcomed by public. However, throughout decades opinions and attitudes of public gradually changed and negative image of expanding infrastructures on the communities shifted to the forefront. Air transport and airports became an easy target of neighbouring communities and pressure groups.

This leads to a question whether practices of land use and planning of transport infrastructures and airports in particular changed in the Europe to reflect the increasing

participation of civil society in the public domain. Are current practices different from those of post World War II or those from the 1960-ties?

LAND USE AND COMPATIBILITY PLANNING

The most important tool for mitigation of environmental problems caused by airport expansion has always been land use and compatibility planning.

The basic documents for long term planning of any large-scale projects were (depending on different state practices) the 'Large Areas Development Plans' prepared on a 'regional' level. The principal features of airport Master Plans had to be incorporated into the Large Areas Development Plans. However, the practice to plan airport system about 20 - 30 years ahead resulted in a gradual airport growth and 'rapprochement' of airports and neighbouring communities. This was (and still is) a permanent source of conflicts.

Different practice was adopted in 1992 in the Slovak republic. Slovakia approved the ECAC Strategy for the 1990s - Relieving Congestion In & Around Airports adopted by the ECAC Transport Ministers in 1992. The overall objective of this strategy was to improve the potential throughput of the European airports and their surrounding airspace while maintaining safety and respecting the environment. With regard to the airport infrastructure, Slovakia aimed at the following, sometimes neglected, objectives:

- To define **the ultimate limits** (in a very distant future) for expansion of every **public airport** respecting the future 'environmental capacity'
- To define the **bottlenecks** which can limit the airport system capacity in the future.

The created legal frame allowed long term airport planning for so called 'unlimited future'. Subsequently long term land use plans and Master Plans were prepared for three Slovak principal airports – Bratislava, Košice and Poprad – Tatry.

EXPROPRIATION AND AIRPORT DEVELOPMENT

Development of each state brings contradictions between public and private interests [22]. The biggest problems are usually connected with building line infrastructures, which are generally defined as motorways, railways and airports, as for these constructions it is necessary to acquire large pieces of land. The process of land acquiring should be quick and effective. The interests of the state are to minimise costs, time and also to eliminate 'political losses'. The interests of the private owner are to minimise troubles with state and possibly to sell property but at a fair price.

Expropriation refers to confiscation of private property. Depending on the regime it can be politically motivated, it can result in forceful redistribution of private property and many times it can be characterized by confiscation of the foreign asset, for a pittance payment [17].

Also the Constitution of the Slovak Republic [22], the present Civil Aviation Law [23], and the Building Act [20] include provisions on expropriation⁴⁰ of land in public interest and an Article on the 'limitation of the proprietor's rights'. According to this Article the rights of the proprietor could be limited:

- in inevitable extent
- in the public interest
- in line with a law
- for appropriate compensation
- and all conditions must be fulfilled simultaneously.

Unfortunately, unlike other types of infrastructure, a runway or an airport are not directly defined as a public interest infrastructure in the Slovak legislation. To use the land expropriation in case of airport development it is necessary to prove public interest. This could be supported by an approved Airport Master Plan or Airport Land Use Study during a public hearing process as a part of a General City Plan, incorporated in the Concept of a General Plan of Slovakia or General Regional Plan where airport development has a 'public interest building activity' status. Expropriation can take place only when an agreement with the proprietor could not be reached by negotiation. Additionally, there is still the problem of defining the 'right price', which should be a market price of the property determined by an authorized expert. The whole process is usually very lengthy, as expropriation can take place only after agreement between the state and the proprietor was not reached. The proprietor can also use all legal tools to protect his rights which, going through all levels of courts, could take years. In one case in the Czech Republic, which has in practice the same legislation frame on expropriation as Slovakia, the agreement between the state and a farmer who refused to sell her land for a motorway construction was reached after 17 years [13]. Usually, right-wing governments are reluctant to use expropriation tool in these cases.

Provisions on land expropriation could be found in the legal systems of most states. In the Ireland it could be applied for a so-called key infrastructure, which comprises also airport infrastructure. There is a special system in the Republic of

Ireland where it is not necessary to go through a public consultation, but the decision passes through an independent body (called 'An Bord Pleanála') which rules on its acceptance. This body measures the need, the public upheaval involved and the economics of the proposed work, and rules on it. If it rules positively, the only way to appeal against the decision is through the 'High' Court. This speeds up whole process considerably. All other planning goes through the County or City Councils where a planner will decide on its acceptance based on the county / city plan. This plan is drawn up by the County Manager acting with planning specialists, architects, civil engineers etc. [18], [11].

Public Utility and land expropriation are defined by the basic principles in France. Public interest is defined by a declaration from the ministry or prefect level in the form of a decree. The declaration must precisely define date by which the expropriation must be accomplished.

The proprietors can appeal against the administration up to two months after the decree was published to object against:

- the excess of the force of law
- in front of the state council in case the proprietor objects against the public contribution of the project or the procedure was not regular [12].

For projects after the 2-nd March 2002 the expropriation becomes effective one year the latest after preliminary enquiry was closed. A year after the declaration of public interest was announced the proprietor can ask the expropriator by a formal notice to purchase his/her property.

The best known case of forceful expropriation is the Narita Airport development. In July 1966 the Japanese government officially designated the Sanrizuka - Narita region of Chiba prefecture as an official site for new Tokyo International Airport. The rapid postwar development of Tokyo caused a shortage of available flat land in the Kantō region, so the only feasible location for the airport was in rural Chiba prefecture. Eminent domain power had rarely been used in Japan up to that point. Traditionally, the Japanese government would offer to relocate homeowners in regions suggested for expropriation, rather than condemn their property and pay compensation as provided by law. In the case of Narita Airport this type of cooperative expropriation did not occur: some residents went as far as using terror by threatening to burn down new homes of anyone who would voluntarily move out [4]. On September 16, 1971 during final government drive to expropriate the land from its recalcitrant owners, three policemen were murdered and a many were injured in riot rides supported by left wing student groups [2]. While primarily revolving around the issue of the right of the government to expropriate private property, the Narita case was much more complex, many-sided event that for a variety of reasons may be considered historically important. During the 'phase one' of the conflict between February 22 and March 25, 1971 fought against each other 25 000 police corps and over 20 000 Narita farmers and their allies from student activists and left-wing political parties which formed a popular resistance group known as the Sanrizuka-Shibayama Union to Oppose the Airport.

⁴⁰ In some states called Eminent Domain or Compulsory Purchase

Although the airport did open, it opened under a level of security unprecedented in Japan. The airfield was surrounded by metal fencing and controlled by guard towers staffed with riot police. Passengers arriving at the airport were (and still are) subject to baggage and travel document searches before even entering the terminal, in an attempt to keep anti-airport activists and terrorists out of the facility. The last anti-airport riot, orchestrated by left wing militants known as Chukaku-ha, took place in 1985 [8].

IDEAL PLANNING HORIZON?

Left wing governments might be more willing to use different forms of eminent domain to enforce projects under public interests. However, a necessary balance must be found between the pace of infrastructure projects construction, expropriation of private property, 'fair price' compensations and political losses. The process of airport privatisation also raises the question if private airport development, in particular terminal areas and airport ground access [21], could be defined as a project in public interest. Private property confiscation gives a strong signal to foreign investors who may give priority to a different country with a more predictable regime which respects more private property. The lawsuits related to private property expropriations are long lasting and often stretch over a number of generations. With this perspective land expropriation in democratic states is used as an extreme and the last option, more likely as a 'threat' to those who were reluctant to sell their property than as a real tool.

Long-established practice of airport planning with Master Plans defining airport expansion in 20-30 years time horizons, or so-called 'long term' development, might be appropriate in some states but could be a serious hurdle to airport expansion in countries where the planning process is 'complicated' by public hearing with active neighbouring communities and action groups involved. For example, it took 23 years to get the final building permission for Munich Airport, while just 7 years were needed for airport construction and commencement of operations. Some airport administrations with visionary architects secured the future airport expansion by purchase of large areas in period when it was possible, e.g. Paris-Charles de Gaulle Airport⁴¹. In other states further airport growth can be blocked even by the government. Planning for very long period ahead should be practical in Britain. The London Mayor's Thames Estuary Steering Group, which is chaired by Sir David King and includes two members of parliament, said in a recent report: 'It is necessary to create a vision and a framework which will inform planning policy and decisions over next 30 years' [4]. But, we are afraid, the 30 years time horizon is insufficient in UK conditions. A new report published by the UK Government Department for Transport expects to delay building any new runways until beyond 2050 [16]. On the other hand, it would be useless to plan an airport development for 30 years or more in unstable states or

regions where fundamental changes in situation, regime or policy may occur within a course of months.

Planning for very distant future is still not a norm and it is not yet recommended in any of airport planning manuals. However, would it be possible to propose an optimum planning horizon for an airport? Engineers would love to have a formula in the Airport Planning Manual defining optimum planning period with unambiguously determined parameters something like:

$$Y_1 = A_{PAX} \cdot GDP \dots\dots X.y$$

Where:

Y_1 is ideal planning period (years)

A_{PAX} is maximum airport throughput in millions of PAX.

Unfortunately, nothing like that is possible and 'the ideal planning period' doesn't exist. It depends on number of variables which are unique for each state and scope of their leverage can vary considerably.

The resistance against airport development will be typically higher in states with higher standard of living where residents usually value the quality of their lives and object airport expansion with environmental problems, pollution and generated traffic. On the other hand, investors may claim economic benefits for the municipality and residents may benefit from improved air transport connections and new jobs creation.

To specify airport optimum planning period number of indicators could be used. One of the best could be Human Development Index (HDI), an international measure of development. HDI is linked with GDP per capita and it combines measures of life expectancy, education, and a decent standard of living, in an attempt to quantify the options available to individuals within a given society [25].

The HDI is used by the United Nations Development Programme in their Human Development Report [7]. However, the HDI does not include ecological aspects and is focusing exclusively on national performance ranking. Nevertheless, future constraints on the airport operation and development could also have an environmental basis [24].

The level of human development is often, though not always, related to the level of democracy, which can be measured, for example, by the Democracy Index (DI) [5]. However, it is important to remember that a high HDI rank not always corresponds with a high DI rank: in some countries a high degree of economic and human development is accompanied by an authoritarian regime (Saudi Arabia), while on the other hand democratic principles are respected in some poor countries (India). DI is based on 60 indicators grouped in five different categories: electoral process and pluralism, civil liberties, functioning of government, political participation and political culture.

Nevertheless, successful airport development depends on many other criteria like political stability, voice and accountability, government effectiveness, regulatory quality, rule of law and control of corruption. Those all are specified by Worldwide Governance Indicators (WGI) [10] and it is possible to weigh them in any particular country or region.

⁴¹ Charles de Gaulle Airport extends over 32.38 km² of land. This vast area was acquired by limited number of potential relocations and expropriations and the possibility to further expand the airport in the future [9]. The planning of CDG and its construction began in 1966.

The last but not the least important factor is country stability, which is usually influenced by internal factors like levels of violence and crime within the country, and factors in a country's external relations, such as military expenditure and wars [6]. This could be measured by the Global Peace Index (GPI).

In general in countries with very high HDI (over 0.889) and high DI (full democracies 8 to 10) it will be an advantage to plan airport development to its final limits (unlimited future) defined by the 'interest area' environmental limitations. Similarly, the length of planning period should be dependent on the other two above mentioned factors: WGI and GPI. A higher ranking in those indices – reflecting better governance and an internal and external stability/peacefulness – should be reflected in an extension of the planning period. Another significant parameter is the population density in the region, which is, however, strongly linked not only with all the above factors, but also with country cultural differences.

RESEARCH

To test the hypothesis of long term airport planning necessity it was decided to conduct research aimed at the widest possible range of respondents. The online research included a single question (in addition to respondent's identification parameters - sex, age, nationality and the highest education):

Imagine that you are attending the presentation of an airport development plan in a locality near the place where you live. What would be the time horizon for the beginning of the project for which you would think: 'That's so far ahead that I do not mind what is being proposed'

Respondents had options to select one of three answers:

- A/ Tick number of years between 5 and 200+
- B/ Tick answer 'I would always be against projects like that'
- C/ Tick answer 'I don't know'

RESULTS

We received almost one thousand responses to the questioner. After data cleaning it was possible to process 952 questioners from 52 countries. No respondent has selected options B or C. We tried to find any data dependences i.e. between the time horizon and sex/ age/ nationality and education but there are none. For example there were no significant differences between answers of respondents from the old and the new EU member states.

The most important dependence can therefore be regarded the percentage of respondents opting for a certain time horizon (see Figure 1). The most respondents opted for the 'traditional' time horizons from 10 to 30 years (with average 25.43 years). This may tempt us to conclude that the current planning horizon, 30 years for airports, is correct.

However, what is surprising is relatively high number of responses with long time horizons i.e. 80 years and more that go beyond the average life expectancy. Total number of these responses 6.62 % is meaningful and could not be neglected. It

could be assumed that these respondents would object airport development planned during their life. Because of their high education (more than 55 % of respondents have bachelor or master degree) they would be able to form, express and defend their opinion and thus hinder airport development plans. This problem, in fact, are now facing most European airports.

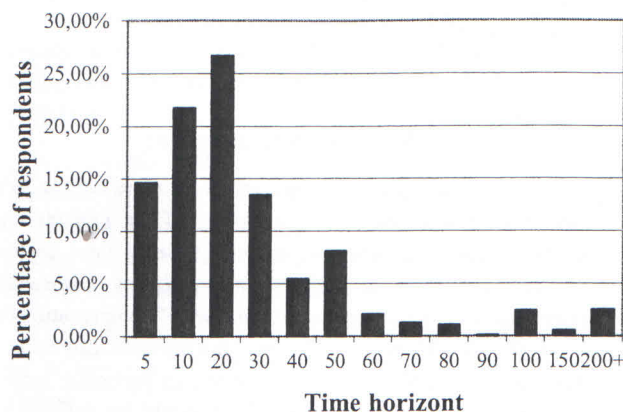


Figure 1 – Percentage of respondents in particular time horizons

CONCLUSION

In countries with high levels of democracy it is practically impossible to use eminent domain for airport development projects, as the process would be very lengthy with uncertain results. The experience of the Slovak Republic to plan an airport development by defining the ultimate limits (in a very distant future) of airport expansion and respecting the future 'environmental capacity' is positive and we were able to guarantee space for most of our airports expansion. Our airport planners were usually confronted with a tough opposition at the beginning, but proposals were gradually accepted by public and included in long term regional urban development plans. It would not be possible to accomplish the same results by planning of airport expansion step by step in 'long term' stages.

On the contrary, there are states where long term planning would be 'unproductive', and some where it is even possible to build an airport without building permission.

Although the long-term airport planning could ease future development problems it can not affect current operational restrictions at big airports resulting mainly from insufficient runway capacity. Airports, which have failed to develop adequate land reserve in the past have limited opportunities for growth nowadays and if so at substantial financial and 'political' costs.

Hence an 'ideal' planning period doesn't exist and must be assessed on a case by case basis using different tools and indicators, sometimes with getting uncertain results. As Albert Einstein said, 'not everything that can be counted counts, and not everything that counts can be counted'.

In our future work we would like to continue our research focusing on developing states (with not full democracies) which were in our research inadequately represented.

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