

INFLUENCE OF LOCATION AND NATURAL CONDITIONS ON DEVELOPMENT AND CONTEMPORARY SITUATION OF KYSUCE REGION

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Abstract: Kysuce region is located in northwest Slovakia, on borders with Czech Republic and Poland. It belongs to less developed regions of Slovakia. Its typical features are great emigration for work, deficient production, and incomplete residential and technical infrastructure. In the paper, we are analysing influence of location and natural conditions on development and contemporary situation of this region.

Key words: region, regional development, location, natural resources

1. INTRODUCTION

Comparing to other Slovak regions, Kysuce belongs to underdeveloped ones. It documents weaker economic indicators, as well as big problems during period of transformation. Typical example is great emigration for work that is in opposition to relatively strong demographic evolution.

Number of economic active inhabitants in district Čadca was 60 210 in 1991. From this number commuted for work outside the region 15 647 inhabitants (it means 26 %), from which 8 328 inhabitants (54 %) commuted to Czech republic.

This territory belongs to regions with the highest population growth in Slovakia. While average population's growth per 1000 inhabitants in Slovakia was 0,82 in 1998, in district Čadca reached number 2,19 and in district Kysucké Nové Mesto already 4,60.

The average number of live births on 1000 inhabitants was in Slovakia 10,68 in 1998, in district Čadca 12,33 and in district Kysucké Nové Mesto 12,94.

Housing and infrastructure are deficient in region. It shows low degree of industrialisation, low production of agriculture, generally low production as well as low consumption. Level of fixed capital occurring in this region is also strongly below standard.

In spite of all facts, Kysuce doesn't belong to the regions with the highest unemployment in Slovakia. While average rate of unemployment in Slovakia was 13,5%, it was only 13,3% in district Čadca and 16,9% in district Kysucké Nové Mesto (30.6.1998). The explanation of this paradox is in traditional habit of Kysuce inhabitants to look for work outside the region.

Present situation is result of many factors, which has played different role in various periods. Aim of this paper is to evaluate influence of location and natural conditions on the development and contemporary situation in the region. Although, location and natural resources are not generally considered as a main factor of regional development at present, they get own characteristic feature to any region and eventually considerable influence its development.

2. EVALUATION OF LOCATION

Kysuce is traditional region of Slovakia, taking catchment areas of river Kysuca. Before 1996, territory was belonging to district Čadca, in accordance with previously valid administrative division. According to new administrative territorial division consists of two districts: Čadca and Kysucké Nové Mesto. Anyway, both already have been districts before 1960 in accordance with valid administration division.

Altitude of Kysuce is ranging from 335 m (river Kysuca outflow inside borders of village Rudinka) to 1236 m (Veľká Rača in Kysucké Beskydy). Location in any altitude influences mostly climatic conditions as the first, and agriculture, forestry, tourism industry or other activities as the second.

Research area is located in the northwest corner of Slovakia, bordering with Czech Republic and Poland. Region Kysuce is located away from important developed axis - Považie. The location of Kysuce within Slovakia is marginal. Factor of remoteness has an origin in division of Czechoslovak Republic in 1993. Inside of Czechoslovakia, this territory was located nearly in the middle. Region was crossed by one of the most important railways (Košice-Bohumín railway) and parallel road lines in times of integrated functional Czechoslovak economy. This area connected directly industrial region Ostravsko with industrial region of Považie. At that time, Kysuce looked like connection area integrating centres of Czech and Slovak Republic and serving also as an important recreational hinterland of these units.

Direct connection to Czechia and Morava brought a location of some factories in Čadca, which collaborated with Moravian, Silesian and Czech factories. Typical example was Tatra factory in Čadca, branch of Tatra Kopřivnice. In accordance with splitting of ČSFR and changing economic conditions, industrial potential decreased and economic situation became complicated in region Kysuce.

Lots of people used railway Košice-Bohumín as a main destination to work situated in industrial area Ostravsko. Traditionally Kysuce supplied with labour surrounding regions, not only Ostravsko, but also Považie.

Region Kysuce became relatively remote in last period in spite of quick development of transportation and communication and general efforts for integration into Europe. The reason was division of Czechoslovakia on two independent states and strong constraints on existing connections meantime.

Another specific element with close connection to previous one is relative isolation. Isolation of Kysuce toward others regions in Slovakia from point of view natural conditions is quite big. It is almost impossible so to find similar region in Slovakia. Settlement and economic activities in Kysuce are concentrated into river valleys, which are like all river catchment areas isolated from surrounding mountains' massive. The only one connection with the rest of Slovakia and foreign neighbours without mountain crossing is valley of river Kysuca.

However, this valley is quite narrow in meeting area with Považie, because in klippen zone north from Žilina, one huge klippen was cut by epigenetic valley (Lukniš, 1972). This narrow place is called Kysuce gate.

The rest of communications are going through passes. The most important is Jablunkov pass used for railway and road to Ostravsko and other regions of Czech Republic. Another one is Skalité with destination to Poland using also railway and road. The rest passes are only for road transport. It means border crossings to Czech Republic by Makov, Milošová, Klokočov. The road to Orava region through Výchylovka in Slovakia is also crossing mountain barrier, but its construction is progressing slowly since 1994.

Relative remoteness and isolation of Kysuce would be reduced in large scale by better cross border co-operation with Czech Republic and Poland and by closing border barriers. The membership of all three countries in European Union could prospective fulfil this idea.

3. EVALUATION OF NATURAL RESOURCES

The development and prosperity of many regions are significantly influenced by their natural resources, as well as their quality and quantity. Mineral resources are typical example, which start expansion and wealth of mining regions. Fertile soils and

suitable climate are assumptions for prosperity in agricultural areas. All activities and settlements need water with good quality what is limit for their development.

However, natural resources are no longer main factor of regional development, whilst human intellectual resources are moving ahead. Nevertheless, possibility of natural resources' deep influence on regional development still exists. Their optimal exploitation offers a chance to leave actual economic troubles, invite capital and businesses, build infrastructure and as an impact of synergic effects start additional activities. Such chance gets for example region Lučenec, using own local silicate resources.

In global point of view, Kysuce is quite poor to own local natural resources needed for living and social and economic activities. By synthetic map from E. Mazúr and J. Drdoš (1980), nearly whole territory of Kysuce belongs to "areas without distinct qualities of natural resources".

3.1. Natural resources

The whole territory of Kysuce belong to flysh zone, just south edge occupies narrow klippen zone. Paleogene flysh rocks are too poor, thanks to the absence of mineral resources. Energetic and ore materials are missing in this territory. Certain theoretical possibility is crude petroleum exploitation, naturally rising in spring near Korňa. An experimental extracting was made in past. Possibility and profitability of its exploitation will prove future research and testing.

Except energetic and ore materials are mining building stone, gravel, sand and clay. Importance of this mining is only regional.

Lack of mineral resources affected economic development of Kysuce in the past. That is why there were not any conditions to build rich medieval mining towns, like in Kremnické and Štiavnické hills or in Slovenské Rudohorie. Similar situation was also during industrial revolution, when big industrial regions were developed on the base of coal and iron ore. Kysuce stayed poor opposite neighbour of expanding Ostravsko region. Lack of resources, underdeveloped industry and limited agricultural production caused great emigration from the region. As a handicraft was the most known tinkering from which local people became famous, also in abroad.

Post war industrialization could not be based on local resources as well. This was also one of the reasons, why industrial backwardness of the region could not be cope with. The deficit of mineral resources, besides other facts, was negative factor also during economic transformation after 1989.

3.2. Relief

According to geomorphologic classification elaborated by Mazúr, Lukniš (1980), Kysuce belongs to Outer Western Carpathians characteristic by flysh rocks. For area like this, typical is relief arising by selective erosion. On places where flysh consists mainly

from resistant sandstone's territory lifts and creates massive mountain ranges and hills. On the contrary, in places with mainly claystones, furrows and basins were washed by erosion. Examples are flats washed by Kysuce rivers: Kysuce basin around Kysucké Nové Mesto, Upper Kysuce basin, Korňa furrow, Krasno basin and Bystrica furrow.

Erosion furrows and basins are the best places to build residences, technical facilities, for transportation or agriculture. That is the reason why there are with exception of remnants of dispersed settlement, concentrated inhabitants, transport lines and all activities, maybe besides tourism industry and forest industry. However, these places can be economically exploited and are integrated into third level of five levels' scale by classification from Mazúr (1980) and are defined as localities of under mountains, low plateaus and closed furrows, with relief limiting potential for economic activity. Remaining places in regard to described classification are integrated to the last, fifth level, which define localities of massive uplands, highlands and high mountains with very small relief potential for economic activity. These places are useful just for forest industry and in average useful for tourism industry.

Relative dissected area with steep slopes, mainly in deforested zones are degraded by soil erosion. Gully erosion is often and intensive and for flysh mountain are typical landslide processes.

Dissected relief, lower and plane areas constrained by slopes so much, just like landslides and erosion processes are limiting to build housing, technical constructions and economic activities in Kysuce.

Dissected relief, climatic conditions and soil fertility shows the way of land use. Forest covers 58 % of territory, permanent grassland 27 % and arable land covers only 7 % of territory.

3.3. Climatic conditions

Climate is another factor, which markedly affects an economic use of territory and lightly limits possibilities of human society.

Altitude and location inside Carpathians define basic climatic features of Kysuce. Lower position erosion furrows and basins line with rivers Kysuca, Čierňanka, Bystrica belong to medium warm climatic area, medium warm and very humid climatic zone in accordance with classification by Konček (1980). Medium temperature of warmest month July in accordance with long-term mediums is 16,9 °C in Čadca and coldest month January -4,5 °C. Rainfalls are often, yearly total is 850 - 900 mm. Vegetation period, number of days with average day temperature more than 10 °C, takes about 150 days per year.

Typical element of lower and descend positions are temperature inversions. Existence of cool air in lower positions badly influences vegetable production concentrating just in these positions. Increased concentration of harmful substances in air comes in case opposite air situation too.

The rest of localities with higher positions belong to the cold climatic area, medium cold climatic zone. These areas are not appropriate for farming. Medium temperature of July in highest positions decrease to 11 - 12 °C and in January to -8 °C. Total rainfall rise to 1200 - 1300 mm. Time of frosting period in mountains is 160 days and snow cover takes 120 - 140 days, what offer great conditions for winter recreation.

The position in medium to cold climatic areas, together with soil and relief conditions stopped expansion of agriculture production in the past. The production did not feed population. It was reason to leave for work and emigration.

3.4. Water conditions

Kysuce is located in territory of spring's river Kysuca. From viewpoint of water sources it means if there are springs, rivers leave area so quick what cause less water in rivers. Length of the largest river Kysuca is 66 km. Kysuca's biggest tributaries are Bystrica and Čierňanka. River system of Kysuca and tributaries is quite rich. It takes in average 1,2 - 1,7 km.km². Kysuca's annual average overflow is 16,1 m³.s⁻¹ in Kysucké Nové Mesto. All rivers in flysh areas have unstable superficial drain. Till measured maximum overflow was 850 m³.s⁻¹. Minimum day medium overflow was 0,84 m³.s⁻¹. The difference between maximum and minimum overflow is more than thousand times.

Flysh area like Kysuce is generally quite poor for ground water. Ground waters are located in massive sandstones with crevice circulation as well as in sandstones, claystones, marlite with regularly alternation. Claystone and marlite layers work like isolated surfaces. They stop deeper infiltration and penetration of water. Water outflow from sandstones in touch with underlying claystones and marlite in small crevice or crevice-layers wells. Their occurrence is quite frequent, however richness takes only some decimals of litre for one second. More rich springs are around Klubina and Oščadnica with capacity between 1 - 5 l.s⁻¹.

Groundwater is cumulating, except flysh minerals, also in quaternary minerals and minerals of klippen zone.

In klippen zone is water permeability of limestone klippen quite good. Their small area and non-permeability of cover do not get condition for larger groundwater circulation and accumulation.

Much better, probably the best conditions for groundwater accumulation are in quaternary river deposits. It means mainly flood plains of Kysuca and Čierňanka. In upper part of Kysuca river, from Makov to Turzovka, thickness of flood plain sediments is 2-4 metres and richness of alone well is moving between 0,2 - 8 l.s⁻¹. In flood plain bellow Čadca, it could be about 20 - 30 l.s⁻¹. Around Kysucké Nové Mesto, where thickness of flood plain sediments is 5 - 10 metres, wells take 2,5 - 12,5 l.s⁻¹ (Porubský, 1991). Similar ground water supplies are in alluvial fan too. Rivers' network, ground water supplies and their spatial distribution markedly reflects settlement. In flysh mountain areas, with number of less rich wells arose dispersed settlements - "clearings" (type of dispersed settlement). In valleys and basins, where water is concentrated not just into rivers, but also into underground resources, there was a chance for arising

concentrated settlements - villages and towns. In general, territory Kysuce is short of water. Contemporary solution is in water reservoir Nová Bystrica on confluence of streams Harvelka and Riečnica. It serves as drinking water supply.

3.5. Soils

Soil is a basic production material for agriculture and forestry. That is why soil characteristics, mainly fertility, were really important in relation to regional development. In Slovak regions, this fact was fully valid, because agriculture was the main economic activity until middle of this century.

Soils with origin in flysh minerals do not belong to the most fertile units. The territory has not great variety from viewpoint of land types where reason is also poor variety of parent materials, changing sandstones and claystones. Prevaingly there are Cambisol saturated and unsaturated, which in higher positions are changing to Cambisol podzol. On river deposits of river flood plains is Fluvisol. On smaller areas carbonate minerals of klippen zone occurs also Rendzina.

The occurrence of soil variety depends on parent material. On places with regularly alternation of sandstones and claystones occur loamy soils. On places build by sandstones are located sand-clay and clay-sand soils, on places with mostly claystones are clay soils. Some soils on sandstones and limestones are skeleton.

Dissected relief and human activity caused removing of original vegetation cover and quicker soil erosion. By soil erosion regionalization of Slovakia (Bučko, 1980), Kysuce belongs to flysh mountains areas and adjacent basins, where runs mainly middle intensive up to intensive soil erosion.

Taking into account facts described this territory has a very low agropedology potential. Kysuce soils are evaluated as very little productive from point of view agricultural fertility. However, soils are prevaingly with good quality and less good quality from viewpoint of forestry needs (Džatko 1980).

3.6. Flora and fauna

Flysh minerals in Kysuce with monotonous alternation of sandstones and limestones also caused relatively poor variety of vegetable cover. Original vegetation consists of mostly flowery beech forest and fir-beech forest.

Cutting and burning over forest removed original forest cover and changed its original variety. The greatest interference into forest cover probably came in the period of shepherd colonisation, when agriculture soil was obtained instead of forest. The original compact forest complex was diminished and crushed. At present forest covers 58 % territory of Kysuce, that is higher number as Slovak average. Permanent grassland (meadows and pastures) covers 27 % territory, also over the Slovak average. Arable land takes only 7 % territory, what is very deeply below Slovak average.

Original beech and fir-beech forests were replaced mainly by spruce monocultures, which are dominating in contemporary forest variety. Spruce became the most extended forest species in Kysuce. Another species are beech, pine and fir.

In respect to their function, nearly half of forests compose production forest (49,1 %). Large areas belong to forest with special function (44,7 %). These types intercept emissions and serve for recreation, like forest parks in Kysucké Nové Mesto, Turzovka, Oščadnica and Čadca.

Wood from Kysuce forests is processing in some sawmills (Turzovka, Krásno nad Kysucou, Oščadnica), in some places with continuing joinery and furniture production.

Kysuce forests are home of hunting beast. Above all, it is tall beast (stag, roebuck), but plentiful occurrence of swine too. There are good conditions for expansion of hunting.

4. CONCLUSION

Presented analysis documents that natural conditions caused more slowing down than acceleration of development in Kysuce region. Lack of resources in flysh rocks, unsuitable agroclimatic and agropedology conditions, dissected relief and insufficient water sources were barriers for optimal development of industry, agriculture as well as settlement network and technical infrastructure. Besides selected activities, like travel industry also contemporary region planning can't lean on natural sources too much.

However, current relative peripheral position of region on three states' borderland intersection offers big perspective for future. Supposed expiration of border barriers could be replaced by intensive connection with Czech Republic and Poland as an impulse for development of many important activities.

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Resume

Vplyv polohy a prírodných pomerov na rozvoj a súčasný stav regiónu Kysúc

Región Kysúc patrí k v rámci Slovenska medzi podrozvinuté, hospodársky zaoštvávajúce regióny, ktoré majú v období transformačných zmien značné problémy. Región sa tradične vyznačuje veľkou odchádzkou za prácou, ktorá je v protiklade s relatívne silným demografickým vývojom.

V roku 1991 bolo v okrese 60 210 ekonomicky aktívnych obyvateľov, z ktorých mimo región odchádzalo za prácou 15 647 t.j. 26% osôb, z toho 8 382 t.j. 54% do Českej republiky.

Územie patrí k regiónom s najvyšším prirodzeným prírastkom na Slovensku. Kým priemerný prirodzený prírastok na 1 000 obyvateľov na Slovensku v roku 1998 bol 0,82, v okrese Čadca dosahoval hodnotu 2,19 a v okrese Kysucké Nové Mesto až 4,60. Priemerný počet živonarodených na 1000 obyvateľov bol v roku na Slovensku 1998 10,68, v okrese Čadca 12,33 a v okrese Kysucké Nové Mesto 12,94.

Región je sídelne a infraštruktúrne poddimenzovaný. Vyznačuje sa nízkym stupňom industrializácie, ale aj máloproduktívnym poľnohospodárstvom, celkovou nízkou produktiou, ale aj nízkou spotrebou. Je tiež silne podkapitalizovaný z hľadiska fixného kapitálu alokovaného v tomto regióne.

Prekvapivou skutočnosťou však je, že Kysuce napatria v rámci Slovenska k regiónom s najväčšou nezamestnanosťou. K 30.6.1998 bola priemerná miera nezamestnanosti za disponibilný počet evidovaných nezamestnaných v SR 13,5 v okrese Čadca bola len 13,3 a v okrese Kysucké Nové Mesto 16,9. Tento paradox možno vysvetliť tradičným návykom Kysučanov hľadať si prácu mimo svojho regiónu.

Súčasný stav regiónu je výsledkom mnohých činiteľov, ktoré zohrávali pri jeho utváraní v rozličných obdobiach rozličnú úlohu. Napriek tomu, že v súčasnosti nie sú vo všeobecnosti poloha a prírodné zdroje považované za hlavný činiteľ regionálneho rozvoja, vtlačili každému regiónu svoju charakteristickú pečať a výrazne môžu ovplyvniť jeho ďalší rozvoj.

V rámci Česko-Slovenska bola poloha regiónu výhodná. Územie tvorilo spojnicu medzi priemyselným Ostravskom a Považím. Prechádzala ním Košicko-bohumínska trať, ktorou tiež dochádzalo veľa pracujúcich z Kysúc na Ostravsko. Región Kysúc vtedy predstavoval spojovací priestor, sprostredkujúci väzby medzi industrializovanými centrami Českej a Slovenskej republiky a zároveň významné rekreačné zázemie týchto oblastí. Osamostatnením sa Slovenskej republiky v roku 1993 sa táto jeho funkcia zoslabila. Región nadobudol výraznejšiu okrajovú polohu na hranici s Českou republikou a Poľskom. Táto sa však v budúcnosti pri bezbariérových cezhraničných stykoch môže zmeniť na výhodnú.

Prírodné zdroje Kysúc skôr brzdili ako pomáhali hospodárskemu rozvoju regiónu.

Flyšové horniny územia sú veľmi chudobné na nerastné suroviny. Nenachádzajú sa v nich rudy ani fosílna palivá. Nemohli tu preto v stredoveku vzniknúť bohaté banícke mestá. Nemohli tu vzniknúť ani fabriky v období priemyselnej revolúcie, ktoré boli lokalizované na báze uhlia a železnej rudy. O nerastné suroviny sa tu nemohla oprieť ani povojnová industrializácia. Aj preto región Kysúc priemyselne zaostával a do dnes zaostáva a plány jeho ďalšieho regionálneho rozvoja nemôžu počítať s využitím miestneho nerastného bohatstva.

Členený reliéf, erózia a zosuny limitujú výstavbu sídiel a technických diel, pričom vo flyšovom území je aj relatívny nedostatok vody, potrebný pre sídla a všetky aktivity.

Nízky agroklimatický a agropedologický potenciál sa prejavuje v spôsobe využitia zeme. Len 7% územia pokrýva orná pôda, kým les pokrýva 58% a trvalé trávnaté plochy 27% územia. Poľnohospodárstvo, ktoré bolo hlavnou obživou obyvateľstva Slovenska až do polovice tohoto storočia, nemohlo pri daných podmienkach užiť miestnych obyvateľov. Preto Kysuce patrili k tradičným regiónom vysťahovalectva.

Prírodné pomery Kysúc však možno veľmi pozitívne hodnotiť z hľadiska rozvoja cestovného ruchu. Vhodné sú podmienky najmä pre zimnú rekreáciu, ale aj pre turistiku, chalupárenie v rámci roztratených sídiel a poľovníctvo. Najvýznamnejším perspektívnym potenciálom pre rozvoj regiónu je však práve jeho poloha na rozhraní troch štátov, ktorá v budúcnosti za predpokladu bezbariérového styku môže byť impulzom pre rozvoj mnohých aktivít.