1. Introduction

Towards the end of 1980s in European countries and United States AP initiated army restructuring. It was largely a result of changes in geopolitical conditions, especially the end of Cold War, USSR disintegration and Warsaw Pact collapse. According to OECD report of 1994 Regional adjustment of defense dependent regions in the post-cold war era the restructuring encompassed defence industry, military installations and research-development institutions as well as the Polish Army. The ‘90s and the beginning of the new century were mostly characterised by reduction and constant transformations of the Polish armed forces. These changes arose mainly from a new concept of national defense and NATO inclusion. Since 1989 through 2000 the changes influenced over a three quarters of military units and institutions. During the 2001-2003 period subsequent garrisons were disbanded. As a consequence each liquidated full-time soldier post carried over 0.74 full-time civil employee post. In 2004 – according to the report concerning socio-economic consequences of garrisons liquidation included in Program przebudowy i modernizacji technicznej Sił Zbrojnych RP w latach 2001-2006 (Scheme of restructuring and technical modernisation of the Republic of Poland Armed Forces during 2001-2006 period) and the following updates – this ratio shifted, affecting full-time civil employees as each liquidated full-time soldier post carried over 1.64 full-time civil employee post. In 2005-2006 the number of military units continued to decrease. In 2004 there were 129 garrisons in Poland; the number dropped to 112 in 2009. The changes were largely dictated by the need to adapt the units to new real-
ity. Their deployment structure inherited from the Warsaw Pact (most of the Polish Army units were located close to the Western border (75%), around 10% in central Poland and the rest in Eastern part of the country) was modified, forming more consistent location patterns. Resolutions were applied taking into consideration the consequences arising from liquidations suffered by local communities. A couple of decades in the past the army was considerably isolated from the society. However, after 1989 the situation changed. Acquisition and transfer of resources were some of the influenced areas.

Consequences of restructuring were varied depending on the strength and character of connections between armed forces and local municipality and also socioeconomic conditions in particular areas of the country, including regions and municipalities (Blair and Carroll 2009; Blakely and Leigh 2010). While lowering of military expenditure may be insignificant for a country, the concentration of this activity in chosen regions might exert more impact on economy. Knowledge concerning the specificity of particular structural elements of armed forces located in particular regions should focus the attention of proper authorities participating in the process of tackling the emerging issues (Cowan 2012). Due to the fact that these issues emerge in particular points in space, they belong to the areas of interests of regional politics (and also local development politics), innovative and structural politics (Piotrowska-Trybull 2010). From the perspective of local authorities (including the territories where military units are stationed) the most important goal is to improve the living conditions as well as conditions for development of entrepreneurship. Achievement of this goal translates into the level of socioeconomic development. The concept of development is understood as positive changes of quantitative and qualitative character, which lead to fulfilment – at a higher level – of material and non-material needs at a given time and place (Piotrowska-Trybull and Strzoda 2010). On the one hand, socioeconomic development indicates changes within social institutions, on the other hand transformations concerning the ways of goods manufacture and service provision according to the needs of citizens and external surrounding. The level of development, resulting from the processes occurring at a given territory, might be treated as a product of certain characteristics, abilities and activity that is prevailing among citizens of a given area. In this sense, the concept of socioeconomic development might be related to local development (Parysek 2001). Development arises from human activity and, simultaneously, living conditions are shaped by its outcomes. In social sphere it means changes concerning attitudes, preferences, patterns of social activity and extended access to public services, social, technical and economic infrastructure, enabling more complete fulfilment of diversified needs and, consequently, improving the quality of citizens’ life. Solutions, adapted by given countries at a central level, concerning economic policy offer varying range of public services. Finland exemplifies a country with a wide range of services where principles governing a welfare state are to be consistent with functioning of society and informational economy. The condition for coexistence of these seemingly conflicting categories is i.a. high productivity of work, which makes it possible for companies to raise working and social costs in order to implement ideas of a welfare state (Castells and Himanen 2009). Consequently, this country experiences relatively high tax rates. However, high quality of public services in the areas of education, healthcare, social welfare – which aids the country in scoring high in innovation indices, quality of life and, recently, level of happiness rankings – is an argument for maintaining the binding model of socio-economic development (Helliwell et al. 2012; Dudzevičiūtė 2012; Lankauskienė, Tvaronavičienė 2012).

Social and economic spheres are concentrated within certain space so it must be stressed that socio-economic development, in addition to generating profits for people, causes a number of negative consequences. Increased usage of natural resources and energy results in higher levels of natural pollution that lead to more cases of respiratory tract and cardiovascular diseases or neurological disorders, which consequently determines the need to counteract, accruing social and economic expenditure. Modern concepts of development are largely dictated by actions aimed at maintaining balance in social, economic and environmental spheres. Such development is labeled as “sustainable development” and its main imperative is living in harmony with nature, which means avoiding such behavior that leads to predatory exploitation of resources by contemporary society at the expense of future generations (Ponikowski 2008).

Sustainable development discusses the concepts of microeconomic effectiveness, ecological rationality and social validity (Korenik 2011). This means
that the criterion of microeconomic effectiveness in entities’ activity is enriched by the categories of rationality and ethics that form the guidelines for assessing the level of socio-economic development. Thus socioeconomic development, occurring in time and space, should be examined in various contexts as (Kupiec 2008):
- socially needed,
- economically attainable,
- ecologically permissible,
- spatially consistent,
- secured in time,
- legally permissible.

The issue of army’s influence on local and regional development, especially the socioeconomic consequences after its withdrawal from municipality (or a larger territorial unit), is presented in reference books (Thanner et al. 2008; Sirko 2010, 2011a, b, c). Due to the scale of the U.S. military transformation of the 1980s and 90s this issue was often discussed by American authors, but not only. References present the results of analyses concerning the effects of army’s withdrawal from a given territory i.a.: unemployment rate increase, employment rate decline (Stenberg 1998), limiting of manufacture, drops in income and demand (Paloyo et al. 2010) and migration (Andersson et al. 2007). Moreover, attention has been paid to the process of handing over the post-military possessions to other local users, natural habitat restoration, actions associated with reconstruction of local economy and potential savings that might be derived from reduction in activity or liquidation of military units and installations. What is also interesting concerning this issue is the influence of political factor exerted on the decision of liquidation or keeping military elements at a given territory. In the reports prepared by local surroundings for central authorities (decision makers) the parameters indicating negative consequences are often overestimated. As a result, threats for local development resulting from making given decisions seem to be greater than the ones derived from the experience of municipalities dealing with this problem in the past (Dardia et al. 1996). The results of studies presented in references allow observing the fact that the effects of military units’ liquidation exert varied influence on local development, depending on the type of territorial unit where the army had been stationed – urban or rural municipality (Stenberg, Rowley 1993). In urban municipalities, differentiated economic structure and existing populational potential support the process of relocation of remaining resources for other, public or private, purposes. In rural municipalities – at times distant from metropolitan areas – whose populational and economic potential is smaller, there are relatively fewer of such opportunities.

This article presents the results of the study carried out among the chosen Polish municipalities. Its purpose was to determine which areas could potentially sustain more losses concerning local development as a result of army withdrawal and to identify where the consequences would be felt the strongest by citizens.

2. Research information

11 Polish municipalities where Air Forces units are stationed have been studied: Dęblin (urban municipality), Kraków (urban municipality), Łask (urban-rural-municipality), Malbork (urban municipality), Mińsk-Mazowiecki (urban municipality), Mińsk-Mazowiecki (rural municipality), Powidz (rural municipality), Poznań-Krzesiny (urban municipality), Radom (urban municipality), Świdwin (urban municipality), Świdwin (rural municipality).

Using the databases of Central Statistical Office and information gathered from Regional Infrastructure Management Offices of particular municipalities, the data forming the basis for characteristics and simulation concerning army departure from municipality has been prepared. 16 variables were selected, representing population, its structure, job market, business entities and income characteristics, including values of real estate, farming, forestry tax paid by the army, population actually inhabiting municipalities, working age citizens, number of workers of mobile and immobile age, post-working age workers, general number of workers, general number of unemployed, share of unemployed among workers in general, number of children in pre-school, number of children at schools, national economy entities divided into public and private sector, general municipal income, municipality-owned income. The basis for the choice of variables was the literary reference analysis and the results of the poll carried out among local authorities, citizens and soldiers, which allowed for identification of the areas of cooperation between the army and municipalities (Piotrowska-Trybull 2011a, b, 2012; Piotrowska-Trybull and Sirko 2011, 2012).

It has been assumed that in the case of military unit
Marzena Piotrowska-Trybull, Stanisław Sirko
Sustainable Development of Municipalities and Polish Army Restructuring’ Interrelation

liquidation the potential consequences, assuming that remaining conditions are unaffected, could be presented as follows:
- decrease in municipal population,
- decrease in number of children at schools and kindergartens,
- decrease in numbers of working age citizens,
- increase in number of unemployed among working age citizens,
- decrease in revenue from real estate tax supplying municipal,
- decrease in revenue from income tax partially supplying municipal budget.

Number, age structure (division into mobile and immobile workers), payment structure divided into civil and military workers have been determined for particular military units, using the data disclosed by the units. Utilising the studies conducted by Military Office for Social Studies (Wojskowe Biuro Badań Społecznych, WBBS) parental indicators (for senior and junior officers – two children, for non-commissioned officers and privates – one child) have been assumed in order to estimate the structure of military workers’ families. Moreover, assumptions concerning the number of workers potentially migrating form municipality have been made (it has been assumed that 77% of the soldiers might leave a municipality as a result of unit liquidation). While determining the proper indicator, the results of own studies as well as studies conducted by WBBS have been utilized.

3. Study results

As a result of conducted studies it has been stated that due to the liquidation of the military units in the mentioned municipalities, the largest population loss might be expected in: Powidz and Świdwin (r. m.) municipalities. Considerably smaller loss could occur in: Łask, Dęblin, Mińsk Mazowiecki (r.m.) and Świdwin (u.m.). For Kraków, Poznań and Radom, military unit liquidation would not exert any substantial influence as far as populational potential is concerned. Population loss concerning the most endangered municipalities would be disadvantageous from the perspective of tax base and citizens’ income (see Figure 1).

![Fig.1. Population loss as a consequence of military unit liquidation, in % (1)– urban municipality; (2) – rural municipality](image)

*Source: own study*

Considering the assumed parental indicators and family structure estimates derived from them, migration of the army workers along with their families would lead to serious consequences consisting in the loss of critical mass by schools and pre-school institutions. In other words, the functioning of these institutions would be precarious concerning the towns exposed at this risk. Thus the loss of job positions in other public service sectors (personnel reduction in schools and pre-school institutions) would be the indirect effect of unit liquidation.

Widz, Świdwin (r.m.), Świdwin (u.m.), Dęblin, Łask, Mińsk Mazowiecki (r.m.) municipalities would be the most endangered ones. Malbork and Mińsk Mazowiecki (u.m.) would fall under slightly less influence. Whereas, just as in the previous case, the most insignificant influence would be exerted on: Kraków, Poznań and Radom municipalities (see Figure 2).
Job market is another area which would undoubtedly be influenced by military unit liquidation. However, as results of analyses from foreign literary sources indicate, this influence would be differentiated, depending on i.a. the type and size or existing economic structure. On the one hand influence on job market concerns decrease in number of workers at productive age, on the other hand increase in unemployment rate in total number of citizens at productive age. Decrease in number of workers means proportionally lesser income supplying municipal budgets and smaller amounts of money spent on goods and services offered by local retailers and service providers. From the local economy perspective, diminishing number of citizens at productive age indicates reduction in developmental incentives. In addition to work efficiency, population number is a crucial element in growth dynamics.

The obtained results regarding this area indicate that the largest losses in workers at productive age would be suffered by: Powidz, Świdwin (r.m.), Łask, Dęblin, Mińsk-Mazowiecki (r.m.), Świdwin (u.m.) accordingly. Slightly less influence would be felt in: Malbork and Mińsk-Mazowiecki (u.m.). Whereas the three large cities subjected to simulation would be under marginal influence (see Figure 3).
Liquidation of military units in enumerated municipalities, as it has already been noted, would result in negative consequences as far as the share of the unemployed in the total number of workers at productive age is concerned. In this case, it is necessary to draw a distinction between soldiers and army employees. Concerning the soldiers, the number of alternative solutions preventing from the growth of unemployment rate is larger. Firstly, soldiers can apply for relocation to another unit. Secondly, they can retire after servicing a given number of years (pension depends on years on duty). Thirdly, they can use reconversion benefits in order to retain. Finally, soldiers at mobile age may migrate to other towns with more diversified job market. Form the civil worker’s perspective, there are less possibilities.

Concerns of municipal rulers very often pertain to job losses by civil workers. This case might also be referenced to indirect and inducted influence, namely the situation where reducing purchasing power results in diminishing demand for local goods, which might also increase unemployment rate. Figure 4 illustrates potential influence of military unit liquidation and unemployment increase in municipality with reference to indirect influence only. As the data indicates, the greatest unemployment rate might be expected in: Powidz, Świdwin (r.m.), slightly less in: Łask, Mińsk-Mazowiecki (r.m.) and Świdwin (u.m.).

**Fig. 4.** Increase in unemployment rate among citizens at productive age as a result of military unit liquidation, in % (1)– urban municipality; (2) – rural municipality.

- share of unemployment among citizens at productive age
- increase of unemployment among citizens at productive age

*Source: own study*

Presence of military units on municipal territory influences the amount of income supplying budgets of local self-governments. From the perspective of the analysed issues, it is worth to note the following sources of income:
- real estate tax, farm forestry tax,
- motor vehicles tax,
- income obtained by municipal budget units and payments supplying municipal budgetary enterprises,
- income tax (PIT) – paid by tax payers residing within municipal territory – 39.34%.

Figure 5 presents the share of taxes paid by military units and soldiers in general amount of income of particular municipalities. In order to estimate the income real estate, farm, forestry and personal income taxes have been included. The largest income supplying the budget has been noted in Powidz, Mińsk Mazowiecki (r.m.), slightly lesser in Łask. In large cities the share fluctuated between 0.21 Kraków and 1.49 in Poznań.
Unit liquidation would result in decrease of tax base and presumably, during the first period, negative consequences regarding the quality of public services provided by self-governments. During the subsequent periods the situation might improve firstly due to the transfers from national budget; secondly, determination of local authorities in developing post-military terrains. Undoubtedly, the purchase (alternatively lease) and adapting of these terrains would indicate additional costs for self-governments. Decrease of income from military units supplying local self-government’s budgets would thus be proportional to their share in these budgets (see Figure 6).

Conclusions

To sum up, the following conclusions might be derived:

Rural municipalities are more exposed at the negative effects of military units liquidation (especially Mińsk Mazowiecki, Powidz and Świdwin) than the urban ones. Due to the smaller number of population and less diversified economic structure rural municipalities...
would experience more intense decrease in economic activity and citizens’ purchasing power.

Liquidation of military units exerts greater influence on municipal employees’ potential decrease than on increase in unemployment rate.

In addition to direct effects of military units liquidation, indirect and inducted effects appear.

Decrease in number of population in municipalities also means diminishing number of children at school and pre-school age, which could potentially translate into the loss of critical mass suffered by educational institutions that is decisive for their functioning.

Large cities, due to the populational potential and diversified economic structure, would only marginally experience the consequences of military units liquidation – perhaps symbolically and in association with a certain prestige derived from hosting such establishments.

It might be also stated that in large cities the release of post-military terrains would be beneficial due to the limited number of available allotments and their prices.

However, it should be stressed that overcoming negative tendencies is determined by series of factors, including: pace of regional and national development and ability of local establishments to cooperate while creating and realising cohesive vision of a given town, which might at times be of crucial importance as far as transformation of post-military terrains into other purposes is concerned.

References


Piotrowska-Trybull, M.; Sirko, S. 2012. Funkcjonowanie jednostki wojskowej na terenie gminy - wybrane wyniki badań [The Functioning of a Military Unit in Municipality – Chosen Study Results], in Gołuchowski, J.; Frączkiewicz-Wronka, A. (Eds.).


Sirko, S. 2011c. Żołnierze i pracownicy wojska na współczesnym rynku pracy [Soldiers and civil employee in army on the contemporary labour market], in Bylok, E; Słocińska, A. (Ed.). Współczesne oblicza kapitału ludzkiego i intelektualnego [Human and Intellectual Resources in Contemporary Perspective]. Częstochowa University of Technology, Częstochowa.

