

Local waste management – the case of „BESKID” Company

Jolanta Marciniak-Kowalska and Piotr Łyś¹

Lokálne hospodárenie s odpadmi – príklad spoločnosti „Beskid“

An action plan of creating local waste management structures is presented in the article. There are described advantages and disadvantages of autonomic waste management. The local waste management has been presented on a case of the “Beskid” Company active in Żywiecki District from 1994. Benefits from the local waste management are crucial not only for the environmental protection (natural sources protection, space saving) but also for commercial plants that use the recyclable waste for the production (cheap resource, decline in production costs) and for householders (fees for the disposal of mixed waste decrease).

Key words: waste, waste management, separate collection, recyclable waste

It is possible to create a local waste management system based on few units of local government. The communities more often cooperate to find local waste management solutions. The projects realized in association with local authorities can be related to the whole system of waste management or to many of its elements (segments). As an example, communities have a common landfill site whereas the rest elements i.e. the collection and transportation, usage and neutralization are conducted individually by each community.

The intercommunity cooperation can be realized in two forms (Łyś P. 2005):

- settlement (agreement) – is covenanted between a community - owner of waste utilization plant (e.g. community landfill site) and communities interested in using the landfill site. There is no creation of a separate unit but only a municipal agreement is established;
- establishment of a common structure (municipal union or company) – communities appoint a separate organizational structure which possesses a legal status (such kind of cooperation permits communities to jointly solve problems as to the building or exploitation of utilization and waste neutralization plants, or to manage municipal waste in a complex way).

The cooperation between individual communities depends on many local factors in the communities regions. Variants of the intercommunity cooperation:

- I. a complex cooperation on all elements of waste management (system of waste and recyclable waste collection, sort plant, landfill, composting plant);
- II. a cooperation only on the waste management while the waste collection is organized on communities own;
- III. a cooperation includes only single objects of waste management (e.g. composting plant, sort plant, refuse incinerator).

There are 12 regional waste management solutions in Poland.

Creation of a local waste management structure, (action plan)

There is no regulation in Polish law that oblige communities to create local solutions in the waste management. The intercommunity structures can be established only in a free way with the approval of these communities. In recent years in Poland interest in building the cooperation in the regional waste management grows up.

The main impulse to create local solutions are the following premises:

- systematically sharpen requirements of environmental protection,
- high costs of building modern utilization plants,
- high costs of exploitation of waste management building.

Creation of local waste management structures should be organized according to a specific action plan (Jerzmański J, 2004, Governmental Waste Management 2003, Waste Management 2004,):

- choosing potential partners for the cooperation,
- establishing of a negotiation workgroup (consulting company),

¹ prof. Jolanta Marciniak-Kowalska DSc., Piotr Łyś, BSc UST, UST- Faculty of Mining and Geoengineering Department of Mineral Processing, Waste Utilization and Environment Protection, Kraków, al. A. Mickiewicza 30, jmk@agh.edu.pl
(Recenzovaná a revidovaná verzia dodaná 7. 11. 2005)

- negotiations – working out a main plan and rules of cooperation,
- fixing the plan by Community Council of local authority,
- programme of waste management,
- implementation of programme.

The implementation of waste management plan is an integrated part of the programme and belongs to the local authority (community) responsible for the projects realization. The ecological education of householders and selective collection of recyclable waste is a part of strategy and lets to minimise a stream of waste directed to the community landfill site. Next, the recyclable waste is directed to companies active in the region.

Advantages and disadvantages of autonomic waste management

In majority of communities in Poland, the waste management is run on the base of a single community structure.

Tab. 1. Advantages and disadvantages in a model of autonomic waste management in communities (Lyś P. 2005)

ADVANTAGES	DISADVANTAGES
<ul style="list-style-type: none"> • big autonomy in the decision making processes about the waste management; • possibility of choice of the system adapted to specific regional-related conditions 	<ul style="list-style-type: none"> • obstacles in gathering financial means for infrastructure investments; • high fixed costs of system functioning; as a result the increase of service prices may occur; • less possibilities to employ experts; • lack of possibilities to create financial backing, what is necessary by the implementation of new technologies of utilization and neutralization waste

In many cases, actions taken are incomplete because they focus strictly on two elements: **mixed (non selected) waste collection** and disposing to landfill sites, what is an irrational solution from the ecological and environment protection point of view. Only few communities endeavour to complete system of **selective collection** and try to build **waste management plants**. This situation is a result of lack of financial means in communities budget for the implementation of new technologies

Advantages and disadvantages of local waste management

The consolidation of communities leads to a decrease of investment expenditures as a result of sharing the whole financial expenses between few cooperating partners. The unit working costs of waste management plants fall down.

Tab. 2. Advantages and disadvantages in a model of local waste management realized by communities (Waste Management Plan for Żywiec District 2003)

ADVANTAGES	DISADVANTAGES
<ul style="list-style-type: none"> • decrease of investment expenditures for single community; • reduction unit working costs of waste management plants; • better financial backup – possibility of implementation new and complex technological solutions; • possibility of employing branch experts; • better chances to comply with environment protections requirements; 	<ul style="list-style-type: none"> • obstacles with gaining consent of population e.g. living in a neighborhood of the planned landfill site; • limit of autonomy by the decision making in communities; • risk of domination of urban districts on rural districts.

Benefits from the consolidation are crucial for the natural environment.

The environmental protection can be better realized and controlled when there are few big waste utilization and neutralization plants (big amount of small plants often hardly meet the environment protection requirements).

Local waste management realized by the „Beskid” Company

Since 1994, communities of the Żywiecki District have been cooperating in the waste management. The goals included in the Regional Waste Management Programme are carried out by the “Beskid” Company. The activity of the “Beskid” Company includes (www.beskid-eko.pl, 2005)

- collecting and pre-utilization of waste from separate collection
- composting of organic waste,
- dumping mixed waste and ballast after composting processes,
- recycling plastics waste,
- collecting hazardous waste such as medical waste.

Objects of the waste management consist of: 1 – collecting station, 2 – landfill site, 3 – mixed waste utilization plant. To encourage people to segregate waste at its beginning, 2 years promotion has been brought into action. Costs of disposing waste and bin bags were paid by local authorities in Żywiec, householders pay only a fee for disposing and collecting ballasts wastes. Such promotion is applied now and concerns the municipal waste (Fig. 1), (www.beskid-eko.pl, 2005)



Fig. 1. Bin bags and containers used for the selective collection of municipal waste in the area of activity of „Beskid” Company (white – white glass, green – mixed glass, blue – paper and textiles, red tins and metals)

In years 1996 to 2004 in Żywiec we can observe a systematic increase of municipal waste segregation among household keepers (Starypan J, 2004). The structure of collected recyclable waste in rural districts in the area of “Beskid” Company activity is shown in tab. 3 and fig. 2.

Tab. 3. The hazardous waste collected in the area of Żywiec (Starypan J. 2004)

Material	Amount
batteries	2 084 kg
fluorescent lamps	1 553 items
energy accumulators/ baterries	2 160 kg
tires	57 750 kg

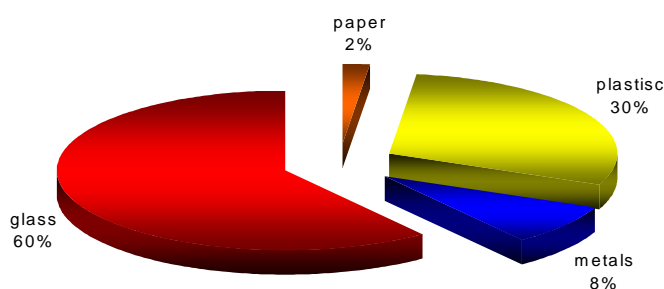


Fig. 2. Structure of collected recyclable waste in rural districts in the area of activity „Beskid” Company. (Starypan J. 2004)

Conclusions

Benefits from the local waste management are crucial not only for the environmental protection (protection of natural sources, space saving) but also for commercial plants that use the recyclable waste for a production (cheap resource, decline in production costs) and for householders (the fee for disposing the mixed waste decreases).

References

- Jerzmański, J.: Nowa Polska Regulacja a Prawo i Polityka Unii Europejskiej w Dziedzinie Gospodarowania Odpadami, *Biuro Informacji i Porad o Prawie Ekologicznym, Wrocław, 2004.*
- Governmental Waste Management Plan / Krajowy Plan Gospodarki Odpadami (M.P.03.11.159 z dnia 28 lutego 2003r.).
www.beskid-eko.pl, 2005
- Waste Management Plan for Żywiec District / Plan Gospodarki Odpadami dla Powiatu Żywieckiego, 2003.
- Starypan, J.: Gospodarka Odpadami na Żywiecczyźnie, *Spółka „Beskid”*. 2004
- Waste Management Act of 27 april 2001/ Ustawa o odpadach. z dnia 27 kwietnia 2001 r. (*Dz. U. Nr 62, poz. 628*).
- Łys, P.: Zasady regionalnej gospodarki odpadami w obszarze o zróżnicowanym profilu, ich charakterystyka oraz podstawy budowy programów realizacyjnych”, praca dyp. AGH wydz. GiG, 2005.