

Social Impact and Input in Waste Management

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Executive Summary

What is the social aspect? What is it made of? Why should it be considered and addressed? Or even more, taken care of?

Society is a sum of individuals having one or more certain common elements to nominate their affiliation (geographical, economical, interests, urbanization etc).

From the waste management point of view, it is the human habit to generate wastes, it is them to actively participate within the implementation stage (which should be a continuous activity, with improvements based on gained experience) and support the correct and safe waste systems.

Recent developments and analysis do prove that any waste management system that does not consider the social aspect does not have a high chance of success. In such cases the decision making process focuses upon technical characteristics, economical aspects and legal compliance. However, public participation in all stages of waste management, from informal status until the acceptance, including behaviour upgrading, is just as significant as the technical, economical and legal criteria.

People do not, generally, realise the risks posed by the bad practice of waste management. There are not always available and well disseminated clear and focused studies to demonstrate the connection between the impact of wastes and waste management to human health and the wider environment. These risks can be direct or indirect, either direct on humans or indirect as the last link of the food chain, either on today's basis (today's immediate effects) or on tomorrow's outlook.

It is often easier to associate the degradation of our landscape due to bad management of wastes (e.g. either through flytipping, improper landfilling, and the dumpsite/tip puzzle).

The participation of people in a waste management system takes two sides:

- Impact – what is the impact that the participation has upon the implementation of waste management

(Impact, in general, can refer to the influence or effect of an object. In science, however, it can refer to the collision of two objects. In medicine, it can refer to impinge.)

- Input – what people do in order to actively participate at waste management

(Input is the term denoting either an entrance or changes which are inserted into a system and which activate/modify a process.)

Introduction

It may sound similar to the water supply topic; we talk about water issues on a planet which has so much water that it could be flooded with a 3km layer. The truth is that 97% is saltwater, and of the remaining 3% most is contained within glaciers. Thus the population is dependant on approximately 1%, both for consumption and economical activities, such water coming from rivers, lakes and some phreatic layers. The distribution is not uniform. But the areas where the water is indeed present, pollution is becoming an increasingly common risk and characteristic.

If we transpose this into waste management, we can say that we still encounter difficulties with the wastes, although we generate wastes since the very moment we are born, since more than ancient times. The wastes are present wherever we are. The negative effects are present at the same rate. That doesn't mean that we do not have a solid culture and that we don't know how to manage the wastes, just we don't always apply our knowledge to protect our water resources.

Technically, we make significant progress, we discover and experiment breakthrough technologies, yet still the wastes are all around us. Waste reduction, reuse and recycling may help reduce the waste burden, but the issue of waste shall always remain in society.

Social Impact and Input in Waste Management

Public awareness of the rising hazards posed by the environmental degradation determines an increase of the interest towards the methods for involvement in prevention and mitigation of the activities which lead to environmental damages and, further on, to human health.

The Romanian Ministry for Environment has conducted a research study, together with the IMAS, on the topic of waste separation and collection. The questionnaire was developed and asked at 1449 persons, balanced as gender participation, in 115 towns and villages in Romania. The conclusions of the study revealed that women are more motivated to separate and collect their own wastes, the reason being the cleanliness and pleasant aspects, while men are more motivated to avoid the negative environmental effects. Very few young people seem to be convinced by the role the individual would have in the environmental preservation, while the aged persons would participate at the separate waste collection only upon request or enforcement by an authority.

In Romania, the main issue is not related to the wastes, as people do not associate the own well-being with the environment they live in, thus it is not the wastes which pose a serious environmental issue, but the indifference towards this topic. Most of the citizens consider that participation is connected to benefits and sanctions.

Social Acceptance in Waste Management

The main approach and, clearly, the easiest to catch, with regards to the social acceptability when implementing a waste management system, either integrated system or special waste flow oriented, is focused on the economical means.

The latest news indicate a further element not considered so far: the already "star" crisis. Taken into account the new global economical development, where will the waste management implementation be? Will it be supported by the public or will it become the step-sister of all utilities?

If we consider the reality as it is now in Romania, we may notice the famous dump sites. We don't like them, but they are there. They are present mostly in the country side. How can we change the inhabitants' behaviour? How can we make them understand that the impact these dumpsites have on the environment and human health is more than not positive?

The July 2009 brings us the deadline for these dumpsites to have been shut down and the affected lands be rehabilitated. Otherwise, infringement!

Another "targeted" issue is related to separate collection. Targets are set in terms of percentages of separate collection, following shortly the implementation of collection systems. If mixed collection should pose less problems, the separate collection will require a significant amount of persuasion on inhabitants to participate.

Example: In Piatra Neamt, one of the cleanest towns in Romania, the separate collection system implementation started a couple of years ago. The situation now seems to be partly functional, as there are indeed pre-collection points set up, for recyclable and biodegradable wastes, both for people living in blocks as for people living in individual houses.

Shortly, the whole county will have to find solutions for shutting down the dumpsites in the rural areas. Separate collection will have to be implemented in all localities and wastes will have to be directed towards transport of residues to regional landfills.

The positive thing is that the abnormal behaviours start to be noticed and blamed. Throwing the garbage in inappropriate locations begins to be associated, by the neighbours, with the behaviour/old habits, the background (the profession of the 'criminal' is always mentioned) and with the effects (usually, visual impacts).

Why was Piatra Neamt successful? Culture! The people are used with the clean streets, with the regular collection of the wastes. Ask anyone who has ever visited the town and the second thing they will state after "It is a nice town" will be "very clean".

Why was it hard when it all started? People are still fearing of complex, new, costly systems.

Transposing these "fears" in the waste management field, namely in separate waste collection, they would sound as following:

1. There is not enough space in the house as to place three or more bins.
2. There is no separate collection infrastructure, the sanitation company collects the wastes in the same bin, or it all ends up in the same landfill
3. If nobody does it, why should I?
4. It is going to cost the individual more for the implementation of these new systems/facilities

These three fears can be deleted by:

1. The waste volume is the same. Either a larger bucket, where we lately place a plastic bag (to replace old newspaper), or three smaller ones with proper bags, we do not generate more wastes. What we refuse to do is the minimal effort to understand which wastes to be placed where, to go downstairs to the pre-collection bins with three bags. In the urban localities, dense populated areas pose serious problems with the significant waste amounts generated per unit of inhabitants, and the limited space available within mass population housing.

It is the same approach in the smaller urban and rural areas. We prefer to dispose the wastes somewhere we cannot access by ordinary eye such as on the water shore, on the field, on the

roadside/verge beyond eye reach. We must question if individuals consider their small contribution to impacting the environment is too small to be concerned about when actually the sum of all individuals displaying such behaviour with cause increased rodents populations, visual degradation of the environment, and landfill gas and GHG generation – further on, polluting the water we drink and use for washing and polluting the soil where we cultivate the tomorrow's food (practically, internally and externally, there is no piece left of our body to avoid participation at assimilation and closing of the waste loop).

2. It is not economically feasible to develop an infrastructure if there is not a minimum fill of the production capacity. It is a well-known solid economical principle, which can be translated, at unitary level, by the cost per product unit. If there are not active at least half of the participants, there is no reason to invest in nicely coloured bi- and tri-compartment compacting vehicles. Such a vehicle, as soon as it is purchased, begins to carry associated costs, costs which need to be recovered or, at least, worth invested. In case, they are to be recovered, the service is to be paid for. The basic economical principle tells us that if this unit is operated correctly and at capacity, the costs are reduced, if not – they are significant. So, can we afford to support such an investment?

Raising public awareness of the presence of new waste infrastructure will help to break myths regarding the ultimate destination of separated wastes. Incidents such as white goods mountain as seen early on in Western Europe will act a negative manner.

3. No doubt, the culture element is determinant. The neighbour's goat will always have smoother wool, will be fatter, will give more milk and will breed more and nicer young goats whose meat will be delicious (Romanian saying). And I am doomed to have a skinny goat, always on diet which, even worse, cannot breed. The approach: i tis better if his goat dies.
4. The costs may look higher, in first instance – if we consider the implementation of the new infrastructure (for collection, transfer, treatment and disposal – most facilities at regional scale). But if we consider the environmental and social costs, they will prove to be more efficient.

It is the cultural background, the way we are used to think fingerprints our minds and actions. It is the way we live our life and all its aspects are determined by the approach we have towards wastes, as well.

Social Aspects – Assessment and Implications in Waste Management

The social aspects assessment is a specific analysis to be performed as part of any planning / design process. The main combining components are:

- Analysis of the social context and aspects together with
- Participation process, including consultation of interested parties, as to ensure
- Operational elements for the planning / designing, implementation, monitoring and evaluation framework. ¹

The analysis of the social context has been included in the planning stage, with the social acceptance, in terms of income share to be associated with the waste fee.

Lately, the public participation has become more visible. This is translated by organisation of public debates, within the planning / designing stage of a system, more focused on facilities, where the public is invited to participate and express their opinions with regards to the future development. In order to be active, you need to be informed. There is no discussion on this matter.

Are we informed? Do we know what we ask? Do we understand what is to follow? Do we possess comparison elements?

There are many cases where the public comes to the debate and manifests its disapproval. The cases are focused on waste facilities, usually landfills. The recent developments point, based on economical grounded reasons, regional landfills instead of local landfills. The presentations and explanations describe the positive effects that the disposal facility will have on the environmental factors, implicitly for the population, thus the participating public.

The reaction is pre-determined: nobody wants everybody's waste in our backyards (the NIMBY). Was it better when we all had the landfills close to our residential areas, close to the rivers, occasionally washed away, or close to the forests, leading to a mix of odours and a multiplication of rodents in the vicinity of well established eco-systems? Was it better when they used to burn on close to the grain crops? Yes, because we are not aware of the negative effects on the environmental and human health and on our lives' quality. And if we don't know, it does not exist. As simple as that.

The vulnerability of a system is given by the vulnerability of the constituent elements and by their interaction. The domino effect can start from a miss-crossing of the development plans (the road / transport infrastructure is to be rehabilitated / constructed and cannot follow the waste system coverage area) or from a denial of public participation.

There are designed systems which, on the paper, give the 'key' – figures are added, they provide correct mathematical results, in excel, on rows and columns – the computation is arithmetically verified.

When we go in the field, what is to happen? The whole system can fail due to one element which we treated insufficiently (in case we did consider it): the human and masses psychology.

The question is: can we afford not to understand?

It is true that the planning, currently in Romania, is based on rather theoretical elements, lacking experience in applying certain technologies, in administrative and institutional cooperation in organising and operating integrated system, from local up to national level, as these systems are just started being implementing. The same is more than valid for the treatment technologies, most of them being all new, from sketch design to functioning.

Therefore, the risk element is rarely present in the planned and designed system – technical, economical or institutional risks are not identified, described and do not benefit of provisioned mitigation measures. There are, of course, alternatives to solve certain topics, as to ensure compliance with the new legislations provisions. There were suggested various technologies and organisation examples.

These provisions, however, need to be functional. The practice tells that there is high confidence that the designed actions will be operational.

What if the ordinary citizen does not understand what he has to do, for instance, for separate collection? What if he refuses to pay a fee function of his waste generation index and would rather throw the wastes on hidden locations? What if the designed technology does not "benefit" of fully trained staff and the output does not meet further acceptance criteria?

These aspects cannot be either new or specific to Romania. But the solutions need to be.

The bottom line comes to the payment of the fee: Who is paying for supporting the system? The citizen has to be convinced that it is better to pay a fee to have the wastes collected rather than to later on undergo the pollution consequences. The fee is directly tangible, the pollution is not.

Thus, implementation of any waste management system must prevent the denial of public participation. In case this does not happen, insufficient input for transport, treatment and disposal facilities will lead to operation at under-capacity and losses will be counted.

Most cases present a calculation of the affordability level, expressed by the amount of money the people can effectively pay for the sanitation services, an important index in calculating the fee and the breakeven for the investments.

Still, the willingness to pay is somehow poorly treated. We need to consider there are areas where the waste collection is not present and where people will have not only to pre-collect the wastes and to give it to the sanitation company, but also to pay for this.

It is mostly the rural areas where the utilities infrastructure does not have entire coverage. When the infrastructure development is on discussion the table, an informal hierarchy is generally accepted: road infrastructure, water supply, gases supply, sewerage, sanitation services. As we may easily notice, the waste management services come as the last component.

The same hierarchy is valid in case of fees systems implementation. The ordinary people will definitely pay for the water supply, considering the needs and benefits, but will less willingly pay for the waste collection and disposal in controlled system.

Effective, professional communication is essential if waste management concepts are to gain general acceptance. Communication is a part of everyday life, be it through advertisements on the television, a radio news bulletin or just a quick chat with a neighbour before you go to work.²

As already mentioned, there are many cases when the sites identification for waste facilities occupied a larger time share than initially foreseen, due to opposition of the local people or administrations.

But there were also cases when good communication eased the disposal facilities acceptance within locations close to residential areas.

The communication towards people with regards to potential risks, both as existence of such risks as well as identification of mitigation measures, can lead to a better understanding and even to a active and positive participation within the decision making process.

It is also true that the interest and motivation of people can face problems, especially when the actions and mitigation measures are decentralised and local preferences prevail the larger interest.

Well-managed solid waste management services are easily recognised if streets and public spaces are clean, the landfill is well run and citizens of various income groups express their satisfaction with collection services. Therefore, good waste management is directly related to well-organised municipal bodies and should be regarded as an excellent indicator for good urban governance.³

Today's Learned Lessons

Given the experience and the projects / programs planned / designed / developed so far, some lessons do reach the light:

Lesson 1: No response does not mean acceptance.

No response can come from ignorance, lack of or improper understanding, slow reaction etc.

Corollary: Do insist for answer (sooner than later).

The answer can support early prevention or mitigation measures.

Lesson 2: Do not consider the social aspect just as an element of the system.

It is active and the whole system depends on it. It has to participate, to have an input and to correctly be involved.

Lesson 3: Explain as for everybody to understand.

The design may be perfect, but if not properly presented and explained, it does not lead to expected results. The explanations need to focus both on the practical implications and participation (the components of the system – collection, treatment, transport etc), as well as on the positive outcomes. The explanations are aimed at ordinary people, not at professionals.

Lesson 4: What is good / optimum for you is not necessarily good / optimum for me.

Your experience is valuable, but if I don't understand correctly the background (including cultural characteristics) there is a high chance that I will not get the same results.

Lesson 5: Learn from bad results as much as from good results.

Corollary: There is no negative experience, there is only experience.

There is no need to ignore the less successful projects and programs, as replication of the mistakes would 'waste' time and valuable resources. Do search for the real reasons which did have significant impact on the lack of or diminished expected results.

Conclusion

In the midst of integrated waste management systems development and future implementation, it is clear that the social aspects cannot be neglected, and one prime condition for ensuring positive outcome will be represented by the communication.

With regards to communication and public awareness, the efforts need to be focused and, most of all, continuous.

The feedback is of utmost importance, as the evolution and the shaping of the future activities are dependant on experience and learned lessons.

Few issues which aroused when analysing the awareness planning can be summarised as follows:

- The awareness planning has to follow a reasoning development contained within an integrated strategy; thus going through identification of necessities, gaps and priorities, profiling of the targets groups, and subsequent specific approaches determination
- Involvement and integration of all professional sectors, institutions, civil society etc in the public awareness strategies and campaigns;
- Evaluation of the awareness activities, ensuring feedback for revision stages, for improvement or larger dissemination of results;
- Best practices and failed systems to be understood and disseminated;

- Communication mechanisms and platforms between stakeholders involved in waste management and in charge with public awareness, exchange of information and results;
- Development of pilot projects which would follow the entire waste flow, as much as possible, and evaluating the understanding degree, as well as, collecting feedback for larger scale implementation or revision.

The social input has to be such directed within the entire waste management systems, as the impact should eventually be positive.

References

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