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Problems of modernization of the waste management sector in Russia: expert opinions

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RESUMO

This article presents the results of a study on the current situation of waste management in Russia, based on expert interview data from various categories of stakeholders in the period from 2014 to 2017. Expert groups are represented by various categories of persons involved in solving the problem of waste: NGOs, activists, scholars of the humanities and natural sciences, representatives of the business sector, public administration, environmentalists and technologists. The problems of legal eco-modernization and economic, environmental, technological, social and cultural aspects are discussed. The dynamics of development in recent years can be described as positive, but there are many unresolved issues in each of the areas. In the legal part of the management there is no necessary clarity in the functional distribution of the responsibilities of the main stakeholders. In the sector of institutional governance there is no chain of stakeholders, which is coordinated with a non-waste or cyclical economy, social policy is not worked out, and there are no solutions in the field of social policy. The strength of the Russian management system can be identified in potential technical capabilities, and the willingness of the non-profit and private sector to take a more decisive position in waste management. However, there are flaws in each direction, which must be quickly resolved in order to meet modern requirements in the field of sustainable development and environmental protection. In the legal support sector, there is no clarity in the functional distribution of the responsibilities of the parties involved in the legal interaction. In the sector of institutional governance there is no chain of stakeholders, which is coordinated with a non-waste or cyclical economy, social policy is not worked out. The project "Clean Country" and the functionality of territorial schemes in the field of waste management on the territory of Russia cause a special resonance. The main resource is initiative non-profit organizations and business sector, which needs legal and economic state support in the form of a well-developed legislative framework that takes into account the interest of all decision-makers and reducing the negative impact of waste on the environment.

PALAVRAS-CHAVE: Waste. Modernization of environmental policy. Waste management. Territorial schemes..

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INTRODUCTION

The Global Agenda aims for Sustainable Development by addressing the waste problem in order to create a non-waste production model (UNEP, 2011; WILSON, 2013). This becomes a necessity for a new movement for the modernization of the world's environmental policies in the context of global environmental risk, where chemical pollution and the consequences of the process of climate change are threatening the development of human civilization. Modern sociologists, who study problems of global risk (GIDDENS, 1994; LUHMANN, 2004; WALLERSTEIN, 2001; BECK, 2000) take into account the growing influence of pollution in the formation of global environmental policy. It is especially important to take into account systemic changes that disrupt biogeochemical cycles, and thus have profound economic and cultural consequences (LUHMANN, 2004). In the 1970s, the Club of Rome, in its report on the limits to growth, already pointed out the key role of pollution, the growing population and waste as the main obstacles to an economically sound society.

The global community sees it necessary to create a collection and recycling service that is accessible to the entire population and safe for the environment, by increasing the number of cities with a resource-efficient structure by 2020 (MARSHALL; FARAHBAKHSH, 2013). It is also planned to significantly reduce the number of deaths and diseases due to the impact of hazardous chemicals by 2030, achieve eco-friendly management of chemicals, guided by the principles of "green chemistry" in the production of goods and services, improving the safety of labour, uncontrolled pollution of landfills and incineration plants, reduce the amount of food waste and create an agricultural and food structure that could provide food supply for the entire population and to reduce the amount of waste (MAVROPOULOS, 2010). The social component must also be taken into account in the reorientation of the industrial sector and the creation of jobs (UNEP, 2015; KLUNDERT: ANSCHUTZ, 2001).

The current situation of waste in Russia has common features with the state of the sector in the countries of Central and Eastern Europe (EU-12) about 10-15 years ago (WORLD BANK, 2014). With the progress of economic reforms since 1991, all the instruments of state policy in the field of management of secondary material resources created in the 1970s and 1980s have been abolished and modernization of the waste management sector has been delayed for two decades (EEA, 2013).

The process of institutionalizing the waste management policy in Russia was non-linear and took place in several stages.

1. The state apparatus in the 1930s, that was based on the Soviet model - the emergence of a socioeconomic need for closed production was dictated by the designation of the political and resource boundaries of the state. Together with various industries was created the recycling industries for paper, glass, plastics, ferrous and non-ferrous metals. It's regulated by national standards of quality for the creation of products aimed at lengthening the life of goods and materials

2. In the process of reforming the economy since 1991 after decay of Soviet Union, all instruments of state policy that created since the 1930-80s in the

field of waste management and processing industries were abolished, and the modernization of the waste management sector dragged on for two decades. Different branches of production and processing were no longer connected with each other, and the main function for collection and removal of waste was undertaken by the municipality, separately there were private companies for waste disposal. Departments and ministries were responsible for certain industries of production and consumption, but are not linked into a single functional system with a single scheme for recording waste and liability (LIKHACHEV, SOVETOV 2017). The process of institutionalization continues with the reform of the industry in 1998 with the introduction of the concept of waste as a resource, and has been particularly actively transformed since 2010, introducing various stages of waste processing as mandatory for the participants in the production process.

3. Since January 2017, the waste that containing reusable components must be recycled without fail, formally this means that an effectively functioning integrated infrastructure should be created (RUSSIA, 2014/2017). At the moment, functional management still prevails in Russia, its means, that for each part of the government regulatory a certain obligation is fixed. Control schemes are used, which are also found in world practice.

The management schemes that we have encountered in the analysis of global practice are involved, but not regulated: it is the centralized management scheme, a federal system for the distribution of regulatory bodies, public private partnerships, or territorial schemes with a regional operator. At the moment they are tested in a joint management scheme.

The system of statuses and roles that oriented on wasteless economy is created within the old system that based on the export-raw model of economy. It is assumed that in low-waste production, the emissions do not exceed the level at which irreversible environmental changes are prevented, however this is not taken into account in the existing apparatus as authorized actions for participants in the production and consumption process. Soviet workers and scientists made a significant contribution to the concept of non-waste production (ZAITSEV, 2012).

Now the project "Chistaya strana" or “Clean country” (http://cleancountry.ru/) within the framework of the state policy is the priority, "which shows the expansion and lobbying of certain technological priorities: incineration, reclaiming and the creation of new landfills." (PROJECT CHISTAYA STRANA, 2017…). Obviously, the declared concept and its actual implementation differ to some extent, as do the positions of regulatory groups supporting different concepts and implementation projects. With the current model in the Russian Federation of the functional management in solid waste, the solution of the tasks of organizing the collection and processing of waste is not included in the list of powers of any of the agencies responsible for the supervision and control functions, export is carried out by the municipality, and processing is done by private enterprises. The objective of this article is to analyse opinions from various expert groups (science, business, public administration, NGOs, civil activists) in addressing waste management issues.

METHODS

An assessment of the current situation in the waste sector by the example of Russia was made on the basis of expert interview data. A total number of interviewed - 30 experts' interviews were taken with an average duration of 1 hour in the interval from 2014 to 2017 years. Expert groups were formed from various industries representing certain social interests and goals (science, business, public administration, nonprofit sector, civil activists) in addressing waste management issues.

The academic community consisted of representatives of the Moscow State University Lomonosov, Moscow State University of Chemical Technology Mendeleyev, Institute of Sociology RAS, Nizhny Novgorod State Agricultural Academy, MNEP, among which were sociologists, environmentalists, economists, technologists.

Representatives of the non-government organization "Garbage. No More," "Coalition for Waste" (Center for the Economy of Resources), "Separate Gathering," "Ecological Movement of ECA," "Greenpeace," "Let's Do It" and others.

The group of business representatives of "Taratrade," "Association of waste recycling," "eco-bureau Greens" were interviewed, in addition the interview materials of "Megapolis-resource" and "Sphere of ecology" were used.

State management is represented by the Department of Ecology and Nature Management of Moscow and this information was supplemented by open materials of the Ministry of Ecology and Natural Resources of the Russian Federation.

Criteria for the choice of the experts. Experts in the field of waste management were:

• professionals, who had a long-term (no less than 5 years) project in eco-business, scientific investigation in All-Russian scale

• experts participated in the shaping and modernization of the waste management scheme in Russia, law, economic, ecological principles of waste management

• had published scientific works about the problems of waste management in Russia

• had public achievements in the field of ecology and nature management

• held a management / advisory position in the field related to waste management or practitioners who continue to make decisions in the field of waste management.

• experts were considered practitioners who continue to make decisions in the field of waste management now and their opinions were important in their (something is missing here).

Gender, sex and age were not considered. Within the framework of the research purpose, the experts were asked to take into account the all-Russian experience. Within the scope of the study, the following problematic blocks for analysis were identified:

1. Description of the current situation and trends of modernization in waste management in Russia

2. Economic aspects: structure and system of the market of waste processing

3. Ecological and technological aspects in waste management

4. Social aspects

The general trends identified in each block are summarized and the contribution of different types of experts is taken into account, the priorities and interests of the group are analyzed in the general field of interests.

WASTE IN RUSSIDA: THE INTERVIEW'S ANALYTICAL RESULTS

INTRODUCTION IN THE PROBLEM WASTE MANAGEMENT IN RUSSIA

The amount of used and neutralized production and consumption waste in the Russia as a whole increased from 1, 396 million tons in 2006 to 2,685 million tons in 2015, i. e. almost doubled. The overwhelming part of the waste belongs to the V hazard class, i.e. to non-hazardous waste it is about 31,1 million tons, or almost 99% of their total volume. The rest is hazardous wastes, classified to the class I of danger - 14 thousand tons, class II - 375 thousand tons, class III - more than 26 million tons and the IV class of danger - about 328 million tons (MINPRIRODA, 2015).

In 2011-2015 the following trends were most clearly seen. Significantly - in 2-3 times - the formation of extremely dangerous and highly hazardous wastes, that is, class I and II hazard classes. Reduction of the formation of low-hazardous waste (class IV) occurred on a small scale by 9%. According to moderately hazardous and non-hazardous waste - III and V hazard classes - their growth was respectively increased by 29% and by 37% to 2015. As in previous periods, the overwhelming part falls on practically non-hazardous waste (V hazard class).

As before, the greatest volume of waste generation is in the extraction of minerals: in 2010 - 89%, in 2014 - 93% and in 2015 - 92%. 59%, 62% and 57% of all waste in the country, respectively, when producing fuel and energy resources - mainly when extracting from the bowels and enriching coal and brown coal (MINPRIRODA, 2015).

The share of recycling industries in 2010 amounted to 7.5%, in 2014 - about 5% and in 2015 - almost 6%. The overwhelming part - three quarters - of waste in this kind of activity in 2015 falls on the enterprises of metallurgical production and production of finished metal products. In the production and distribution of electricity, gas and water - first of all, when burning fossil fuels in order to generate electricity and heat - about 0.5% of all waste is generated. On the share of agriculture, hunting and forestry in 2010-2015. accounted for less than 1% of all generated and recorded production and consumption wastes. Other activities occupy an even smaller share in this structure. Two thirds of I class (very dangerous waste) is generated in processing industries, almost 20% at facilities for the production and distribution of electricity, gas and water; Class II hazard - approximately 90% in manufacturing industries; III hazard class - about 75% in agriculture, hunting and forestry, over 20% - in manufacturing industries; IV class

of danger - more than a third in processing industries, 19-20% - at mining enterprises, about 17% - in agriculture, hunting and forestry. Class V non-hazardous wastes of approximately 95% of their total value are formed during the mining of minerals (MINPRIRODA, 2015).

In 2015, the value of the waste production also increased, both in absolute terms (from 2357 to 2685 million tons) and relative terms (from 46% to 53%). A relative increase occurred, including due to a small reduction in waste generation.

Of the 60.3 billion rubles expended by Russian enterprises-nature users on the treatment of production and consumption wastes in 2015, the material costs amounted about 32 billion rubles, wages and deductions for social needs of the relevant employees exceeded 15 billion rubles. The main part of the current costs was provided by processing facilities: 26.5 billion rubles, or 44% of the total in 2015. The share of different activities includes:

• provision of other communal, social and personal services (mainly for the subspecies "collection of waste water, waste and similar activities ") accounted for 15.1 billion rubles or 25% from all;

• extraction of minerals - less than 10 billion rubles, or 16%;

• production and distribution of electricity, gas and water - 3.7 billion rubles or 6%;

• transport and communications - 1.4 billion rubles, or more than 2%.

The functions of the subjects of waste management has a complex structure now.

Ministries. the Ministry of Natural Resources and Environment of the Russian Federation exercises general control and supervision in the area of waste management, the Ministry of Education conducts research and development of the biological and technological priorities in the development of waste management, the Ministry of Industry develops technologies applicable to waste management.

Federal Services. The Federal Service for Ecological, Technological and Atomic Supervision exercises control and supervision over the compliance with the legal requirements in regard to radioactive waste management, the Federal Supervisory Service for Consumer Rights and Human Welfare exercises control over the compliance with the health legislation when managing waste in order to ensure safety of the population, Federal Anti-Monopoly Service is responsible for the adoption of legal regulations in regard to the calculation of regulated tariffs in the area of waste management,

Public authorities fulfil three responsibilities at the same time:

• the development and consolidation of regional waste management programs,

• the establishment of standards of their placement,

• control and supervision over the objects that are subject to this regulation.

Since 2015, there is a regional operator in the system, who is supposed to assume the responsibility for collection, removal, and disposal of municipal solid waste in order to free the municipal authorities of this responsibility.

TRENDS OF MODERNIZATION IN WASTE MANAGEMENT IN RUSSIA

The situation in the waste management sector is reduced by all experts to the need to rethink economic landmarks. The problem is indicated in three ways:

● on the one hand, there is an obvious dependence of Russia on the raw materials - the export model of the economy, or the problem of unlimited economic growth, the waste has a linear way of life - from the place of production to the landfill.

● on the other hand, for the majority of the population and decision-makers, recycling is perceived as disadvantageous from the point of view of economic development.

● if we talk about the place of Russia at the stage of moving to a non-waste economy, most experts speak of the uncertainty of the position of socio-environmental policy.

Environmental experts analyze the systemic influence of a person on waste generation. In general, production growth is criticized, as well as the modern valuation approach, its inadequacy in the evaluation of substances that are harmful at microscopic scales - primarily for dioxins.

Sociologists in addition to the emphasis on economics, pay great attention to the culture of waste management. The influence of "one-off consumption," and programmed obsolescence as a constituent culture of modern society, it too and experts attribute it to the dynamics of changes in human relationships, the transformation of ecological attitudes.

> “The main problem is one for the whole world: the principle of capitalist production does not take into account the last stage of the production process, namely the need for waste disposal. There are separate developments, for example, how to reduce human pressure on nature (saving resources, rationalizing their use, processing (recycling) of waste). But the old philosophy of the human attitude to nature remains, and the population and its appetites grow.” O. N Yanitsky, interviewed ecosociologist

Representatives of NGOs and public organizations have several functions: on the one hand they coordinate the population, on the other they try to influence the authorities, offering their organizational resources.

In their work with the population they see the main goal as an awakening of motivation among citizens and raising the level of ecological ignominy, in working with government officials to carefully, methodically and accurately communicate their demands and opinions to the population in terms of environmental safety priorities. Particular emphasis is placed on making current petitions adequate for the perception of the broad masses, where the positions of the NGOs are respected. The explanatory work is carried out with the population, on how to correctly formulate statements, how to promote joint decisions with the municipality and representatives of the authorities to implement separating systems or environmental protection.

Sometimes they combine the functions of NGOs (education, integration, eco activism), and the role of business (participation in a project with a certain share

of profit, or commercial services to the public or a business-to-business consulting model), for which an individual enterprise or firm is created.

The NGO has a comprehensive view of the situation: according to the representative, the state does not have enough support for initiatives, for the introduction of a law that implies the responsibility of all the parties involved for the motivation of the population. The business world is divided into environmentally responsible (with whom it is possible to cooperate) and the ones with whom it is not. The perception of the value of resources is what separates the representatives of the sphere of government.

> “There are many resources available, it is the "Dutch disease," large areas are dedicated to landfills. There is the conflict between Moscow and the greater Moscow area, where the main landfills are located. There are lobbying projects for incineration, plus the problem of corruption There are no problems with technology, since there are entrepreneurs who create projects that are contrary to the current system. The greatest difficulty is the economic model: it is difficult to reach payback. Companies find solutions to our mentality. Previously, it seemed that the separate system of waste is just unrealistic/unachievable." T. Chestina, All-Russian Movement ECA

Representatives of the business sector see a resource in the waste, and their problems lie in the obstacles to building environmentally responsible and profitable business from the state. Business lacks the technological capacities to separate waste collection and cannot provide a solution to it at the moment (only about 10% of all secondary raw materials). However, the law, where the responsibility of each participant of the process with which the business interacts, is prescribed.

> "The current problems of waste are: the lower strata (residents) want to change the system (signatures that were collected and the polls conducted prove the fact that there is willingness for waste disposal), but the top (state) does not want it. Solving the situation is not to putting separate waste bucket and establishing infrastructure. The first line for processing batteries was opened by business, and not by the state. It is possible to justify an increase in the communal fee by 10 to 15%”. E. Smirnova, biologist, economist and entrepreneur, eco-bureau Greens.

ECONOMIC ASPECTS: STRUCTURE AND SYSTEM OF THE MARKET OF WASTE RECYCLING

Respondents agree on the definition of a common system of agents of action in the chain of effective policy development in waste management: it should involve the state, municipality, business, citizens, activists (environmental movements or environmentalists), and NGOs. On the part of the operator - the coordinator for the collection and removal of waste, there are questions as to how effectively they will combine the coordinating activity with the regulatory function. The subsystems of the reform problem mentioned: the economic, social, political, and legal subsystems. Respondents also agree that the ideal system is the Lansink Stairway, where the priority should be given to preventing waste generation.

> "In Russia, there are too cheap primary raw materials and too monopolized (or, more accurately, "oligopolized") raw material markets (as a consequence of the peculiarities of the power system) in order to seriously address the problem of waste as secondary raw materials. The ecological aspect of waste management is not much better - the territory is large, there is no need to think about rational processing - they are just exported and buried." V. Pashinsky, a chemist

The first stage in waste management should begin with the production model of the product. Here one must immediately plan for two areas of work:

- produce goods from materials suitable for recycling
- produce less goods (i.e., waste in the end of cycle)
- producer must provide life cycle analysis (LCA) and environmental marketing should be conducted prior to the release procedure, not at the time, or after
- review consumption and its pace, bring over-consumption out of fashion

> "Less goods - less garbage. But more importantly, the fewer goods, the more free time. If you use a car twice as long, than to earn a new one, you can work half as much. And half as much if you share a car for two." D. Stark, founder the movement "Garbage. No More."

Experts assumed that the state could introduce lucrative economic benefits, the municipality should choose environmentally responsible companies that do not carry garbage "past the dump," companies should have corporate social responsibility (CSR) policies and equipment that does not harm the environment, and citizens should separate waste for few fractions. In summary these actions can provide the movement to zero waste society. NGOs perform the functions of education, integration and coordination, the main requirement for them is their competence and diplomacy, with observance of environmentally-oriented goals.

A special role in the discussion was taken by the problems and the participation of business. Business is divided into industrial, business-as-usual (in this context, business based on the export-raw carbon material model of the economy), and environmentally-oriented business. "Business is easier to change than other sectors, in production, where goods are quickly formed, it is easier to start managing energy innovations and waste management." It is important to include all business sectors with an emphasis on greening and tightening environmental requirements for a wide range of industries, and it is necessary to make environmental savings higher than the business orientation to supply. The niche of eco-marketing, and promotion of environmental goods is widely discussed:

> “The company is now making environmental achievements in corporate social responsibility (CSR) or a report on sustainable development, because this is important for investors (this may be a requirement). For example, it’s change of corporate identity, printing, design from recycled materials." E. Smirnova, scientist and entrepreneur, Eco-Bureau Greens.

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There were opinions of representatives of the associations of processors:

> "The main goal is to unite enterprises that are engaged in collection and transport of waste on the basis of the recycling industry, and first on the sale of equipment. Our mission is to make recycling a higher priority than landfilling." R. Cherednichenko, Association of Waste Recyclers.

> "If it is a question of medium-sized business in the waste-processing industry, then yes, today there are no real mechanisms that stimulate the development of the industry of harvesting recyclables and their processing. Business develops in the conditions of "promises for the future," it is often on a semi-legal position and outside the legal field. Large garbage-collecting companies, in fact, are monopolists, they dump the price on collecting garbage, and a small-sized business, but more environmentally oriented can't survive." A. Garkusha, lawyer specializing in environmental issues

The business can and does make the production environmentally responsible at the expense of different tools, as the experience of the "Sphere of Ecology," "Taratrade," Kuusakowski recycling, "Megapolisresource" demonstrated. Their tools of interaction are relationships that built on the basis of horizontal direct actions with the companies and citizens. Experts say that legislation can be an obstacle, but does not lead to the "impossibility" in the conditions of creating an environmental oriented company for waste management and recycling. It may be incomplete profitability, if we talk about the fact that now there are no tools to support eco-business, and restrictions for business–as-usual. But business finds new ways: it cooperates with NGOs, and creates a working network of eco-responsible contacts. The companies creating an image that allows to interact and attract eco-oriented groups, they can be classified as follows:

- normative groups - government, regulators, industry associations;
- functional groups - employees, trade unions, suppliers, distributors, service organizations;
- diffusive (periodically involved, scattered) groups e.g. journalists and NGOs;
- groups of consumers - different segments, distributed according to needs.

Basically, the resource of the action of waste disposal is assigned to functional groups and consumer groups. Not all business-responsible companies have large capacities to participate in bids on regional operators in existing territorial schemes.

> "We have non-commercial relations with individuals. This is our corporate social responsibility CSR." Director of the "Sphere of Ecology"

> "Firstly, officials are the part of society that can do less than others to solve the problem of waste. And secondly, from them the rest of society expects the most." D. Stark, of the book "The Way to the Country without Garbage," and of the movement "Garbage. No More"

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The most detailed discussion with the interviewed experts was about the problems of redistribution of power and bureaucracy. For to solve the waste problem, experts proposed a single unit instead of a complex system of functional bureaucratic interactions. Since the device of government has many responsible persons with their own interests, it is not easy to get feedback. There is not common opinion by experts about involvement a regional operator or coordinating agent in the system of waste management, but experts agree that the whole system is needed to the industry, from exporting to processing is linked. The idea of a closed circular economy should be reflected in the structure of decision makers, rather than wearing separate functional links. The device of government should be clear, transparent, and "visible" for everyone.

> "Both in private and public organizations, strict control over the waste produced by them must be established. But this control should be based on the achievements of science that reduce the amount of waste." Representative from the business sector.

In a sense, state structures hamper the activity of the public and private sectors. The business sector expects quite specific changes in the legal amendments from the state to open its activities:

> "Everyone is waiting for amendments to the 89th law. The authorities are interested in the profits that can be distributed to the state budget, but the amendments did not take into account the list of recyclable goods and their regulations - this is not taken into account in the amendments. And if you use some raw materials and you have a standard for recycling, then you will have waste, that is recyclable, not discarded. If there are benefits for business, then business will go there like a snowball." R. Cherednichenko, Association of Waste Handlers.

ECOLOGICAL AND TECHNOLOGICAL ASPECTS IN WAST MANAGEMENT

Experts who do not deal with the technical side of the issue of the ecological and technological aspects in waste management commented on this issue by pointing out that the landfills should be equipped with the appropriate for the ecological safety, and their number should be reduced, to also lower the impact of the incinerators. Within the framework of the Clean Country project, where it is planned to increase garbage landfills (dumps), an technological update of existing dumps and an increase in the number of urban areas as well as an increase in the number of incinerators is planned, the community in waste management has divided into supporters and opponents.

The key factor in the separation was the possible environmental damage to the incinerators, the question of the appropriateness of rational use of resources in comparison with the processing industry, which returns waste to the cycle. Applicable to landfills, it is necessary to reduce their quantity, ensure environmental isolation, and preferably joint generation of energy from biogas.

> "Everyone is talking about the harmfulness of emissions from incineration, but no one in waste processing is talking about harmful emissions which are also there [meaning plastics and complex

> chemicals, whose combustion is poorly understood]." Elmurod Rasulmuhamedov, technologist.

> "Professional growth inevitably entailed the strengthening of a personal civic position: the more you realize the harm of incineration, the more confident you feel about your rightness, the easier it is to convince people of the need for separating waste collection and for the development of the waste-processing industry." A. Garkusha, lawyer on environmental issues.

Also, the problem of landfills was attributed to the problem of production, which had to be solved paramountly, rather than the subsequent formation of landfill.

The end point in the priority of nature management should be the conservation of natural resources and the return of many materials as possible to the cycle, all other things being equal to the compliance with environmental regulations (GENTIL; DAMGAARD; HAUSCHILD, 2010). Therefore, the lobby of the incinerators can not provide such.

> "[Waste is needed] according to the following steps of priorities of wasteless economy: reuse - use as recyclable material, raw materials - use as energy of raw materials, disposal for land planning - proper disposal. Schemes will inevitably have a local specificity." V. Pashinsky, a chemical ecologist.

> "Landfills are only the final element of the waste production system. It is necessary to begin with the first phase of the production process: minimizing the risks when designing a particular product of production or consumption. And again, a rejection of consumer ideology is necessary." O. Yanitsky, ecosociologist.

There is a controversial issue as one of the accents of modernization of environmental policy, in that waste is a renewable source of energy. In the use of solid waste at the incinerators, this issue has more categorically negative comments than the landfills and the use of sediment sludge. The utilization (decontamination) of waste in agriculture, forestry and hunting farms increased from 20 million tons in 2010 to 34 million tons in 2014 and 38 million tons in 2015 in Russia. The processing level was 82%, 78% and 83%, respectively (MINPRIRODA, 2015). Apparently, these tendencies on the whole coincide with the overall development of agricultural activities in the country and the growth of output.

Experts agreed that, from given the existing situation in the arrangement of the landfills, work on them is unsafe for humans. In the first place, workers are directly at risk.

> "Yes, the work is dangerous, especially when the technology of waste management is violated. What are the methods of harm reduction for workers' health? - Compliance with established technologies for handling solid waste, including the use of personal protective equipment. Are these measures being followed? Usually not." V. Pashinsky, a chemical ecologist.

Secondly, dumps harm the health of citizens if there are fires and emissions, penetration of harmful substances into soil and rivers.

> "In principle, work at any training ground is dangerous both for the health of its employees and for the people living around it. Dumps are dangerous because leakage from them can spread to tens and hundreds of kilometers, and harmful substances can be transformed, accumulated, etc. in all environments: air, water, soil. This is called "socio-ecological metabolism." O. Yanitsky, ecosocialist.

The problem of using any technologies for waste disposal has become a problem of mistrust of the technical regulations for the human factor. In the phrase "the air purifying filters of the incinerators are safe - they delay 99,99% of the contamination" does not add to the fact that the plant can function continuously and the garbage is burned in tons, and the amount from a ton to the remainder of 0,01% is constantly accumulated. Furthermore, kilograms of residues ash and toxic substances require separate landfills for disposal (VEOLIA, 2009).

To persuade an average citizen who does not understand or is not interested in the problem of waste in order to minimize his sensitivity to the environmental risk, the phrases "air purifying filters incinerators delay 99,99% of the pollution." A marketing game on the decency of foreign developments can be used in favor of the incinerators. Supporters of incineration said about the proven effect of the incinerators in the West, but there is a thing that the Europe has approved a program to minimize and refuse incinerators in the future, due to a small area of countries. So, second argument of incinerators' supporters is the need to develop alternative energy resources, and waste can take this place, but it is not resource-saving strategy as whole (ALLESCH; BRUNNER, 2014).

There is a certain discrepancy in the facts and their interpretations regarding harm and clearing of dioxins. Experts can focus on high afterburning temperature, but at the same time, the minimum amount of dioxins formed is not even applicable to the maximum permissible concentrations concept. Redistribution of environmental benefits in economic - ash is used in asphalt laying - is given as an example of resource that saving production. The lobby behind the incinerators and for the dumps mention that the separation of the waste does not solve the problem of recycling. However, incinerators and dumps with energy production are contrary to the principles of resource-saving, if used as the main technologies.

SOCIAL ASPECTS OF WASTE MANAGEMENT

The social aspect is least taken into account in Russia, including by the experts interviewed, although on the global agenda this is one of the main problems that should be resolved as a priority within the framework of the waste management policy, since the human resources and environmentally-oriented actions are the main capital in waste decision making policy (MEDINA, 1998, 2001). The social aspect in this vein has several directions of development:

- observance of environmental justice in different categories of the population (uniform minimum distribution of environmental risks of pollution), which directly affects the quality of life and health of citizens.

- creation of jobs (environmentally oriented, socially oriented, reorientation of the industrial sector to green production with redistribution of jobs) (SCHÜBELER; WEHRLE, 2011; WILSON, 2013).

● search for working groups that can be introduced into the official sector of the economy from the informal sector, providing labor protection (waste collectors, migrants, the poor). This sector, although small in number, is important for the modernization of waste management policy (DIAS, 2011).

● environmentalization of the production system through advanced training

While the acute problems are conflicts between the authorities and the population in the search for a means of uniform minimum distribution of environmental risks to the pollution in the process of the "Clean Country" project's implementation, the problem of mistrust towards the incinerators lobby and technical regulations for processing was raised.

The issue of waste collectors was unexpected for experts. In Russia this group is not so widespread that it was visible and its participation in the process was taken into account. The problems of social and environmental policy should be resolved first of all, then to think about specific social programs. With regard to waste collectors, the following associations have emerged:

• garbage collectors as a socially unprotected group that can be integrated into the process, into a model of a socially-oriented economy.

> "About garbage collectors - yes, collectors can be embedded, these are jobs, you need to change attitudes towards them as a socially useful profession. Citizens try to oust the problem of garbage. The shadow economy is dangerous because when there are no jobs, and the work of garbage collectors is replaced by machine work, public unrest begins." T. Chestina.

> "Garbage collectors can be involved in. We once attracted attention to such a social group as environmentalists." I. Sosunova, ecosociologist, public figure

• garbage collectors as marginal, critical, risky group

> "Throughout the world, people of the lowest social strata are attracted to work on them. He, as a rule, has no rights." O. N. Yanitsky

• garbage collectors as an independent phenomenon, which has its own psychological characteristics, are not associated with a working position or a permanent occupation.

> "On the one hand, about the scavengers, this is a question to the psychology of these people. There are people who want to find a job and they will find it. And the rest is a certain type of people who are inclined to it. There can be places for sorting, but is it acceptable for them? The avalanche mechanism of involving people in the process, the critical mass of people is important here. As with orphans, there is no such phenomenon in the Caucasus and Israel. Maybe there are technologies in the social sciences that could make avalanche processes controlled?" D. Stark, the founder of the movement "Garbage. No More"

The problem of waste has the following features:

• Waste is displaced from a normal life, both materially and psychologically

> "Mentally, a person displaces the problem of waste. Anyone will take out the garbage just not me. And really to think after it will be in the bucket. And when he sees a bunch of garbage cans then anyone is to blame but not he. And it does not bind in his mind that this is the same garbage that he threw into the bucket. Since he ousted it, he does not think about it. It should be reconciled with garbage. I think it all happened from childhood. Even when we go with children on the street and a wrapper is lying around there, it's interesting to the child, he wants to raise it, to see them shout do not touch it, it's disgusting, put it down we say. And he has a habit and we live with this neurosis." Public figure.

• Waste in the context of culture is understood as a relation to value objects - nature and human relations. The position of sociologists is particularly close to the interpretation of waste as a characteristic of society - its rhythm of life, its relations, its superficiality and disposability due to redundancy.

> "-The attitude towards waste is the same as for people. -What do you mean, the concept of "culture of waste management"?
>
> - Do not produce superfluous, produced to process / use without harm to others. " Ecologist – technologist.

• in the minds of man and various social groups there is some norm of purity and "littering," which is formed in a specific situational environment, a person littered in accordance with their ideas. The norm is dynamic, its boundaries change from above.

> "The society supports the "normal" state of its environment. On the garbage side, this means that there is some familiar level. And deviations from it both in the direction of cleanliness, and in the direction of litter "are corrected." Each person has a comfort zone. Or, in other words, their upper and lower limits of the norm, the approach to which causes discomfort, and the intersection - active actions. The sum of these comfort zones is the group representation of the norm. If you are perceived as a "stranger," the effect will be reversed. "Excellent, if someone is cleaning, then you can more litter." And the more you clean, the more you will litter. The norm does not change from the outside, but only from within the collective." Stark, the movement Muzora.bolshe.net

• Also, some experts under the rule imply social patterns/trends.

> "Fashion is hardly nearly the most important aspect in human behavior." E. Smirnova.
>
> "Public opinion is different with respect to different categories of populations. People who are watching mass media can hardly explain that everything is not quite right. In all you need though a small, but a specific result. " I. Sosunova.

In order for the population to have an eco-oriented lifestyle, a mass effect is needed.

> "The more people are involved in simple reasonable steps, the further we will get,rather than dividing them into five or six factions. Let's first do two or three, and not try 5 different types of plastic right now" E. Smirnova, ecoburea Greens.

The external cultural norm promotes the world standard as a value and norm of conduct, including in the context of sustainability. The internal cultural norm - the adherence to the Russian economic program, about what waste is, their life cycle analysis and what the benefits of processing are, known to many, but not all of them are reflected. There is no orientation to the North Ossetian Republics and processing plants, there is an orientation toward the incineration program.

CONCLUSION

As conclusions, we can forming the following key problems in every aspect that have been discussed with experts.

The main trends of modernization in waste management in Russia:

• the problem of waste management in Russia now is a problem of environmental priorities of government between law and social policy

• the amount of production and consumption waste increases more rapidly than the generated waste infrastructure recycling for different hazard classes of waste. At the same time, the number of non-hazardous waste of the 4th and 5th hazard classes, for which it is required to create separate branches of industrial recycling for different fractions, depends on the rate of consumption of the population, but continues to grow

• in Russia, the principles of the cyclical economy are declared at the legislative level, but at the federal level such infrastructure is not yet created, which develops the entire life cycle of products from the design of the product to its recycling

• the state management scheme assumes several responsible persons for different aspects of waste management, but none controls the production and recycling from start to finish.

The main trends in economic aspects of waste management:

• experts agreed with idea of a common system of agents of action in the chain of effective policy development in waste management: it should involve the state, municipality, business, citizens, activists (environmental movements or environmentalists), and NGOs which involved in the economic system of waste management.

• waste management structure must be similar to priorities of Lansink Stairway scheme, and circular green economy scheme

• the state needs to develop economic incentives for environmentally responsible persons, and significant economic sanctions instruments for persons who make a negative contribution to the environment.

Ecological and technological aspects in waste management:

ERMOLAEVA, Y. V. Problems of modernization of the waste management sector in Russia: expert opinions. **R. Tecnol. Soc.,** Curitiba, v. 15, n. 35, p. 56-77, jan./abr. 2019.

• there are lobby of incinerators and green lobby for standing recycling industry. Now the national eco plan “Clear country” promotes expansion of the territory of landfills and construction of incineration plants in federal ecological programs

• now “Clear country“ try to solve the problem of quantity of generated waste, but does not take into account the possible profits from the recycling. The project don’t have the idea of zero-waste cities in the context of sustainable development because landfills and incinerators is not resource-saving level

• there is no confidence in the future operation of incineration plants from experts because they consider that the conditions of labor protection are easily violated, and cleaning filters and their technical support are expensive, for many of them the question of the use of toxic ash and residual products remains controversial. At the same time, some technical experts agree that incineration plants are safe at the correct combustion temperature.

The main trends in social aspects of waste management:

• in Russia there is no social program of green jobs for recycling, supporting waste pickers, but it is important point in sustainable development program

• wastepickers is a little-spread group in Russia for creating social program

• experts considered that waste as mental object displaced from a normal life, both materially and psychologically, it’s not a eco-practice (as deliberate separating by citizens the different kinds of waste for recycling), it’s a “dirt,” but for standing to green economy strategy in future this attitude must be transforming in daily eco-practice.

In general, experts assess the dynamics of changes in the waste management policy as positive, taking into account, first of all, updating the legislative base.

So, there are differences in experts’ position and their perceptions of waste problem.

The **sociologists experts** dealing with various environmental issues, brought to attention the impact of waste on the culture, environmentalists (also those who are close to chemistry of the environment) are studying wastes within the framework of systemic influence on the environment. The main motivation was their scientific interest "what is connected, and what and how does it affect the environment."

Scientists, working in the field of natural and technical sciences introduce new possibilities of green chemistry, green technologies, and disclose the concept of resource-saving. For them, a metabolic chain is important, without loss of materials and leakage of contaminants. The creation of a non-waste technology is based on the principles of a green or circular economy, which will become the main ideologies in the design of production as the environmental policy progresses. Science and technology should become environmentally and economically viable, then environmental modernization will go as an even process.

Representatives of NGOs and environmental movements specializing in the problem of waste came to understand the need for activism through awareness of personal impact on the environment, the desire to unite with the community, to influence the situation.

Business representatives are motivated by the understanding that garbage in Russia is a complex and profitable niche. They have the most fully expressed perception of waste as a resource. The majority of representatives also express an activist position, the closer the orientation to social entrepreneurship, the greater ideological focus on the benefits of the environment and society.

Representatives of the authorities are trying to combine two positions: a functional vision of the waste problem in comparison of economic and hardware costs. The government does not deny the importance of separate collection, but in most of the territorial schemes and projects, mainly incinerators and landfills appear, and they are lobbied and promoted as environmentally-oriented. Incineration and disposal of waste cannot be a solution to the problem of recycling, also taking into account data on the final harm of incineration plants.

The divergence of experts arose on the basis of the environmental and technical aspect of waste management. Among ecologists, representatives of NGOs and eco-oriented businesses, there is no loyalty to the increase of incinerators and the expansion of landfills. Technologists and government officials can agree to the promotion of such a program with some reservations about the controlled amount of raw materials used. To solve the waste problem, experts proposed a single unit instead of a complex system of functional bureaucratic interactions. Since the device has many responsible persons with interests, it is not easy to get feedback. The idea of a closed cycle should be reflected in the structure of decision makers, rather than wearing separate functional links. The policy on waste management should be built simultaneously in two directions: resource saving and environmental protection (solving already existing pollution problems). At the moment, Russia has many features of the linear "brown" economic model of production, the export-raw development vector, the availability of free space contributes to the expansion of landfills from the resources of the territory, the influence of the shadow economy is great, the waste is generated in large cities, but landfills are located in rural/non-urban areas, which entails many social conflicts and promotes the spread of zones of ecological inequality in access to resources from the population. However, the process of institutionalization is built from disorganized and dysfunctional elements (from the point of view of rational nature management, green economy, sustainable development) to an organized, functional system. This means that, with the expansion of the influence of the concept of a non-waste economy, a higher status will be provided by environmentally-oriented specialists (profitable for the economy), who will support the appropriate ideological basis for draft regulatory and legal frameworks, and project implementation conditions.

Problemas de modernização do setor de gestão de resíduos na Rússia: opinião de especialistas

ABSTRACT

Este artigo apresenta os resultados de um estudo sobre a situação atual da gestão de resíduos na Rússia, com base em dados de entrevistas de especialistas de várias categorias de interessados no período de 2014 a 2017. Os grupos de especialistas são representados por várias categorias de pessoas envolvidas na solução do problema de resíduos: ONGs, ativistas, acadêmicos das ciências humanas e naturais, representantes do setor empresarial, administração pública, ambientalistas e tecnólogos. Os problemas da eco-modernização legal e aspectos econômicos, ambientais, tecnológicos, sociais e culturais são discutidos. A dinâmica do desenvolvimento nos últimos anos pode ser descrita como positiva, mas há muitas questões não resolvidas em cada uma das áreas. Na parte jurídica da gestão não há clareza necessária na distribuição funcional das responsabilidades dos principais stakeholders. No setor de governança institucional não existe uma cadeia de partes interessadas, que seja coordenada com uma economia não-desperdício ou cíclica, a política social não é trabalhada e não há soluções no campo da política social. A força do sistema de gestão russo pode ser identificada em potenciais capacidades técnicas, e a disposição do setor privado e sem fins lucrativos de assumir uma posição mais decisiva na gestão de resíduos. No entanto, existem falhas em cada direção, que devem ser rapidamente resolvidas para atender às exigências modernas no campo do desenvolvimento sustentável e da proteção ambiental. No setor de apoio legal, não há clareza na distribuição funcional das responsabilidades das partes envolvidas na interação legal. No setor de governança institucional, não há cadeia de partes interessadas, que é coordenada com uma economia não-desperdício ou cíclica, a política social não é trabalhada. O projeto "País Limpo" e a funcionalidade dos esquemas territoriais no campo da gestão de resíduos no território da Rússia causam uma ressonância especial. O principal recurso é a iniciativa de organizações sem fins lucrativos e setor empresarial, que precisa de apoio legal e econômico do estado sob a forma de um quadro legislativo bem desenvolvido que leva em conta o interesse de todos os tomadores de decisão e reduzindo o impacto negativo dos resíduos sobre o meio Ambiente.

KEYWORDS: Desperdício. Modernização da política ambiental. Gestão de resíduos. Esquemas territoriais.

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