SUPPORT TO THE ARMENIA-TURKEY NORMALISATION PROCESS

European Union Initiative

EURASIA PARTNERSHIP FOUNDATION

Government Offices of Sweden
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URBAN FOUNDATION
for sustainable development

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RECYCLING OF PLASTIC WASTE:

Practices

www.urbanfoundation.am

This information booklet is prepared for waste practitioners and general public. It contains historical overview of waste management practices, speaks about necessity of separation and recycling of plastic waste in the modern world. The booklet tells about the first attempts of separating plastic waste in Armenia, about achievements and lessons learnt. The booklet also provides plastic waste separation and recycling practices in Diyarbakir, Turkey.

ABOUT “URBAN” FOUNDATION

This initiative was launched by “Urban” Foundation. Since 2008, the organization has been continuously working with communities throughout Armenia, to encourage and educate community members and waste disposal staff to sort and recycle plastic waste, by means of providing relevant capacities and infrastructure. Starting from Alaverdi, today this practice is spread or being spread in more than 20 communities in Armenia, and the first plastic recycling plant will soon be launched in Kapan community of Syunik Marz.

URBAN FOUNDATION for sustainable development | ՈՒՐԲԱՆ կայուն զարգացման ՀԻՄՆԱԴՐԱՄ

“A clean place is not the one which is cleaned,
but the one which is not littered”

ABOUT THE INITIATIVE

This initiative of "Urban" Foundation aims to promote cooperation in the field of management of plastic waste among the civil society organizations in Armenia and Turkey, waste management specialists, responsible authorities, and business persons.

Turkey has made considerable progress in plastic waste recycling with well-established waste recycling companies operating in the country. Armenia is still making its first steps toward separation of plastic from household waste and recycling thereof.

Since this issue was in the focus of interest of stakeholders of both countries, this initiative enabled discussions on solutions or mitigations, and exchange of best practices of their countries. Along with the discussions, participants of the initiative visited waste recycling plants and were introduced to the manufacturing process. In addition to reduction of waste, recycling of plastic waste will not only prevent its spreading, but also transform it into public goods and create economic opportunities for businesses and population.

Success stories of plastic waste management in both countries have been included into this booklet. Dissemination of the booklet among interested public, private and governmental organizations of two countries may contribute to the improvement of skills and expertise of the field.

"Urban" Foundation extends their gratitude to the Eurasia Partnership Foundation, the European Union and the Ministry of Foreign Affairs of Sweden for their support for the initiative.

HISTORICAL OVERVIEW OF WASTE MANAGEMENT

The harmful impact of waste on the environment and human health is largely touched upon these days; numerous informative materials are published and studies conducted on this topic. Waste may be spread through the wind, by animals penetrating landfills, people and businesses. Uncontrolled waste is full of adverse consequences; most of landfill sites is constantly burnt.

The issue of waste disposal traces back to prehistoric times. In various periods of history, people tried to find solutions to waste management, which are at the core of current international experience.

- Even 3,000 years ago, on the Island of Crete, people used to dispose waste into specially drilled pits and cover is with soil.
- The first known law on waste disposal, which set forth rules for waste disposal, was adopted 2,500 years ago by the authorities of Athens. Citizens of the polis were required to dispose waste at least 1.5 km away from the city.
- In the 11th century, Japan was the first to experience waste recycling by means of collecting pieces of used paper and recycling them into new ones.
- In the 14th century, England and France started imposing fines for the pollution of city streets.
- In many cities of England and Germany, waste disposal near water basins was banned.
- In the 16th century, the Queen of England granted special tax privileges for waste collection and disposal.
- In the 18th century, the collection and storage of recyclable metal waste was a patriotic duty of every person during the US Independence War, due to the lack of raw materials for ammunition.
- In the 19th century, the large-scale development of urbanization in the United States resulted in significant

increases of volume of waste, making city officials create the first municipal waste management services.

- In the same century, New York population was assigned to store waste separated (food, paper, metal). Waste was thrown into special trash bins placed on the street. The first waste recycling plant was built in the city.
- In the 19th century, the British Parliament enacted a law on waste sorting and recycling. In Nottingham, waste-to-energy practice was initiated.

CAPABILITIES OF RECYCLING PLASTIC WASTE

Efficient and comprehensive management of waste assumes sorting and recycling. In the modern world, composition of household waste has changed. Environmental pollution has increased, and household waste has been multiplying with the domestic use of plastic bags and polyethylene packages. Since the 1970s, the use of plastic bottles became a common thing in everyday life of the US population.

The use of plastic bottles (Polyethylene Terephthalate/PET) is particularly needed in the industry; as they say, plastic bottles are as beautiful as crystal and as light as soap bubble; they are unbreakable and as steady as steel. Plastic bottles are completely recyclable.

Despite of their economic advantages, plastic bottles have serious harmful impact on the environment when instead of being recycled they are thrown into the environment. Different estimates show, that 63 billion plastic bottles are thrown into landfills or the ocean. Annually, companies producing plastic bottles generate 2.5 million tons of dioxin. All this affects the global climate change and global warming.

Plastic waste does not undergo biodegradation in the nature; however, it is exposed to decay under the light, which means that with time it splits into small particles that absorb organic pollutants (bisphenol A (BPA) and polychlorinated biphenyl (PCB)). Water and soil contaminated with these pollutants, infect animals and birds, and penetrate into the food chain thus affecting human health, causing infertility, cancer, and other harmful impacts on the human immune, reproductive and nervous systems.

Therefore, recycling of plastic items becomes a necessity to mitigate those harmful impacts. As it was mentioned, recycling of waste is also beneficial from economic perspectives. Today, plastic waste is sorted with 28% in the US, 78% in Japan and 98% in Germany.

The most commonly used modern approach of recycling is the mechanical processing, which proceeds through the following main stages: removal of organic remains by washing, milling, melting and producing outcomes with required features. However, mechanical processing technologies represent some restriction, and it is not possible to recycle all types of plastic through that mode, due to their different chemical and thermal features. Thus, there are only two types of plastic that can be processed mechanically, including PET and PE (polyethylene), which make up 9 and 37 percent of the annual production of plastic, respectively. The rest of solid plastic household waste is almost impossible to process through this way. Processing of that type of waste is done using other modern technologies, such as chemical processing, conducted through pyrolysis (thermolysis) and the use of catalysts, which allows selective production of gas, oil and wax. However, chemical processing is not widely common mainly due to large consumptions of energy resources.

Burning and generation of energy in the form of heat is another alternative of waste recycling. Burning is suitable for recycling of mixed waste, as it does not require sorting. At the same time, re-use of the original material becomes impossible after burning. In addition, this technology is not energy efficient.

CAPABILITIES OF RECYCLING PLASTIC WASTE IN ARMENIA

A study of the composition of waste was conducted in six pilot communities of different sizes and lifestyle of Armenia. The study showed, that plastic bottles constituted about 30% of the overall waste (in terms of volume).

Various estimates claim, that 6,000 tons of plastic bottles (PET) are produced in Armenia annually. Sorting of the plastic waste is common only a few communities. Moreover, in different communities sorting takes place in different ways. For example, sorting of waste in Vedi community and 15 villages is done mainly from mixed waste being transported or already disposed to the landfill. Within the completed and ongoing projects implemented by "Urban" Foundation in the regions of Lori, Tavush, Shirak, Gegharkunik, Kotayk, Vayots Dzor, Syunik, waste is sorted at the trash bins with the help of waste producers.

First attempts of waste recycling have already initiated in Armenia. The initiators represent the private sector who started from collecting plastic bottles in collaboration with various communities in Armenia. However, those attempts revealed that the annual amount of plastic produced in Armenia is not sufficient to establish a profitable business of waste recycling. Consequently, the interest of the private sector has dropped down and is limited to milling of plastic waste and exporting of flakes thereof.

In this situation, it is important to seek new approaches to recycling of plastic waste. It is recommended to solve the issue of insufficient amount of plastic by means of adding other materials, such as sand, to the processed stuff. At the same time, instead of establishing a recycling business, the processed outcome could be used for the improvement of infrastructures in various communities. In this regard, the first attempts are done in the city of Kapan. They plan to establish a workshop of construction materials from plastic wastes.

SUCCESS STORIES

SORTING OF PLASTIC WASTE

ALAVERDI – A PIONEER OF SORTING PLASTIC WASTE IN ARMENIA

Alaverdi is a mining town located in the North-East of Armenia, full of environmental issues. Mining issues were added with the environmental and health challenges caused by inefficient waste management, exacerbated by continuous increase of the amount of plastic in household waste.

Thanks to the caring and progressive community leader of Alaverdi, it was ready to overcome the challenges. Artur Nalbandyan had already started working toward construction of a licensed landfill in Alaverdi - the first one in Armenia. However, overall waste management was still insufficient. The waste was not removed from the community for long periods, due to the lack of sufficient financial and technical resources, required for waste disposal with certain frequency. Waste disposal charges were quite symbolic with no economic calculation, and the community had to subsidize some of the costs at the expense of its scarce budget, expecting to cover the rest of expenditure by the help of its residents. However, community members refused to pay due to the lack of proper service.

Sorting of waste initiated in Alaverdi, was the first among such attempts in Armenia.

Concerned about the environmental and economic situation, the community leader initiated consultations with experts and relevant organizations, understanding that under those circumstances, it was necessary to demonstrate a creative approach and find less costly alternative solutions. One of those organization, “Urban” Foundation, recommended the community leader to introduce waste sorting practices, and start with sorting of plastic waste, the most dangerous one from the environmental and health perspective. It would allow reducing the amount of generated waste by 30%, and creating future economic opportunities. Reduction of waste would thus make it more manageable.

At first, the community leader was sceptical about the recommended solution, because the sorting of waste was advised to be handled with the help of community members at their homes. The community leader was concerned by the fact that the community members were refusing to pay waste collection fees; moreover, they were not following basic rules of waste disposal thus polluting the city and the environment. In addition, Armenia was lacking any experience of waste sorting. Alaverdi was the first Armenian community to make that attempt. Nevertheless, concerned about the clean environment of the city, Arthur Nalbandyan agreed to be the first to try waste sorting in the community. Perhaps the willingness to mitigate numerous environmental challenges available in Alaverdi was another reason for that commitment.

"Urban" Foundation assisted the community to raise funds for the pilot project. The financial aid was provided by the Swiss Agency for Development and Cooperation. Active public awareness and educational campaign was launched, including community meetings, seminars for community members and schools, roundtable discussions, TV debates, social advertising. Afterwards, in some parts of the city, special trash bins for plastic were placed next to common household waste bins.

The Alaverdi community members, and in particular the community leader, were surprised by the project outcomes; people were sorting the waste by separating plastic bottles into special trash bins. "We will definitely sort the waste, as we see that by throwing plastic away we pollute the street and the yard, while after sorting, they can have further use," says Rima Galstyan, a resident of Alaverdi Community. Ms. Rima lives near the riverside and often notices plastic containers floating over the river. That is why she thinks that the residents should feel more responsible for the protection of environment. It is also noteworthy, that residents of other districts were approaching the community leader with a request to have plastic trash bins in their neighbourhoods as well. The community administration was storing the sorted plastic, which could be sold to private companies exporting plastic, or collected for further processing. In any case, the most remarkable thing for the city was the reduction of waste and the environment clean from plastic waste.

PUBLIC-PRIVATE PARTNERSHIP

LEASONS LEARNT AS A DRIVING FORCE FOR FUTURE SUCCESS

The goal of public-private partnerships is to ensure the efficiency of public infrastructure or public services through the private sector. Increased efficiency, higher quality and cheaper services provided by private sector – are the main advantages of such cooperation. It allows financial, technical and professional arsenal of the private sector to be contributed into the public sector. Moreover, the public sector retains the ownership of the infrastructure.

Public and private sectors can also effectively collaborate in waste management, which could be beneficial for all stakeholders, including efficient environment protection, better quality services delivered by the community, and profitable business for the private sector.

In 2011, "Eco Engineering", a private company, started co-operation with communities in Armenia to collect plastic waste, which would later be used for recycling and sales.

Various estimates show, that 6,000 tons of plastic bottles (PET) are produced in Armenia annually, which is not sufficient to establish profitable recycling plants.

This collaboration was supported by the United States Agency for International Development (USAID) and the United Nations Development Program, which assisted eight interested communities, including Alaverdi, Vanadzor, Sevan, Hrazdan, Tsaghkadzor, Charentsavan, Ararat, and Dilijan, to introduce special trash bins for the collection of plastic waste. The communities were provided with plastic compression equipment.

Compressed plastic waste, plastic flakes from recycled waste – photo credit to "Eco Engineering".

Harutyun Petrosyan, the Head of "Eco-engineering", says that the company started processing plastic since 2009. They established a factory that was collecting plastic from communities, sorting it by colour, washing and milling them into small particles. The collected waste was recycled into plastic flakes and exported to Romania and Bulgaria, and recently to Germany. "Eco Engineering" was ready to make investments in the field, if large amount of plastic bottles could be collected.

The cooperation was a success.

- The communities were able to significantly improve waste management in cooperation with the private sector.
- The communities received a small, yet certain income; "Eco Engineering" was paying 70,000 AMD for a tone of plastic bottles to the communities.
- Plastic bottles collected by the company were exported after proper processing.

This collaboration was also a beneficial lesson learnt.

Plastic waste recycling is considered a profitable business worldwide. Various estimates show, that 6,000 tons of plastic bottles (PET) are produced in Armenia annually, which is not sufficient to establish profitable recycling plants. "Eco Engineering" was recycling about 1,000-1,500 tons of plastic a year.

"Since there is no considerable amount of plastic waste today, the business is not profitable at the moment. The secret is in the amount," says the Head of the Company. "Foreign companies are interested in purchasing raw materials from recycled plastic. In the developed countries, there are a number of laws requiring that manufacturer use only recycled raw materials in their productions. However, the local companies cannot provide the required amount."

These lessons learnt encouraged in seeking alternative solutions for recycling of plastic waste in Armenia. A pilot project is currently implemented in Kapan.

WASTE RECYCLING

TRANSFORMING CHALLANGES INTO OPPORTUNITIES – KAPAN, ARMENIA

Since 2010, realizing harmful impact of plastic waste on human health and the environment, the number of communities in Armenia, that started sorting plastic waste from common household waste gradually increases. It has also ensured more efficient waste disposal and management in their communities.

One of those communities was Kapan City, the centre of Syunik Marz (Region). The community had already practiced sorting of plastic containers. It was time to combat widespread use of polyethylene bags, by means of promoting multiuse packs.

Mayor of Kapan City:
"Plastic items should not appear in household waste, they should be separated and disposed into trash bins for collections for plastic."

As in many other communities in Armenia, there were few opportunities to solve the issue by community resources, so it was necessary to seek for alternative means.

The Municipality of Kapan City led by Ashot Hayrapetyan, the head of the community, initiated collaboration with "Urban" Foundation, the United Nations Development Program, and the US Agency for International Development, to launch the project. "Plastic items should not appear in household waste, they should be separated and disposed into trash bins for collections for plastic," says Ashot Hayrapetyan. The project was a success; community members supported the initiative and began to collect plastic waste in special trash bins.

The next step was to handle the collected plastic. Using the experience of plastic sorting already practiced in other communities of Armenia, Kapan community stored the separated plastic for further hand over to private companies engaged in collection and expoting of plastic. The municipality of Kapan had a small technical advantage over the other communities – a clamp, which was used to compress the separated plastic for more efficient storage and transportation.

"Why we don't recycle the collected plastic waste instead of handing them over to private companies? After all, other products are made from recycled plastic around the globe; moreover, recycling is a profitable business." This question was raised in many communities, and Kapan was not an exception. The answer to this question is the volume of plastic production in Armenia – the amount is not sufficient to establish a profitable business.

However, the Municipality of Kapan was not pursuing business goals. Following the recommendation of "Urban" Foundation, the municipality decided to convert the collected plastic waste into construction materials, to be used for the improvement of community infrastructures. Given that the amount of collected plastic waste was not sufficient for production, they simply mixed it with sand to produce pavements, curbs, roofs, and other materials.

So everyone would benefit: the environment would be rescued from hazardous plastic, harmful impact on human health would be prevented, community waste management would become more effective, community infrastructure would improve, and jobs would be created. Further professional studies show that this type of construction material was very competitive in the market, compared to standard construction materials.

Peter Svitalski, the Ambassador, Head of the EU Delegation in Armenia:
"I am hopeful, that the idea of turning plastic into construction materials will have positive outcomes with newly created jobs, and most importantly, cleaner streets, gardens and fields in Kapan City."

The idea interested the officials of European Union and they decided to support its implementation. For this purpose, trash bins for plastic bottles were installed, special waste disposal vehicles were introduced, and production line was established.

The initiative is not completed yet; however, the path the community has already passed, the determination and commitment of the community, cooperation with various partners, and the investments made prove that it is going to be a success. The first construction materials produced from recycled plastic are expected in the nearest future.

“I am hopeful, that the idea of turning plastic into construction materials will have positive outcomes with newly created jobs, and most importantly, cleaner streets, gardens and fields in Kapan City,” said Peter Svitalski, the Ambassador, Head of the EU Delegation in Armenia.

Upon the launch of the production line in Kapan, it is planned to create 35 jobs mainly for the unemployed.

SEPARATION OF PLASTIC WASTE IN RURAL COMMUNITIES

THE LARGEST RURAL COMMUNITY WAS THE FIRST ONE TO INTRODUCE AN INNOVATION IN THE FIELD OF WASTE DISPOSAL (ARMENIA)

There is no proper waste management in rural communities in Armenia. This booklet touches upon numerous reasons thereof, including the lack of management strategy, financial resources, defined landfills, waste sorting culture and environmental mentality, as well as absence of cooperation with the private sector.

The community leader Artsrun Igityan, like many community leaders, was concerned about the issue of waste management in the community. Holding the position for many years, the community leader was well-aware of the challenges, however, the standard approaches were not effective. In this regard, it was his experience to guide through the search of alternatives. The community leader was in continuous cooperation with international and local development organizations. Thanks to such cooperation a number of community infrastructures were upgraded with innovative and efficient solutions. Artsrun Igityan decided to use that approach for waste management, as well.

In collaboration with "Urban" Foundation, the community drafted a strategic plan for waste management, defined an economically justified and estimated tariff, and implemented a tool for collection and calculation of fees. Meanwhile, the most important innovation was the sorting of plastic from household waste.

The largest rural community in Armenia was the first rural community to start sorting plastic waste, thus taking step forward dozens of urban communities.

With the support of the Norwegian Embassy, special trash bins were purchased. They were 26 in number, and still not sufficient for the whole community; however, it was an excellent start for the reduction of waste and reuse of plastic. Akhurian Community also invested in the purchase of special trash bins for plastic bottles.

However, placement of trash bins was not enough; community members would also need to show collaboration in sorting plastic waste. Artsrun Igityan believed that the residents of Akhuryan Community would understand the importance of the issue and would support the initiative. “We introduce the culture, and plastic bottles will be separated and collected into specially bins. That is my request to and demand from the population.”

The experts of “Urban” foundation also highlighted public participation and support as a very important factor. They believe that even the best conditions would not deliver a successful initiative, if the population did not express their willingness to keep their surroundings and the community clean. Experts estimated that some 50 special trash bins were needed for separation of plastic waste produced in Akhuryan Community, and 26 special trash bins were already installed. The neighbourhoods with no special bins were recommended to collect plastic bottles in separate bags or sacks and leave them at standard trash bins for the community waste disposal service to easily remove them.

The community began to work closely with different sectors of the population, organizing walking campaigns with participation of young people encouraging community members to support the community in separating plastic waste.

Community clean-up days were also organized with participation of both children and adults. Signboards were installed in different parts of the community to inform the public about separation of plastic waste and its placement into special trash bins. Alongside with those activities, trash bins for plastic waste were placed in the community.

Community members began separating plastic waste and collecting them in special trash bins. The community waste disposal service was collecting the plastic and storing it. There were two options for further handling of the stored plastic – continues storing it for further recycling or deliver it to private companies engaged in recycling and exporting of plastic. The issue of missing trash bins was also solved. Following the recommendation of "Urban" Foundation, Akhuryan Community applied to the UN Development Program and received additional trash bins for the remaining neighbourhoods.

The initiative was a success. "We extend our gratitude to the population of Akhuryan Community for their response and understanding of the importance of sorting plastic waste. Today there are special trash bins placed in Akhuryan Community, and people really use them for collecting plastic waste. We were lucky that our concerns about people who would never use the special trash bins for separation of plastic and would continue throwing it into the mixed waste were not justified," says Armine Tukhikyan from "Urban" Foundation. In this community, people learnt that the plastic should be collected, separated from common household waste and placed into special trash bins. Moreover, inspired by success, Akhuryan Community has already initiated sorting and collection of plastic waste from the neighbouring settlements composing part of the larger community.

INTER-COMMUNITY COOPERATION AS AN EFFECTIVE FORM OF WASTE MANAGEMENT:

"Experience of Vedi Intercommunity Union" (Armenia)

It is still practically impossible to deliver effective waste management in almost all Armenian settlements, except for several urban communities. The issues emerge from interrelated causes and reasons; collected fees are not sufficient due to low quality service; the service quality is low due to the limited budget for investment; the collected fees are not sufficient because the tariff is low and economically not justified. With economically justified tariffs, the population would have to pay more, while in Armenia, especially in almost all rural areas, the number of population is small, and the amount required for the self-sufficiency of the service can be a considerable burden on the population.

Proper funding can be secured by the private sector; however, a rural community with a small number of population cannot provide an attractive and profitable business. The private sector needs a larger geographical area with more settlements and larger population. Moreover, the private sector would prefer not to deal with collection and with community members, but rather deliver a relevant service by making proper investments in infrastructure. To cover investment costs, the community/communities should periodically pay to the private sector. In order for the community to be able to cover such financial burden, the private-public partnership shall be based on a long-term waste management agreement. This will be beneficial for both the community and the private sector. However, currently, communities conclude only a one-year agreement with the service provider, which could be either extended or not. This situation significantly reduces private interest for proper investments in waste management of the community/ communities; moreover, it raises doubts for the private sector to take such commitment at all.

Understanding the above-mentioned challenges, Vedi Community reached an agreement with neighbouring rural communities, and those 15 communities launched a cooperation for the efficient waste management. They created communities' union called "Vedi Intercommunity Union". The Union created a limited liability company "Makur Yerkir" ("Clean Country"). Since 2010, the latter is engaged in the waste management of 15 communities (Vedi, Aygavan, Aralez, Dasakar, Yeghegavan, Ginevet, Goravan, Nor Kurin, Nor Ughi, Norakert, Sisava, Surenavan, Pokr Vedi, Lousarat, Shaghap).

Community leaders agree that they do not have sufficient resources to conduct waste management by their own means. Yura Harutyunyan, Head of "Makur Yerkir" LLC, noted: "The composition of waste is very complicated; rural waste one thing, urban waste is another. One single community cannot handle such waste management; currently, our company is paid 1 million AMD per year, however, if done individually, none of the communities could handle such a service even with 2 million AMD."

"We distribute green and black bags to the population; the green ones are for paper, polyethylene and plastic, while the black ones are for the mixed household waste.Waste disposal trucks collect the waste and provide the community members with new waste bags.

Yura Harutyunyan, Head of "MakurYerkir" LLC

The company needed some support to take a start, which was provided by the European Union. Necessary infrastructures were provided, waste disposal vehicles and trash bins. In Dashtakar Community, 5 hectares of land was allocated for the establishment of a landfill; the area was properly checked and fenced.

The communities composing "Vedi Intercommunity Union" are among the small number of communities in Armenia, that in cooperation with "Makur Yerkir" LLC, sort plastic waste. Following best practices and in continuous cooperation with international organizations, the Company, installed special trash bins for separation of plastic waste, with the support of USAID/Counterpart International and the

United Nations Development Program. “Makur Yerkir” LLC is the only company in Armenia that collects waste in polyethylene bags. “We distribute green and black bags to the population; the green ones are for paper, polyethylene and plastic, while the black ones are for the mixed household waste. We collect the waste by a clearly defined schedule. Waste disposal trucks visit each community once or twice a week; they collect the waste and provide the community members with new waste bags. In Vedi Town, waste disposal is done every day,” Yura Harutyunyan explained. Plastic waste is also separated from the mixed household waste transported to the landfill.

The company is sorting household waste; however, it is not recycling it yet. “Since 2011, I have come to realize that we cannot keep what we have at this landfill. Our goal is not to collect waste in the landfill, but rather to recycle it,” says the Head of “Makur Yerkir” LLC. The company is building a waste recycling plant with a grant provided by the United Nations Development Program. They are planning to establish a workshop and install a production line, where the waste will be sorted and recycled. “In the future, we are planning to build a greenhouse in front of the plant, to generate gas from the recycled waste and thus heat the greenhouse,” says Yura Harutyunyan. This is still a project that requires large investments, and in case of success, it will become one of the first waste recycling plants in Armenia, which comes to solve the issue of landfills.

REGIONAL COOPERATION IN PLASTIC WASTE MANAGEMENT

BEST PRACTICE OF IJEVAN (ARMENIA) AND BOLNISI (GEORGIA) CITIES

The cooperation was unique in the sense that is was established between two bordering cities of the neighbouring countries, which agreed upon finding solutions to waste management challenges through joint efforts. The challenges of both cities were almost identical. In addition, both communities introduced sorting of plastic waste as an innovation for their communities. The project was initiated by Ijevan Municipality with the recommendation of "Urban" Foundation and the assistance of the civil society of Armenia and Georgia. It was a valuable experience of international cooperation for Ijevan Municipality. The municipalities set forth a number of challenges and drafted a common methodology and action plan in order to find solutions for all the issues. Participation, awareness raising and education of the community members were the key focus of the initiative.

As a result of this cooperation, Ijevan and Bolnisi municipalities already have a jointly developed and mutually approved waste management strategies.

- Sorting of plastic waste has already become a reality in both communities, with the help of community members.
- In both communities, teachers and pupils received basic environmental knowledge, including information on harmful impact of plastic waste on the human health and environment.

The Armenian-Georgian joint initiative comes to prove that public participation is important for overcoming waste management challenges, and it is essential to inform the population about those issues and to make them allies, rather than opponents. Active members of the communities participated in the process of identifying waste management challenges and finding relevant solutions; they organized clean-up days and environmental walking campaigns, thus influencing the behaviour of fellow citizens and bringing the community population together to find a joint solution to the issue.

To learn more about this initiative, watch this video:

RECYCLING OF PLASTIC WASTE IN TURKEY

Today recycling of plastic is already a successful business in Turkey. They have started collection of plastic waste for recycling since 1989. The first steps were made in the Turkish city of Adana, despite of the absence of legal commitments. 30,000 tons of plastic bottles are recycled annually in Adana, by SASA (Artenius Türkpet), the first plant for recycling PET bottles. At the same time, in 1991, ÇEVKO Foundation was established, with SASA as a founding member. The goal of the newly established foundation was to raise public awareness about environmental and associated issues and promotion of public participation in the sector.

Since 2001, large-scale waste recycling projects have been launched. Production of other goods from recycled materials has grown considerably, and the amount of generated outcome is significant. Plastic waste constitutes about 50% over common household waste. 900,000 tons of plastic waste is generated in the country annually, of which 40% returns to the economy.

Neutral and legal entities interested in collection, sorting and recycling of plastic waste, have to obtain a license from the relevant public authority. Thus, there are centres for collecting plastic waste, companies and enterprises buying and recycling plastic in the country.

The Ministry of Nature Protection provides special assistance to the licensed companies. In addition, the legislative framework encourages investments, which contributes to the effectiveness of businesses involved in waste recycling. The legislation encourages involvement of credits and loans, granting such investors preferential interest rates, tax and insurance benefits.

In Turkey, the raw materials generated from recycled and reused plastic waste are used for production of trays, tubes, overalls/ working clothes (25 pieces of 2-liter plastic bottles can be recycled into a single overall), sleeping bags (35 pieces of 2.5-liter bottles needed), auto spare parts, agricultural greenhouses, fibres used in garment manufacturing, containers, packaging boxes, as well as fuel.

SUCCESS STORY. TURKEY

Waste Recycling Plant of Çevsan (Çevsan Geri Dönüşüm Limited Şirketi)

The plant launched its recycling activities in 2005. Those years, the society was not well aware of recycling processes. At the beginning, waste collected for recycling purposes was purchased from waste collectors. Licenses obtained from the Ministry of Nature Protection allowed recycling companies conclude waste collection deals with municipalities. In this regard, no fees were charged from the municipalities. Sorting of waste was done on the spot. Informative meetings were organized by environmental engineers at every workplace and public buildings. Small and stylish trash bins were provided separately for that type of waste. At the same time, plastic, glass, paper waste was separated and collected at landfills. Later on, separated waste was collected by the waste disposal vehicles provided to Çevsan Company. Every vehicle was served by a group of two employees. Currently, the company periodically collects sorted waste from large residential areas and homes, by placing special trash bins in large residential areas and even at homes. The company sells the collected waste to interested companies, while plastic waste is recycled in their own plant into granules, and then sold. In this way, production continues to grow.

Waste disposal vehicles of the company collect the separated waste from workplaces, public buildings, social and residential areas, and transport it to Çevsan recycling plants, for further sorting and compression.

At the beginning, municipalities did not charge any fee, however with the adding number of actors and emerging competitor companies, municipalities started organizing tenders among interested companies, and the Ministry of Nature Protection and Urban Development initiated a process for authorization of successful companies. This situation created additional costs for the companies.

Waste is separated at workplaces, public buildings, social and residential areas, public places and schools, and stored in special trash bins for plastic, glass and paper. No criminal liability is imposed for not separating the waste.

All these activities are supported by the public. Social advertising is used on national and local television to raise public awareness.

For the large amount of collected waste, Çevsan Company receives financial assistance. It is provided by agencies under the Ministry of Nature Protection and Urban Development, such as, the Turkey Environmental Protection Foundation (TÜÇEV) and the Foundation for Environmental Protection and Waste Recycling (ÇEVKO Foundation). The state grants tax and insurance benefits not only to companies engaged in waste recycling but also to investors of different areas. Since waste recycling is a sector requiring huge effort and work, the state supports waste recycling companies, for example, by means of paying salaries of qualified employees for some period through various programs.

“In order to boost the production growth we purchase already separated waste from Europe (particularly from Germany) to further recycle it into granules and sell. The sorted waste in Europe is cleaner and ensures more profit,” says Sucru Adanr, the financial director of the company.

Public awareness raising campaigns are one of the most important components of the activities of Çevsan Company. The PR department and engineers of the company organize and deliver awareness raising workshops to municipalities, universities, local self-governing authorities, other relevant agencies, and particularly schools. Since the company has business relationship with foreign companies, it has long-term projects with the latter, and works with international experts and specialists of the field.

EXPERIENCE SHARING BETWEEN ARMENIA AND TURKEY

“Clean Dialog: exchange of best practices in plastic waste management between civil society organizations and experts of Armenia and Turkey” project was an excellent opportunity of cooperation between the experts from both countries. Two meetings were held in Diyarbakir, Turkey (in March and June this year), which laid grounds for cooperation between local self-governing authorities, representatives of environmental NGOs, plastic waste management specialists, plastic waste sorting and recycling plants. On-site visits allowed Armenian representatives learning about the years’ experience of Turkey in plastic waste management, in particular visiting plastic waste recycling plants. Diyarbakir alone hosts numerous plastic waste recycling plants and has a long-lasting experience in the sector. During the visit, the participants discussed about the issues of the sector and possible solutions, as well as considered the mechanisms of applying the obtained practical skills in Armenia.

In order to strengthen the bases for cooperation, it was decided to organize a similar meeting in Armenia, in September. This was an excellent opportunity to hold a joint discussion. Representatives of local self-governing authorities, civil society, environmental NGOs, and entrepreneurs from different regions of Armenia, members of Diyarbakir Association of Industrialists, Entrepreneurs and Businessmen of the Middle East, Diyarbakir Chamber of Commerce and Industry, Diyarbakir Union of Environmental Protection, as well as representatives of organizations providing financial assistance to the Project, including the EU delegation in Armenia, the Embassy of Sweden, and Eurasia Partnership Foundation, arrived in Yerevan.

During the stay in Armenia the group from Turkey met the members of the Union of Manufacturers and Businessmen (Employers) of Armenia and discussed possibilities of further cooperation.

Since the issue of plastic waste management was the focus of interest of stakeholders of both countries, this visit allowed for joint discussions of the challenges available in the sector and for exchange of best practices, as well as for a dialogue on opportunities of future cooperation.

SUPPORT TO THE ARMENIA-TURKEY NORMALISATION PROCESS

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