



Research Summary

Elections and Environment

*Establishing Policy Framework for Elections
Waste Management*

May 24, 2022

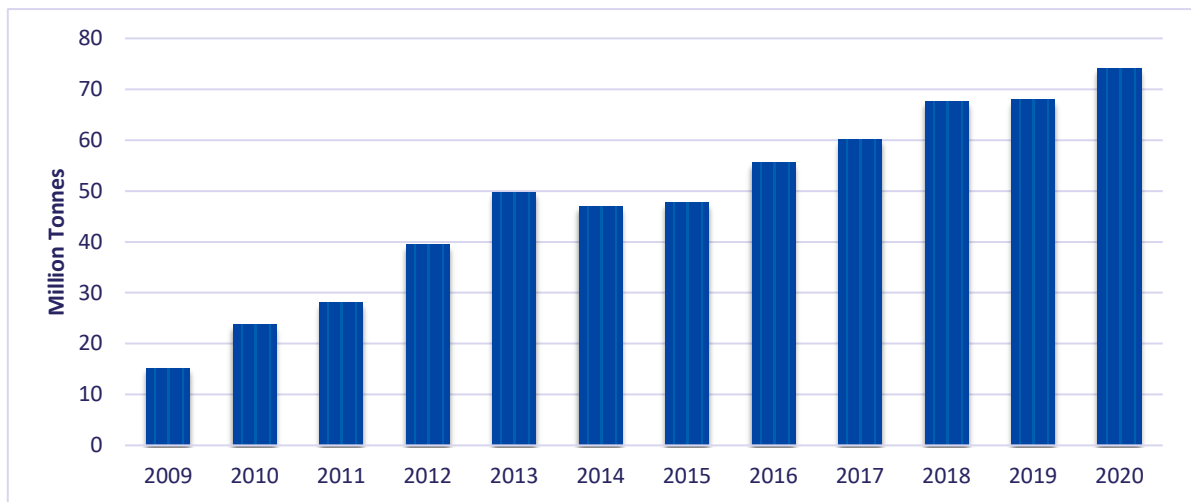
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We wish to extend our appreciation to the governor of Armavir region, the heads (as of December 4, 2021) of Yervandashat, Bagaran, Koghbavan, Vanand and Hushakert communities, and all the residents of these beneficiary communities for their engagement in the case study and the survey conducted within the scope of this study.

With population growth and excessive consumption of goods and resources in modern society, waste reduction and proper waste management have become a global challenge. In Armenia, the annual waste generation since 2009 had increased fivefold, amounting over 74 million tonnes in 2020. The amount of municipal solid waste transported to landfills from the municipal areas in 2020 was 577.3 thousand tonnes, the highest ever recorded in Armenia.¹



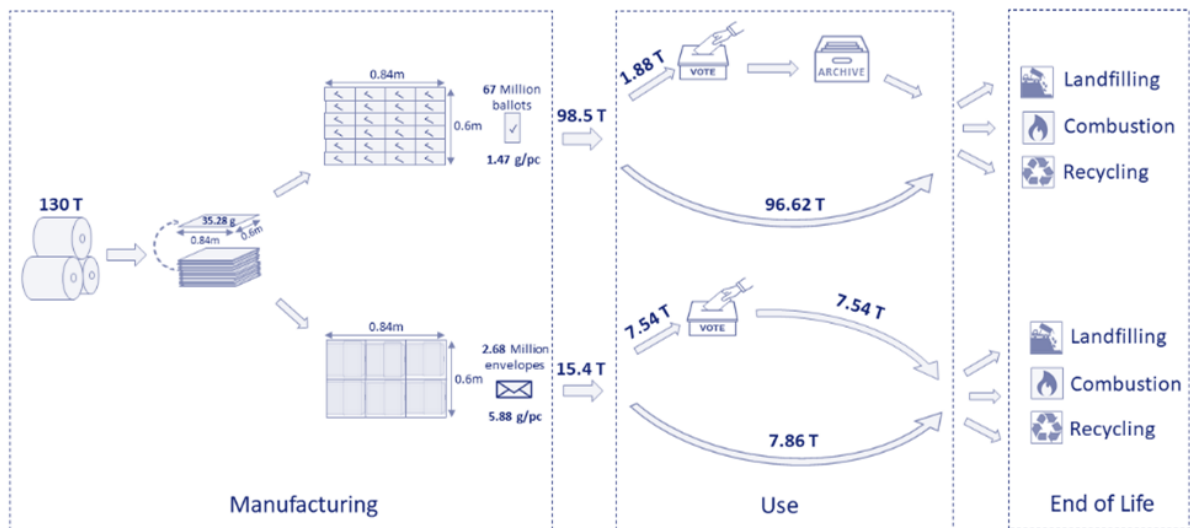
The annual waste generation in Armenia from 2009 to 2020

The new Electoral Code of RA (Electoral Code of RA, 2016) sets new conditions and procedures for the elections, creating a growing interest in Solid Waste Management (SWM) of elections waste (i.e. waste generated due the activities related to political elections) in general and of ballot papers and envelopes in particular.

¹ Armstatbank. (2020). Statistical Committee of the Republic of Armenia. Retrieved March 30, 2022.

Elections

According to Electoral Code of RA, the number of ballot papers provided to each precinct (polling station) should be 5 percent (and not less than 10 ballots more) than the number of voters in that precinct's voter lists. Thus, in 2021 RA Parliamentary, for 2,595,512 total number of voters, 67 million ballot papers and 2.68 million envelopes were printed/produced pursuant to the approved samples.²



The Flow of Ballot Papers and Envelopes in 2021 Parliamentary Elections.

For 2021 RA Parliamentary election, in total, 98.5 tonnes of ballot papers and 15.4 tonnes of envelopes were distributed to all precincts. Since the number of voters participating in the election was 1,281,997 (about 49.4% of all voters), and they were selecting only one ballot paper from 25 ballot papers that were provided to them, in total 1,281,997 ballot papers (1.88 tonnes) and 1,281,997 envelopes (7.54 tonnes) were dropped into ballot boxes. All the submitted votes (ballot papers) were later counted and archived. The following figure illustrates the flow of the ballot papers and envelopes in Manufacturing, Use and End of Life stages of the life cycle.

² Central Electoral Commission. (2022). *Elections to the National Assembly*. Retrieved March 30, 2022

Consequential Life Cycle Assessment is conducted with consideration of downstream GHG emissions with a primary goal of evaluating the impact of ballot papers and envelopes disposal of 2021 RA parliamentary elections. The LCA follows the ISO standard 14040 series for LCA.³ It is conducted for three scenarios – optimistic, realistic, and pessimistic. The following table shows the results of LCA for the three scenarios.

Global Warming Potential of 2021 RA Parliamentary Elections

	DISPOSAL METHOD	GLOBAL WARMING POTENTIAL (TONNE CO _{2eq} /ELECTION)		
		Optimistic	Realistic	Pessimistic
DISPOSED AFTER ELECTIONS	Recycling	-343.84	-57.31	-19.10
	Landfilling	6.96	83.56	97.48
	Combustion	-2.90	-14.48	-14.48
DISPOSED AFTER 5-YEAR (ARCHIVED)	Recycling	-6.12	-3.22	-0.32
	Landfilling	0.00	0.00	0.00
	Combustion	-0.05	-0.49	-0.93
TOTAL		-345.94	8.06	62.65

Both, realistic and optimistic scenarios show positive values for GHG emissions during 2021 RA Parliamentary elections, 8.06 tonnes and 62.65 tonnes of CO_{2eq}, respectively. However, for optimistic scenario we see a negative value of -345.94 tons CO_{2eq}/election, indicating that in this scenario the net GHG emissions are being reduced.

In realistic scenario, the disposal of elections waste resulted in 354 tonnes of CO_{2eq} more than in optimistic scenario. In other words, proper management of elections waste resulting in optimistic scenario would decrease CO_{2eq} GHG emissions 44.25 times.

³ ISO. (2006). ISO. Retrieved March 30, 2022, from ISO 14040: 2006 Environmental management — Life cycle assessment — Principles and framework

Armenia can learn from the countries that implement holistic approach to the paper life cycle and design SWM policies to target the reduction of environmental impact in every stage of the life cycle.

In general, by successfully adopting policies based on the conceptual framework defined by Waste Hierarchy, which is deeply aligned with the principles of Circular Economy, Armenia will mitigate issues related to SWM and address the national strategic goals and responsibilities related to environmental protection stated in various international agreements such as CEPA.

- Elections waste management policies should be designed to prevent the production of those ballot papers and envelopes that are not being used.
- The enforcement of mechanisms that allow the reuse of materials used during the elections will have a significant effect on GHG reduction.
- Implementing creative solutions related to ballot papers and envelopes and encouragement of recycling and effective waste to energy conversion reduce the amount of paper disposed in landfills, lowering the GWP.
- The life cycle of paper used in political elections should be monitored.
- Questions on the paper source, quality, production, as well as post-election handling of sensitive documents need to be addressed.

The case study conducted in Yervandashat, Bagaran, Koghbavan, Vanand and Hushakert communities that are included in the newly consolidated Baghramyan municipality identify the existing gaps in elections waste management and test the effectiveness of waste management solutions proposed above.

The case study showed that the consolidation of community members and creation of successful public-private partnership aimed at proper/sustainable elections waste management solutions is feasible.

The data showed that if decent actions were undertaken across the country, it would have been possible to reduce and eliminate additional pollution in the communities created by promotional and other materials. In fact, 60% of pre-election materials used by the parties (flyers, posters, etc.) has been collected and recycled instead of planned 30%.

As indicated in the case study, the main three actions required for sustainable downstream waste management are:

1. Organization of public awareness raising campaigns and meetings with the voters and active parties prior to the elections to ensure the willingness of recyclable waste collection.
2. Installation of sorting bins in the polling stations areas or nearby public areas, so that people can dispose solid waste after the elections.
3. Reaching agreement with recycling companies to ensure the recycling of the collected waste afterwards.