
# 3R GUIDELINES FOR TSUULL

# CONTENTS


# INTRODUCTION

## ABOUT THESE GUIDELINES

Uzbekistan is affected by climate change in the same way as the rest of the world. Our efforts to mitigate climate change will be directly supported by reducing waste and implementing a Circular Economy Strategy. To this aim, TSUULL has made being a "Zero Waste University" one of the top national objectives. On the path we are taking to achieving a Zero Waste Nation, everyone has a part to play.

TSUULL created the 3R Guidebook to assist university staff/students in evaluating their present waste management procedures and identifying possibilities to reduce, reuse, and recycle waste materials in order to reduce their waste disposal needs. This is in line with the Zero Waste University target.

To create and carry out 3R plans, teachers and staff assigned to promote 3R practices in their classes and consult the Guidebook when necessary.

### WHAT CAN BE TAKEN AWAY FROM THIS GUIDE?

This guidelines are not meant to serve as a "one-size-fits-all" approach to creating the ideal 3R curriculum for TSUULL. Instead, it aims to offer broad ideas and things to think about during the planning stage.

The TSUULL Office for Sustainble Practices works to guarantee sustainable growth and a healthy living environment for both the present and future flow of student/staff generation by preventing pollution in environment, upholding a high standard of public health, and delivering timely meteorological information.

# CHAPTER I

## HOW TO PROMOTE ‘ZERO WASTE’?

The amount of rubbish being disposed of in Tashkent has dramatically increased over time. The amount of waste disposed of has increased significantly from 2000, when it was just 500 tonnes per day, to more than 1,800 tonnes per day now. This increase is expected to continue along with population and economic expansion.

In order to handle the rising volume of waste discarded, significant investment has been made in the construction of landfills and waste-to-energy incineration plants since 2000. The waste-to-energy incineration plants are outfitted with air emission cleaning technology and are designed to safely incinerate waste.

These facilities cut waste volume by up to 90% while recovering energy to meet 3% of Tashkent’s electrical needs. From the bottom ash of the incineration process, ferrous and non-ferrous metals are also covered for recycling. The remaining ash is then transported to the landfill in the suburbian district of Sergeli, Tashkent. Every seven to ten years, a new incineration plant would need to be built if waste volume growth keeps up at the current rate. The City Landfills are predicted to be full by 2035, leaving no place for the ash produced by garbage incineration. This poses an existential problem for Tashkent, which has a limited quantity of land, and forces us to dramatically reduce the amount of waste we produce in order to preserve our landfill for as long as possible.

Sergeli Landfill

## SUSTAINABLE SOLID WASTE MANAGEMENT TECHNIQUES

## APPROACH TO THE CIRCULAR ECONOMY

Tashkent, a compact city-state with constrained space, must ensure careful land usage in order to maintain economic growth. There will be less space available for other uses such as industry, housing, water catchment areas, transportation, and recreation as a result of the construction of additional trash disposal facilities to handle the growing volume of waste.

The "Three Resiliences" for Tashkent —climate resilience, resource resilience, and economic resilience— are outlined in TSUULL's Zero Waste Masterplan as ways we intend to go above and beyond these goals.


We have developed a circular economy strategy to do this, in which the value of resources is maximized by keeping them in use for as long as practical. This would not only preserve the planet's finite, shared resources, increase Tashkent and regional landfills' lifespan, and reduce our waste management efforts' carbon footprint.


**climate resilience**

**economic resilience**

**resource resilience**


Adoption of measures along the entire value chain, from sustainable production and consumption to sustainable waste and resource management, will be necessary to achieve this.

# CHAPTER II

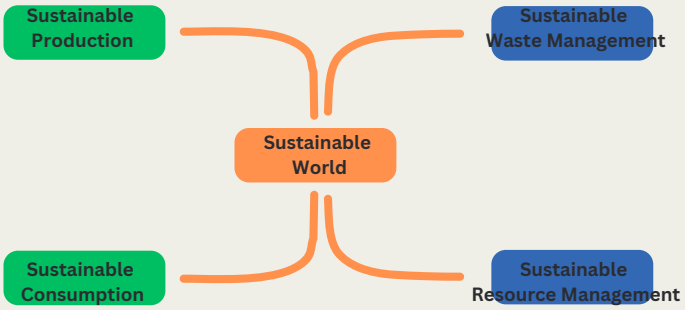
## WHAT ARE THE 3RS?

The three R's are:


- Reduce: To minimize the amount of waste that needs to be handled or disposed of, waste should be avoided at the source.
- Reuse means to put something or somethings back to use for the same or a similar purpose without materially changing its physical shape.
- Recyclable materials are created by converting waste into reusable forms, some of which may or may not be identical to the original product.

**All actions that reduce the amount of garbage disposed of fall within the 3R practices.**

The preferred waste management practice is to reduce waste at source, i.e. to prevent waste from being generated. Where waste generation cannot be prevented other options such as reusing the item(s), followed by recycling of the waste should be considered.



# REDUCING, REUSING, AND RECYCLING FOR TSUULL: BENEFITS

TSUULL generates a lot of trash, including paper and food, which offers enormous opportunity for recycling and waste minimization. The 3Rs can potentially lower the cost of waste disposal. The value of teaching the 3Rs in universities goes beyond financial considerations, though.

TSUULL is to be a significant factor in educating the public about the value of the 3Rs in protecting the environment. By setting an example and upholding the 3Rs themselves, they might encourage others to do the same.

TSUULL offers a beneficial atmosphere for forming habits. Students who participate more actively in the 3R program at school are more likely to retain the habit into adulthood and bring it with them home.

# CHAPTER III

# A STEP-BY-STEP APPROACH TO A 3R PROGRAM

This Guidebook can serve as a resource even if TSUULL already has a 3R program in place. This Guidebook is meant to assist the university in creating and implementing a successful 3R program for TSUULL if the university is starting 3R journey from scratch. It is advised to take the following six steps to properly establish a 3R program in the university:

## Step 1
## Run a waste audit

## Step 2
## Examine Possibilities for Reduction, Reuse, and Recycling

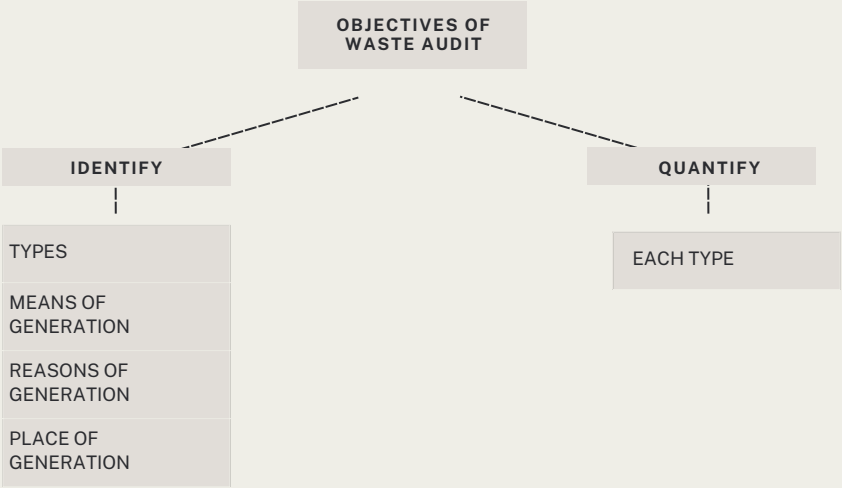
## Step 3
## Create a 3R Program

## Step 4
## Implement and Improve the 3R Program

# Step 1 Conduct a waste audit

A waste audit is a methodical procedure for locating and calculating the sources, volume, and waste categories produced by the university.

A waste audit's goal is to profile the different waste categories by gathering data on:




By doing this, you can find regions of waste and potential for waste material reduction, reuse, and recycling. Additionally, it will assist in gathering initial data that will be used to evaluate the success of your 3R program after it has been put in place.

## How should a waste audit be done?

An internal waste auditor or an external waste auditor hired by the university can conduct a waste audit.

Different areas of the university produce different forms of garbage. On unannounced days of operation, walk around the various areas of the schools to observe current procedures, check what is in the trash cans, assess any waste reduction initiatives already in place, and record observations.

Be careful to pay particular attention to the areas and processes that typically produce more waste, such as:

- Canteens (food packaging waste)
- Departments (paper waste)
- Administrative Offices ((paper and print cartridge waste etc.)

## Stages of the waste audit:

## I. Create an audit checklist

Make a list of all the waste products produced in each area. By auditing waste in each department independently, it is possible to ensure that any necessary 3R efforts may be customized for each department.

## II. Collect Waste Samples

Choose a few days of the week to collect garbage samples from all the locations without warning.

Take a full week's worth of samples from each area to make sure the waste samples are representative. You might want to gather waste samples from various locations on different weeks to avoid confusion. For instance, in week 1, only collect waste samples from the canteen; in week 2, only collect waste samples from the offices and classrooms; and so on.

Clear instructions on the locations and types of waste they will be collecting should be given to the personnel and cleaners who will be doing the waste audit. Also how to label the collecting bags or containers to indicate the sources of the waste. The garbage sample will require constant supervision from the supervisors.

## Sample Audit Checklist

| Types of Waste | Point of Origin | Disposal (kg/month) | Recycled (kg/month) | Other |
|---|---|---|---|---|
| Paper | | | | |
| Carton Boxes | | | | |
| Plastic Bottles | | | | |
| Plastic Packaging | | | | |
| Glass | | | | |
| Ferrous Metal Cans | | | | |
| Aluminium Cans | | | | |
| Food Waste | | | | |
| Garden Waste | | | | |
| Others | | | | |
| Total | | | | |

## III. Sort the Waste

The sample waste bags are gathered, labeled, and documented before being weighed and dumped into a big plastic sheet. The garbage can then be classified into several sorts or categories in accordance with the audit checklist.

## IV. Data Analysis and Recording

Each type of garbage is then independently weighed and documented after sorting.

The Environmental Sustainability Team can then gather all the information and submit it into the checklists, according to the departments, for analysis to identify potential 3R activities.

Keep in mind when analyzing the data how these wastes are produced, why they are produced, when they are produced, and how they are managed after they are produced. When creating 3R strategies and practices, these analyses will be helpful.

# Step 2 Recognize Opportunities and Apply 3R Techniques

## Recognizing Recyclables

The chart below lists recyclable wastes that are typically present in universities. Please keep in mind that materials received for recycling shouldn't contain any food or liquid residue to avoid contamination. Resources that are highly polluted cannot be recycled at all, which reduces the value of recyclable resources.

| Common Waste Types | | |
|---|---|---|
| Paper |  | Office paper, cardboard boxes/packaging, newspapers, posters and beverage cartons |
| Metal |  | Used food and beverage aluminium cans and containers, tin and steel cans and containers |
| Glass |  | Sauce bottles and jars |
| Plastic |  | Mineral water bottles, sauce bottles, detergent bottles, food containers, food and goods packaging |
| **Other Waste Types** | | |
| Food |  | Raw and cooked food waste (excluding used cooking oil) |
| E-Waste |  | Photocopier and printer cartridges, electrical and electronic equipment of any kind to be discarded |

The Environmental Sustainability Team should be able to identify possibilities for intervention after analyzing the waste audit data and developing plans and procedures for 3R outreach and activities that specifically target each waste category.

| 3R Practices for General Office | | |
|---|---|---|
| **PAPER WASTE** | Reduce | Set the default printing and photocopying settings throughout the school to "Doublesided" |
| | | Avoid unnecessary print-outs by emailing soft-copies or faxing directly from the computer |
| | | Track and monitor printing and photocopying volumes of each employee. Encourage printing only when necessary and proofreading before printing. |
| | Reuse | • **Reuse paper that has been printed only on one side**<br>• **Reuse boxes to store items, and move equipment and supplies** |
| | | • Reuse paper that has been printed only on one side<br>• Reuse boxes to store items, and move equipment and supplies. |
| Others | | |
| **Reuse** | | Use ink refillables for markers and pens |
| **Recycle** | | Provide recycling bins |

# MONITORING, EVALUATION AND IMPROVEMENT

- Obtain monthly waste and recycling tonnage reports (this could be requested from the collector/s) to monitor waste reduction and recycling performances against the targets set
- Maintain records of waste disposal fees and recycling collection fees/revenue to calculate monthly cost savings in the form of reduced disposal costs and/or revenue obtained from the sale of recyclable items • Work with collectors to place recycling bins at strategic locations within the schools
- Conduct routine inspections of recycling bins to identify sources of contamination and misuse, if any. If contamination levels are high, engage staff and students through various avenues to inform them of what cannot be thrown into the recycling bin.
- Encourage staff and students to provide feedback or ideas to improve the school's 3R practices
- Conduct annual reviews of the 3R Programme – this includes a waste audit to identify new 3R opportunities, making changes to initiatives if needed and setting higher waste reduction/recycling targets