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INTEGRATING GREEN ACTIONS WITH DISASTER RISK REDUCTION STRATEGIES: A COMPREHENSIVE EXPLORATION

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Abstract:

This comprehensive study delves into the interdisciplinary realms of disaster risk reduction (DRR), resource depletion, climate change, sustainable development, and the innovative concept of green nudges within the context of higher education institutions. The introductory chapter establishes the fundamental principles of disaster risk reduction, emphasizing the critical need for sustainable development practices to mitigate disaster risks. Resource scarcity, particularly in natural assets like oil, gas, coal, minerals, and water, is examined alongside its implications for exacerbating hazards and contributing to climate change. The escalating global demand for energy, predominantly met by fossil fuels, underscores the urgency of transitioning to renewable energy sources and implementing sustainable practices across sectors.

The United Nations Environment Programme (UNEP) emerges as a central figure in advocating for environmental protection, sustainable development, and climate action. Through its environmental assessment, governance, capacity-building, and sustainable development initiatives, UNEP collaborates with diverse stakeholders to address environmental challenges and advance global sustainability goals.

"The Little Book of Green Nudges" introduces a strategic approach to promoting sustainable behaviour through evidence-based nudges in higher education campuses. Green nudges, operating on the EAST framework (Easy, Attractive, Social, Timely), leverage behavioural insights to steer individuals and organizations towards eco-friendly choices, thereby fostering a culture of environmental stewardship.

The focus shifts to research fundamentals at Indraprastha College for Women, situated in Delhi, India. The college's demographic diversity, infrastructure, historical significance, and academic excellence set the stage for a comprehensive analysis of green actions awareness and daily practices among students. The study aims to sensitize individuals towards environmental safety, promote sustainable lifestyles, conserve energy and resources, reduce material consumption, and encourage sustainable travel.

Keywords: Green actions, environmental sustainability, practical strategies, environment conscious behaviour.

Introduction:

In the modern era, as humanity stands on the brink of unprecedented technological advancement and global connectivity, we are also faced with a sobering reality: the health of our planet is in peril. Environmental degradation, climate change, and the loss of biodiversity threaten not only the delicate balance of ecosystems but also the very survival of countless species, including our own. In this critical moment, the concept of environmental protection has emerged as a beacon of hope, guiding our efforts to mitigate and reverse the damage inflicted upon the Earth.

Our planet provides us with essential resources such as clean air, fresh water, and fertile soil, which sustain life in all its forms. However, unchecked exploitation of these resources has led to widespread environmental problems, jeopardizing the very foundations of our existence. By prioritizing environmental protection, we can mitigate these threats and pave the way for a more resilient and equitable society. The urgency of environmental sustainability cannot be overstated.

Innovative approaches and collaborative efforts offer hope for positive change. Whether through reducing personal consumption, advocating for sustainable practices, or participating in grassroot-level movements, each person has the power to make a difference. By collectively embracing a culture of environmental stewardship, we can amplify our impact and inspire meaningful change on a global scale.

Green actions encompass a diverse range of practices and initiatives aimed at reducing environmental impact, conserving natural resources, and promoting ecological resilience. From simple everyday choices like recycling and energy conservation to larger-scale efforts such as renewable energy deployment and conservation projects, green actions empower individuals and communities to play an active role in safeguarding the health and vitality of our planet.

Lastly, the journey towards environmental sustainability is a collective endeavour—one that requires bold vision, unwavering commitment, and meaningful action. By embracing green actions, advocating for change, and fostering a culture of sustainability, we can build a brighter, more resilient future for ourselves and generations to come.

UNEP: United Nations Environmental Programme:

The United Nations Environment Programme (UNEP) is an international organisation responsible for coordinating responses to environmental issues within the United Nations system. It is the leading global environmental authority that sets the global environmental agenda, promotes the coherent implementation of the environmental dimension of sustainable development within the United Nations system, and serves as an authoritative advocate for the global environment. The United Nations Environment Programme (UNEP) was established on June 5, 1972, coinciding with World Environment Day. Its formation followed the landmark United Nations Conference on the Human Environment held in Stockholm in 1972. Over the years, UNEP's mandate and activities have evolved in response to emerging environmental threats and changing global priorities.

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Little Book Of Green Nudges:

The "Little Book of Green Nudges" is a publication by the United Nations Environment Programme (UNEP) that offers practical strategies and ideas for encouraging environment-friendly behaviour. It serves as a concise and user-friendly guide for reducing environmental impact on university campuses.

It is a student-oriented publication that summarizes the evidence around which nudges work best while seeking to encourage more sustainable practices among students and staff across several behavioural categories.

“Nudges are positive and gentle persuasions that are meant to influence behaviour and decision-making. This book offers 40 nudges that can be adopted by colleges and universities, from the small-scale to the large, depending on the resource availability and need. By embracing this approach, leaders and activists on campus can facilitate more sustainable decisions and help reduce the approximately 75 per cent of personal emissions that come from what we eat, how we travel and the homes we live in.

The Little Book of Green Nudges provides eight target areas around which the 40 nudges are centred and aim at behavioural change. These 8 targets areas involve small, subtle changes in behaviour that can lead to significant environmental benefits.

These are as follows:

- Energy Conservation
- Water Conservation
- Sustainable diets
- Reduced Material Consumption
- Sustainable and reduced travel
- Recycling
- Engagement and support for change

Study Area:

The study area of this research is the campus of Indraprastha College for Women, University of Delhi- the oldest women's college in Delhi, India. Founded as a part of a nation-wide campaign for women's education and empowerment, it is located on a beautiful campus which is a recognized heritage site and a landmark of Delhi. The research focuses on the surveying the students of the college for an extensive study on the awareness and implementation on the green nudges.

Demography and Infrastructure:

I.P. College has an enrolment of approximately 3500 students in its UG and PG programs. The College offers a wide range of courses, which promotes interdisciplinary studies in the 3 streams of Humanities, Mathematical Sciences and Commerce. The college covers an area of about 21 acres with modern infrastructure and facilities.

Aims:

The study on ‘Disaster Risk Reduction Through Green Actions’ aims:

1. To analyse the level of awareness of students towards green actions.
2. To assess the daily actions of students in relation to green nudges.
3. To sensitize/mobilize people towards environment safety.

Objectives:

To realise the aims of our current study, the following objectives were selected to reduce the disaster risks through implementation of green nudges and taking conscious efforts towards them:

1. To save different resources in the campus
2. To increase our dependency on renewable resources
3. Encouraging partnership, engagement and support for change
4. Promotion of sustainable lifestyle including sustainable diet and travel
5. Take steps towards conservation of energy
6. Reducing material consumption and promoting the 3Rs (Reduce, Reuse, Recycle)

Data Source and Methodology:

The following research work is based on both primary and secondary sources of data. The research is based on the 'Little book of Green Nudges' published by the UNEP and focuses on the target areas provided by this guide book for implementing green nudges in the study area. The research presents an extensive study of the green nudges and the various target areas along with focusing on issues of environment protection and disaster risk reduction.

The research is based on the primary survey of the study area in relation to the awareness about the green nudges and the implementation of the environment conscious behaviour. The research is based on the survey of 172 respondents selected from different departments using the systematic sampling technique.

Department	Number of Respondents
BAP	19
BMMC	7
Commerce	15
Computer science	11
Economics	7
English	12
Geography	15
Hindi	9
History	13
Mathematics	8
Not told	2
Philosophy	14
Political science	23
Psychology	8
Sanskrit	2
Sociology	7
Grand Total	172

Age	Number of Respondents
17	3
18	20
19	49
20	68
21	26
22	1
Not told	5
Grand Total	172

The samples were collected using an interview administered questionnaire.

Discussion And Inferences:

The survey of the students of the study area revealed a variety of results.

Target Area : Energy Conservation:

Views on Adopting Renewable Sources of Energy:

The responses overwhelmingly support the idea that renewable sources like wind and solar power are indeed superior alternatives to non-renewable energy sources. Reasons cited include their renewability, contribution to sustainable development goals, reduction of carbon footprint, and potential for large-scale energy savings. Many also highlight their environmental friendliness, such as the absence of greenhouse gas emissions and pollution.

Use of Temperature Control in Electrical Appliances:

Setting heating appliances and air conditioners to a higher or moderate temperature generally results in the unit consumed being less therefore consuming less energy over the course of the day. Each degree higher can save a significant amount of energy. It is generally recommended that the AC Temperature should be kept between 23-26 degrees which is both comfortable and sustainable. It can be inferred from the collected data that only 27.4% of the students set the heating and air-conditioning systems to moderate temperatures which is a very less percentage. 38.1% of the students follow this practice only sometimes while 9.5% of the students never practice it.

Awareness about Eco Settings in Electrical Appliances:

While set on eco setting the appliances use comparatively less energy and thus helps in energy conservation. About 62.6% of the students are not aware of the eco setting on appliances and thus they do not use the feature. 24.6% of the students are aware of the setting and even use it. 12.9% of the students are aware of the function but they don’t use it.

The survey results indicate that a significant portion of respondents, 58.4%, haven't attended sessions or workshops focused on energy-saving practices for their computers. This suggests a potential gap in awareness or prioritization of energy efficiency among users.

Target Area : Water Conservation:

Water conservation refers to the careful management and use of water resources to ensure their sustainability for future generations and the environment. It involves reducing water waste, improving water use efficiency, and preserving freshwater ecosystems.

Showering Habits and Relation to Wastage of Water:

The data on showering habits among college students reveals a varied spectrum of behaviours with implications for water conservation and green nudges. A significant portion, comprising 52.6%, adhere to a daily showering routine, while 31.6% opt for twice-daily showers. These habits suggest a considerable water usage, potentially straying from conservation efforts. Conversely, 13.5% shower based on necessity, indicating a more conscious approach to water consumption and a likely receptiveness to green nudges promoting sustainable behaviours.

To encourage more sustainable showering practices, initiatives could focus on promoting alternatives to frequent showers, such as using dry shampoo or installing water-saving showerhead.

Views on Sensor-Based Water Taps:

A small portion of respondents was not aware of sensor-based water taps at the first place and out of those who were aware, their views were quite different.

Some respondents consider sensor-based water taps as an good/useful option as they responded that they are more hygienic, easy to use(convenient), effortless (user friendly) and good option to opt as water conservation method as using them is a good step to reduce water wastage in public areas as most of the times people left public taps open. One of the respondents argued that "It will help in water conservation as they can't be left open when not in use."

In Contrast to this, another set of respondents argued that the sensor-based water taps, if not maintained properly, could lead to more water wastage.

Target Area : Sustainable Diets:

Sustainable diets are eating patterns that promote health and well-being while also minimizing environmental impact and supporting the long-term viability of food production systems. These diets typically prioritize plant-based foods, local and seasonal ingredients, and environmentally friendly production methods.

Student's Awareness of Term Sustainable Diets:

There were some respondents who were not really sure of what is a sustainable diet. This highlights the need for creating more awareness among people. While also what can be noted is that most of the respondents who answered on sustainable diets did talk about environment and animal friendly diets but did not talk about adopting good dietary habits like consumption of only required amount of food.

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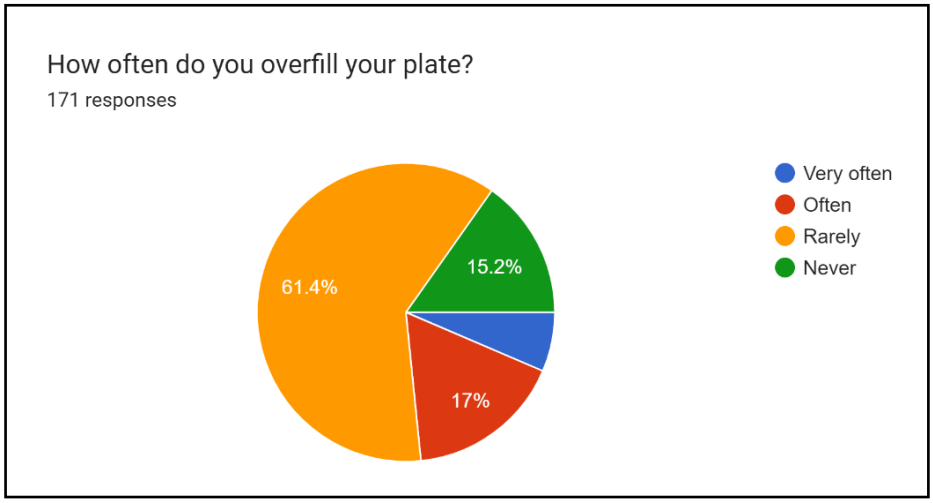
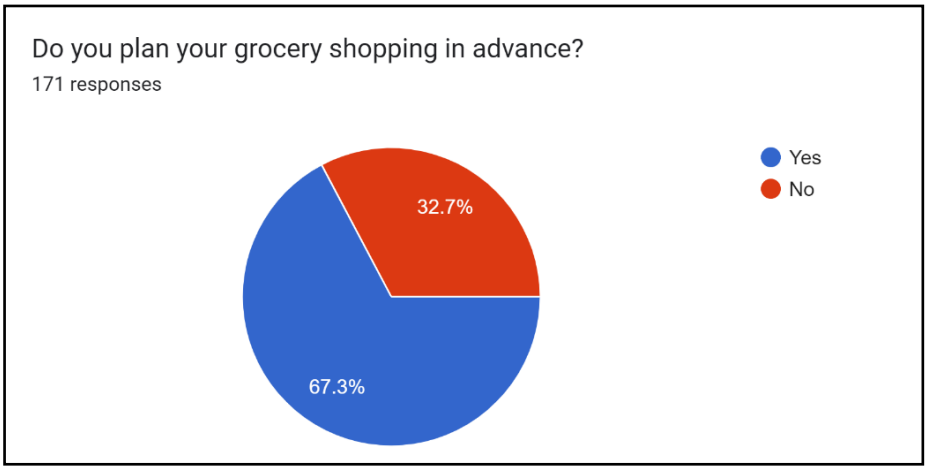
Analysing Wastage of Food



Overfilling the plate leads to either the food being thrown away or overeating both of which are unsustainable. Overeating causes unnecessary food usage while dumping causes waste generation. Both these scenarios can be avoided by taking appropriate amount of food instead of overfilling the plate.

Only 15.2% respondents never overfill their plate. 61.4% rarely overfill while 17% often do. 6.4% respondents very often overfill their plates. Reasons for overfilling can range from unwillingness to refill to not being aware of the impacts of food wastage.

Planning of sustainable diets



Planning grocery shopping in advance is an important aspect of sustainable eating habits. Buying the required amount of grocery at once also helps in reducing the packaging waste.

During the survey it was found that majority (67.3%) of respondents do plan their grocery shopping in advance while 32.7% respondents don't. The reason behind not planning grocery shopping in advance could be lack of awareness regarding the related benefits, lack of time to plan, etc.

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Changing Dietary Habits:

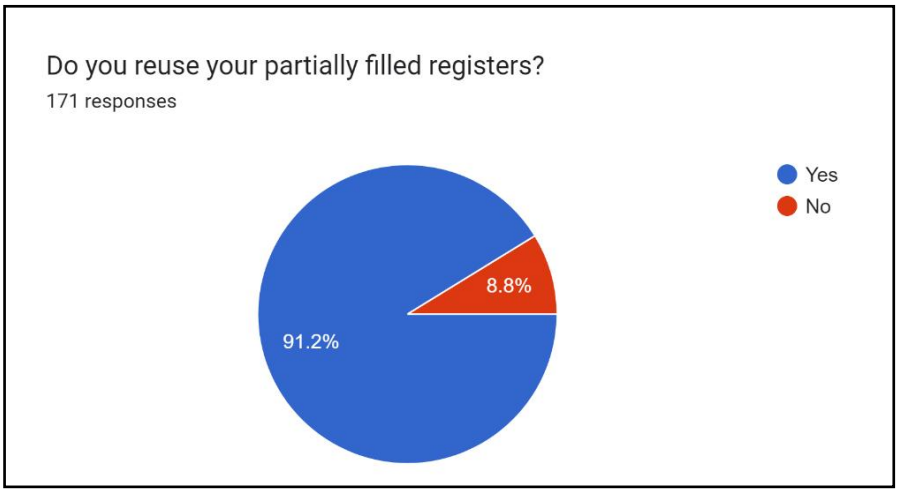
82.9% agreed to change their dietary habits while 17.1% of people did not agree to do so. This indicates that awareness level among people for sustainable diets and their environment is proportionately high. What concerns me is the 17.1% of people who still do not agree to do so. There could be multiple reasons behind their denial which can be food tastes and likes whereas affordability of healthy and vegan food that is more eco- friendly.

Ways to Encourage Students to Adopt Sustainable Dietary Habits:

Some of the respondents did not suggest any measures to encourage sustainable diets in the campus while some gave their precious thoughts to this initiative. Students suggested providing fruit juices instead of canned drinks around the campus while filling the plates in proportionate amounts rather than overfilling. Eating home cooked foods and avoiding over-packaging of foods is also a way to sustainable diets. Left- over food can be used to feed animals rather than disposal. Awareness programmes in the campus can help in this.

Target Area : Reduced Material Consumption:

Reducing material consumption involves embracing minimalism, reusing and repairing items, shopping second-hand, participating in the sharing economy, making conscious consumption choices, embracing digital alternatives, DIY projects, composting/recycling, opting for eco-friendly packaging, and spreading awareness about sustainable living.



The data indicates a significant majority of respondents are actively engaged in reducing material consumption. Firstly, with 68% preferring to refill pen inks rather than purchasing new pens (figure 1), and secondly, with 91.2% indicating they reuse partially filled registers.

Target Area: Sustainable and Reduced Travel:

Reducing travel for sustainability involves remote work, virtual meetings, public transportation, active transportation, telecommuting, staycations, efficient route planning, off-peak travel, eco-friendly transportation, and carbon offsetting.

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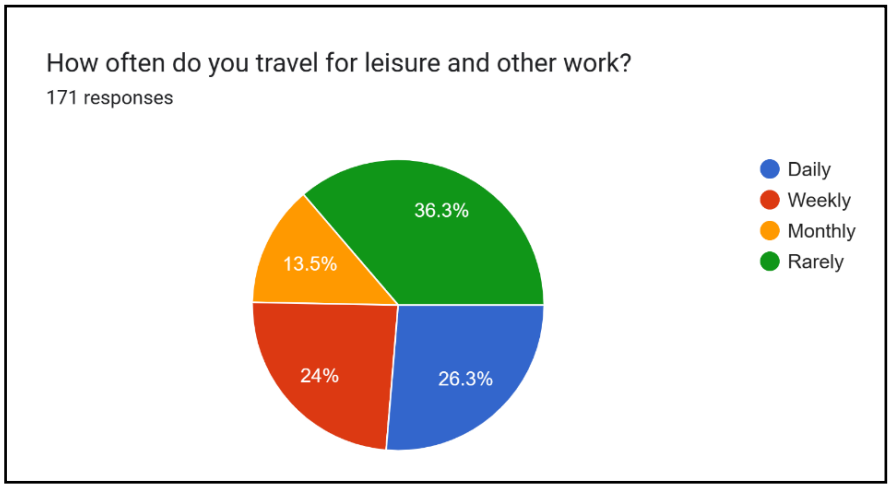
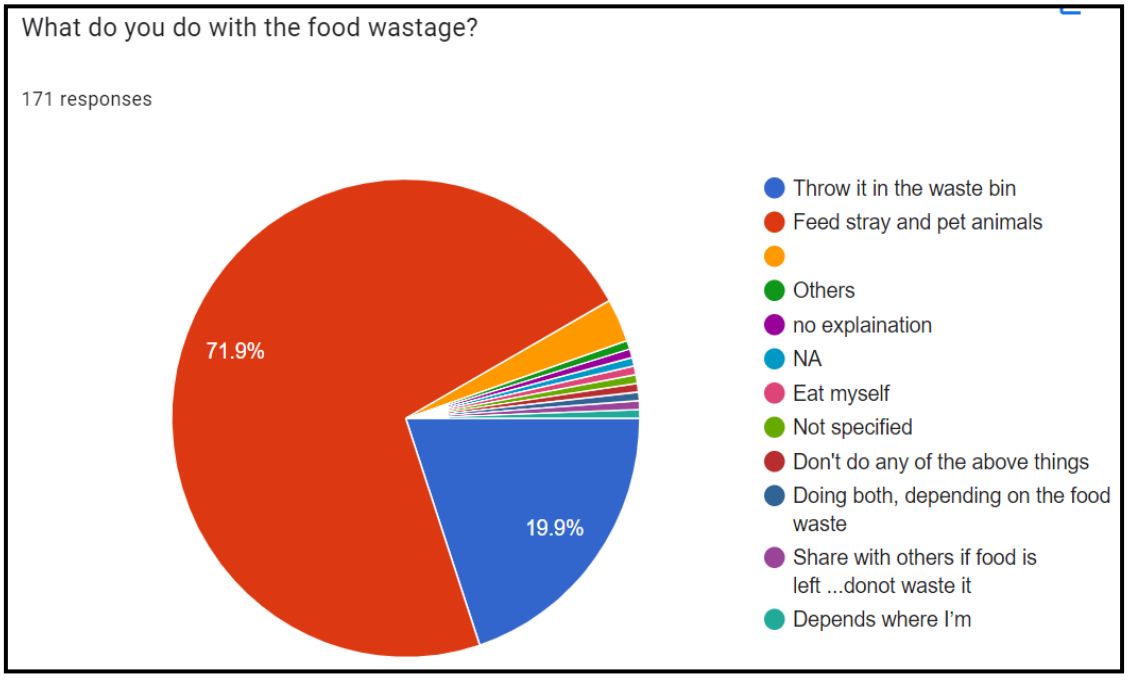


From the above chart, it can be seen that although there is a good number of students (26.3%) who used to visit outside daily, but then also more than one fourth of the people do not travel much for the leisure activities and they used to go only for their important work. Twenty four percent of the students are also at the point that they would prefer to go on a weekly basis with their fellow mates and would not travel to the far of places.



Based on the above analysis on the 171 respondents view about food wastage. 71.9% said that they feed stray and pet animals, 19.9% throw it in the waste bin. While others gave different responses such as they eat themselves, sharing the leftovers. Some said it varies according to the place they are in. While some said they do both i.e., feed stray and pet animals as well as throw it in the bin. Some people did not respond to this question or specify anything which implies that people have very little or in some cases no consciousness at all about the food wastage.

Conclusion:

This report has illuminated the critical role that sustainable practices play in shaping a healthier and more resilient future for our planet. Through comprehensive research and analysis, we have underscored the urgency of addressing environmental challenges and implementing proactive measures to mitigate their impact. From advocating for renewable energy sources to promoting waste reduction strategies, each green action outlined in this report represents a tangible step towards fostering environmental stewardship and promoting sustainable development. It highlights the importance of green nudges in college campuses for behavioral interventions to catalyse positive environmental change within academic communities.

The research underscores the importance of integrating green nudges into broader sustainability initiatives and institutional policies, fostering a culture of environmental awareness and responsibility. Through collaboration among students, administrators, and other stakeholders, colleges can create environments that not only prioritize sustainability but also empower individuals to enact meaningful change.

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