Website Project: Food Waste Awareness and Food Donation

1. Introduction

- Food waste has been an alarming problem from a long time. According to a report from chintan-india.org about 40% of the food produced in India is wasted and its value being Rs. 92000 cr. Per annum. We have so much food production in our country but yet in the world hunger index 2023, India ranks 111th out of 125 countries. If the wastage of food was not at such an alarming stage, people would've been more fed than they are now. Food wastage is a serious issue for the sake of mankind, but people are unaware about the fact and the amount of food being wasted just keeps increasing. Our website deals on **awareness-building** and **action-taking,** will not only educate users about the staggering impact of food waste but also empower them to make a difference. Let's delve into the details of this transformative initiative.

2. Project Objectives

Our project has two core objectives:
1. **Raise Awareness**:
    - **Inform**: We will provide users with eye-opening statistics, engaging content, and practical tips related to food waste reduction.
    - **Inspire**: By showcasing the environmental consequences and social implications of food waste, we aim to ignite a sense of responsibility.
2. **Facilitate Food Donation**:
    - **Connect**: Our platform will serve as a bridge between individuals and local restaurants.
    - **Empower**: Users can easily donate surplus food to nearby establishments, ensuring it reaches those in need.

3. Literature Review

Food waste is defined as food loss during retail and final consumption. Although the world produces enough food to feed everyone, millions of children still go to bed hungry every night. According to the latest research by the Food and Agriculture Organization (FAO), 828 million people are hungry in the world. We now wonder why this is happening; one of the primary reasons is food waste; according to the FAO, approximately 1.6 billion tons of food are wasted annually. This is a staggering amount of food that could have been used to feed millions of people. In this project, we are going to look at the effects and causes of food waste in India and how we can tackle them.

According to a report by the **United Nations Development Programme (UNDP)**, the major causes of food wastage in India are:

1. **Lack of infrastructure**: Lack of proper storage facilities, transportation, and refrigeration systems lead to spoilage of food items.

2. **Poor supply chain management**: Inefficient supply chain management leads to food wastage at various stages such as harvesting, processing, packaging, and distribution.

3. **Lack of awareness**: Consumers are often unaware of the consequences of food wastage and tend to discard food items that are still edible.

In addition to these factors, the report also highlights that India loses about **$14 billion worth of food annually** due to wastage.

Some other major causes for Food Waste in India:

4. **Harvest and Post-Harvest Losses:** A significant portion of food wastage in India occurs at the agricultural level. Factors such as improper harvesting techniques, inadequate packaging, and lack of access to markets contribute to losses of fruits, vegetables, and grains.

5. **Consumer Behaviour:** At the consumer level, food wastage often occurs due to purchasing more than needed, improper storage, and overlooking expiration dates. There's also a cultural aspect where consumers may reject slightly imperfect produce.

6. **Inefficient Food Processing:** Food processing industries in India may generate waste during production, such as peels, seeds, and trimmings, which are often discarded rather than being utilized for other purposes.

7. **Lack of Food Recovery Programs:** Inadequate efforts to recover and redistribute surplus food from restaurants, hotels, and markets to those in need contribute to food waste.

8. **Lack of Preservation Techniques:** Traditional food preservation techniques, like sun-drying and pickling, are underutilized, leading to spoilage and waste of perishable goods.

9. **Weddings and Celebrations:** Indian weddings and other large celebrations often involve serving a substantial amount of food to guests, which often produces large amount of food waste.

Addressing food waste in India requires a multi-faceted approach that involves improving infrastructure, raising awareness among consumers and businesses, implementing better supply chain management practices, and promoting sustainable agricultural and food processing methods. Government initiatives, NGO efforts, and private sector collaborations can all play a role in reducing food wastage in the country.

Effects of food waste

- **Environmental Impact**

  Food wastage has a significant environmental impact. When food goes to waste, it contributes to greenhouse gas emissions and other environmental problems.

- **Economic Impact:**

  Food wastage also has an economic impact. When food goes to waste, it represents a loss of resources and money for farmers, businesses, and consumers.

As individuals, Indians can take several steps to **reduce food waste** and contribute to a more sustainable food system:

1. **Mindful Consumption**:

   - **Plan Meals**: Plan your meals in advance to avoid overbuying or cooking excess food.

   - **Portion Control**: Serve smaller portions and avoid wastage on your plate.

   - **First In, First Out**: Consume older food items before opening new ones.

2. **Smart Storage**:

   - **Proper Refrigeration**: Store perishables like fruits, vegetables, and dairy products in the refrigerator to extend their shelf life.

   - **Freezing**: Freeze leftovers or excess food for later use.

   - **Dry Storage**: Keep grains, pulses, and spices in airtight containers to prevent spoilage.

3. **Donate Surplus Food**:

   - **Local NGOs**: Connect with local NGOs or community kitchens that distribute food to the needy.

   - **Weddings and Events**: If you host an event, ensure excess food is donated rather than discarded.

4. **Composting**:

   - **Home Composting**: Convert food scraps into nutrient-rich compost for your garden.

   - **Community Composting**: Support community composting initiatives.

5. **Educate Others**:

   - **Spread Awareness**: Educate family, friends, and neighbors about food waste and its impact.

   - **Schools and Colleges**: Engage in awareness campaigns in educational institutions.

6. **Purchase Responsibly**:

   - **Buy Local**: Support local farmers and reduce transportation-related food waste.

- o **Check Expiry Dates**: Purchase items with longer shelf lives.

- o **Avoid Impulse Buying**: Stick to your shopping list.

7. **Creative Cooking**:

- o **Use Scraps**: Turn vegetable peels, stems, and leftovers into tasty dishes (e.g., vegetable broth, chutneys).

- o **Revive Stale Bread**: Make croutons, bread pudding, or French toast.

8. **Restaurant Etiquette**:

- o **Order Wisely**: Order only what you can finish at restaurants.

- o **Takeaway Containers**: Take home leftovers from restaurants instead of leaving them behind.

4. Target Audience

- Identify the primary audience for the website:
  - o **General Public**: Individuals interested in reducing food waste and contributing to social causes.
  - o **Restaurants and Food Establishments**: Entities willing to accept food donations.

5. Materials and Methods

5.1 Implementation and Technology Stack

- **Front-End**:
  - o HTML, CSS, JavaScript: It uses HTML to represent all the data and framework of the website, in which the home-page consists of a donation section which leads to the different choices of restaurants page, where you can select a restaurant to donate your leftovers to. And the other section is the awareness section which make people aware about this alarming problem using data collected from different sources. At the end of the website, It leads to a form made again with HTML, embedded with a little of JavaScript. This whole website is decorated and made more visually appealing using CSS.
- **Hosting and Deployment**:
  - o Live Preview from Microsoft: It has been hosted on a server provided on Microsoft Visual Code, under live preview extension by Microsoft itself.

5.2 User Experience (UX) Design

- **Clean and Intuitive Interface**:
  - o Simple navigation for easy access to different sections. Each section has a navigation button that leads to the different section mostly the sections in the awareness part of the website. Uses JavaScript to bind them together.
  - o Mobile-friendly design. Width and viewport of webpage is friendly to all devices, let it be a Mobile Phone or a Tablet.
- **Visual Appeal**:

- o Use appealing images related to food as a background which has a low opacity on the home page, alongside that, things that an individual can do to prevent food waste is shown with appealing images in a border box, styled using external CSS.
- o Consistent colour scheme throughout the whole webpage to keep a similar tone and fonts that are set to appeal to everyone.

6. Results and discussion

6.1 Awareness Section

- **Statistics and Facts**:
  - o Display eye-catching infographics or charts illustrating food waste data.
  - o Explains the major causes of Food Waste in India, so that people can have an insight of what they can avoid to prevent it.
  - o Provide facts about the environmental impact of food waste which we collected from various sources, data from the recent years from different organisation.
  - o Aware about economic and social impact of food waste.
- **Educational Content**:
  - o Tips for proper food storage and minimizing waste.
  - o Teaches ways us as an individual can follow to reduce this problem.

6.2 Food Donation Section

- **Food Donation Listings**:
  - o Users can post details about leftover food items (quantity, type, expiration date).
- **Location-Based Search**:
  - o Users can search for nearby restaurants accepting food donations.
- **Request and Confirmation Process**:
  - o Restaurants confirm availability and arrange pickup.

7. Conclusion

Managing food waste is a vital and urgent issue that requires the collaboration of Government as well as the individual. It also faces several challenges, such as the lack of awareness, appreciation, the lack of adequate and effective policies, incentives, and institutions for food waste governance, and the lack of comprehensive and reliable data and information on food waste and their services and disservices. However, there are also many opportunities and solutions for overcoming these challenges, such as increasing the public awareness and education on food waste management, creating enabling policies and incentives that support and reward food waste management. By following all these majors and contributing towards a better future, the problem of global hunger that we have despite having such surplus production of food can be cured.

8. References

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