LSE Psychological and Behavioural Science

GreenVows – A Sustainable Wedding Planner for Northern India

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1. Background

Weddings are often not only life events for the marrying couple, but also serve as opportunities to show off status, wealth, and prosperity (Lal, 2021). While wedding practices and traditions vary drastically across cultures, they are consistently occasions of grandiosity on the part of the marrying couple, their families, and often their guests. Lavishness, for example, may be shown through clothing in China, with the bride dawning three different custom dresses throughout her wedding day (Mattia & Park, 2022). Additionally, in Niger, extravagance may be displayed via performance where ceremonies often include a live Camel dance performance (Mattia & Park, 2022). Exuberance is also revealed through audience participation. In Cuba, it is customary for guests to pin money to the bride's dress for each dance (Mattia & Park, 2022). Similarly, in Nigeria it is traditional for wedding guests to spray the couple with money as a sign of their happiness toward the union (Fielding, 2018). With the strong societal pressures of such traditions, weddings have been commercialized and commodified to be days of grandiosity and splendour. A commodification that has increased and intensified the need to outshine the industry standard over the last several decades (Halliday, 2021).

Weddings are also the focal point of many television shows and movies. From reality television shows such as Marriage or Mortgage (Howell et al., 2021) and The Big Day (Manjrekar, 2021), to popular romantic comedies such as Father of the Bride (Shyer, 1991) and many more, media portrays weddings as premier, once in a lifetime experience in which there is no limits to grandeur (Ingraham, 2008). This is especially true in India, as many Bollywood films include lavish weddings and have inspired many more (Lal, 2021).

The Indian wedding industry, with all its nuances and eccentricities, is fertile grounds for exploring and addressing waste generated by weddings. As of 2021, the Indian wedding industry was valued at about $50 billion with an annual growth rate of 25-30% (Gupta et al., 2020). Furthermore, roughly 10 million weddings take place in India each year with an average budget of ~$34,000 (Gupta et al., 2020). The amount of money spent on Northern Indian weddings is considered a status symbol and reflects the wealth of the families involved, which is why it is estimated that people in Northern India spend almost 20% of their lifetime wealth on their weddings (Goel et al., 2021). Due to this emphasis on grand displays and excesses, Indian Punjabi weddings have become a source of immense amounts of waste. With this waste as a prominent feature in many Punjabi weddings (an event that will usually last 4-5 days and can include several thousand guests), this paper will focus

on identifying the sources of wedding-related waste and propose interventions aimed at mitigating this issue. To do so, it is essential to first gain a deeper understanding of why Punjabi weddings are so grand.

2. Introduction

As mentioned by Lal (2021), a major cause underlying the lavishness of Indian weddings is the need and desire to position oneself in society and indicate one's status both in terms of wealth and position. This is best illustrated by quotes from Bhardwaj's study (2020):

"Approximately thousands of people are invited. It's more like a trade fair. Projection of multicuisine and the décor of ultra-flowers from around the globe (…). And then you have the musicians. Ludhiana is famous for Bollywood people; they hire them to have a glimpse or show. (…) Right from an invite, it is just a card that is designed by a designer from Delhi, Bombay or somewhere. You know the colossal gifts which [are] beyond the reach of a common man. It is basically done to [signal the wealth] off the host and basically an obligation for the other to go and give *shagan* [monetary gift]" (Bhardwaj, 2020, pp. 82-83).

2.1 Status and Consumption

The idea touched upon by Lal (2021) finds resonance with other literature in the field such as Bloch et al.'s work (2004), which found a strong relationship between weddings and the desire to depict status, and prestige. At the core of this relationship lies the idea of consumption being a marker of status and prestige, since individuals not only "communicate themselves through their purchases" (Bahn et al., 1982, as cited in Mann & Sahni, 2015, p. 180), but also exhibit their "status, personality and image in society" (Shukla, 2008, as cited in Mann & Sahni, 2015, p. 180). The link between status and consumption had been first studied by Veblen (1899) who traced it back to the notion of ownership, where owning property was a marker of possessing both honour and status, as well as a position of respect in the social hierarchy (Veblen, 1899; Trigg, 2000). Veblen extended this further to propound the idea of excessive consumption being a defining feature of the leisure class – one that marks their distinction from the working class. According to Veblen (1899), this act of consumption by the leisure class undergoes a process of specialization where only the best is consumed. Since the consumption of these "excellent goods" is indicative of wealth, it becomes honorific, while its failure becomes a "mark of inferiority and demerit" (Veblen, 1899, p. 36). Thus, the conspicuous consumption of these excellent goods becomes a "means of reputability" (Veblen, 1899, p. 36) for the leisure class – one that members of this class cannot display alone. They, therefore, call upon their competitors and friends – with whom one "wishes to institute the

comparison" (Veblen, 1899, p. 36) to aid them in the process by making them recipients of their giftgiving, feasts, and general entertainment.

Weddings in general, and Indian weddings in particular, are such occasions where friends and relatives come together, allowing one to not only flaunt one's status but also one's lifetime achievements (Mann & Sahni, 2015). This idea receives further support from Friedman and Ostrov (2008) who claimed that "some goods and services, such as expensive interior decorations and lavish parties, are consumed mainly to impress other people" (as cited in Sarmaniotis & Atilgan, 2021). Similarly, speaking about Indian weddings the renowned sociologist, Patricia Uberoi, said that they are "the most visible site of conspicuous consumption and conspicuous waste" (Goel et al., 2021, p. 3), with both being closely tied to notions of reputability, as per Veblen (1899). According to Goel et al. (2021), conspicuous consumption is expressed through the "performance of the wedding as a spectacle" (2021, p. 386) where many actors/performers come together to "render a performance" (p. 386). Other than the main actors (bride, groom, and close family), weddings also consist of facilitators (wedding planners and service providers), along with consumers of the performance – the audience – that reflect the social prowess and status of the actors. Anthropologists have long noted that the notion of status in India differs from the West such that it not only includes one's own accomplishments and successes but also extends to include one's circle of friends and acquaintances – how many important people one knows, in essence (Bloch et al., 2004). It is in such a situation that marrying into a "good family" (Bloch et al., 2004, p. 677) becomes an occasion for lavish celebrations and status displays since it becomes indicative of a good match and consequently enhances how a family is viewed by their peers.

2.2 Gift Giving

Another way through which one can make sense of the grandness of the wedding ceremonies in Northern India is by looking at it through the lens of gift giving, and more specifically, the potlatch. In this ancient form of gift giving, which can be found in all societies around the world, the host of a ceremony destroys or gives away valuable gifts in order to demonstrate their own wealth and generosity (Bataille, 1988). Within the potlatch, the act of giving away, wasting, and destroying goods in a ceremonial setting can be seen as a form of acquiring, as individuals will engage in this behaviour in order to acquire prestige and status (Bataille, 1988). Mauss (1950) theorised that the act of accepting a gift represented an obligation to the receiver, as they were now expected to return the favour. Within the potlach, the gifting individual makes the gifts so valuable and grand

that the receiver is not able to return the gesture, thereby creating a sense of superiority in favour of the gift giver (Bataille, 1988).

At Punjabi weddings in Northern India this is, for example, practiced by the families of the bride and groom providing the guests with vast amounts of food, lavish flower displays or extensive fireworks. Furthermore, there are also many sacred events throughout the ceremony of the wedding at which the families will provide each other with numerous gifts (Farooq & Kayani, 2013). One of these is the *mehndi*, the first day of the wedding celebration. At this day, the maternal uncles provide the bride and her family, with expensive gifts such as furniture, dresses, and jewellery (Awan & Abid, 2021). These gifts are seen as an honouring for the maternal side, and it is a matter of respect as well as a sign of status to be as generous as one can afford (Awan & Abid, 2021). In alignment with this, Bataille (1988) points out a direct link between the rank of a family or individual in a given society and their capacity of giving away, as only those who have acquired enough material wealth in their lives can afford to waste their possessions.

Having outlined the underlying reasons for why Punjabi weddings are so grand, the next section will dive deeper into the environmental problems that arise with this grandness.

3. Problem Outline

Weddings in Northern India are major producer of multiple types of waste and environmental damage. The ceremonies that go on for several days are not only connected to excessive consumption of food, floral displays, and unsustainable entertainment practices, but also to the vast acquisition of new clothing, jewellery, and the cause of travel congestions. For the scope of this essay, however, we will only focus on tackling three major waste aspects, namely food waste, floral waste, and fireworks.

3.1 Floral waste

Flowers are an integral part of Indian weddings and are not only used for decorative purposes but are also indicative of the beginning of the official wedding ceremony which begins with the *jaimala* (exchange of floral garlands by the couple) ceremony. Indian weddings are notorious for their use of flowers of different varieties as décor items. Some wedding planners have suggested that flowers contribute to over 50% of the wedding costs (D'Cruz, 2012). Despite the paucity of studies looking into the amount of floral waste generated by Indian weddings, a study by

Soundarya et al. (2021) analysed the generation and disposal of floral waste in the Indian city of Hyderabad. The researchers identified wedding and wedding related festivities as the leading cause of floral waste generated by function halls. According to the study's statistics, approximately 735 kgs of flowers (equal to about 730,000 flowers) were sold per day during the wedding season at the Gudimalkapur market in Hyderabad while about 550 kgs (around 550,000 flowers) of flowers were sold at the Moazzam Jahi market alone. Apart from the overconsumption of flowers which yields high volumes of floral waste, a major unsustainable practice that exists in the same domain is that of importing flowers from places like New Zealand and Australia, with some exotic flowers being imported from countries like China, Singapore, and Holland (D'Cruz, 2012).

However, not only the sourcing of the flowers, but also the improper disposal of floral waste after the weddings are oftentimes unsustainable and related to environmental pollution. Floral waste in India is usually thrown into the local rivers which not only causes water pollution but also leads to foul odour and growth of water-based worms (Waghmode et al., 2018). Furthermore, the decomposition of floral waste dumped in landfills leads to the emission of greenhouses like methane and carbon dioxide (Srivastav & Kumar, 2020). During the monsoon season, this kind of waste also serves as the perfect breeding ground for mosquitoes (Srivastav & Kumar, 2020).

3.2 Food waste

To convey desired status and prestige, wedding parties must ensure there is never even a perceived shortage of food. Thus, food surplus is a guarantee at the end of each of the thousands of weddings that take place in India each year. Research has found that on average around 20% of all food is wasted at weddings or similar social events (Sharma & Vrat, 2018). Similarly, in Jaipur roughly 30% of food waste is attributed to weddings and catering services (Agrawal & Nag, 2013). Meanwhile, as of 2016, roughly 58% of people in India do not have reliable access to food (Sharma & Vrat, 2018).

During weddings most of the waste is stock-induced and behavioural (Sharma & Vrat, 2018). Specifically, wedding guests take more than they can eat because the vast amounts and varieties of food are available and visible to them. Catering for Indian weddings often follows buffet structure for food service through which each guest has full autonomy to select portion sizes, number of plate refills, and the timing of these refills (Srivastava et al., 2023). The combination of social pressures on the host to provide a surplus of food and pressures on the guests to sample all varieties and fill their plates to capacity leads to both stock and dustbin waste each wedding (Srivastava et al., 2023).

While dustbin waste is difficult to control as the food has already been served and partially consumed, stock side surplus is too often a missed opportunity for food donation.

3.3 Fireworks

Fireworks have a long-lasting tradition in Indian weddings with the first reports dating all the way back to the 16th century (Dames, 2010), and are oftentimes seen as an important display of the prestige and status for the families of the bride and groom. Unfortunately, however, fireworks are not only big air polluters and harmful to the atmosphere (Vecchi et al., 2008), but they also create a lot of waste and noise pollution (Nair, 2020). Furthermore, the working conditions in the firework industry in India are said to be particularly unsafe, as workers are oftentimes uneducated about the correct handling of the hazardous and toxic materials used for the fireworks, leading to a high risk of chemical accidents and explosions as well as severe health issues (Nallathambi et al., 2022). In addition to that, a lot of Indian fireworks are also produced with the help of child labour (Kothari, 2013).

4. Stakeholder Analysis

The problems outlined above involve a large number of stakeholders, including (but not limited to) the bride and groom as well as senior members of both families (parents, grandparents), wedding planners, guests, suppliers and service providers, NGOs, and floral artisans. For the limited scope of this essay, however, the focus of the stakeholder analysis will lay on the people planning the wedding and the wedding vendors, as these have the greatest potential influence in improving the sustainability of the wedding. In order to better understand where one can intervene and change unsustainable behaviour, it is helpful to first take a closer look at the individual's activities, goals, and motives. This is done by using activity theory (as cited in Lahlou, 2017), as it enables a breaking-down of the planning process of a wedding and provides a better understanding of the reasoning behind the behaviour of the key stakeholders.
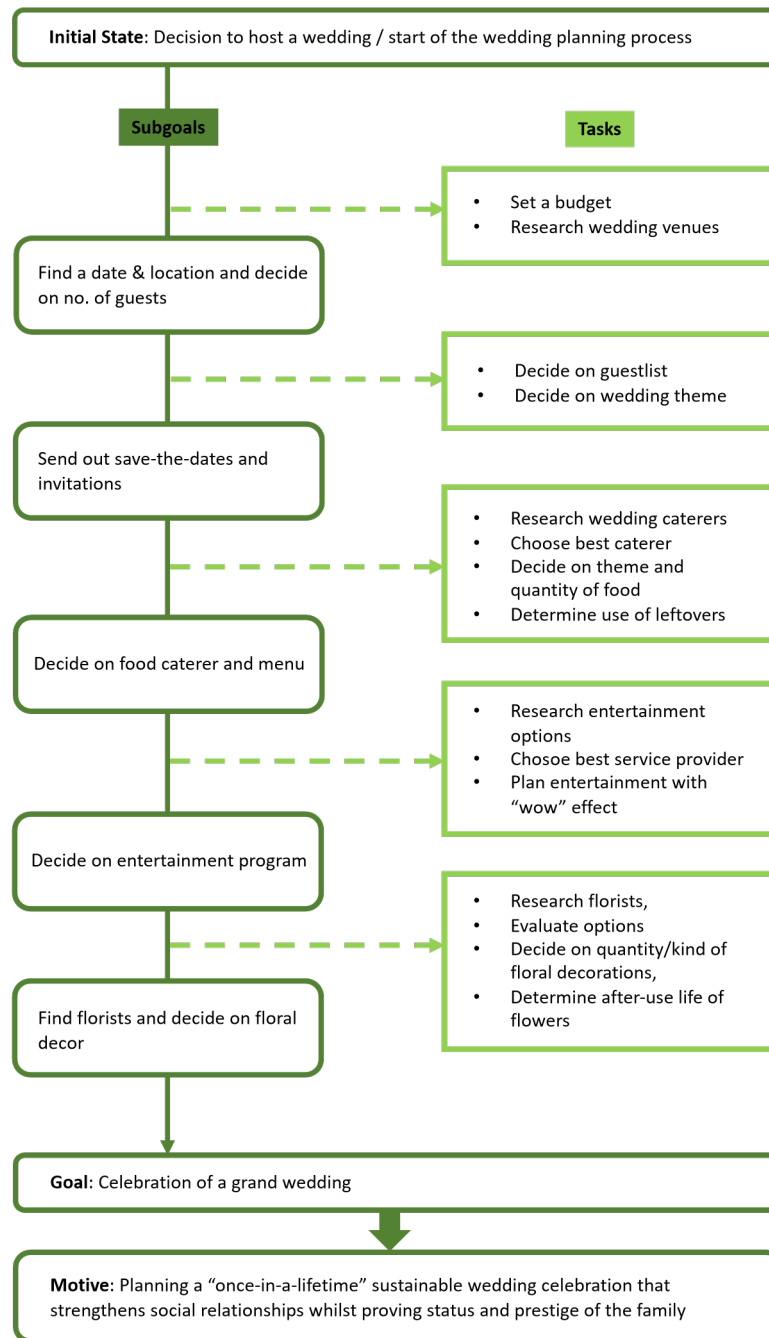
The first stakeholders who are being analysed are the planners of the wedding (see Figure 1). As these can, depending on the budget of the hosts, be both professional wedding planners and senior members of the hosting families (or a mix of both), the two stakeholders were combined in one for reasons of simplicity. The second stakeholders analysed were chosen to be the wedding vendors (providers of food, flowers, and entertainment) (see Figure 2). Even though their services may differ quite substantially in their nature, for the sake of concise analysis, GreenVows combines

vending service providers and surplus managing organisations as "service providers" since they have similar goals and motives and can, thus, be analysed together.
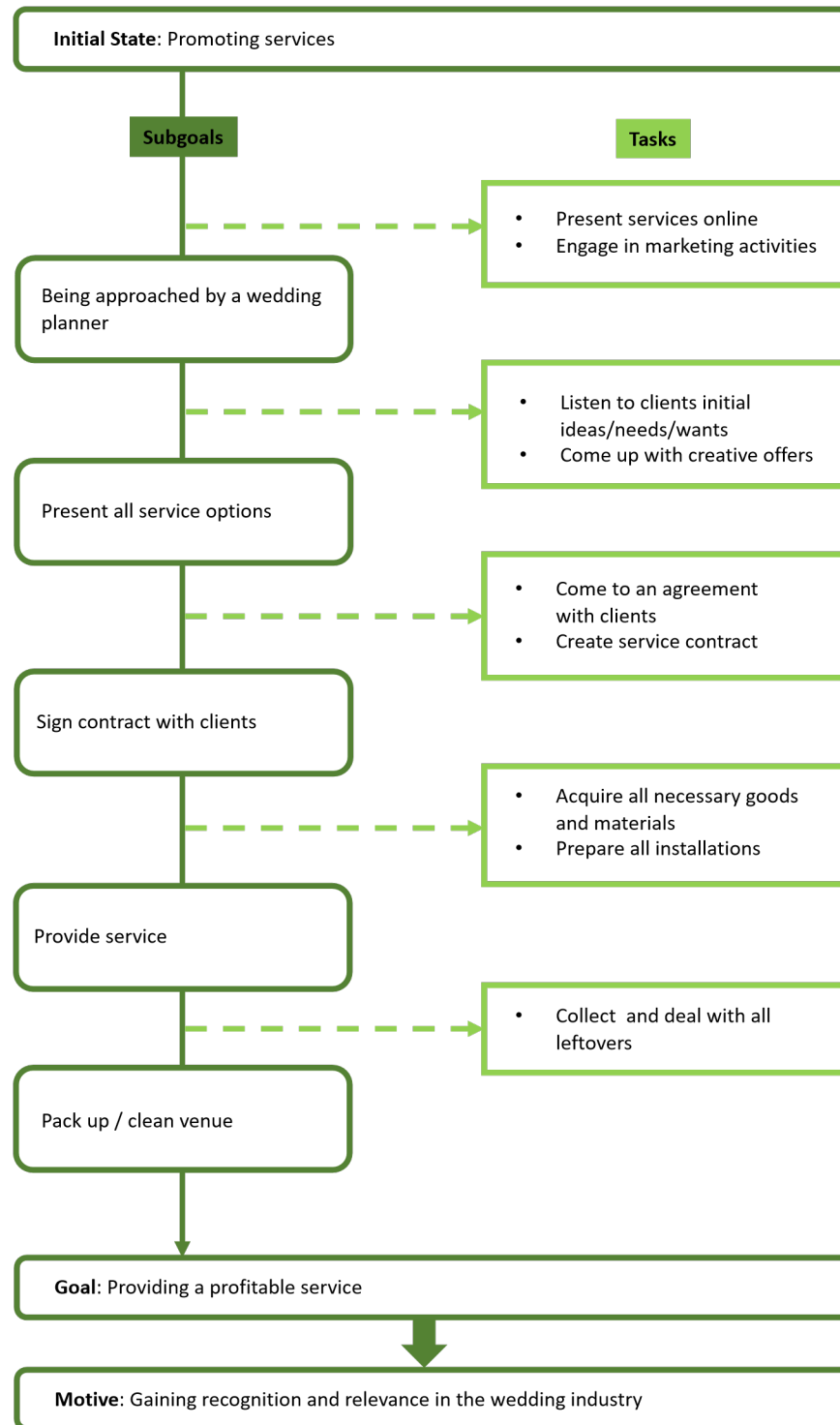
4.1 Planners of weddings (simplified)

Figure 1

Stakeholder Analysis - Planners of Weddings


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Initial State: Decision to host a wedding / start of the wedding planning process

        Subgoals                                          Tasks

                                              •  Set a budget
                                              •  Research wedding venues

   Find a date & location and decide
   on no. of guests

                                              •  Decide on guestlist
                                              •  Decide on wedding theme

   Send out save-the-dates and
   invitations

                                              •  Research wedding caterers
                                              •  Choose best caterer
                                              •  Decide on theme and
                                                 quantity of food
                                              •  Determine use of leftovers

   Decide on food caterer and menu

                                              •  Research entertainment
                                                 options
                                              •  Chosoe best service provider
                                              •  Plan entertainment with
                                                 "wow" effect

   Decide on entertainment program

                                              •  Research florists,
                                              •  Evaluate options
                                              •  Decide on quantity/kind of
                                                 floral decorations,
                                              •  Determine after-use life of
                                                 flowers

   Find florists and decide on floral
   decor

   Goal: Celebration of a grand wedding

   Motive: Planning a "once-in-a-lifetime" sustainable wedding celebration that
   strengthens social relationships whilst proving status and prestige of the family
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4.2 Service Providers (simplified)

Figure 2

Stakeholder Analysis – Service providers

Initial State: Promoting services

Subgoals | Tasks

- Present services online
- Engage in marketing activities

Being approached by a wedding planner

- Listen to clients initial ideas/needs/wants
- Come up with creative offers

Present all service options

- Come to an agreement with clients
- Create service contract

Sign contract with clients

- Acquire all necessary goods and materials
- Prepare all installations

Provide service

- Collect and deal with all leftovers

Pack up / clean venue

Goal: Providing a profitable service

Motive: Gaining recognition and relevance in the wedding industry

5. Solution Proposal

Considering the two stakeholder analyses, it becomes apparent that waste-related issues might be tackled most effectively at the planning stage of a wedding. The process of planning and bringing to life a traditional North-Indian wedding with its numerous elements (see Table A1 in Appendix A) is quite arduous, with proper post-wedding waste management rarely being a consideration one takes into account during planning. To this end, the group's solution to the wedding waste problem is the development of a one-stop wedding planning website called GreenVows, that not only aims at helping curtail the generation of waste and pollution, wherever possible, but also helps in disposing of waste in a sustainable manner.

As an all-purpose wedding planning website, GreenVows not only aims to make the process of planning a wedding convenient and easy for planners, but also aims to provide service providers with a platform through which they can reach a large range of potential clients. Simultaneously, the platform encourages planners to opt for eco-friendly service options by offering local, sustainable choices in the areas of food, décor, entertainment, as well as partnerships with surplus recycling/management organisations, whilst acknowledging the importance of not reducing the perceived grandeur of the offers. GreenVows does so by presenting multiple services in one place and offering customers with a comprehensive list of relevant and available service providers. Combining these two elements, the website helps customers to make more sustainable choices by addressing the two main challenges for sustainable behaviour, namely the lack of convenience and availability of suitable sustainable alternatives (Mathiyazhagan et al., 2019).

GreenVows intervenes at the planning stage to not only help planners incorporate sustainability into the wedding planning process, but also encourages them to think about and make provisions for the waste management and recycling process – an aspect that is otherwise often overlooked during both planning and execution. The website leverages the theories of installation, nudging and social norms to provide affordances and develop competencies for the planning of a sustainable Indian wedding. These concepts will be closer looked at in the following sections.

5.1 Installation Theory

Proposed by Lahlou (2017), installation theory was used to analyse a typical North Indian wedding (see Tables A2 and A3 in Appendix A) by treating the ceremonies as an installation consisting of three separate layers:

Figure 3

Installation Theory Model (Lahlou, 2017)
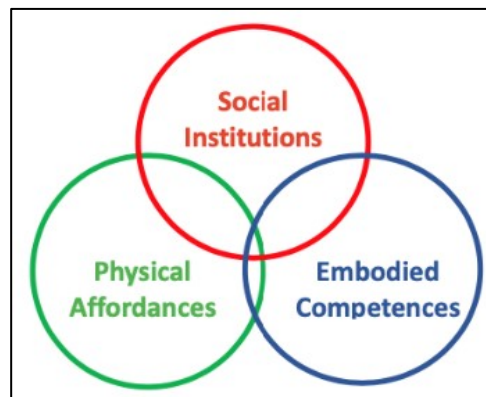
Physical Affordances: This is the physical context in which the activity takes place, the material environment external to the subjects. These materials or objects have a particular role or intention. In the case of weddings, one must consider not only the physical space in which a wedding is taking place and how it allows for specific activities or alternatives to unsustainable consumption, but also the tools that allow the key stakeholders access to essential information and communication with vendors as well as other involved stakeholders.

Embodied Competences: These are the interpretation structures internal to the body, related to skills, knowledge, experience, etc. that shape the interaction of the individual with their surroundings, and may differ between individuals. In the case of sustainable weddings, there must be knowledge about the organization and planning of a wedding, how to access online information, sustainable wedding practices, sustainable vendors, etc.

Social Institutions: Social context is necessary to enable the appropriate application of embodied knowledge into affordances. Social institutions are understood as a set of rules that control the use of affordances and coordinate the behaviour of a certain group of people, enforced through rewards or sanctions. In the case of Northern Indian weddings, crucial aspects of status and cultural obligations regarding excessive consumption surround the ceremony.

In terms of intervention, these three levels represent different approaches and challenges. While the root causes of unsustainable customs in Punjabi weddings can be traced back to social institutions in Northern Indian culture, an interference to this level proves to be incredibly challenging. In outlining the effectiveness of targeting different places to intervene in a system, Eder

(1999) points out that behavioural evolution comes from a process of structural learning, and that most societies prefer stability over risk-taking and change, thus avoiding the learning process. This means that, although not impossible, changing paradigm in any given society is a process which can take a long period of time and requires deep interventions at several leverage points (Meadows, 1999). Therefore, considering the scope of this essay, our solution does not focus on changing the grandness of Punjabi weddings, but rather on offering sustainable alternatives to polluting practices by focusing on enhancing the physical affordances and embodied competences of the people planning the weddings, as this seems to offer the most effective intervention point in the shortterm.

Using the principles of installation theory, the website hopes to help planners develop competencies around acquiring knowledge about sustainable weddings and upcoming sustainable wedding trends. It also aims to raise awareness around the need to recycle wedding waste and the key players who can facilitate this. Furthermore, the website intends to provide planners with the affordances required for looking up different wedding related services in one place and make provisions for dealing with wedding waste (see Table 4, highlighted in purple). By doing this, GreenVows aims to promote the idea of conscious consumption towards Indian weddings in the planning stage through leading users to consider the "larger context of production, distribution, or impact of goods and services" (Willis & Schor, 2012, as cited in Goel et al., 2021, p. 387) of their celebrations. Underlying this notion of conscious consumption is the idea of reducing and/or doing away with unnecessary consumption and moving towards sustainable and environmentally friendly alternatives (Goel et al., 2021).

Table 4

Installation Theory Grid for those planning the wedding

Task	Installation: Affordance	Installation: Competency	Installation: Regulation
Pre-wedding (Planning stage)	Narrowing down on vision for what the wedding should look like and what events to include. Drawing up guestlist Ensuring invitations go out on time. Booking venue and place of stay. **Provision for looking up different wedding related service providers (wedding planners, food caterers, decorators, entertainers etc.). Provision for dealing with wedding waste.** Affordances for interacting with key players (service providers). Engaging in wedding related shopping for gifts, clothes, jewelry/accessories, and shoes Planning for the honeymoon.	**Building knowledge base around sustainable weddings and upcoming wedding trends.** Communicating vision to the wedding planner (optional). Obtaining necessary permissions and licenses. **Developing awareness around need to recycle wedding waste and the players who can facilitate this.**	Understanding the social regulations and expectations of the rituals/ceremonies performed. Knowing what to look/ask for when interacting with service providers. Setting expectations vis-a-vis services rendered. Setting timelines and reminders for tasks. Communicating timeline to people of interest (service providers and guests). Signing contract(s) Coordinating and following up with service providers In-built provisions for addressing deviations from the original plan.

In terms of service providers, the website aims to provide them with the affordances required for being active on a platform where they can be sought out by clients who are keen on going local and incorporating sustainable elements into their wedding (see Table 5, highlighted in purple). The website also incentivises service-providers to display samples of their work for clients to view in the form of uploaded pictures and videos of past weddings they have served.

Table 5

Installation Theory Grid for service providers

Task	Installation: Affordance	Installation: Competency	Installation: Regulation
Pre-wedding (Planning stage)	Being publicly visible and making name for self in the wedding market. Forging and maintaining bonds with wedding planners. Providing comprehensive list of services offered. Developing affordances to offer/reduce client offerings based on demand. **Being active on a platform where clients can approach self.** Finalizing agreement with client. Obtaining ingredients/products for deliverables Affordances for storing, maintaining and transporting (if required) the deliverables	Advertising self through multiple channels. Receiving training for specific services Developing. knowledge of how to leverage different channels of communication. Communicating with clients. Knowing how to work within different budgets. Developing basic financial knowledge, especially around the wedding industry. Developing competencies to execute client vision within budget. Preparing ingredients/products for deliverables. Knowledge of deliverable and how to store/maintain it.	Knowing how to sell self and standing out in the wedding market. Following local rules around setting up and running a business. Knowing how and where to get the best kind of training to hone skillset. **Showing samples of work to clients to establish expectations of product offerings.** Knowing how to accurately price the service(s) provided. Setting expectations vis-a-vis services rendered. Setting deadlines and timelines. Signing contract. Setting timeline for product roll out on the wedding day. Organizing necessary storage, transport, packaging and other related facilities to store, maintain, display and transport the product from office/warehouse to the wedding venue.

5.2 Nudging

Nudges are quick, easy, and low-cost behavioural interventions in the form of changing choice architecture that are said to "alter people's behaviour in a predictable way without forbidding any options or significantly changing their economic incentives" (Thaler & Sunstein, 2021, p. 5). This intervention technique is based on the realization that humans do not make fully rational decisions and are in fact prone to making mistakes (Thaler & Sunstein, 2008), offering insights that can be applied to policymaking. Nudging has been found to be able to positively impact sustainable behaviour e.g., through successfully curbing household food waste by providing consumers with a food purchase plan (von Kameke & Fischer, 2018). Similarly, nudging has also shown to be successful in reducing food wastage at hotels through reducing the plate sizes at buffets and inviting guests to visit the buffet more often if desired (Kallbekken & Saelen, 2013, as cited in Ferrari et al., 2019). As will be showcased in section 6, the GreenVows planner utilises the principle of nudging by supporting users to choose sustainable waste solutions through making them users' default choice.

5.3 Social Norms

Social norms can be defined as a "predominant behavioural pattern within a group, supported by a shared understanding of acceptable actions and sustained through social interactions within that group" (Nyborg et al., 2016, p. 42). The website will leverage a specific type of social norms — dynamic norms — which describe an "upward trend in a behaviour's prevalence" (Cialdini & Jacobson, 2021, p. 3) and have proven to be more influential in encouraging proenvironmental behaviour than other kinds of norm messaging (Loschedler et al., 2019). By using dynamic social norm messaging that conveys a sense of growing interest in the adoption of waste management practices, the website will influence customers to ensure that the waste generated by them is repurposed and recycled in an environmentally friendly fashion.

Table 6 summarises the website's solutions to the aforementioned problems and the theories that underpin these solutions.

Table 6

Problem Overview of Indian Punjabi Weddings

S. No.	Problem	Impact	Theories	Solution
1.	Floral waste	Environmental damage and degradation due to import practices and improper disposal	Installation theory, nudging and social norms	1. Recycling wedding floral waste to make incense sticks, powdered colour 2. Collaborating with local dyers to help make botanical dyes 3. Collaborating with NGOs to make handmade paper
2.	Food waste	Contributes to food insecurity	nstallation theory and social norms	1. Switching from buffets to plated meals 2. Forging ties with NGOs that donate excess (leftover) food

3.	Fireworks	Air, noise, and waste pollution Poor working conditions for workers	Installation theory	1. Opting for laser shows or light installations 2. Opting for drone shows over conventional fireworks

6. The GreenVows Wedding Planner

6.1 Landing Page

With sustainability still being a limited and underdeveloped trend in Punjabi weddings, and the topic itself seemingly contradicting the cultural customs of the grandeur of weddings, GreenVows anchors its brand proposition partially in other attributes to appeal to a larger customer segment. In this way, the GreenVows landing page communicates messages of convenience and practicality associated with the benefits of the platform as a digital affordance that contains easy access to service providers and creative wedding ideas. For vendors, the platform presents a reliable space in which they can promote their services and more easily reach a large number of potential clients.

Figure 4

GreenVows website - landing page
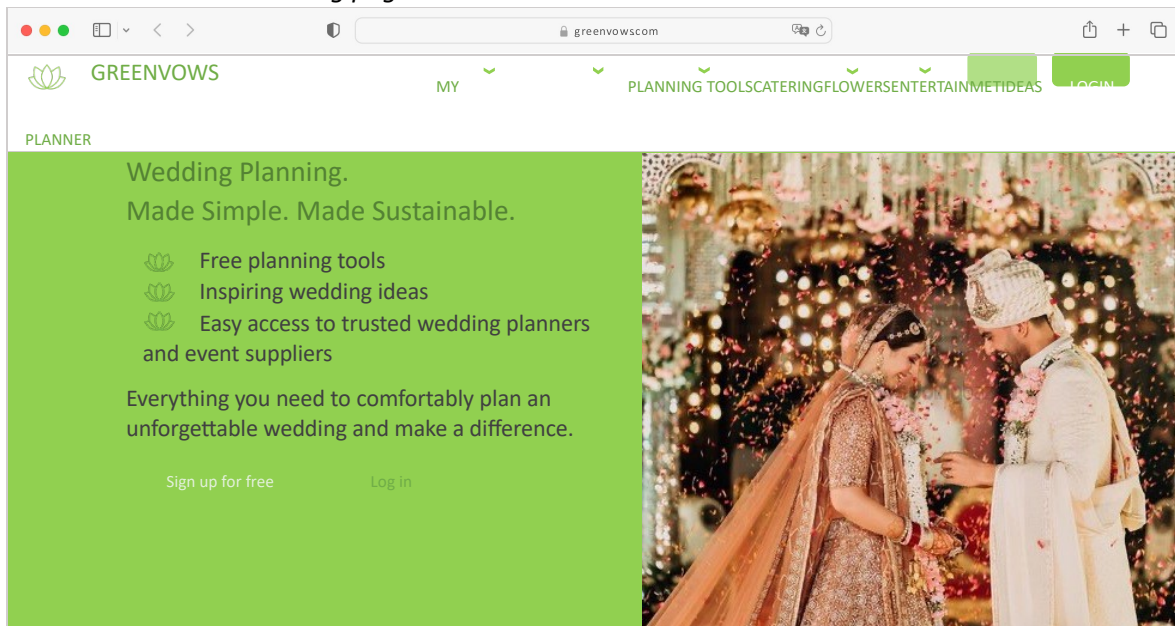
The personality of the GreenVows brand is easy-going, warm, and genuine, appealing to a sense of community and cooperation. The aim is to create an approachable brand, that signals trustworthiness in order to allow planners of weddings to ease the stress that organising and

preparing a wedding ceremony can create. This personality shines through the different touchpoints consistently such as the webpage, advertising for users and service providers, and appeal to the emotional needs of connection and support for both parties.

Visually, the look and feel of the webpage is easy to access and understand, with a clear layout and concise information. The different areas of the webpage give access and information about relevant vendors of the most essential services for a wedding, and also a social section that communicates to users the spirit of collaboration. The following sections will provide deeper insight into how the proposed solutions have been integrated into the individual pages of the platform.

6.2 Floral Waste

The most sustainable practice when it comes to dealing with floral waste would ideally be to significantly reduce the number of flowers used throughout the wedding celebrations. While this may sound good in theory and would save the to-be-weds a lot of costs, it does not seem implementable in practice. As aforementioned, flower displays serve as an important display of status and prestige at Punjabi weddings, and reducing the number of flowers would, at least at this stage, also mean a reduction in the perceived grandeur of the wedding. The platform therefore emphasises the importance of using locally sourced flowers whilst offering opportunities to make alternate and sustainable uses of the floral waste collected after the wedding festivities.
The website helps address the two problems identified with floral décor in two ways:

1.   **Importing**

The landing page for floral waste informs users of the amount of floral waste generated as a by-product of weddings (see Figure 5). This page intends to help users build their competency around gaining awareness for the need to recycle wedding related floral waste. Upon clicking *Flowers,* the website will take planners to a page that lists local florists/flower vendors that source their flowers locally and sustainably (see Figure 6). By making it convenient for planners to access a list of available local florists, the website hopes to encourage the use of domestically grown flowers, instead of importing them from abroad. Although there is little consensus on the matter of quantifying the reduction in emissions as a result of switching from imported to homegrown flowers, a study in the UK found a 90% reduction in emissions, while an Australian study found a 20% reduction ('Eco-Friendly Wedding Flowers', 2021). Planners can then click on any of the

options to not only view the florist's details and unique selling points but can also scroll through a gallery of the florist's work (see Figure 7). Planners can accordingly choose the florist they want to go with and request a quote.
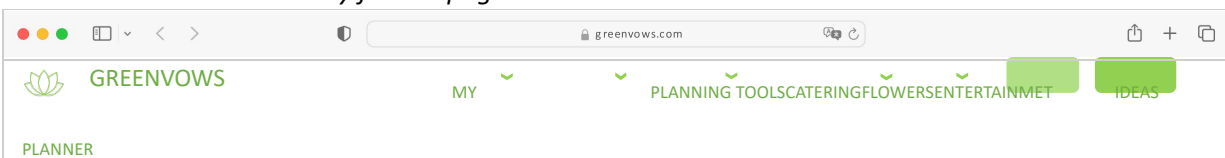
Figure 5

GreenVows website – "Flowers" page
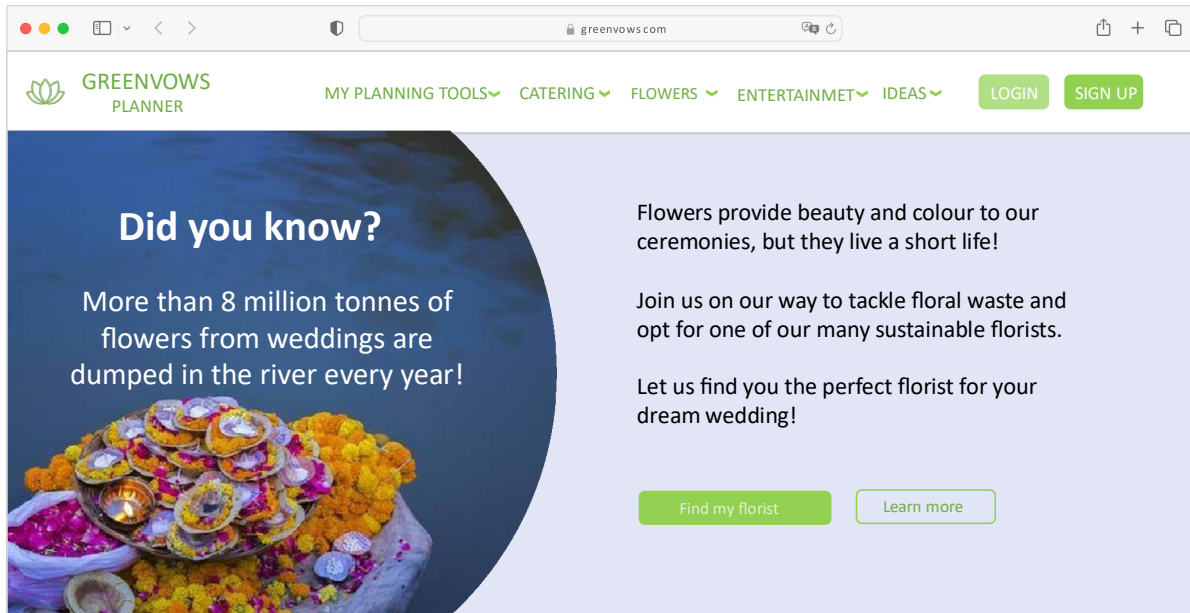
Figure 6

GreenVows website – "Find my florist" page

Figure 7

GreenVows website – Exemplary profile of florist
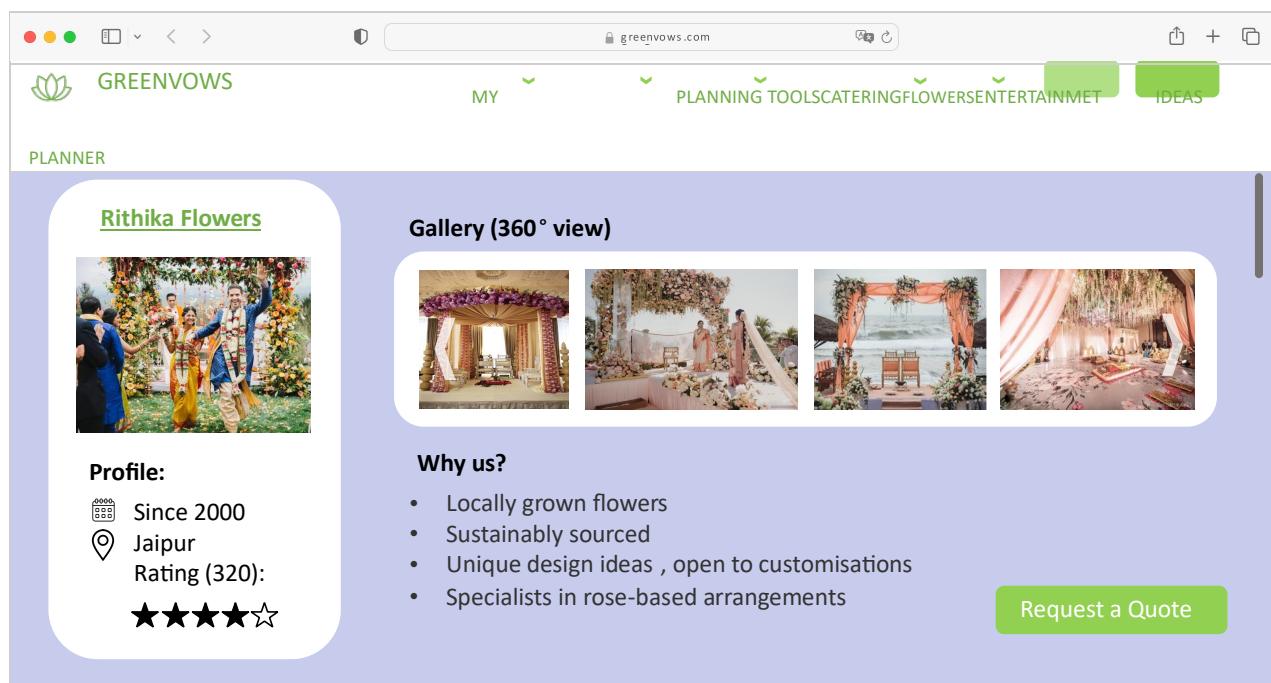
2.   Floral Waste Recycling

The next page then takes planners to the website's intervention where they will be given an option to collaborate with a local organisation (which will be chosen automatically based on the pin code. See Figure B8 in Appendix B) that recycles floral waste (see Figure 9).

The page header uses the theory of social norms to indicate to planners the growing trend of recycling wedding related floral waste and encourages them to do the same and not be left behind. This is followed by details of the floral-waste recycling NGO and what they specialise in. Finally, the page uses nudging to make recycling floral waste the default option since planners are automatically enrolled into the option that includes the waste recycling organisations' services in the final floral quote. This kind of a nudge has been tested before by the UK government in the context of automatic enrolment into pension schemes and has been quite successful (Morrison, 2013). Although planners can choose to untick the box and opt out of the scheme entirely, this is unlikely to happen as people have been found to often "go with the default option" (Morrison, 2013). Users will then click the *Finish Request* button, after which their request will go to the florist who will work directly with the planners to coordinate details of arrangements.

Figure 9

GreenVows website – Collaboration page with floral recycling NGO
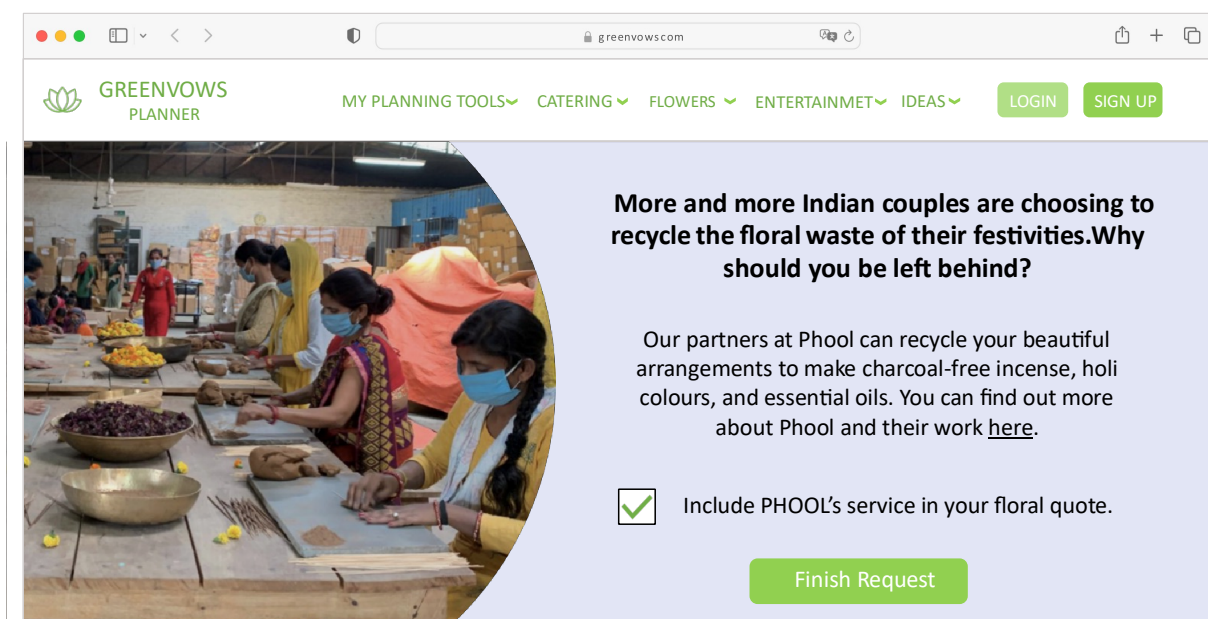
Furthermore, previous research has supported the platform's use of partnering with various floral-waste organisations since floral waste in the form of saffron and hibiscus have been used to dye Pashmina shawls and used as a natural dye in the textile industry generally (Srivastav & Kumar, 2020). Other flowers like jasmine have been used to make incense sticks by rural women to whom the floral-recycling industry provides a source of employment (Phool, 2019; Bageeya, 2023). Finally,

proper floral waste management also ties in well with the Clean India Campaign and is a step towards helping India achieve the UN's sustainable development goals around the collection and management of solid waste (Srivastav & Kumar, 2020).

This page-by-page approach introducing social norms, nudging choice architecture, and organisations partnerships will be consistent through all wedding planning requests. While users will not be booking directly through GreenVows, quotes will be inclusive of all selected services involved for each segment. The following sections will address the specific solutions addressing food and entertainment waste, while holding the request structure constant.

6.3 Food Waste

Because food waste is an established inevitability, any proposed solution must first be introduced to target the end-result of surplus (see Figure B10 in Appendix B). The ways GreenVows intends to accomplish this are to intervene during the planning stage to alter what food is served, how it is served, and how it is handled following the reception. As couples and wedding planners come to the platform, they will be given the opportunity to select caterers with whom GreenVows has partnered for their sustainable practices (see Figure B11 in Appendix B). We intend for all caterers available on the site to have sustainable food offerings, i.e., leaning more vegetarian, locally sourced, non-factory farms, etc. Once the planning individual selects a caterer they will see further information on the service provider including their set menu offerings, and varieties (see Figure B12 in Appendix B). In addition to food offering, the page will display reviews from previously catered events, contact information, and NGOs with whom the caterer has partnered. Finally, the individual will be prompted to request a quote from the selected caterer. Clicking on "Request Quote" will bring the visitor to a page (see Figure 13) which offers information on food waste and a call to action to partner with an NGO such as Feeding India, which picks up and distributes left over foods from large scale events (Chandani, 2019). Furthermore, this page will include a nudge in the form preselected defaults to include an NGO partnership in the initial quote, and to see the available menus for plated meals. When the individual finishes the request, the service providers are notified and will be able to build a quote from the customer's request and GreenVows details.

We have decided on this set of interventions for food waste as it presents sustainable options before waste is ever generated and establishes a convenient pipeline for sustainably sourced foods

to be managed and donated. In addition to sourcing and disposal, this intervention addresses serving practices at the time of the reception. Nudging individuals to selected plated food menus rather than buffet style offerings eliminates a prominent source of dustbin waste from the start (Srivastava et al., 2023). A simulation of this proposal found a 46% reduction in food waste (Sharma & Vrat, 2018).

Figure 13

GreenVows – Finish Catering Quote Request Page with call to action and default choice architecture
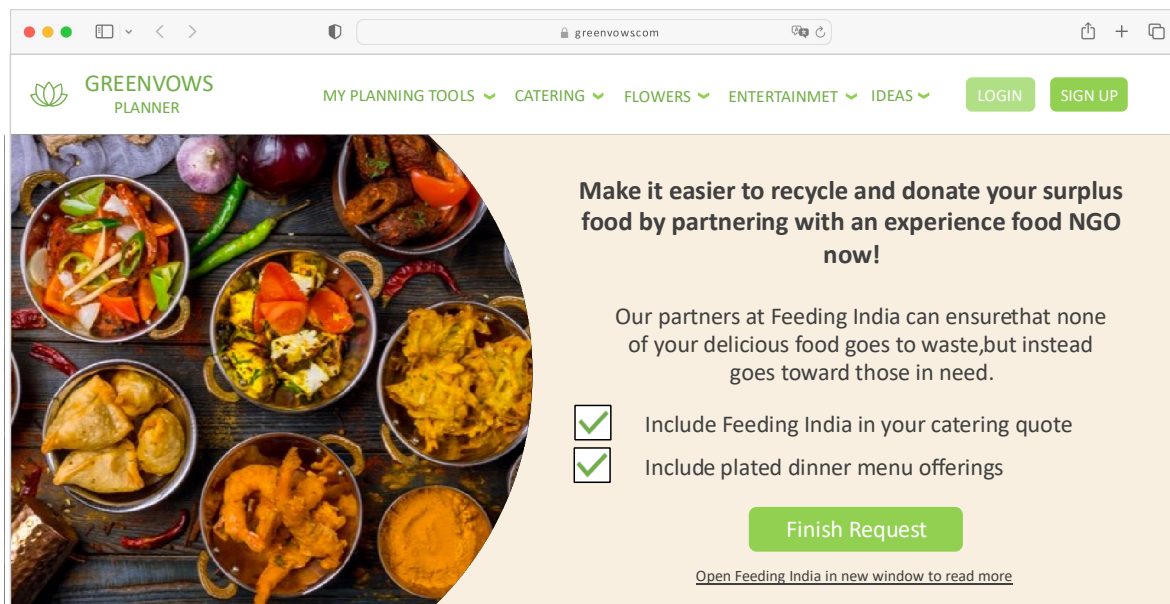
6.4 Sustainable Entertainment

Even though there has been a development in India with the aim to make fireworks and especially firecrackers less polluting, the effectiveness of these "greener" options can be seen as limited, as they still carry around 67% of their original emissions and toxic fumes (Wankhede et al., 2023). Therefore, the GreenVows wedding planner aims to provide users under the "Entertainment" section of the website with the individual competences and affordances they require to find and opt for more sustainable (but not less glamorous) entertainment alternatives (see Figure B14 in Appendix B). Through the "Find my entertainer" page (see Figure 15), users will be able to search

and get in touch with service providers who have specialised in sustainable entertainment options outside of the traditional firework displays.

These options may include light installations, laser shows, visual artists, and especially displays of light drone shows. Not only do these options not commit any air or noise pollution, but they also don't generate any waste throughout their usage (after the production phase) and can be reused many times. Furthermore, taking drone shows as an example, these displays offer the opportunity to virtually project anything that is desired into the night sky (so far, drone shows with up to 5.200 drones simultaneously in the sky are possible (Guinness World Records, 2021)), and thus also do not lack on the prestige- and desired "wow"-effect during the celebrations.

Figure 15

GreenVows' website – "Find my entertainer" page


6.5 Community Section

The "Ideas" section of the platform is a space where users can access and share written blog posts (see Figure 16), pictures (see Figure 17), and videos of their wedding celebrations, to show the services they hired from GreenVows and how the event turned out. This aims to enhance the competencies of planners of weddings by providing knowledge of innovative sustainable practices and service providers. Regarding the latter, this section includes a link to featured vendors' profiles in the platform. The posts also have the option to comment on and react to, serving as a space to create a sense of community.

Figure 16

GreenVows' website – "Ideas" page
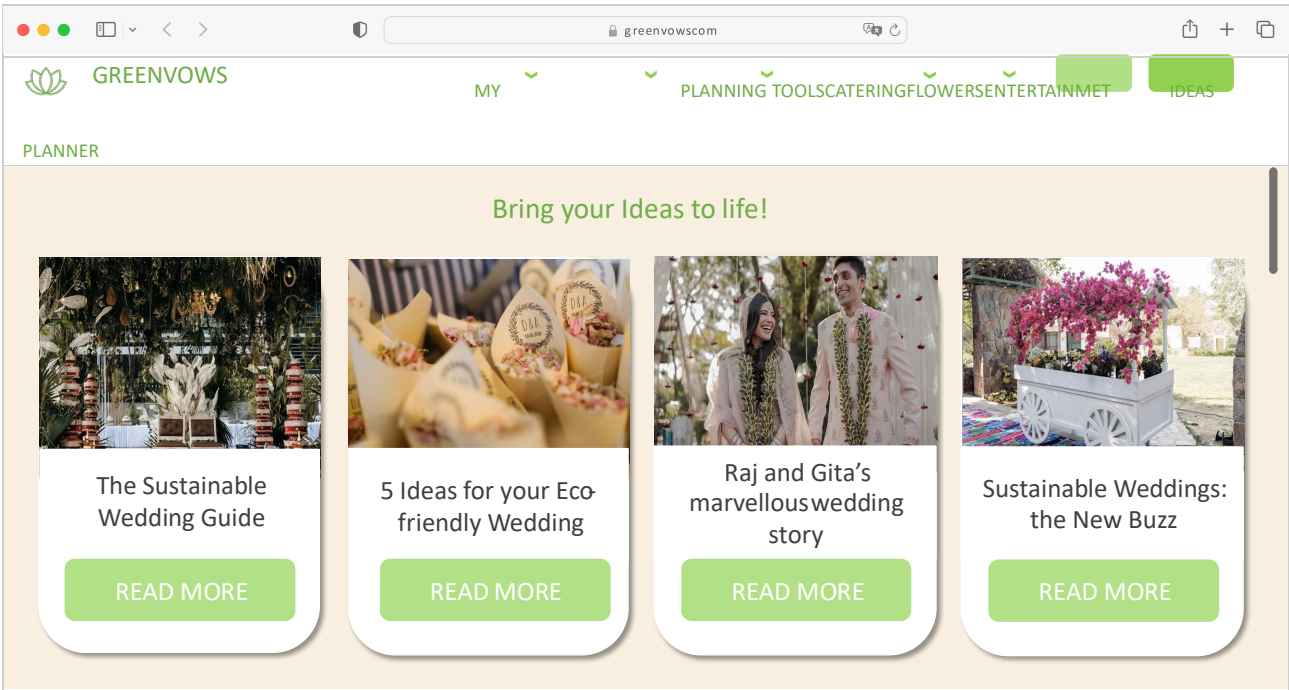
Figure 17

GreenVows' website – "Gallery" found under the "Ideas" page
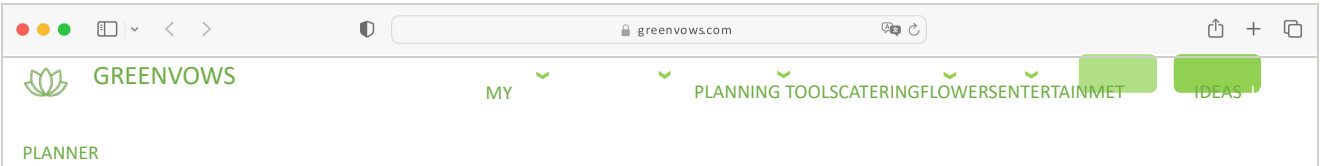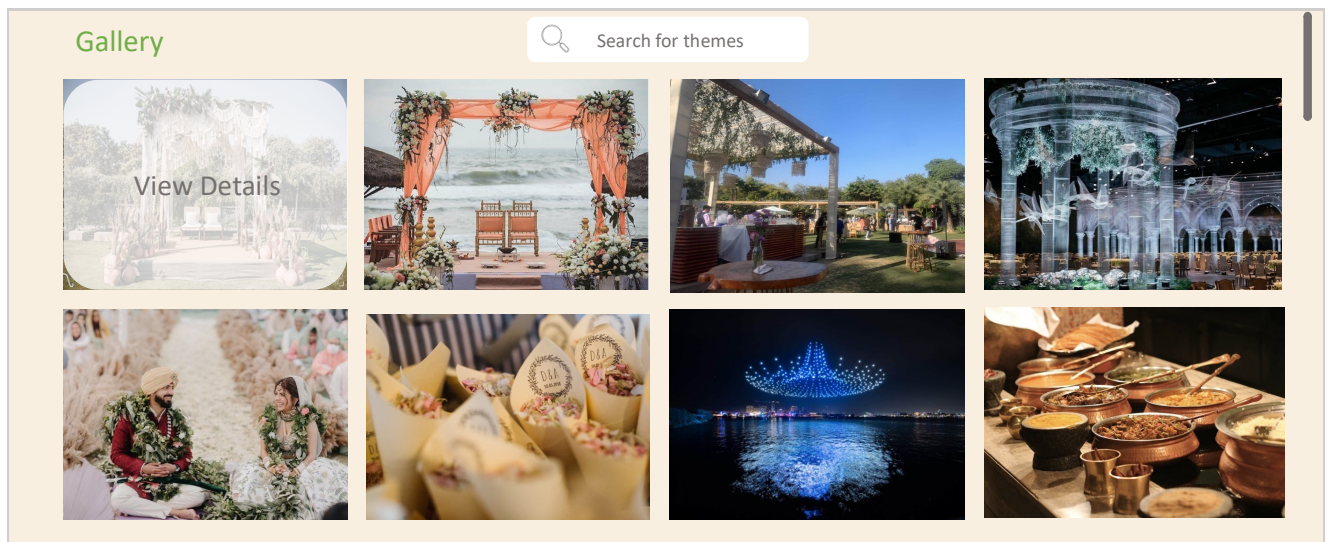
A recent trend on the rise is that of the Indian wedding industry adopting and incorporating sustainable practices (Outlook, 2022). This can, in part, be attributed to the restrictions that were put in place during the COVID pandemic but are more importantly a consequence of millennials increasingly becoming aware of and sensitive towards the harmful impacts of the often-idolised Big Fat Indian Wedding (Outlook, 2022; Verma, 2022). This trend suggests a new necessity in the wedding market, with an openness to questioning current customs and searching for options that results in a segment of the population that could become early adopters of the platform and propel its growth in usage.

Considering this, the "ideas" section attempts to influence dynamic social norms through promoting attributes such as sustainability, organization and cooperation that shape the behaviour and expectations of the users (Prentice, 2007). Currently, the customs in Northern Indian culture enforce certain expectations for how weddings should be conducted. This enforcement happens through a series of descriptive social norms that entail what is commonly done in wedding ceremonies, informing individuals what is adaptive in this situation to be able to maintain social status (Goldstein & Cialdini, 2009), and where the deviation might lead to negative group responses such as social exclusion (Williams, 2007).

GreenVows offers an alternative way of engaging with wedding ceremonies, and the community section might help to relieve potential feelings of embarrassment or anxiety (Elster, 1989) through making the behaviours salient by seeing other people make similar decisions. This element of perceived similarity between the individual planner of a wedding and the group of

users of GreenVows (as the reference group) is relevant to highlight, as it has an influence on the likelihood of the individual to adopt the new customs (Goldstein et al., 2008).

7. Green Vows' Business Model

Although a complete outline of GreenVows' business model can be found in the appendix (see Figure B18, Appendix B), this section aims to provide a short overview of how the platform will operate. As outlined in section 4, the two main stakeholders considered in this essay are the planners of Punjabi weddings as well as the vendors offering their services for the festivities. Whilst there are no criteria that clients have to fulfil in order to use the website (other than having access to a computer and the internet), vendors will only be included in the platform if their values and services are in alignment with the aim of GreenVows mission (namely to make Punjabi weddings more sustainable). Taking florists as an example, only those florists will be allowed to showcase their services on GreenVow's website who exclusively use locally sourced flowers in their displays and who operate in collaboration with one of the many organisations in India that recycle floral waste.

Whilst the website is free of charge for clients, it will be financed by vendors having to pay a standardised fee for every quote that is requested from potential clients through GreenVows. Strategically, GreenVows could partner with social media platforms such as Pinterest. This platform links uploaded pictures to the originating websites – thus, people who are looking for inspirations on Pinterest could be attracted to the GreenVows website with the pictures of the sustainable wedding vendor's services being linked to the platform. This would represent a low-cost access to a large number of potential clients. Furthermore, once the platform has gained traction, word-ofmouth recommendations of former users will play a significant role in attracting new clients.

8. Discussion and Limitations

To start off with, it is crucial to note that the effectiveness of GreenVows as a solution to the problems outlined above is dependent on its success as a business. For the platform to have the desired impact, it must first build a substantial base of service providers and wedding planners willing to participate in partnerships with GreenVows and with each other. In a similar way, large numbers of clients will have to be attracted to the platform and convinced to opt for sustainable vendors as well as to contact them through GreenVows. For the sake of concise analysis, GreenVows combines vending service providers and surplus recycling/managing organisations to have a comprehensive

definition of wedding service providers. This broad definition may overlook the nuanced performances of the recycling and managing organisations within the stakeholder analysis.

Furthermore, considering the scope of this essay, GreenVows' solution approach is limited to only three specific avenues of waste: food, floral, and entertainment. Wedding produced waste, however, is by no means limited to these three sources. For examples, weddings are notorious for single use clothing, jewellery, decorations, paper invitations, and much more (Sharma, 2022). By focusing specifically on wedding produced food, floral, and entertainment waste, GreenVows does not include the other contributing factors to these forms of waste. Similarly, there are many events, marketplaces, services, and productions that contribute to food, floral, and fireworks waste in India outside of the wedding industry (Vaibhav et al., 2020). This paper has narrowed the scope for GreenVows to realistically manage it as a developing small business. Overcrowding the website from the start with too many goals and targets would have its own difficulties, but the option of serving a broader range of customer groups could be considered in the future.

Finally, as stated in the beginning, our solution does not aim at changing the cultural aspects underlying the excessiveness and wastefulness of Punjabi weddings. Indian weddings are deeply ingrained with symbols of status, wealth, and hospitality, which necessitate conspicuous consumption and waste (Goel, 2021). Because these characteristics are cultural, it would take more than a website to change these root causes. According to Eliasoph and Lichterman (1999), this can be understood through the fact that culture creates and is created by a systemic structure, and that people within a specific culture understand their own social rituals through this limited scope. In other words, in order for a culture to change something, it first needs to consider it a problem, which can be difficult to see from within. This also creates an obstacle since it implies a degree of resistance, resulting in a need for more extensive, longitudinal cultural change that escapes the scope of this proposal.

While GreenVows is limited in these regards, we believe that the described interventions present a promising first step in addressing the problem of wedding-related waste and can facilitate change towards more sustainability in the existing social norms around Indian weddings.

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Appendix A

Tables

Table A1

Exhaustive list of wedding related activities

Serial Number	Task	Activities
1.	Setting a date	Consulting priest/astrologer to help determine auspicious date for wedding
2.	Budget	Deciding the budget for the wedding and other wedding related events, deciding the budget for each event
3.	Events	Deciding what events to host based on the vision and the budget
4.	Guestlist	Drawing up a guestlist collaboratively – deciding whom to invite and to what event
5.	Vision/Theme	Seeking inspiration for what the wedding and its related events should look like, choosing and picking aspects to include in one's own wedding based on the final budget
6.	Wedding Planner (optional)	Look for wedding planners who can work according to the vision and within the pre-determined budget
7.	Venue + Stay	Looking at and booking venue options for the different, wedding and wedding related events based on vision, budget and guestlist, booking rooms for the wedding party at the hotel/resort

8.	Invitations + initial gifts for guests	Visit shops that specialise in wedding invitations, identify and book design that

		aligns with the theme and send invitations out to guests along with initial gifts (usually sweets, nuts or chocolates)
9.	Transport	Book transport facilities for the wedding party (to and from airport, to and from wedding venue, to and from shops and other places of interest)
10.	Decor	Look for and finalise/book suppliers/vendors who can execute vision and work within budget
11.	Priest	Book family priest to conduct the ceremony/different rituals
12.	Make-up artist, hair stylist, mehendi (henna) artists, videographers, and photographers	Identify and book make-up artists, mehendi (henna) artists, photographers, videographers, and hair stylists that can execute the vision/offer recommendations for all events pertaining to the wedding
13.	Entertainment	Look for and book entertainers who can work within the budget and whose performance aligns with the vision
14.	Food	Visit different caterers, decide on the number of cuisines, look at individual menu options, try different dishes, draw up the final menu and place order depending on guestlist (and a little extra to accommodate extra guests)
15.	Licenses	Obtain permits and licenses from authorities (for alcohol, music, performances etc)

16.	Outfits + jewellery + shoes	Visit different boutiques and shops to try on and purchase different wedding and wedding event related outfits, jewellery/accessories and shoes
17.	Gifts	Look for and purchase gifts for in-laws (jewellery, clothes, sweets, nuts) as well as wedding guests
18.	Honeymoon	Decide on destination(s) and make provisions for visiting

Table A2

Detailed installation theory grid for those planning the wedding

Task	Installation: Affordance	Installation: Competency	Installation: Regulation
Setting budget + finances	Viewing ceremony options available within different budgets.

Allowing mixing and matching of options to curate budget-friendly wedding ceremony. | Knowledge of wedding-related financial matters.

Articulation of goals – what the wedding should look like.

Allotment of budget to wedding and wedding related events. | Getting budget approved by the couple and their immediate families.

Designing strategies/plans to stick to the budget.

Making provisions for exceeding budget. |

Pre-wedding (Planning stage)	Narrowing down on vision for what the wedding should look like and what events to include.	**Building knowledge base around sustainable weddings and upcoming wedding trends.**	Understanding the social regulations and expectations of the rituals/ceremonies performed.
	Drawing up guestlist Ensuring invitations go out on time.	Communicating vision to the wedding planner (optional).	Knowing what to look/ask for when interacting with service providers.
	Booking venue and place of stay.	Obtaining necessary permissions and licenses.	
	Provision for looking up different wedding related service providers (wedding planners, food caterers,	**Developing awareness around need to recycle wedding waste and the players who can facilitate this.**	Setting expectations visa-vis services rendered.
			Setting timelines and reminders for tasks.

	decorators, entertainers etc.). **Provision for dealing with wedding waste.** Affordances for interacting with key players (service providers). Engaging in wedding related shopping for gifts, clothes, jewellery/accessories, and shoes Planning for the honeymoon.		Communicating timeline to people of interest (service providers and guests). Signing contract(s). Coordinating and following up with service providers. In-built provisions for addressing deviations from the original plan.
Wedding stage	Venue is set up for the ceremony. Guests are physically where they need to be. Bride, groom and guests dressed and know what to do.	Communicating to wedding party what to do/where to go to properly participate.	Ensuring celebration of the vows do not condone wastefulness. Making sure the ceremony's sanctity is maintained while encouraging people to have fun
Post-wedding (Clean-up stage)	Ensuring waste-recycling organisations have access to the waste. Preparing surplus food to be taken as individual meals by guests or full trays for NGOs.	Communicating with members of the organisation to collect waste once the wedding is over. Coordinating collection processes with organisation.	Ensuring that postwedding waste is not disposed. Setting a time and place to meet to facilitate the take-over process (from

			hosts to members of organisation).

Table A3

Detailed installation theory grid for service providers

| Task	Installation: Affordance	Installation: Competency	Installation: Regulation
Pre-wedding (Planning stage)	Being publicly visible and making name for self in the wedding market.	Advertising self through multiple channels.	Knowing how to sell self and standing out in the wedding market.
	Forging and maintaining bonds with wedding planners.	Receiving training for specific services developing.	Following local rules around setting up and running a business.
	Providing comprehensive list of services offered.	Knowledge of how to leverage different channels of communication.	Knowing how and where to get the best kind of training to hone skillset.
	Developing affordances to offer/reduce client offerings based on demand.	Communicating with clients.	**Showing samples of work to clients to establish expectations of product offerings.**
	Being active on a platform where clients can approach self.	Knowing how to work within different budgets.	Knowing how to accurately price the service(s) provided.
	Finalising agreement with client.	Developing basic financial knowledge, especially around the wedding industry.	Setting expectations vis-a-vis services rendered.
			Setting deadlines and timelines.
	Obtaining ingredients/products for deliverables	Developing competencies to execute client vision within budget.	Signing contract.
	Affordances for storing, maintaining and transporting (if required) the deliverables.		Setting timeline for product roll out on the wedding day.

| | | Preparing ingredients/products for deliverables.

Knowledge of deliverable and how to store/maintain it. | Organising necessary storage, transport, packaging and other related facilities to store, maintain, display and transport the product from office/warehouse to the wedding venue. |
|---|---|---|---|
| Wedding stage | Have products finished and bundled according to order.

Serve up deliverables.
Keep surplus deliverables together. | Setting up deliverable and prepare them for consumption.

Communicate with venue and planner for setup and breakdown.

Communicate with planner and venue for expected surplus. | Ensure deliverables are where they should be prepared and placed according to contract of service.
Follow through with service as explained by customer/venue/planner.

Ensure deliverable surplus served in manner keeping intact for recycling. |

Post-wedding (Clean- up stage)	Being equipped with tools required for collection.	Communicating with collectors and/or the liaison to collectors.	Understanding proper channels of communication for successful collection.
Recyclers	Reaching client site on time for collection	Knowledge of how to collect properly.	Understanding how deliverables must be packages following wedding.
	Surplus deliverables prepped for collection.		
	Having surplus deliverables in good condition.	Communicating proper packing.	Understand what waste cannot be collected.
	Minimal final waste.	Communicate everything that can be collected is.	Staff understand that they can take whatever is left of unrecyclable deliverables.
	Individual takeaway containers on deck for staff.	Communicate that nonrecyclable deliverable be taken by staff.	

Appendix B

Figures

Figure B8

Alternate floral recycling organisation page options
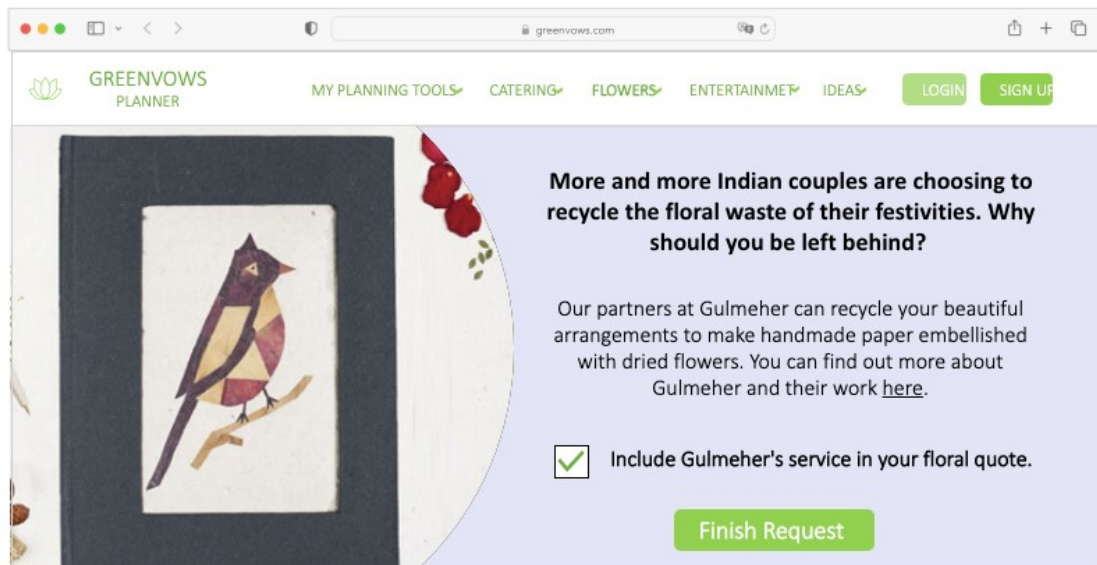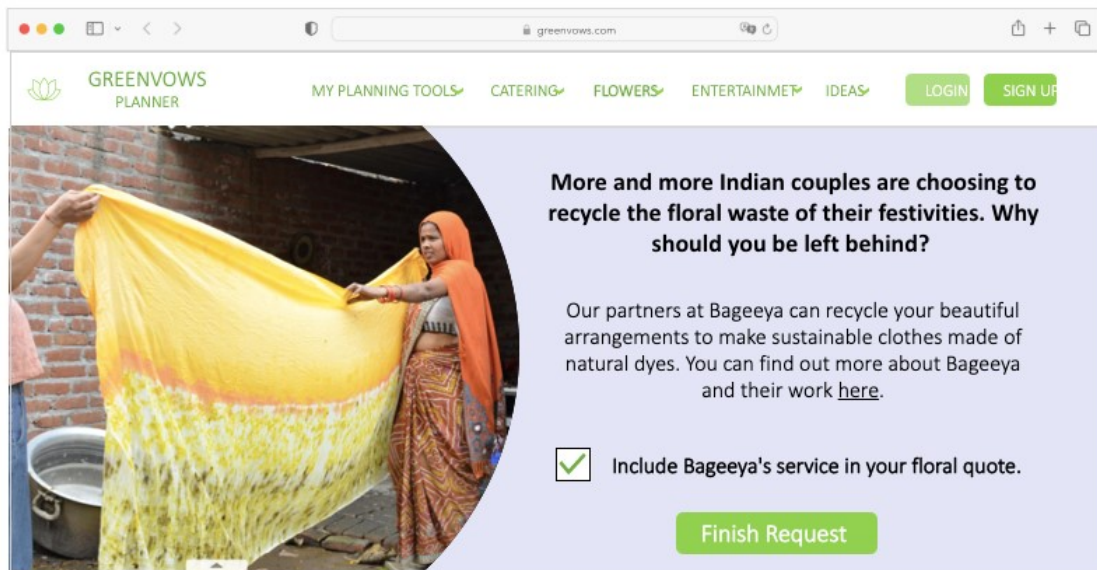
Figure B10

GreenVows website – "Food" page
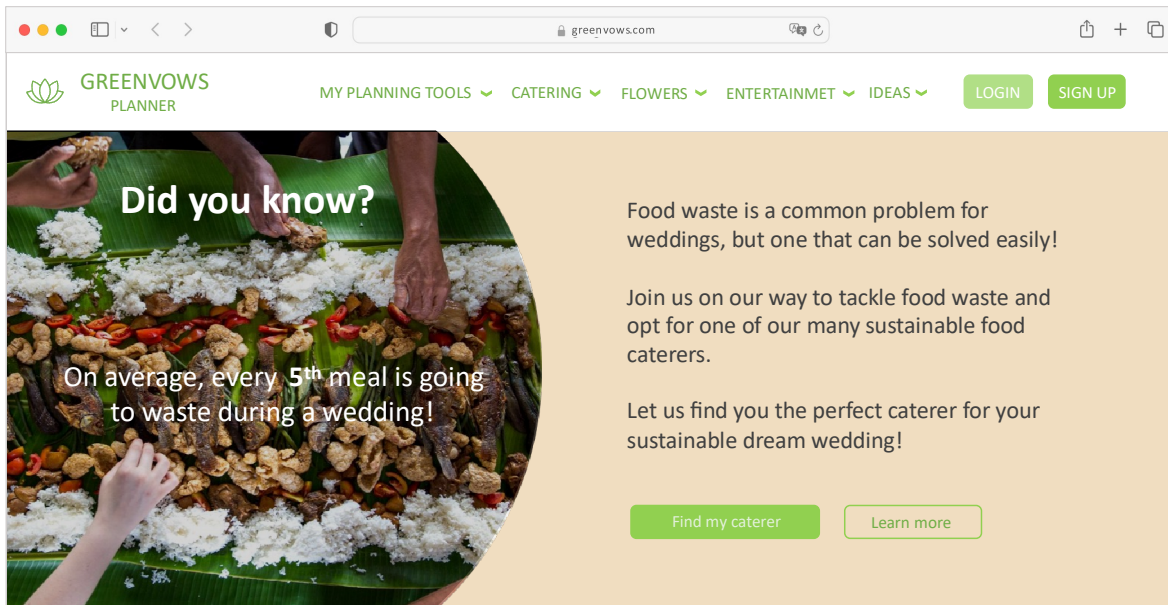
Figure B11

GreenVows website – "Find my caterer" page
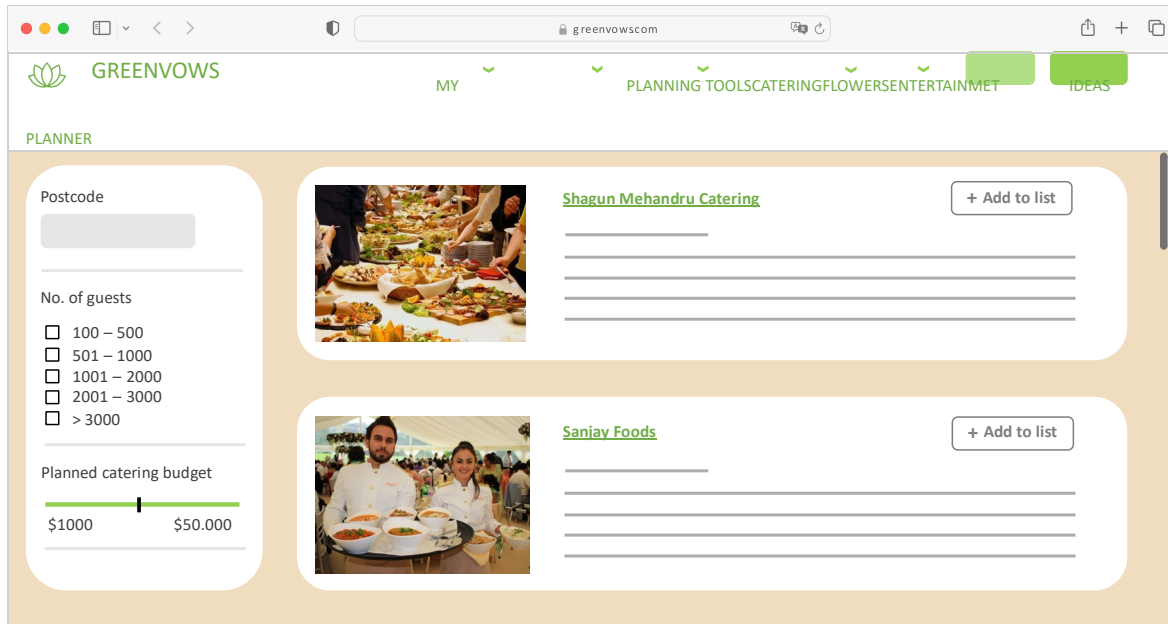
Figure B12

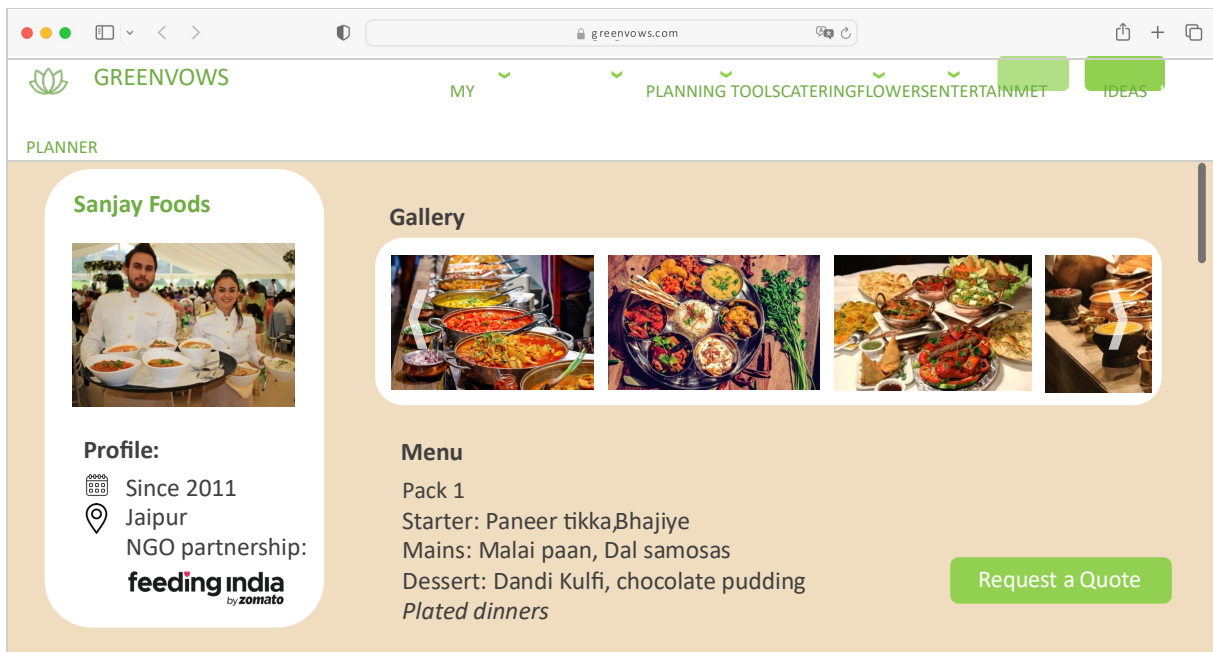*GreenVows website – Exemplary profile of caterer*

Figure 14

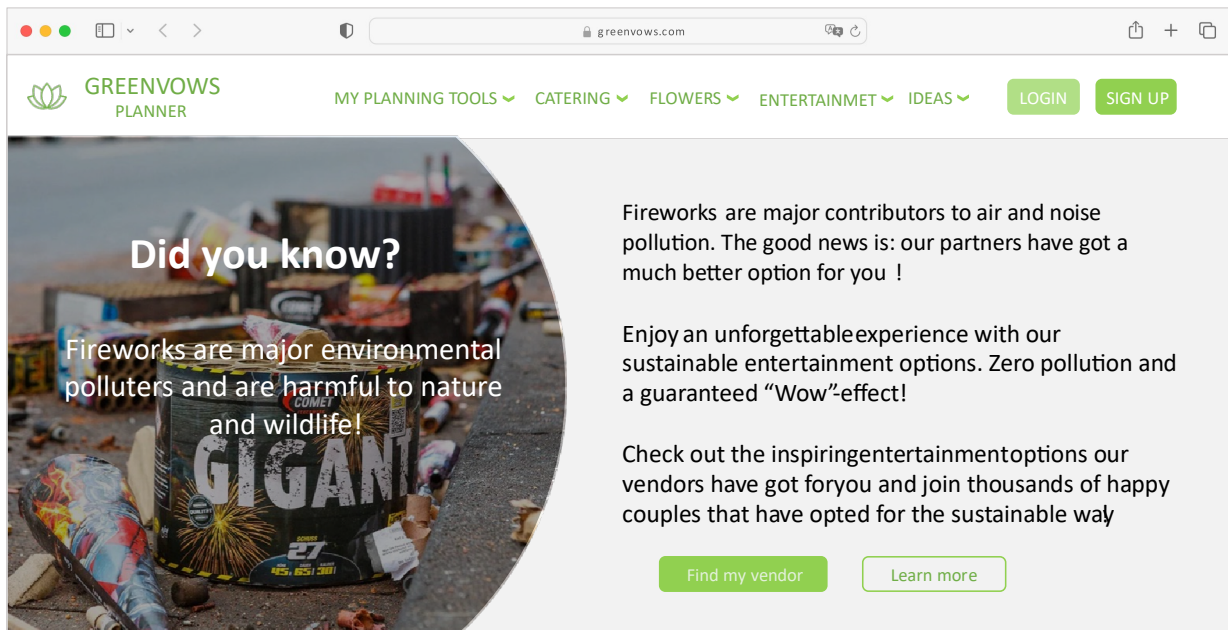*GreenVows website – "Entertainment" page*

Figure B18

GreenVows' Business Model Canvas

GREENVOWS PLANNER
Business Model Canvas

KEY PARTNERS	KEY ACTIVITIES	VALUE PROPOSITIONS	CUSTOMER RELATIONSHIPS	CUSTOMER SEGMENTS
- Local wedding professionals - Florists - Caterers - Entertainment providers - Food NGOs - Floral waste recyclers	- Development of an online wedding planning platform - Reaching out to sustainable service providers - Content creation - Community building - Digital marketing	- Providing convenient access to valuable tools that simplify the wedding planning process - Offering easy-to-use search and contact options for sustainable wedding service providers - Providing a platform through which users can inspire each other and share their ideas and experiences around the topics of sustainable weddings - Provides effective tool for professional wedding planners to serve their clients	- Creative ideas and inspirations for sustainable wedding solutions - User reviews and recommendations - Sense of community - Personalised to-do-lists	- Couples - Senior family members - Professional wedding planners
	KEY RESOURCES - Web-based business platform - Directory of service providers - Software features - IT infrastructure - Content generated by users - Community - Editors		**CHANNELS** - Online / website - Word-of-mouth referrals - Social Media	

COST STRUCTURE	REVENUE STREAMS
- Development of online platform - HR & Operations - Digital Marketing (SEO, Social Media, …) - IT infrastructure - Acquisition of service providers - Office costs	- Service providers pay standardised fee for each quote that is requested through GreenVows (free use for wedding planners) - Advertisement and software as-a-service offer for service providers

ENVIRONMENTAL COSTS	SOCIETAL COSTS	SOCIETAL BENEFITS	ENVIRONMENTAL BENEFITS
- Energy consumption of running platform	- N/A	- Reduction of hunger; Support for NGOs	- Reduction of food, floral waste and environmental pollution