Project Report

on

BEHAVIOURAL INDUSTRIAL/ENVIRONMENTAL ORGANIZATION

TOPIC: DESIGNING AN EFFECTIVE DIGITAL PLATFORM FOR CONNECTING PRIVATE AGENCIES OFFERING PAYMENTS FOR ENVIRONMENTAL SERVICES WITH SERVICE PROVIDERS, SUCH AS FOREST OWNERS AND FARMER

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1. INTRODUCTION

ALC EcoRepair, founded by three Business Intelligence students, is a French digital platform linking private agencies with environmental service providers such as farmers and landowners. Serving as an intermediary, it facilitates connections between farmers and private agencies. Moreover, EcoRepair provides diverse incentives like agricultural training, European agricultural event advertising, and access to expert services for carbon reduction and bioremediation. Enabling the connection between farmers and private agencies offering environmental payments, as EcoRepair does, yields mutual benefits for both parties and society. Farmers access financial rewards and technical assistance for sustainable practices, enhancing soil health, and mitigating carbon emissions. Meanwhile, private agencies leverage a vast network of service providers, cost-effective implementation strategies, and quantifiable environmental impacts, advancing their sustainability objectives. In our research, the primary focus lies on the carbon footprint and reduction mechanisms, utilizing services that could be provided by both private agencies and farmers.

2. OUR SERVICES

We offer various services aims to bridge between Private agencies and Farmers to provide offers, consultation, Trainings and bring Events that enhance agriculture growth and is helpful to ecosystem. Reducing Carbon Footprint in farming and Soil Remediation that naturally heals the land.

2.1 Reduction Carbon Footprint:

Agriculture contributes significantly to greenhouse gases. Sustainable practices can dramatically lower emissions. By adopting smarter farming methods, farmers can cultivate a greener future and reduce agriculture's carbon footprint.

2.2 Soil Remediation

Cleaning up contaminated soil to remove pollutants and restore its health for future use. Utilizes microorganisms such as bacteria, fungi, and algae to break down contaminants into less harmful substances.

2.3 Agricultural Trainings and advises

Agriculture farming training equip aspiring and existing farmers with the skills and knowledge to succeed. Sustainable practices, raising specific crops or livestock, and the latest technologies in farming. Farmers can refine their skills, and become more efficient and responsible producer with these trainings

2.4 Agricultural events

Farming events showcase the latest innovations, connect farmers with experts, and celebrate agricultural achievements. These gatherings offer opportunities to learn, network, and discover new ways to grow.

3. ANALYSIS OF NEEDS OF PRIVATE AGENCIES AND FARMERS

To discern the specific requirements of private agencies and environmental service providers in managing carbon footprints, the following considerations are crucial:

- Measurement and Assessment: Private agencies and environmental service providers necessitate tools and methodologies for precise measurement and evaluation of carbon emissions across diverse operational activities.
- Data Monitoring and Reporting: Robust systems are essential for continuous monitoring and tracking of carbon emissions data. Additionally, streamlined reporting mechanisms play a vital role in transparently communicating carbon footprint information to stakeholders.
- Identification of Hotspots: Understanding the primary sources and drivers of carbon emissions within their operations allows organizations to effectively prioritize mitigation efforts.
- Implementation of Reduction Strategies: Access to strategies and technologies aimed at reducing carbon emissions is vital for private agencies and environmental service providers. This includes initiatives such as energy efficiency measures, the adoption of renewable energy, and the implementation of waste reduction strategies.

4. CHARACTERISTICS OF INVOLVED STAKEHOLDERS

These characteristics would capture the motivations, constraints, and presumed behaviors of stakeholders.

4.1 Private Agencies

- Motivations: Private agencies are incentivized by corporate social responsibility, cost reduction via energy efficiency, adherence to regulations, and bolstering brand reputation.
- Constraints: Financial constraints might impede investments in emission-reducing technologies and initiatives.
- Presumed Behavior: It is anticipated that companies will enact carbon reduction strategies to align with stakeholder expectations and maintain competitiveness.

4.2 Suppliers/Farmers

- Motivations: Suppliers and farmers face pressure from downstream companies and stakeholders to curtail greenhouse gas emissions along the supply chain.
- Constraints: Limited resources and expertise pose challenges to the implementation of carbon reduction measures, potentially conflicting with cost management objectives.
- Presumed Behavior: Suppliers are presumed to prioritize low-carbon initiatives to uphold business relationships and enhance competitiveness.

4.3 Platform

- Motivations: Market demand and create engaging user experiences to attract and retain users, which can lead to increased revenue opportunities
- Constraints: User resistance or skepticism towards new digital platforms can be a constraint, particularly if there are established alternatives or habits.
- Presumed Behavior**:** Platform build ecosystems of users, partners, and developers to create network effects and enhance value for all stakeholders

Examining an already existing platform, we discovered the Kisaan, an Indian agricultural digital platform. It has features of a marketplace connecting farmers and wholesalers, also offering more services like promotion of agricultural events, training, and store section to aid sales and auction of agricultural produce. They provide the services of Carbon Calculator, which is an essential software tool that makes farm greenhouse gas emissions visible, helping actors across the food supply chain take confident and cost-effective steps toward a net-zero future.

5. POTENTIAL EXISTING PLATFORMS IN OTHER COUNTRIES, THEIR BUSINESS MODEL

5.1 PES Projects in Kenya

Kenya has implemented several pilot PES projects focusing on carbon sequestration, biodiversity conservation, watershed protection, or a combination of these. Kenya implemented Payment for Environmental Services (PES) focusing on the reduction of carbon emissions. It emphasizes the importance of PES in incentivizing landowners to adopt conservation-friendly practices that contribute to carbon sequestration and mitigation of climate change. Although not explicitly mentioned, the concept of carbon offsets or carbon credits is indirectly addressed through the discussion of projects aimed at carbon sequestration and biodiversity conservation. These projects essentially involve the exchange of compensation for activities that lead to carbon sequestration, thereby indirectly contributing to carbon offsetting efforts. The paper highlights the significance

of PES schemes in promoting sustainable land management practices while also providing economic opportunities to local communities.

5.1.1 Benefits

Forest-adjacent communities and landowners who can earn extra income for conservation efforts. Improved environmental outcomes like increased tree cover and reduced soil erosion.

5.2 Kisaan Helpline

Kisaan Helpline, an Indian agricultural platform. Offering services like agricultural events, They provide services of Carbon calculator, which is an essential software tool that makes farm greenhouse gas emissions visible, helping actors across the food supply chain take confident and cost-effective steps towards a net-zero future. Link to the website is given here: https://www.kisaanhelpline.com/press-release

5.3 Costa Rican PES program

Costa Rica was one of the first developing countries to establish a nationwide PES program. It offered payments to landowners for conserving forests and providing environmental services like water filtration, biodiversity protection, and carbon sequestration. Though it has faced challenges in securing funding from user fees and targeting payments efficiently, it has undoubtedly played a role in the country's success in reversing deforestation trends.

5.3.1 How it Works

Landowners sign contracts with FONAFIFO, a government agency, and agree to manage their land in a way that protects the environment. In return, they receive payments.

5.3.2 Regarding carbon payments

The paper highlights Costa Rica's efforts to engage in carbon markets, initially through the sale of Certifiable Tradeable Offsets (CTOs). Challenges arose due to limitations under the Kyoto Protocol's Clean Development Mechanism (CDM), which favored reforestation and afforestation projects over avoided deforestation initiatives. However, recent developments, such as agreements with the World Bank's Bio carbon Fund, signify a renewed focus on carbon sequestration projects.

6. BEHAVIORAL BIASES THAT AFFECT STAKEHOLDER'S PARTICIPATION

When making tough decisions, it's key to realize that people's hidden biases can strongly influence how they think and choose. These biases, which they might not even notice, shape their views and decisions, impacting how well our plans work out. So, it's crucial to recognize and understand

these biases when dealing with complex situations. Incorporate choice architecture that subtly guides farmers towards sustainable practices, leveraging biases such as status quo bias or loss aversion to encourage adoption of environmentally friendly methods.

6.1 For farmer's side

1. **Risk Aversion**: Farmers and landowners tend towards conservatism when embracing novel practices.
2. **Cost Sensitivity**: Economic factors significantly influence the decision-making process of farmers and landowners.
3. **Skepticism of Innovation**: There exists a level of skepticism among farmers and landowners towards external entities proposing new initiatives, often preferring to rely on their knowledge and networks.
4. **Long-Term Perspective**: While farmers and landowners prioritize immediate concerns like crop yields and profitability, they also adopt a long-term outlook toward land management.
5. **Value of Independence**: Farmers and landowners highly value their independence and autonomy in the management of their land.
6. **Community Influence:** The decisions of farmers and landowners are frequently shaped by the influence of their community.

6.2 Company side:

- **Over confidence:** Investors or companies may overestimate their ability to accurately predict the future performance of carbon offset projects.
- **Confirmation:** There might be a tendency to seek out information that confirms pre-existing beliefs about the effectiveness or profitability of carbon offset projects.
- **Endowment Effect:** Once investors or companies have committed resources to a particular carbon offset project, they may become emotionally attached to it and overvalue its potential benefits while ignoring alternative options.
- **Loss Aversion:** Investors or companies may be more sensitive to potential losses associated with carbon offset projects than to equivalent gains.
- **Framing Bias:** The presentation or framing of information about carbon offset projects can influence decision-making. Investors and companies may react differently depending on how information is presented.

7. KEY STATISTICS GENERATED ABOUT FRENCH FARMS WITH AN EXPLANATION ABOUT HOW THEY GET AFFECTED BY BEHAVIORAL BIASES

The average age of a farmer in France is 55 years old. French farmland stores 20.9% of the country's carbon. More than half, 52% of France's land area is dedicated to agriculture. Women make up 30% of the permanent workforce in French agriculture. There are currently 564,000 active farmers in France.

7.1 INSIGHTS:

Statistics provide objective measures and quantitative data that can reveal patterns, trends, and disparities, making them essential for examining biases in various contexts, including agriculture.

- **Average Age of Farmers**: Older farmers are common, suggesting resistance to change and new technologies.
- **Carbon Storage**: French farms store a significant amount of carbon, highlighting the importance of eco-friendly practices. However, some farmers may be hesitant to adopt sustainable methods.
- **Land Usage**: More than half of France's land is used for farming, but biases towards monoculture or intensive methods may harm the environment.
- **Gender Representation**: Women are underrepresented in the farming workforce, indicating potential gender biases and barriers to equality.
- **Number of Active Farmers**: There are many farmers, but biases favoring larger farms may disadvantage smaller ones.

Analyzing important numbers while considering behavioral biases helps us understand patterns in agriculture. These patterns might show how our thinking affects decision-making. This insight can guide efforts to create fairer and more sustainable farming practices.

8. STRATEGIES OF BEHAVIORAL NUDGES TO ENCOURAGE ACTIVE PARTICIPATION

Behavioral nudges, along with incentive mechanisms, can be crafted to encourage active stakeholder participation in reducing carbon footprints.

1. **Feedback**: Providing real-time feedback on carbon emissions can increase awareness and prompt individuals to adjust their behaviors accordingly.
2. **Incentive Mechanisms:**

- Financial Incentives: Offering subsidized taxes can incentivize stakeholders. Additionally, avoiding penalties or fines by using carbon credits to offset excess carbon emissions.
- Non-monetary Rewards: Recognition, certificates, or access to exclusive events for achieving carbon reduction milestones can serve as non-financial incentives.
- Personalized Reminders: Tailored messages reminding stakeholders of their commitment to reduce carbon footprints can reinforce positive behaviors.

3. **Green nudging:** Green nudges offer a way to steer farmers and companies towards more sustainable practices. By encouraging pro-environmental behavior voluntarily, these nudges motivate individuals to contribute to environmental protection, fostering a positive self-image for both companies and farmers. On the company side, it enhances corporate social responsibility, while for farmers, it provides motivation to actively participate in sustainable initiatives.

4. **Community:** Our platform aims to create lasting and meaningful change by bringing people together in surprising and community-focused ways. Through our spaces, local individuals can grow and connect, strengthening both the community and the local economy.

5. **Salience and affect**: Based on the principle that individuals are commonly influenced by personally relevant, and vivid examples, and that the emotional associations stimulated by these items can be effective in driving decisions and behaviors in a specified direction.

We tried to conclude that the most effective nudges are typically those that make the desired behavior easiest or automatic, with default options being a prime example.

9. MARKET MECHANISM

Just as stated earlier, our platform ALC EcoRepair is focused on Carbon Footprint reduction and how private agencies and farmers can aid in the reduction of this into our environment, what they gain from doing this, and how our platform aids as an intermediary.

We discussed certain market mechanisms we implemented to help us achieve our goal of Carbon Footprint reduction. These mechanisms include but are not limited to;

9.1 Auctions

Conducting auctions on our platform where participants bid for carbon credits or emission allowances. This can be done in the form of ascending-bid auctions to ensure transparency and fair pricing. In our case, we used reverse English auction. To offset high carbon charges resulting from their significant gas emissions, private agencies often participate in auctions on our platform. In

these auctions, they bid for a portion of farmland, allowing them to emit their gaseous byproducts. This strategy helps reduce their environmental impact and indirectly lowers their costs.

Also, we have another mechanism which is the use of carbon market materials such as certificates, to manage indirect emissions. Our platform can arrange with Government establishments to offer Certificates to Private agencies who attain certain outlined criteria for emitting and reducing their carbon Footprints. This certificate would not only improve integrity in the sector for these private agencies but also position them to receive lesser taxes on their day-to-day productions.

We posted two auctions on our website that are explained below:

9.1.1 100 tons of Carbon Credit

Private agencies that face carbon emission problems beyond the limit set by the government can cause heavy fines and penalties. Such private industries can reach out to organize and post an online auction for them. They will receive a carbon credit from farmers depending on how much they are beyond their limit in carbon emission. This works by offering an amount to farmers, to do carbon reduction which acts as a carbon credit. Thus, it is the purchase of carbon credits from farmers to offset their carbon emissions. Carbon offsets are used to reduce direct global emissions. One of the Auction we have on our website is 100 tons of carbon credit. It is required by a private agency that offers to invest in farms to offset their less costly carbon emission. Farmers bid online on this auction. The farmer who can do these 100 tons of reduction at the lowest possible cost gets this project. This process saves the cost for private agencies and meets the goal of reducing global carbon emissions in cost cost-saving way.

9.1.2 PES Soil Remediation Auction:

Our website offers a unique auction platform for soil remediation, a process that cleans contaminated land. This contamination can cause a variety of problems, including:

Polluted water: Contamination can render water sources undrinkable.
Reduced tourism: Contaminated areas can be unattractive to tourists, impacting local economies.
Public health issues: Direct exposure to contaminants can lead to health problems.
Food chain disruption: Contaminants can be absorbed by plants and animals, posing health risks.
Economic impacts: Contaminated soil can harm agriculture and lead to costly infrastructure repairs.
Loss of recreational opportunities: Contaminated areas may be unsafe for use as parks or playgrounds.

Private Agencies Take Action:

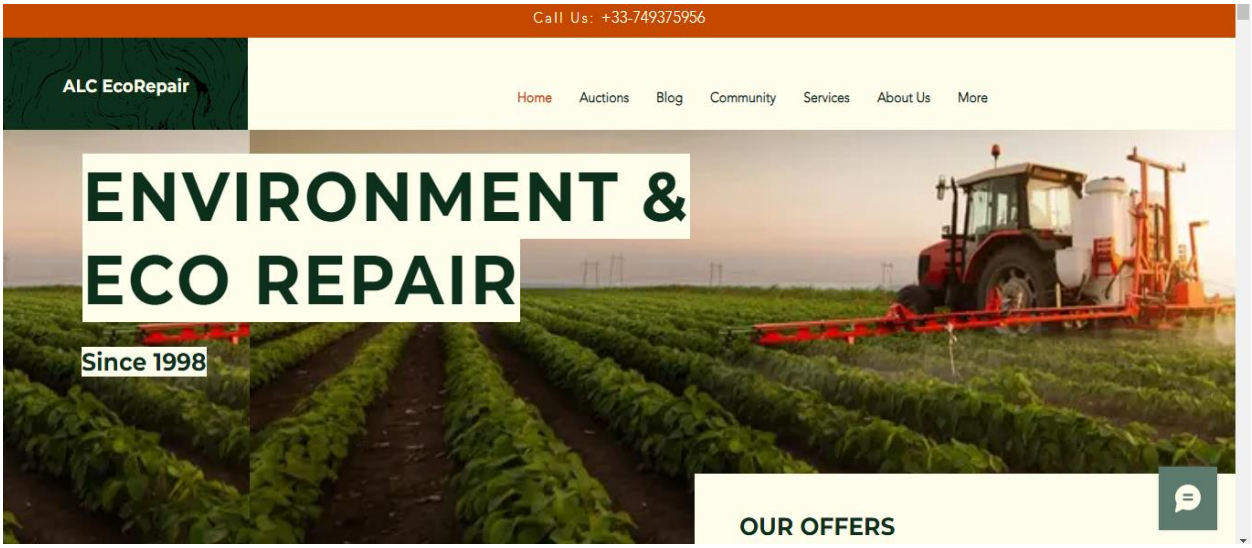
Private agencies, such as restaurants, hotels, towns, NGOs, and agricultural companies, can be impacted by these problems. They have a vested interest in cleaning up contaminated land to: Improve public health, Protect the environment, Boost tourism, and Support local agriculture.

Reverse Auction for Soil Remediation Services

Our platform utilizes a reverse auction format for soil remediation (PES soil remediation auction). In this type of auction, the landowner or farmer offering their land for the lowest remediation cost wins. This approach encourages competition and helps to ensure that soil remediation projects are completed cost-effectively.

By connecting private agencies with landowners and farmers through reverse auctions, our platform facilitates the cleanup of contaminated land and promotes a healthier environment for all.

10. OUR PLATFORM



Our digital platform was designed to accommodate both the farmers and private agencies acting as a meeting point and marketplace for both parties likewise rendering other essential services in the agricultural sector.

It contains a home tab that contains several other tabs like Auctions, Blogs, Community, Services, About Us, (More >> Work Gallery and Contact Us), Testimonies, Live Chat, and Subscription.

Home: This option returns you to the homepage, very easy to navigate and understand.

Auctions: Under the auction menu, we designed this such that both the farmers and the private agencies can come and upload available auction offers on the platform space created for this. Interested parties who are members or users of our platform get to see these offers under Auction, and bid according to their budget. These auction offers also are designed to last within a specific number of hours and days.

Blogs: The blog category of our website enhances information sharing. Through the blog, visitors and users of our platform get to see recent happenings in the agricultural sector, both about Carbon emissions and others. We give insights on also training and events that recently took place in the ecosystem under the category of Agriculture, with direct links to articles that give room to generate deeper insights.

Subscription plan: We introduced a subscription plan on our website so that our model is profitable. It mainly contains three plans

1. Trial
2. Basic and
3. Advance.

All three plans provide access to the platform.

Trial plan: The Trial plan gives unlimited access to ALC EcoRepair. Free quota and newsletter of the ALC EcoRepair activities and what going on in the recent days in the industry.

Basic plan: The Basic plan offers access to the platform, a free quote, product ads, a newsletter, and coverage of agriculture issues. This plan is valid for three months. The plan price is 5 Euro per month. The price is lower, which encourages farmers to subscribe.

Advance plan: The Advance plan includes platform access, a free quote, product ads, a newsletter, access to events, and coverage of both agriculture issues and tourism. This plan is valid for 6 months and has a monthly subscription of 10 Euros. It also has a trial period free for 7 days.

Testimonials: Testimonials have been displayed on our website. Through this, we encourage our users to publish testimonies. This has a positive impact as a nudge on our potential visitors. It can create awareness in the farming community that our services e.g. carbon reduction have many benefits. These testimonials act as a nudge that attracts more customers to come to our website.

Live Chat: The chat online Services provide real-time chatting service to our website users. The live chat feature offers a wealth of benefits, from fostering social connections and communities to providing real-time communication. Farmers or private agencies can directly chat with our team. We can communicate about our services and address their small problems quickly. We can also connect them to experts to resolve their problems immediately. It's convenient, often anonymous, and can be a cost-effective way to connect, learn, share information, and get help.

Community: Through this section of the website, you are allowed to sign up, be a member of the platform, choose a given subscription plan, access various benefits, and communicate with other community members upon conclusion.

Services: Access the various services we offer on our platform. These services include the Reduction of Carbon Footprints, Soil Bioremediation, Agricultural events and training.

About us: Details information about the platform, our company registration information, our location, email, and phone number.

Contact Us: This simply makes communication easier, users can easily fill out a few pieces of information on the Contact Us form provided on the website to discuss or make inquiries.

The link to our website is: https://chidinmaukandu8.wixsite.com/my-site-10

11. KEY PERFORMANCE INDICATORS

For Carbon footprint reduction:

Carbon Emissions per Crop Yield: We measure the amount of carbon emissions produced per unit of crop yield, thus indicating the efficiency in resource utilization.

Energy Efficiency: Track energy consumption in agricultural operations and assess improvements over time, aiming to reduce energy consumption and associated carbon emissions.

Corporate ESG reporting

ESG reporting provides transparency on a company's environmental, social, and governance (ESG) performance, including its carbon footprint and emissions reduction initiatives. By disclosing emissions data and reduction targets, companies demonstrate accountability to stakeholders.

For Soil Bioremediation:

Contaminant Reduction Rate: We measure the percentage of contaminants removed from the environment over a specific period to assess the effectiveness of bioremediation efforts in the farm.

Microbial Activity: In this method, we monitor the activity and diversity of microorganisms involved in bioremediation processes, indicating the health and functionality of the remediation system.

For agricultural trainings:

Training Attendance: Measure the number of participants (farmers, farm managers etc.) attending each training session to assess the level of interest and engagement.

Participant Satisfaction: Conduct surveys or feedback sessions to gauge participants' satisfaction with the quality, relevance, and delivery of the training. Feedback after a certain period to ensure are the practices and information utilized and how useful were them

For Agricultural Events:

Satisfaction Level: Conduct post-event surveys to gauge participant satisfaction with the event content, organization, and overall experience of the event.

Speaker Effectiveness: Assess the quality of presentations and workshops by evaluating speaker ratings and feedback.

Networking Opportunities: Measure the number of networking interactions or connections made during the event to evaluate its effectiveness in facilitating industry connections

Sustainability report and communication

Two-way communication channels in sustainability reporting allow stakeholders to provide feedback, ask questions, and share suggestions related to the carbon offset program. Incorporating stakeholder input into program design and implementation improves transparency and accountability.

Operational measurement

Operational measurement identifies opportunities to optimize processes, technologies, and resource use to minimize carbon emissions. Implementing energy efficiency measures, renewable energy adoption, and emissions reduction initiatives based on data analysis contribute to achieving carbon reduction goals

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