



## **EXTENDED ABSTRACT**

# **Market Research and Business Plan for a Forestry Start-Up based Carbon Compensation Services**

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## Introduction

The importance of forest acting as vital contributors to society, biodiversity and climate change resilience cannot be denied. Forestall lands worldwide protect soils, provide clean air and water, are home of three-quarters of the terrestrial flora and fauna species, and serve as a source of medicine, food and energy for population established in rural areas. Moreover, forests play a key role in the mitigation, resilience and adaptation to climate change, absorbing an equivalent of approximately 2 billion tons of carbon dioxide per year (FAO, 2018).

In this scenario, Spain is a highly vulnerable country with respect to climate change impacts due to its social-economics and geographical characteristics. Desertification, decreasing water resources, changes in rainfall patterns and increasing temperatures are threatens Iberian forests will face soon. Consequently, the physiology of the Iberian forest species will change. Although the Iberian forests are currently acting as carbon sinks, climate change predictions threaten to convert these carbon sinks in carbon net emitters (Spanish Ministry of Environment, 2005). A further disadvantage for the adaptation and mitigation of Spanish forestall lands to climate change is the nature of its ownership, since 70% of the forestall area is owned by private landlords with limited resources or drive to ensure a sustainable forest management within their lands.

Engagement of both public and private sector is crucial for the integration of sustainable forest development. Through the European Union 2014/95/EU directive, large entities are compelled to disclose non-financial information regarding their sustainable practices in terms of social and environmental development. In addition, the Spanish government through the royal decree-law 163/2014, created the Voluntary Registry of Carbon Footprint, following an assessment of all the registered companies and their efforts towards the reduction of Green House Gases (GHG) emissions ascribable to their economic activities.

In the context presented above, “Gestión de Activos Ambientales” (GAA or Environmental Asset Management), is a start-up idea initiated in 2017 after detecting a connecting link in the shortage of resources of forestall lands in Spain and the newly created needs of enterprises with regards to their environmental and social responsibilities. GAA aims to close this gap finding symbiosis between these two very different entities in benefit of both parties and society as a whole. The main objective of this document and the market research imbedded in it, is to assess and analyses the feasibility of GAA start-up idea in the current market and find the best suitable business model to implement it.

The value proposition of GAA is based on the synergies found between companies willing to invest in Corporate Social Responsibility (CSR) initiatives and forestall landowners. Firstly, GAA aims to provide a portfolio listing of several private and public forestall lands with the potential to host carbon compensation projects based in reforestation and/or sustainable forest management. The portfolio will include a valuation of each property and the evaluation of the carbon offset potential. Secondly, GAA aims to offer consulting services to large corporations implementing feasible sustainability policies and advising on Natural Capital

investments. Finally, GAA aims to create a certified natural capital market to implement property and services right agreements and perform ongoing monitoring activities on the forestall compensation projects developed, ensuring all parties fulfil their commitments.

The document presented builds on the successful development of a strategic business plan. To do this, the knowledge gap to fulfill lays on the understanding of the market for forestry and environmental services and corporations willing to invest on CSR in Spain. In addition, there is a need to gain perspective on the contextual framework in legal and environmental terms, for forestall landowners, their needs and their willingness to collaborate with third parties. The research questions formulated to gain this level of understanding are defined below:

- *What are the current trends for CSR development in Spain and which kind of environmental related projects are these companies willing to support?*
- *What are the current needs for the Spanish forestall landowners to be able to sustainably manage their properties?*
- *Which kind of forestall projects can be developed in behalf of CSR programs that could bring social and environmental benefits in such a way that could provide an economic valuation?*

The structured followed by the documents to solve the research questions evolves in three main phases: review of literature, market research and description of proposed business model. These phases have been cyclically reviewed and revisited, attempting to continuously interpret the data collected enabling the business model design to pivot and fine tune in a lean start-up approach.

## Review of Literature

As an essential initial research stage, the analysis of the political, social and corporate environment influencing the business idea proposed has been performed. The initial research stage is followed by a research in pro to the deep understanding of the legal, administrative and natural framework affecting GAA.

At a social and political scale, a business idea such as GAA is affected by the macroenvironment influencing the private sector on sustainability and carbon footprint matters. Regulatory bodies such as the United Nations, the European Union and local governments play a key role in the implementation of CSR programs within different sectors and company sizes, through guidelines and voluntary or mandatory policies. Despite the importance of the political drive, it can be subject to discussion on whether this is the main driver for enterprises to integrate a CSR strategy. Other drivers are the business opportunities in terms of customer relationships, access to capital, innovative and efficiency of processes, risk management and cost savings.

On the global scale, the Sustainable Development Goals (SDGs) emphasize not only on the importance of create a sustainable and fair world, but also on the idea of the promotion of new market opportunities, economic growth and implementation of innovative business models. For small enterprises there are direct market opportunities created by addressing those challenges exposed by SDGs (Frost & Sullivan and

GlobeScan , 2017). As GAA is a business idea willing to promote sustainable forest management in the Iberian Peninsula, it can be seen by larger companies as a tool to achieve or contribute to these goals. GAA serves the following goals: SDG11 Sustainable Cities and Communities (section 11.4 & 11.A), SDG12 Responsible Consumption and Production (section 12.6 & 12.8) and SDG15 Life on Land (section 15.1, 15.2, 15.4 & 15.A). Despite the positive reaction of European business leaders to include SDGs as part of the corporate strategy, according the GlobaScan survey performed in 2017, there are two key challenges to integrate SGs as part of corporate business strategy: very low SDG awareness at an employee and top manager level and lack of governmental guidelines, resources or commitment towards SDGs at a local level.

At a regional level, the Multisectoral Study on CSR for Large Enterprises in Spain<sup>1</sup> provides key information on CSR trends. In the year 2017, the results released show 98% of the companies surveyed implement integrate CSR in their core strategies. Out of this percentage, 94% of these companies implement environmental related policies and 76% of these companies have a defined GHG offset strategies<sup>2</sup>. At an environmental impact level, 44% of the respondents cause environmental harm in natural preserved areas and 40% of this promote restoration and compensation activities (Club de Excelencia en Sostenibilidad, 2017). The data shown highlights the increasing importance of CSR in large Spanish enterprises and provides positive feedback on the increasing trend of the actions held in the environmental dimension.

Despite the study provides useful information, the results must be taken with careful consideration, as in Spain only 0,1% of the companies are large enterprises, whereas 99,9% are SMEs. Taking a closer look to SMEs, only 4% of them integrate CSR policies, a value leaving room for improvement (Forética, 2015). Given the difference in CSR engagement trends between SMEs and large enterprises, we interpret there is a window of opportunity to explore how to increase the CSR engagement in smaller entities.

Looking at the legal dimension, the governing framework applied to the Spanish forest and other wooded lands (FOWL) is described under the Spanish law for FOWL of the 21<sup>st</sup> of November 23/2003. The law can be interpreted and adapted by each autonomous community, generating multiple autonomic forestall laws. The main policies used for forestry management are articulated at three levels: The Spanish Forestry Strategy, established to meet international demands yet ensuring the adaptation to the unique features of Iberian forests; the Spanish forestall plan, is the main tool to develop the Spanish Forestry Strategy, setting the key objectives and the Forestall Resources Management Plans or PORF (“Planes de Ordenación de los Recursos Forestales”) representing the focal tool. PORFs are elaborated and approved by autonomous communities and represent the governing forestall management guidelines (Ministerio de Agricultura, Pesca y Medio Ambiente, 2019). On top of this structure, natural protected spaces, are regulated by the Natural Resources Management Plans, the Natura 2000 network and the European directive 92/43 of habitats and 2009/147 of bird fauna (Bernad, 2014). The legal framework for FOWL in Spain is extensive and complex,

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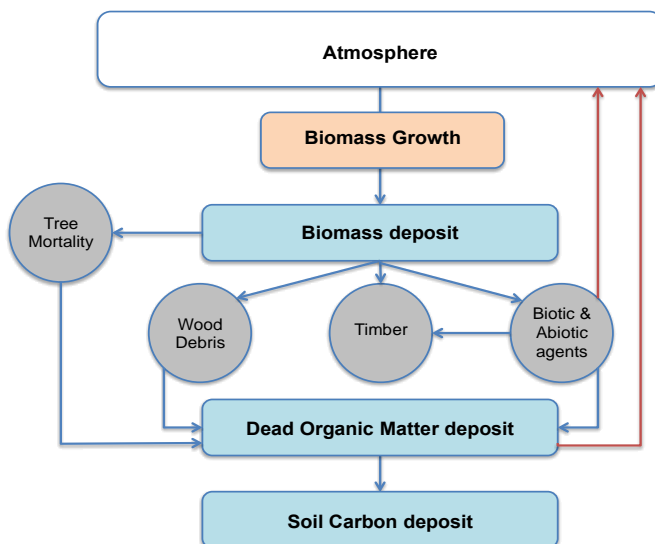
<sup>1</sup> The Multisectoral Study on CSR for Large Enterprises is a report developed since the year 2007 by the Ministry of Labor, Migrations and Social Security. Analyzing 112 of the biggest operating companies in Spain.

<sup>2</sup> Offset GHG measures according to the relevant company emission results, sector and following the International GHG Protocol (Club de Excelencia en Sostenibilidad, 2017).

varying between autonomous communities, territory ownership and the unique natural resource present in each land. Considering that 70% of FOWLs are privately owned, in GAA we believe this data renders the task to develop a simplified legal framework with policies promoting sustainable forest management plans in private FOWL across the national territory (Ministerio de Agricultura, Pesca y Medio Ambiente, 2019).

In the natural dimension, forest area in Spain serves multiple purposes in terms of preservation of hydrological cycles, biodiversity, air purification and climate change mitigation. With 27.7 million hectares of forest area, 55.6 % of the national territory, Spain is the second EU-27 country, in terms of total forest area (Castro, González, & Tenorio, 2005).

The ability of forest to act as carbon sinks is vital in the context of mitigating climate change in Spain. Despite this, the current framework does not address an economic valuation of the environmental services provided by forests acting as carbon sinks. The environmental evaluation of the services provided by forests as carbon sinks is key to enable us to monetize the value of the services provided by carbon sinks. As one of the main activities of GAA will be to develop carbon compensation projects, we described the methodology developed by the Intergovernmental Panel for Climate Change (IPCC) in the Guidelines for National Greenhouse Gas Inventories, a valuation instrument regarding the impact of sustainable forest management in the carbon balance of forest ecosystems, shown in figure 1. Sustainable forest management plans are tools used to maintain or increase the ability of forest acting as carbon sink, reducing deforestation and forest degradation emissions. To accurately evaluate carbon fixation comparing the carbon sink potential of sustainably managed forest against non-managed forests is crucial as a tangible valuation of the benefits provided by the carbon compensation projects based on sustainable forest management plans and reforestation plans.



**Figure 1 Carbon balance in forest ecosystems**

## Market Research

The ecosystem where the business proposal idea of GAA will be developed is mainly affected by three different parties: private companies investing in CSR; forestall landowners and/or forestry experts and GAA competitors providing CSR services. To gain deeper understanding of the parties, we conducted a market research based on three stages: surveys, interviews with experts and a competitor's analysis.

### Surveys

Two different surveys have been performed, one for the private sector companies and one for the forestall landowners. Despite the findings of these surveys are far to be considered as proven facts, this information is useful to gain insight on the market where GAA aims to be deployed.

The first survey, targeting private sector companies had a total number of respondent companies equal to 21 and was aimed to gain knowledge on internal CSR department structure, typology of CSR projects including budget and temporal length and willingness to investment in forest related projects. With 81% of the respondents including CSR as part of their core business strategy, we can interpret that CSR strategies are gaining increasing importance in Spain. The average annual budget to for CSR related activities of the respondents is larger than expected, 15,000 euros per year. Respondents tend to develop CSR policies internally, although it is common to include external agents to conduct specific projects. Most of these projects are based on reduction of energy and water consumption, waste management and carbon footprint measurement. Only 30% of the companies participating in the survey collaborate with NGOs and external agents in forestall projects. Finally, we obtained positive reply towards the willingness of respondents to invest in reforestation and sustainable forest management projects based in Spain.

The second survey target forestalls landowners. Given the difficulties found to reach respondents, the survey was sent to multiple forestall owners' associations for its distribution. Despite distribution efforts, we only obtained 15 answers. The survey aimed to understand the type of owner and main activities developed in forest plots and the financial resources used to maintain these lands. Only one respondent was a public entity, 13 respondents were private owners and 1 respondent answered on behalf of a communal owner's association. With regards to the challenges addressed by the respondents, we would like to highlight the administrative and legal difficulties found to obtain licenses and permits. Other needs addressed are those related with the lack or resources to develop forest regeneration, selective thinning, biomass cleaning and forest fire prevention activities, with an average cost of 750 €/ euros. Despite conclusions arising from these findings are prone to different interpretations, we can infer that most forestland private owners participating would be willing to reach an agreement with the private sector and we believe there is a window of opportunity were forestry activities developed under sustainable forest management projects, could be included as part of carbon compensation projects included under the National Voluntary Registry of Carbon Footprint or under the European Programme LifestoreCO2

## **Interviews with experts**

The knowledge acquired from the surveys can be discussed due to the limitation number of respondents, the beliefs of each individual and the veracity of the replies. To gain deeper knowledge, we have had the opportunity to hold several interviews with experts in CSR and forestall matters. We would like to express our gratitude to all the professionals who kindly shared their time and knowledge with us.

We had the chance to interview four experts working as CSR managers in mid and large size companies based in Spain. To conduct these interviews, we have carefully read each company non-financial annual reports. We were invited to interview the CSR Manager of the Spanish bank BBVA, the CSR managers of two large corporations Melia Hotels and AENA, an airport management company. Finally, we interviewed the environmental manager of Arneplant a mid-size industrial company. The interviews tackled the following topics: current environmental and sustainability policies; current approach in direct GHG emission measurement, reduction and compensation; current collaborations with biodiversity and climate change related projects and future strategies to reduce Scope 3 (indirect) GHG emissions. Out of these interviews we infer the important role of large entities influencing SMEs environmental approach. Financial institutions such as BBVA act as environmental impact stakeholders, implementing environmental assessments as part of their financial-decision tools. In addition, companies where high GHG emitting points are found under indirect emissions such as AENA or Melia Hotels, are likely to include environmental requirements for clients and third-party contracts. On the other side, SMEs working in manufacturing industries with a significant environmental impact, such as Arneplant, need to comply with increasingly demanding environmental standard, leading to an increasing workload in SMEs newly created environmental departments.

Given the particularities of the legal framework for each autonomous community and the differences in the characteristics of climate and bio-geographical features, we have interviewed forestry experts from four different regions: Fernando Exposito from Galicia, Ricardo Forcadell from Aragón, Ignacio Caliz from Andalucía and Pablo Talens from Valencia. The interviewees shared their opinion on four forestry fields: main drivers for owners to develop sustainable forest management plans; public funds and subsidies; needs and urgent actions to ensure a sustainable management for privately owned forest and the role of privately-owned forests as corporate carbon compensation service. Forestry experts agree in the main challenge being the current complex regional administrative framework discourages forest owners to develop activities needed for an appropriate forest management.

## **Competitors Analysis**

The Business idea analysed by GAA is quite new in terms of the ecosystem it creates bringing together private forestall owners and companies willing to promote CSR through reforestation projects. Despite this, there are companies providing services that can replace those suggested by GAA. With this premises and given the fact that the business will be established in the Iberian Peninsula, 17 Spanish companies providing

substitutive services have been studied. Through this analysis we aim to gain knowledge on how these companies operate, their strengths and weaknesses.

Looking at the core service provided, we divide competitors in those providing CSR consulting services and tree adoption platforms. Less than 25% of the competitors analysed provide tree-planting services through user-friendly online platforms. About 76% of the companies analysed provide CSR consulting services. We could identify two different working lines, those companies working closely with the local Spanish forestry sector and those companies working closely with carbon emission trading schemes at a global scale.

Companies providing CSR services based on carbon compensation projects in Spain represent 53% of the competitors analyse. These companies tend to work closely with the local communities and the forestry sector developing reforestation and afforestation projects. These companies tend to choose to register compensation projects under the Register of Carbon Compensation Projects of the Spanish Ministry of Ecologic Transition (MITECO) using the seal “Calculo, Reduzco, Compenso CO2” (CO2 Mapping, Reduction and Offset) or the European LifeForestCO2 certificate. On the other end, companies analysed working closely with carbon emission trading schemes seem to be closer to international corporations. Carbon compensation services provided by these competitors, are likely to be more competitive in terms of pricing as they are mostly based in developing countries and verified through carbon credits markets such as Gold Standard Verified Emissions Reductions (VERs) or Verra’s Verified Carbon Standard (VCS).

#### Redefinition of the business proposal

After the market research conducted to understand the environment where the business idea proposed by GAA will be deployed, we redefined certain characteristics of the business proposal. The role of GAA was initially described as an end to end developer for private companies to improve their CSR strategy through the sustainable forest management and reforestation projects in the Iberian Peninsula. Now, we would like to pivot towards an agreement facilitator role, where GAA’s main purpose is to focus on the connections and relationships to facilitate agreements between forestland owners, private companies investing in CSR, forestry companies, regional administrations and local carbon compensation certification bodies such as the Ministry of Ecological transition and the European Programme Life Forest CO2.

Additionally, the market research analysis allowed us to narrow down our client profile. GAA will be willing target companies operating in industries outside the European Union Emission Trading Schemes. Focusing the service on the voluntary carbon markets for diffuse sectors. We consider there is a window of opportunity in medium to large size enterprises, operating in the transportation, residential tourism and industrial sector. We believe these sectors are subject to a greater impact from stakeholder pressure, with clients and financial investors demanding strict environmental requirements to qualify as vendors.



## Presentation of the Business Plan

After the efforts conducted to assess the ecosystem where we will operate, the core value proposition has shifted towards a facilitator role of GAA in the implementation of carbon offset compensation projects in an excessively bureaucratic scenario.

Taking in consideration the likelihood of most competitors to provide services at a lower price, the strategic positioning chosen is to move closer to niche markets. We aim to address medium to large corporations of the transportation and tourism companies already measuring and reducing their carbon footprint. This decision was taken on the understanding that these sectors tend to be high emitters and are greatly influenced by stakeholders in terms of environmental awareness. To support this decision, MITECO reports that the transportation sector in Spain represents 25% of the total GHG emissions in the country and the tourism sector, accounted within the residential, commercial and institutional sector, represents 8% of national GHG emissions. (Ministerio para la Transición Ecológica, 2019)

An estimation of the market size and the number of GAA potential clients has been built using information provided by the Spanish Ministry of Employment and Social Security. From this data we infer a maximum number of potential clients of 10,606. Out of this number, 4114 companies are tourism companies including transportation and accommodation and 6492 companies are good's transportation companies.

The economic valuation of the market size is difficult to obtain, as it should consider different parameters and it is casuistic dependent. If using the data obtained from the market research survey, the average budget of companies for CSR projects is 15,000 euros. If GAA charges 30% of the budget per client, with an extremely low penetration rate of 1% we can size the market for the year 2019 to 500,000 €.

The service provided by GAA is defined as an outsourcing service for the development carbon compensation projects based on reforestation enclosed under the Spanish Ministry for Ecological Transition (MITECO) or carbon compensation projects based on sustainable forest management in Spain registered under "Life forest CO2". The procedure to successfully conduct the service is as follows:

1. Complete an assessment of the client's carbon footprint and define the scope of the project
2. Complete an assessment of the forestall property and the viability for the development of a reforestation or sustainable forest management plan matching the requirements of the client.
3. Calculate an estimation of carbon offsetting potential . Methodology defined by the IPCC guidelines
4. Present a sustainable forest management plan to the regional administration
5. Preparation and submittal of the documentation required to register the project in the National Voluntary Registry of Carbon Footprint or as a "LifeforestCO2" project.
6. Regarding forestry activities, we will rely on local forestry services. Forestry activities generally comprised: land clearing and preparation, plantation tasks and intensive follow-up tasks.
7. Once the project is registered and approved, the project is verified by an external agent
8. Ensure periodic maintenance including yearly pruning, clearing and phytosanitary treatments

Determining the service price of the service it is an extremely difficult task, it is dependent on parameters such as the budget or scope of the project, the forestall land chosen and any particularities. Although pricing is subject to include ad-hoc additional priced items, we wanted to provide an example of a service pricing. For this purpose, we analyse the cost of a carbon compensation project based on sustainable forest management registered under Life Forest CO2 database. The project is based Villasandino (Spain), the size of the terrain is 5 hectares and the carbon offset is equal to 47,53 tCO<sub>2</sub>/ha. We assumed the price for voluntary carbon offset reported in Spain, fixed at a price of 15,6€/tCO<sub>2</sub>e. With an estimated cost of 496,03 €/ha for the development of the sustainable forest management compensation project in year one and 474,77€/ha for the upcoming years, the potential product margin in this sample service for the first year is equal to 33,1%, and 35,9% for upcoming years. (Estévez Malvar. M., 2016).

## Business Model Canvas

### Value Proposition

#### Corporate Clients

- Purchase of certified carbon compensation projects based in the Iberian Peninsula
- Availability to adapt compensation projects to corporate client budget and time scale

#### Forestall Landowners

- Development and approval of a sustainable management forest plan, document increasing the property value and entitles permits for future mechanical activities

### Customer Segment

Corporate Clients: The service provided by GAA targets two niche customer segments, these are companies included in the transportation and the tourism industries.

Forestall Landowners: GAA will focus its efforts in private forestall landowners with unused or abandoned forestland. Ideally these individuals will belong to regional forestry associations.

### Customer Relationships

Corporate Clients: given the degree of flexibility per project provided by GAA, it is key to establish a personal relationship with those members in charge of CSR project for each company.

Forestall Landowners: good degree of personal and trustful relationships through personal meetings or calls

### Channels

Including online platform, outbound activities, participation and promotion of events in forestall landowners' associations and word of mouth and referral programs once the first compensation projects are carried-out

## **Key Activities**

- Creation of a scalable, secure and reliable network between the different stakeholders participating in the services provided by GAA assisting in the adequate development the compensation projects.
- Provide accountability in all the stages of the development of the project.

## **Key Partners**

- Forestall landowners are key to provide access to the forestall land, accept the on-field activities in their domains and aid when needed with regards to the request of the administration
- Forestry maintenance and vivarium companies conducting on-field tasks
- National Voluntary Registry of Carbon Footprint (MITECO) and Life Forest CO2

## **Key Resources**

The multidisciplinary team of engineers founding GAA is the most valuable resource. Creating the network, the analysis of potential properties and the expertise on the forestry industry.

## **Cost Structure**

- Initial office rental agreement of a coworking space for three people implies an upfront cost of 3000€ and ooffice equipment implies a total upfront cost of 4000€
- Creation and Design of online platform. Following consultation, the price is close to 20,000€  
Software: GIS System license (1500\$ per year)
- Initial marketing campaign and initial forestall landowner training campaign 5000€ budget and Communication, social media and marketing outsourcing campaign services estimated as 2000€
- Office Rental in the coworking space chosen in Madrid cost adds a total of 18,000€ per year.
- Insurance costs are estimated as 4,200€ per year
- The total cost defined for the company for two engineers based in Madrid per year is 66,700€ and a monthly average travel cost of 1000€ per month for one employee

## **Revenue Stream**

Revenue stream based on a service fee per transaction applied to the company willing to offset their carbon footprint through the carbon compensation projects. Depending on the particularities and the profit margin of each project, the service fee can vary from 15 to 35% of the total budget allocated by the client.

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