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Social Impact Bond Feasibility Study
APAC Portugal: Enhancing Ex-offenders' Lives

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Thesis presented to Escola de Economia
de Empresas de São Paulo of Fundação
Getulio Vargas, as a requirement to
obtain the title of Master in Economy.

Knowledge Field: International Master
in Finance

Adviser: Prof. Dr. Ricardo Rochman

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III. Abstract

The present study analyses whether a Social Impact Bond is a suitable tool to fund APAC Portugal's intervention model aiming to enhance the life of former offenders and reduce recidivism rates through helping them reinsert into society upon release. While the costs of running a prison will be borne by the public sector just as any other prison, the innovative intervention model has to find another way of financing. The suitability of using a Social Impact Bond to fund this innovative intervention was tested through the building of a robust excel model representing the investment mechanism in order to test the profitability of such a measure. The results show that a Social Impact Bond could indeed fund APAC Portugal's intervention model efficiently.

Keywords: Social Impact Bond, Feasibility Study, Recidivism, APAC methodology

IV. Resumo

Este estudo é uma análise à eficácia de um Social Impact Bond como instrumento financeiro no modelo de intervenção da APAC Portugal. O objetivo é o de melhorar a vida de ex-criminosos e reduzir os índices de reincidência de modo a apoiar a sua reinserção na sociedade após a libertação. Enquanto os custos de funcionamento de um estabelecimento prisional forem suportados pelo sector público, como é de lei, o modelo inovador de intervenção terá de encontrar um meio alternativo de financiamento. Sendo assim, testámos a rentabilidade de um Social Impact Bond através de um bem estruturado modelo Excel que simula o mecanismo de investimento, tendo os resultados demonstrado que um Social Impact Bond pode, de facto, financiar o modelo de intervenção da APAC Portugal de forma eficaz.

Palavras chave: Social Impact Bond, estudo de viabilidade, reincidência, metodologia APAC

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VII. Executive Summary

This feasibility study advocates that a Social Impact Bond (SIB) could finance APAC Portugal's intervention model to enhance the life of former offenders and reduce recidivism rates through helping them reinsert into society upon release.

Recidivism rates are rocketing in many countries, around 70% (United Nations, 2012, pp.7). This implies the penitential system's incapacity to motivate offenders to desist from crime. High recidivism rates have as consequences high costs to the government and taxpayers, lower security within communities, overcrowding of the infrastructure and hence a lack of incarceration standards. The offenders' difficulty of reinsertion upon release, due to a lack of assistance as well as a lack of professional and social skills coupled with a damaging stigmatisation, is to be attributed for this never ending vicious cycle.

APAC Portugal, a newly founded association, took this issue as its mission. Inspired by the well-known APAC methodology born in Brazil, the project was proven to be efficient: the recidivism rates of projects applying the methodology are known to be around 10% (Wilson et al., 2015). While there is funding available from the public sector to cover the running of prison facilities, it is in the implementation of innovative and efficient support services where funding is lacking. A SIB would allow the risks to be shared with the investors and an efficient measurement framework to be put in place.

The present feasibility study suggests that a SIB could indeed be an effective instrument to fund APAC Portugal's intervention model.

1 Introduction

“It’s hard to train freedom in a cage.”

- N. Morris & D. Rothman (1995)

Recidivism, the act of a person committing a crime despite having already been sentenced in the past, is the consequence of a system unable to make offender desist from wrongdoings. In this perspective, it is difficult not to appreciate the relevance of the above quote about the current penitentiary system. In a society in which the use of custodial penalties rather than crimes is increasing (Cuneen et al., 2013), asking the question of how to design the sentences in a relevant way is crucial. The damaging effects of incarceration in a person’s life (Cuneen et al., 2013) and the difficulties to reinsert upon release are the main causes of recidivism. Incidentally, different paths were already taken to try to adjust the traditional penitentiary system, such as cognitive behaviour, therapeutic approaches or restorative justice initiatives (Wilson et al., 2015)

The trend to make imprisonment more human and appropriate towards its objective to persuade offenders to desist from crime as well as building a better life is growing (Wilson et al., 2015). The methodology under discussion in this feasibility study is part of this trend. Its name is APAC (this acronym, translated from Portuguese to English, means *Association for the Protection and Assistance of Convicts*) and it was created in the 80’s in Brazil. The project is rather an assistance to people already motivated to turn their life around than a way to persuade them to do so. The APAC methodology has inspired more than a dozen of countries to try out new ways to tackle the causes of recidivism (IBJ, 2009). Since August 2015, APAC Portugal exists as a not for profit association and has as purpose of studying and promoting the implementation in Portugal of alternative rehabilitation and reintegration programmes as well as best

practices as a way to enhance the offenders' life post release, hence reducing recidivism. This project represents a new and singular solution to the major issue of recidivism in Portugal.

The public sector usually finances these kind of social projects by commissioning support services from social organisations. Indeed, these organisations often lack financial incentives and market accessibility to attract private investors (Warner, 2014). However, the sustainability of this funding status quo is doubtful: studies found the inefficiency of public funding to be around 30% (IMF Staff Report, 2015): the heavy administrative procedures, the lack of incentives to attain a desired outcome and agency problems are notable reasons for this happening (Warner, 2014, pp.4).

However, private investments play an important role in advanced economies, amounting 20% of the GDP against a public investment of 5% of GDP in average (IMF Staff Report, 2015). At the same time, the state's role is shifting to a more decentralized function and this shift inferred increasing privatization and tax reduction during the last decades (Nicholls et al., 2013). The inefficiency of some state funded projects and the recoil of the state's dominance in the economy allowed a perspective's shift. Private investors began to invest in social projects, showing increasing interest in impact investments, or rather the possibility to couple both financial and social returns (Gustafsson-Wright et al., 2015). Moreover, since private investors have different preferences than the public sector, the approach to financing projects has been altered¹. The evidence of a project's impact has taken on a relevant part in the pre-investment screening, inducing new evaluation and measurement techniques (Gustafsson-Wright et

¹ It is important to note here that these changes were equally influenced by the recent economic downturn and its causes.

al., 2015). On the same line, the value for money has increasingly been given importance, just as performance based financing (Gustafsson-Wright et al., 2015).

The Social Impact Bonds (SIBs) are a direct consequence of this trend. A social impact bond aims to improve social issues through the commissioner's agreement to pay for the measureable social improvement guided by the social intervention. The most novel characteristic of this new financial instrument is its outcome-based structure that represents a shift away from traditional service-based configuration. Indeed, only if predefined outcomes are met, the payment flows to the investors. The service provider operates with the social outcome in mind and has therefore a clear incentive to improve the given social outcome of its beneficiaries. The way to the purpose is flexible and adaptable to changing environments or new ideas along the way, since the payments do not depend on it. However, the service provider is not the only one taking advantage of this new mechanism. The state can shift all or part of the risk to the investors, since these are the ones investing the upfront capital. The state only pays if the project proves successful. And while the investors take on new risks, they can access investments, which were not available before, and expect both financial and social returns from it.

To the point, a SIB might be able to attract new funds to the pressing social issue of recidivism. Although the exact recidivism rate in Portugal is unknown, the country is no exception. Finding new ways to deal with offenders and offer them a better life that will benefit the whole community is a must. As a consequence, the present feasibility study intends to determine whether APAC Portugal is a viable project to be financed through a SIB.

A feasibility study is the first step to develop a SIB and implies to understand the social issue and analyse the viability of the intervention model as a SIB. If the

project is proved viable as a SIB, the structuring of the deal, as well as the implementation are the next steps.

1.1 What Is a Social Impact Bond (SIB)?

A SIB is a pay-for success financial instrument oriented to socially motivated investors. Created to improve on social issues, the SIB contractually binds three different parties: a commissioner², a service provider and investors³. The investors provide an upfront capital to the service provider in order to deliver a social service. The commissioner agrees to repay the investors if the service provider achieves pre-determined outcomes. The amount of the payment is decided upon in advance with, generally, a flexible component that adjusts the amount to the difference between the achieved outcome and the expected outcome. These outcome metrics are set to make sure that all the parties agree on the definition of success. If the service provider does not achieve the outcomes, the commissioner's payments will be lower or non-existent, thus the investors bear the financial risk.

Often, an intermediary is also part of the transaction and has the responsibility of raising capital and bringing the different stakeholder together to agree upon transactional details (Gustafsson-Wright et al., 2015). Another independent party to be mentioned is the evaluator, analysing whether the outcome metrics were met.

All parties involved can gain from engaging in a SIB. The government ensures that it will only pay for successful social outcomes and does not have to take the risk of implementation. The investors can couple financial and social returns. Indeed, donors and foundations often finance social interventions and they traditionally not expect any

² This often means the government. However, in Portugal, the likely commissioner is *Portugal Inovação Social* through its SIB Outcome Fund.

³ The population in need is a fourth actor. However, since the population is not directly in the transaction, only the three others will be named to describe the mechanism in place.

financial return from their investment. The SIB mechanism makes financial returns possible. The service provider has an incentive to get creative in order to achieve the social outcome in order to meet the pre-defined outcome metrics. The service users, a predefined cohort, have a bespoke service that has the clear goal and motivation to improve their condition. Finally, a new market and social ecosystem is flourishing, mainly through the need of intermediaries and independent evaluators.

<p>1. The investor invests the principal</p> <p>2. The intermediary manages the deal, coordinates the exchanges</p> <p>3. The service provider delivers the service to the population in need</p> <p>4. Results on the project’s impact will be analysed</p>	<p>5. The evaluator assesses whether the outcomes were met</p> <p>6. Only if 5. proves positive, the commissioner pays for success.</p> <p>7. The investors are repaid, once a reserve amount for the sustaining of the project was deducted from the commissioner’s payment</p>
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Table I: Explanation of the division of roles in a SIB depicted in Figure 1

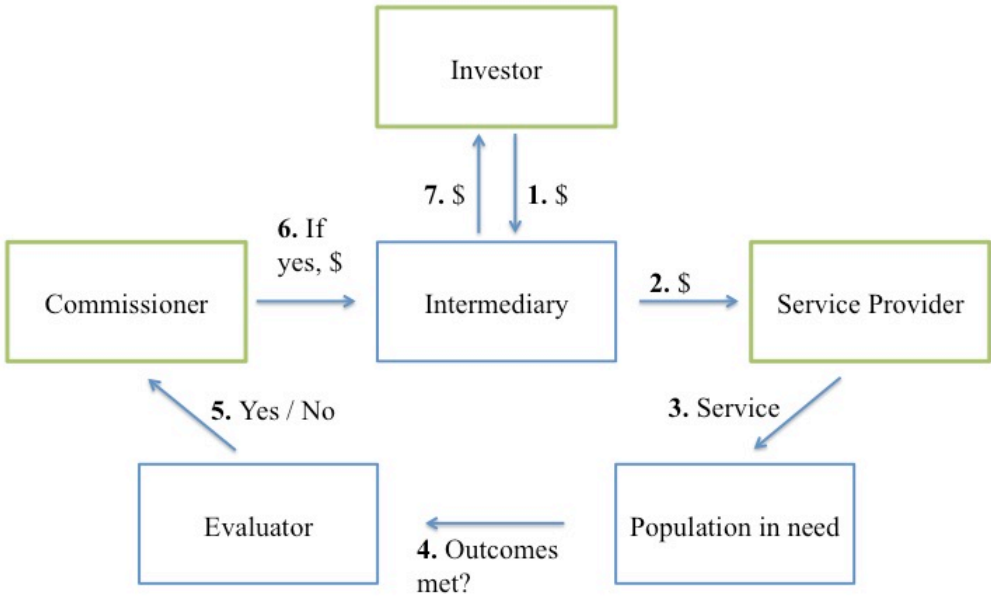


Figure I: Basic structure of a SIB with the explanation of the mechanism

1.2 Methodology

This feasibility study was written within the Social Impact Bond Research programme, led by António Miguel, managing director of Gulbenkian Foundation’s *Laboratório de Investimento Social* (LIS). Every semester, students have the opportunity to enter the

programme and develop a SIB feasibility study on a relevant social issue as a master thesis. Each feasibility study may unfold into an emitted SIB by *Portugal Inovação Social*. In order to get there, the feasibility has to be sent to their manifestation of interest (occurring twice a year) and eventually be approved.

The 2nd edition of the programme began on the 21st of September 2015. Until December, the students had four training sessions on different subjects such as SIB financial modelling on Excel. Each student had two meetings per month with António Miguel, in order to keep track of the development of the work. The work plan of the research programme is built around four stages⁴, subsequent to the following timeline:

1. Understanding the social issue (2 weeks);
2. Intervention model (3 weeks);
3. SIB business case & modelling of the investment structure (4 weeks);
4. Scenarios, conclusions and limitations (2 weeks).



Figure II: Timeline of the project

⁴ The time spent on every stage is written next to the subject, in parenthesis, starting from the 21st September 2015 on.

The present work analyses the feasibility of a SIB issued in Portugal addressing the matter of high recidivism rate and the difficult reintegration of ex-offenders. The evaluated service provider is APAC Portugal, adapting the Brazilian APAC methodology to Portugal.

In order to complete the descriptive and theoretical part on SIB, explanatory papers released by the leaders of the impact investing industry, such as Social Finance or Bridges Ventures, were the main sources. The training session on SIBs given by the LIS also was of great help.

The SPACE⁵ project of the European Council as well as the different reports of the United Nations about Police and Crime gave a good base to understand the issues and reality behind the current penitentiary system in Europe and in Portugal. In order to get reliable information about the Portuguese case, unofficial sources had to be used, as for example articles in different newspaper, since official data is still lacking.

The Brazilian APAC association (FBAC) was open to help and give items about the methodology and its implementation in Brazil. The Portuguese counterpart was, as already mentioned above, a perfect partner to write a complete and relevant work on the subject.

2 Why Should Recidivism Rates Be Lower?

Criminality will never disappear. However, thriving to cope positively with offenders for them to desist from crime makes the world a safer place. A recidivist is a person committing an offence despite previous punishment. In this feasibility study, the word will be used for a person going back to prison. The recidivism rate remains very high in many countries, hitting 70% or more (United Nations, 2012, pp.7). Even though the

⁵ In French “*Statistiques Pénales Annuelles du Conseil de l’Europe*”, literally “*The Council of Europe Annual Penal Statistics*”.

exact rate in Portugal is unknown, recidivism jeopardizes public safety and should, therefore, be reduced in full measure. Furthermore, these statistics, translating a failure of the penitentiary system to motivate prisoners of desisting from crime, demonstrate urgency for a new perspective (Cuneen et al., 2013; Lösel, 2012). Reducing recidivism also means savings to the state and taxpayers as a consequence of lower costs of the penitential system. In order to understand how to design solutions more efficiently, the causes and consequences of recidivism will be explained, as well as their economic cost to society.

2.1 Causes

Two main causes for recidivism arise in the literature and research on the subject: the impactful conditions of imprisonment on offenders and the difficult reinsertion into the community upon release.

The traditional penitentiary system keeps prisoners in a closed environment with little or no contact to the outside world. This comes from the popular view that offenders should be punished during imprisonment for committing a crime by isolation amongst others (Wilson et al., 2015). However, research shows that tougher prisons do not reduce reoffending (Chen and Shapiro, 2007; MacKenzie, 2012) and that, on the contrary, seeing imprisonment as a time of rehabilitation improves changes of reinsertion (Katz & Levitt, 2003). Indeed, traditional imprisonment tends to worsen offenders' situation (MacKenzie, 2012): studies comparing two groups of offenders under two different rehabilitation styles, either a prison or a boot camp, showed that the boot camp group did not do better, but the group in prison did worse. Moreover, poor conditions may bring more harm than good through the prisoners' bitterness against society and lagging vocational competences upon release (Murton, 1976; Selke, 1993).

If prisons were places of recovery, where prisoners would have the possibility to build social and vocational skills to reintegrate afterwards, both parties involved would be better off (Wilson et al., 2015, pp.8). Also, tougher conditions may lead to more violence and restlessness among inmates, which again induces more social and psychological aftermaths (Chen and Shapiro, 2007).

This leads to the second cause: the difficult reintegration into society. Unfortunately, the impact of reintegration measures, dealing with the damaging stigmatisation of conviction in our society and lagging skills of offenders, is extremely difficult to assess (Griffiths, 2007). The difficulty to separate the real impact from helping circumstances is almost impossible. For this reason, recidivism rate, for instance, is a relevant proxy to assess whether the applied measure was successful or not.

Social reintegration may be challenged on many levels: the past of the offender, the physical and mental disabilities that he may face and the prospective skill deficits of the prison population (United Nations 2012, pp.11; Maruna, 2001). Indeed, in many cases, it might be difficult for offenders to successfully compete in the community, due to stigmatisation, the lack of self-confidence and skills as well as, in some cases, mental illness and/or drug addiction (Shapland & Bottoms, 2011). Additionally, the fact that offenders might not have any peer support (e.g. family or friends) after release worsens the experience of reinsertion (Lösel et al. 2012).

Upon release, basic comfort, such as finding a home or a lucrative activity, are substantial challenges to overcome (Fehr, 2009). Indeed, employers tend to keep an eye on crime registers to make sure not to hire an ex-offender, concerned about the safety and the notoriety of the workplace (Nally et al., 2014). Unfortunately, unemployment is the main predictor for recidivism, regardless of the severity of the criminal records

(Nally et al., 2014)⁶. The level of education influences the recidivism rate in the same way, since better-educated offenders tend to reoffend less (Nally et al., 2012)⁷. These issues show the difficulties in meeting the demands of, amongst others, the strict and fast-changing job market and standing on the own feet upon release. Adding to this the above fact that mental illness and drug addiction⁸ are not uncommon among prison population, the adversity one may encompass after deliverance are discernible.

In other words, offenders fight against many barriers, such as stigmatisation, lack of social or professional competences as well as individual difficulties. Having few incentives and support to turn their life around, the way to crime is often the easiest. The penitential system as it is today is unable to give criminals the means and courage to reinsert into the community, once their sentence served. However, since the reinsertion of offenders would improve the situation of all parties involved and is a clear international objective of criminal and justice departments, present in both international human rights law and United Nations standards and norms (United Nations, 2012), the need to find new ways to deal with this issue is pressing.

⁶ This also means that employment is the best way for preventing recidivism. However, ex-offenders rarely have the qualifications to meet the challenging professional market of today.

⁷ Interestingly enough, it seems that the former level of education (as well as the correctional education provided) does not have any influence on employment when the release happens during recession times. (Streuer et al. 2001)

⁸ World Health Organisation states: “Rates of ever-injecting drugs are substantially higher among prisoners than among the general population. Between 5% and 38% of prisoners in European countries reported ever injecting drugs prior to imprisonment.”

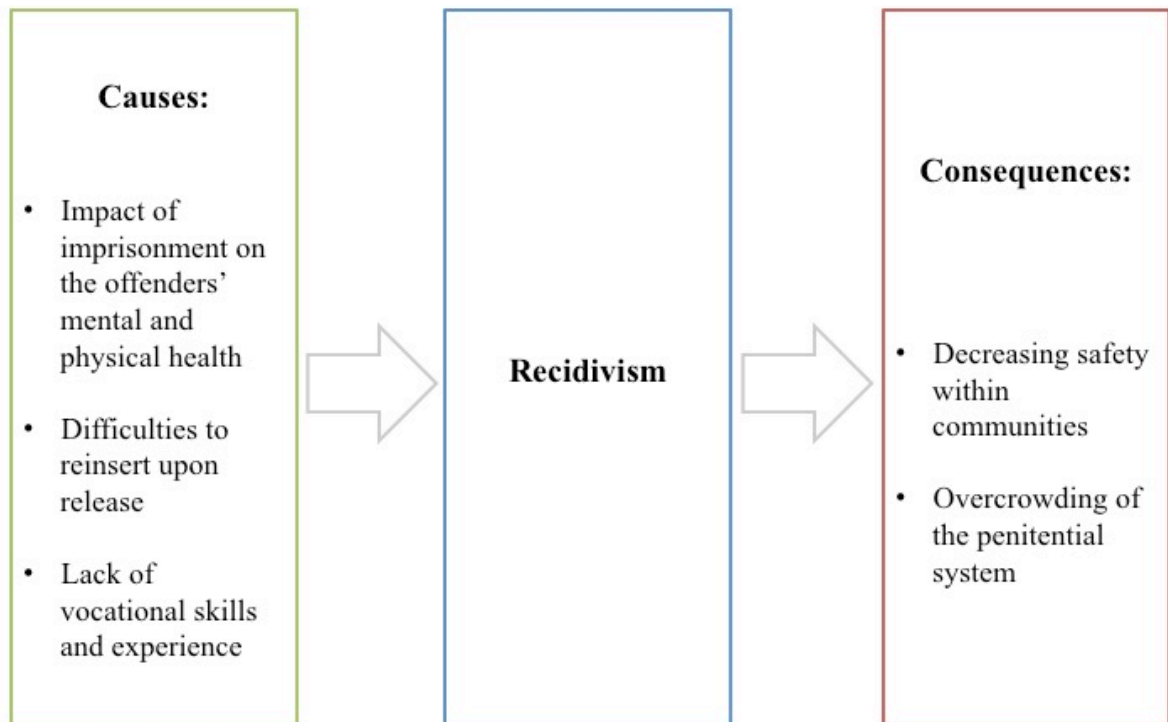


Figure III: Overview of the causes and consequences of recidivism

2.2 Consequences

Two consequences of recidivism trigger a cascading effect and depict the situation quite thoroughly. Firstly, recidivism induces more crime, which again generates less safety to communities. Stigmatisation, steamed up by the fear and negative feeling vis-à-vis the offenders, leads, as previously said, to troubles of reinsertion. This process leads to a vicious circle that worsens the chances of successful reinsertion and a pleasant community life. Furthermore, society pays for every additional crime and those costs are not to be forgotten (see at the end of this section).

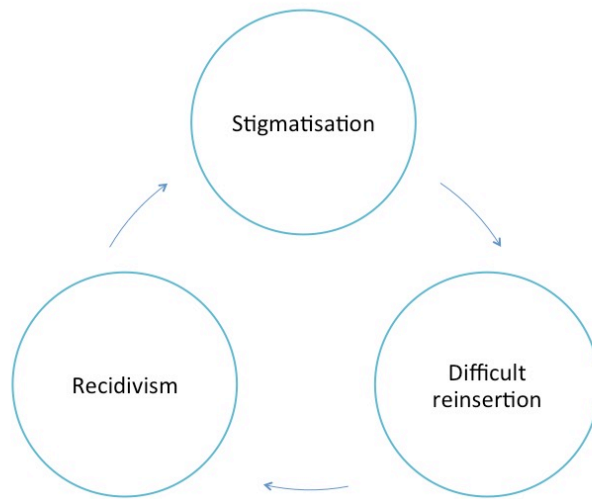


Figure IV: Vicious circle of recidivism

Secondly, the overcrowding of the system, both in terms of infrastructure and administrative inefficiency of the law enforcement agencies, is a notable problem and is worsened by recidivism (Wilson et al., 2015). The Council of Europe created a research group at the University of Lausanne, Switzerland, to evaluate the situation of overcrowding in 19 member countries⁹. It says that 43% of prison administrations in the member states experienced overcrowding in 2013 (SPACE I, report 2013). On the 1st of January 2014, Portugal had a prison density of 117.4 per 100 places (SPACE I report, 2014). Lisbon Central Prison alone experienced almost 150% of overcrowding in 2012 (SPACE I report, 2013). With overcrowding comes the difficulty of maintaining satisfying standards for inmates in terms of space, hygiene and infrastructures (WHO's data and statistics). The pressure put on the law enforcement agencies reduces their capacity to efficiently (and fairly) treat crimes (Wilson et al., 2015). In a nutshell, as H-J Albrecht (2012, p.65) said about his research on overcrowding: *"(...) it is certainly also fair to say that it is in general much easier to produce overcrowded prisons than*

⁹ Albania, Austria, Croatia, Denmark, Estonia, Finland, France, Germany, Iceland, Ireland, Italy, Latvia, Netherlands, Norway, Poland, Spain (Catalonia), Switzerland, the United Kingdom and the United States of America.

developing and implementing effective ways to reduce prison populations.”

In conclusion, the consequences of recidivism exacerbate its causes. Worse conditions due to overcrowding impoverish the *intra-muros* experience of offenders and may decrease their access to relevant training and preparation to freedom. Moreover, the decreased safety leading to fewer chances for former criminals to be accepted into society indirectly makes successful reinsertions drop.

All the aforementioned issues entail significant **costs to society**. The costs of law enforcement, investigating and prosecuting crimes, even if purely administrative, are not to be underestimated. Not only financially speaking, the time pressure and demand for efficiency imposed on this process is consequent. The costs of imprisonment itself as well as the mentioned externalities of overcrowding may however represent the main part. In Portugal, the costs per prisoner is estimated to be between 40€ and 53€/day (Dores et al. 2013). This wide range of daily prices is due to the lack of official data and, therefore, the need to take on different assumptions logically leading to different conclusion. The Portuguese prison population being around 14'000 in 2015, the total costs amount to roughly 200 mio €¹⁰ this year. Of course, only part of the costs could be annihilated thanks to a lower recidivism rate. Besides, the indirect and mostly non-financial costs born by the victims and the community are heavy. From their expanded scope, many costs must be included: the medical and psychological attention to the victims, the individual aftermaths (such as traumatisms or negative emotions), the social rejection coming from some subsequent behaviour or prejudice, to name just a few.

¹⁰ This amount was reached by taking the more conservative cost per offender of 40€/day. This conservative value will be used for the modelling of the SIB.

The externalities and costs of recidivism to society are plenty. Hence, reducing recidivism would leave all parties involved better off and would begin with encouraging the reinsertion of prisoners into the community. In order to escape the trap of high recidivism, the criminal justice system needs to internalize a reintegration programme that would give a greater chance to criminals and, hence, a safer life for the community.

3 APAC Portugal: A Strong Intervention Model

In February 2015, the soon to become APAC Portugal started contacts with Portuguese prison services with a view of studying the implementation of an alternative rehabilitation and reintegration methodology, through a project's pilot to be launched in a discontinued farm and former educative centre for young people "*Centro Educativo da Vila Fernando*" in Elvas, a town in the Alentejo region in the south of Portugal. The project, if successful, would be scalable to other regions. The agricultural land could be cultivated by the participants and, partly, rented to other farmers of the region. The plantations' revenues could be used as a rent to the government.

The **eligibility criteria** for the project's pilot include males, between 25 and 35 years old, with neither drug addiction nor mental health issues and with circa one year of sentence left. There are no restrictions regarding the kind of crime committed. By targeting the biggest part of Portugal's penitentiary population as well as taking offenders between 25 and 35 years old, the project aims to touch as many people as possible and increase the probability for participants to enter into the employment market. The greater potential for young males to learn new skills and have incentives to change their life around is ponderous.

The APAC Portugal team plans to communicate its launch throughout all the Portuguese prisons. Every inmate meeting the eligibility criteria may apply to the

programme. For this, he will manifest his interest to the concerned APAC team (made of volunteers) that will then have them observed and interviewed by the staff of their original prison. The approval of the application is made by the penal system on the base of the report of the rehabilitation technicians and director of the original prison. The penal judge will make the last call on whether to authorise the transfer.

3.1 Methodology

The methodology, originally based on 12 elements¹¹, congregate to 7 elements in the case of APAC Portugal (see Table II). The first element, *community* and *voluntary work*, were two different elements in the Brazilian methodology. These were put together since they both refer to the need of the local community in which APAC Centre is established to be involved and engaged in the project. The third element, named *judiciary* and *health assistance* also were originally two singular elements. They are one in Portugal since they both tackle the practical needs a participant may have during his stay. Voluntaries specialized in the one or other field will be available to help the participants upon appointment. *Human valorisation* and *merit* were merged because they were both considered to be two sides of the same issue. The emphasis of the first is the offender's life and history and the need to enrich his educational and cultural skills. The merit is promoted through a progressive approach, in which good behaviour and self-development are followed by higher responsibilities and autonomy. The two last elements, *spirituality* and *journey of freedom in Christ*, were united and have as a goal to encourage each participant to grow and increase self-awareness through spiritual experiences and, if applicable, to religious practice. The "Centre of Social Reintegration" was left out because it references to the APAC Centre itself. Since it is a location and not an action, it seemed confusing to use it as a pillar of the methodology.

¹¹ See Appendix i

I. COMMUNITY & VOLUNTARY WORK	The community is involved during the whole process in order for the prisoners to be in contact with the outside world and for the community to understand the challenges and reality of penitentiary life. The community is engaged in the form of voluntary work. Each offender has a volunteer as a reference person, coming every week to enjoy time together. The volunteer is previously formed by APAC Portugal.
II. PEERS SUPPORT	Participants must support each other, involving a strong sense of solidarity, collaboration and reciprocity. This is built on the necessity to help each other during day-to-day life, executing basic duties around the house and making small gestures for one other.
III. JUDICIARY & HEALTH ASSISTANCE	The APAC programme makes legal assistance available for offenders that do not have the means to hire private assistance. In order for the programme not to become excessively involved in the process, this option is only available for those that do not have an alternative. The APAC team also makes health support available.
IV. FAMILY	Family is an important part of the process, whenever possible. Involving the near circles of the offenders helps them connect with the community and feel supported, which, in turn, enhances the reinsertion.
V. HUMAN VALORISATION & MERIT	The human valorisation and sense of merit are of big importance in the process. Offenders are called by their names, not by a number, in order for them to recreate their own identity. All work has to enhance the capabilities of each offender, along with the individual education programme.
VI. WORK	The offenders are working from the second stage onwards. In the first stage, work is not allowed since they then take time to think and rehabilitate themselves. In the second stage, they begin to work – mainly for the APAC community – and engage in educational training. During the open phase, the offenders work outside of the prison and only come back at night.
VII. SPIRITUALITY	Personal growth, the re-formation of the personality and life of each offender, the freedom to be and think independently within themselves is encouraged through spirituality, a necessary element and way to development within the APAC process.

Table II: 7 elements of APAC Portugal's methodology

For each stage and element, APAC Portugal plans to establish relevant partnerships. Partners are needed for education purposes, therapeutic support as well as legal and health assistance. In order for the offenders to work during the third phase, partners offering work or helping them to look for it are a key element.

3.2 Structure

Each phase of the APAC methodology has a different contribution to the journey offenders undergo during the APAC process. Upon release, the offenders are equipped to reinsert into the community. The goal of the programme is for the offenders to reflect on their deeds, take responsibility for them and their future and gain trust back, from others just as much as from themselves. Education and vocational training is key to the programme, in order for each offender to find his potential and way to benefit most society as well as build his own life. In other words, the APAC method gives the opportunity and means to offenders to set up their future life and to prepare for reintegration, while building up self-confidence, trust, taking on responsibilities and learning useful skills.

The process divides the sentence of a participant into two stages. In the first one, the participant is obligated to stay in the APAC Centre. While in the second stage, the participant is in the community of the APAC Centre but does not reside there anymore. Being in the first stage, the participant goes through three different client statuses: closed, semi-closed and open. When the participant goes over to the second stage, his client status changes to “freedom”.

The first three statuses may last for a maximum of 18 months¹². The judge decides on the length of the different statuses independently for each participant. During the first status, offenders are in a closed environment, in a different building than the offenders in the two next ones. Mainly creativity and spirituality are encouraged at this stage, intended to develop the level of self-awareness and adaptation to the new environment.

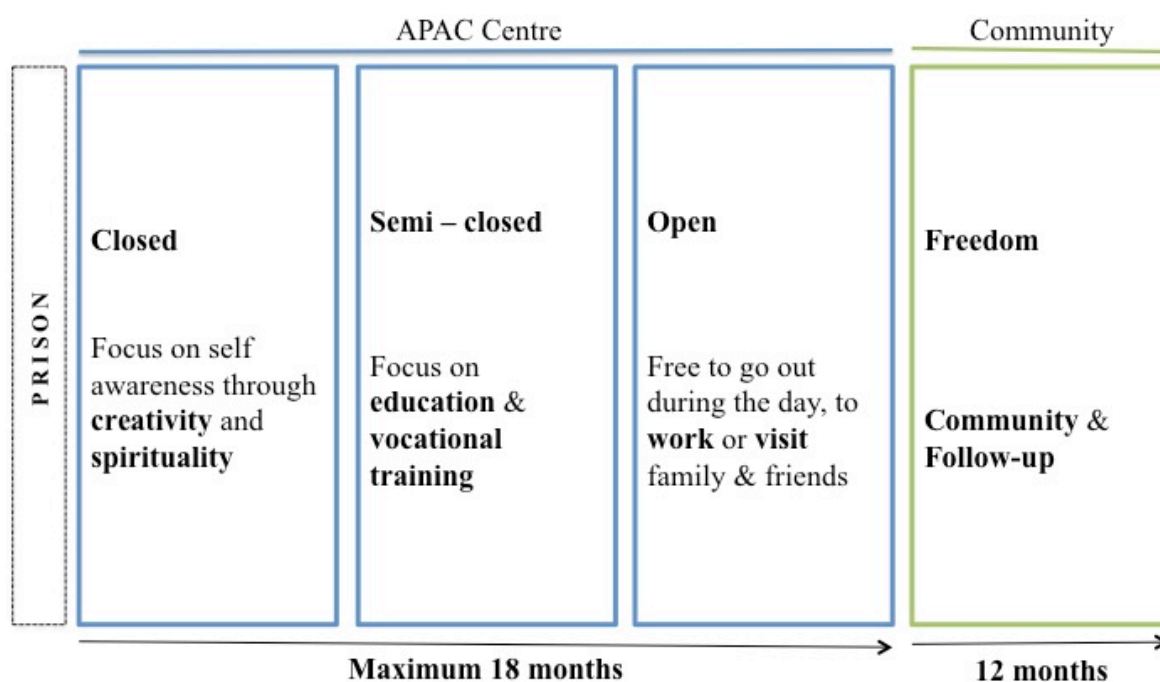


Figure V: APAC Portugal's timeline and structure

The second status is the first step into reintegration based on education and professional development. Through working activities, the offender is capitalizing and developing his professional potential. This status has as goal to help offenders find their way in life with emphasis on their professional life. The offender is building his life again by becoming aware of his positive potential for society and controlling his anger and negative emotions.

¹² The 18 months' length is not set by the APAC methodology but by the SIB mechanism that will further be explained.

During the third status, the offender is free to leave prison during the day but has to return for the night. He might use this time to work, visit family or acquaintances and simply get used to being *extra-muros*. After having worked on himself and developed his skills, it is time to apply them to real situations and further develop his social development. The offender is, at this point, a catalyser of the APAC model since he should be a role model for others to follow. The offender still thoroughly follows the educational programme. With the help of the previously acquired skills, he has the ability to integrate himself into community and, if possible, forge a strong relationship with his family, friends and other immediate entourage.

In the second stage and fourth status, freedom while being part of the community, the offender is expected to fully accomplish social reintegration, namely through the practice of a profession, by the lack of involvement in new judicial processes and by the contribution to the community (family, work and society in general), applying the behavioural conduct learned within the APAC centre. Within this period, the offender is also encouraged to stay in touch with the APAC team in order to continue peer support and receive technical support in areas such as job seeking and judiciary assistance. This stage is set to last for 12 months. This period also represents the time during which the outcome metrics' measurement takes place.

The features and structure of the reintegration programme outlined above (eligibility, duration, etc) correspond to the current thinking of APAC Portugal, based on the work carried out until this date and might evolve, as the association's work progresses (e.g. the project could be implemented in one wing of a traditional prison rather than a specific facility as the centre in Vila Fernando). Mentioned features and structure are used as assumptions to this feasibility study and its conclusions. This

feasibility study therefore refers to such assumptions and does not purport to cover all potential future adjustments made to APAC Portugal's programme.

3.3 Benchmark projects

	Main points	Monthly costs per p.	Recidivism Rate
Brazil	The first APAC project that inspired the world and that still stays as a baseline.	235 €	8.4%
Italy	Culturally speaking, the nearest to Portugal.	1600 €	8%
Germany	Germany's legal system is similar to the Portuguese one. Inspiration and experiences can be learnt from this project.	n.a.	25%

Table III: Summary of the benchmark projects

Brazil. Dr. Mario Ottoboni, a religious lawyer and journalist, developed the APAC methodology and opened a pilot in 1972 in São José dos Campos. The aim of the pilot was to find a methodology de-stigmatising and rehabilitating offenders by *“improving their self esteem, challenging their anti-social thinking, improving their education and vocational skills and providing positive role models who mentor and guide ex-prisoners as they return to their communities”* (Wilson et al. 2015, p.4). Since then and because of its success, the project was extended to many other places in Brazil: the Minas Gerais State alone now includes 24 APAC centres and there are 100 of them in the remaining parts of Brazil (IBJ, 2015). The recidivism rate of the APAC method in Brazil is around 8.4%, against a national average of 80%, while the cost per offender is around 250US\$/month versus 1000US\$/month in a traditional prison (IBJ, 2015). The methodology inspired and was successfully adapted to more than 27 countries worldwide (IBJ, 2015). However, for the purpose of this work, only Italy and Germany will be shortly presented, with a special emphasis on the second.

C.E.C in Italy. The Association Pope John XXIII, believing in the importance of solving the current penitentiary situation for the sake of prisoners and the communities, presented in 2008 the C.E.C (*“Comunità Educante Con I Carcerati”* – Literally: An Educational Community with Prisoners), a project inspired by the APAC method (Synergia, 2013). The costs amount 54.75€ per day per person (Synergia, 2013, pp.3). Over a thousand offenders already completed the process, even though not all of them succeeded. Some recidivists where forced to return to prison. The recidivism rate of the project approximated 8% - against 75% for offenders serving their sentence in traditional prisons in Italy (Wilson et al. 2015).

Seehaus in Germany. A similar project, called Seehaus Leonberg and run by the association Seehaus e.V.¹³ was launched in 2003, in Germany. This case is of particular interest for APAC Portugal, due to the same origin and close similarities between the Portuguese and the German legal system. This implies that the shape of the project and its limitation might be similar as well, and thus, the Seehaus project is a good stencil for building such a project in Portugal.

The project is conceived for juvenile offenders, aged from 14 to 23 years old. Approximately 15 participants are at all times in the programme. They are split in two different houses, living with two different families. The idea is to reduce the negative influence of prison environment by inviting young offenders to live in another kind of community, a family oriented community. Through the firm and structured routine, the participants learn to take responsibility for their past, present and future. The schedule of the day is the same for everyone, from 5.45am to 22pm. Sports, cleaning, working and many other activities are organized, even recreation activities such as canoe or rock

¹³ « Wahr.haft.leben », the slogan, is an interesting word play : « wahrhaft leben » means, per se, « living truly ». However, by dividing it in these 3 words, it means : « true sentence life »

climbing. The rules are very strict. For instance, the smoking rules: only 3 times a day for 15 minutes, only after the meal. The participants are expected to follow an educational training during their time in the community, in order for them to have applicable skills upon release.

The project welcomed 120 participants, from which 60% went through the whole programme. 99% of the one that completed the programme were able to find a stable professional situation. Three years after release, the studies show a recidivism rate of 25% (Wilson et al. 2015, pp.30). The project was extended to Leipzig (Sachsen county) under the name Seehaus Störmthal in 2011.

4 Structure of The SIB

4.1 General Information and Overview

As explained before, a SIB is a financial instrument built to catalyse projects with a positive impact on challenging social issues. Three benchmark projects, already applying the methodology, were presented previously and displayed a positive social outcome. By enhancing reintegration and thus lowering recidivism, it is possible to take control over many resulting problems, such as overcrowding and decreasing safety within communities. Fighting the causes rather than the symptoms (e.g. enlarge prisons) gives the opportunity to, little by little, tackle the real issue and improve the social outcome.

Furthermore, the mechanism of the SIB shifts the approach from the traditional service based to a new outcome based structure. Traditionally, social services undergo complicated and time-consuming procedures to acquire financing. The structure of a SIB shifts the weight from the administrative procedures to the final goal. In the present case, the objective of APAC Portugal is to reduce recidivism and bring

more safety into communities by increasing reintegration. This is the main target the service provider should have in mind. The way and means invested to achieve it are however flexible. This new investment structure implies performance management and gives the incentive to organisations to change their perspective and innovate their operating approach in order to achieve a tailor made service for the target population.

Structure of APAC's SIB. *Portugal Inovação Social*, the commissioner in this SIB contract, agrees to pay a predefined amount, if a predefined social outcome is met. Up until this point, the project is funded through an initial capital investment, made available by investors. *APAC Portugal* (the service provider) is therefore able to launch the social intervention. The commissioner's payments are used to both fund the project further and repay the investors, if the independent evaluator's analysis shows that the outcome metrics were met. The intermediary links all of these entities, raising money and writing contracts. Figure VI depicts the structure of the present project and the different entities playing a role in this SIB are summarised below:

- Portugal Inovação Social takes on the role of the commissioner.
- APAC Portugal is the service provider.
- The investors and independent evaluator are still to be defined.
- The intermediaries are both Hexagonal¹⁴ and the Laboratório de Investimento Social (LIS).

¹⁴ Hexagonal Impact Investment, Lda. is a Portuguese company with the purpose of providing strategic, operational and financial consultancy services in the context of social projects, being also able to act as investor in the context of the said projects. Hexagonal has been cooperating with APAC Portugal in the structuring of the APAC Portugal project pilot.

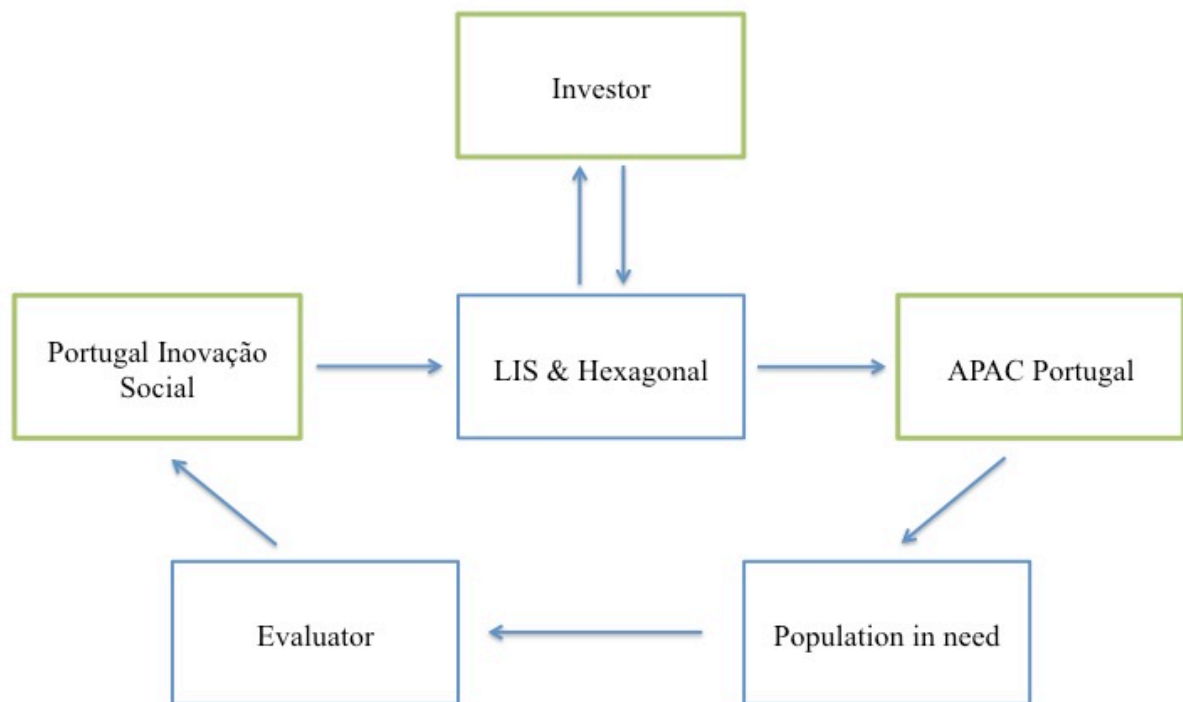


Figure VI: APAC Portugal's SIB structure

4.2 Construction of The Social Impact Bond

The mechanism was built on excel as a dynamic tool. First, the intervention scope was analysed. The goal of the last was to understand who is aimed by the SIB (target population) and under which form (intervention model). Secondly, the intervention costs were computed to understand what the financial needs are to launch and sustain the project. Thirdly, the payment mechanism was built, settling the relevant outcome metrics and what the reward for achieving them should be. The investment structure reunites everything; shows how the preceding findings work together and what results can be expected under the base case. The public sector value summarises what is the value creation of a SIB applied to APAC Portugal for the public sector. Once the base case is understood and clear, a sensitivity analysis will show its limitations and opportunities.

4.2.1 Intervention Scope

Target population. The eligibility criteria for the pilot project are males, between 25 and 35 years old, neither with drug addiction nor mental health issues and with circa one year sentence left. There are no restrictions regarding the kind of crime committed.

By targeting the biggest part of Portugal's penitentiary population¹⁵ as well as aiming to offenders between 25 and 35 years old, the project touches as many people as possible and increases its efficiency. Indeed, by narrowing the targeted scope, APAC Portugal is able to increase its efficiency through adapting the methodology to the specific group. This specific cohort was chosen because the probability for young males to successfully enter into the employment market and reinsert in the long run is high. Taking a wider age group could have created a possible bias against more senior prisoners, since the probability to achieve the predefined outcome metrics would be lower¹⁶. The intervention would consequently lose efficiency. A risk that APAC Portugal did not wish to increase by taking on participant with drug addiction and mental illness issues since the methodology is not adapted to such difficulties.

Cohort delivery model. The intervention's duration is, in the longest case, of 54 months. The participants are separated in 5 different cohorts. Each cohort is expected to have 25 participants, unless 6 months have passed since the first participant entered. Maximum 6 months can pass by from the time when cohort is opened to the time it is closed and this, regardless of how many candidates are in it. Each participant will stay at most 18 months in the APAC centre, going through the 3 phases. These phases are adapted on an

¹⁵ In 2015, around 90% of the Portuguese prison's population was male, according to the World Prison Brief's dataset.

¹⁶ Since one outcome metrics is about employment and older prisoners may have less chance to enter the professional market, favouritism for younger participants may occur. The outcome metrics will be discussed further in the work.

individual basis and the judge decides on their length. Once in complete freedom, in the 2nd stage, the participants stay in the community during 12 months, regularly meeting with the staff.

The point of release from the APAC centre will count for the cohort allocation (see * in Figure VII). Each grey dash represents 6 months.

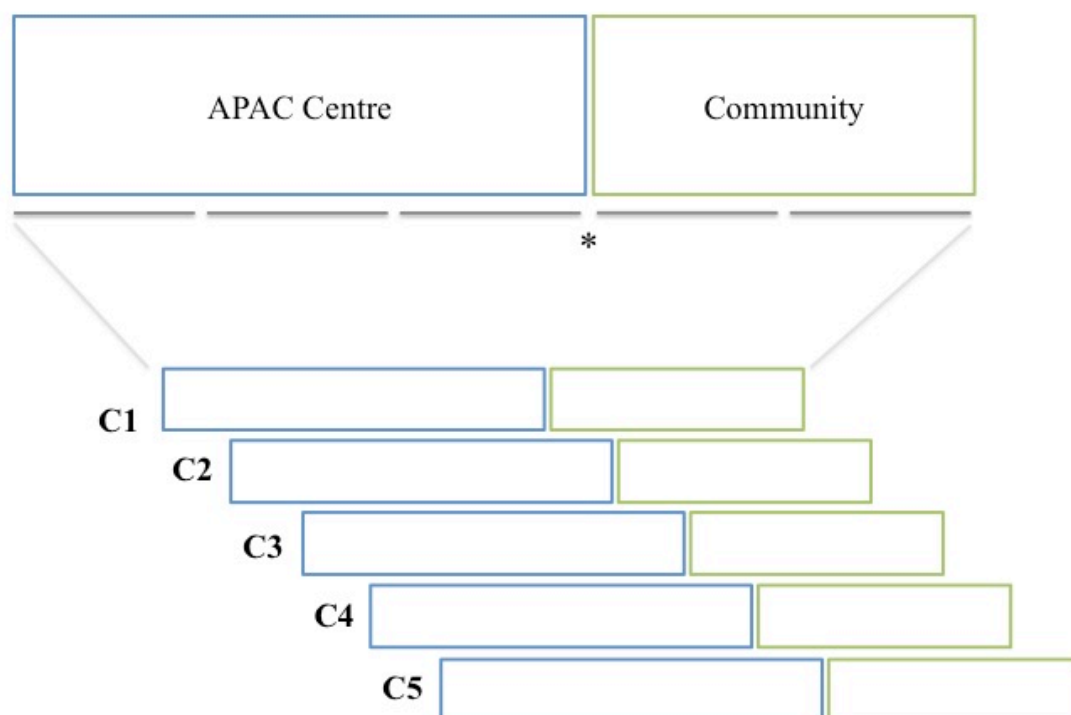


Figure VII: Timeline of the intervention model

4.2.2 Intervention Costs

The government is expected to take on the building and implementation costs, as it would for any other prison. The APAC centre would pay a rent through its agricultural production. Villa Fernando being an ancient farm, part of the participant's work will be to financially sustain the project by cultivating land.

The budget taken as a basis for the costs of the project is an adaptation of the APAC Brazil's budget to Portuguese costs. The proportions are customized to Portugal's prison system costs, adjusting the proportions to a realistic country view. The detailed costs are to be found in Appendix ii at the end of the present document.

There are two different paths to take with respect to the budget. The first is taking only the staff costs representing the running of the APAC project, i.e. the SIB funded project, not the running of the prison itself. These are regular over time and amount 15'562€ per month, representing 99% of the total intervention costs. The fixed costs, such as administrative material and communication needs, were allocated to the budget in proportion to the APAC / Total staff ratio¹⁷. The variable costs, depending on the number of participants, characterise material for physical or creative activities as well as kitchen equipment. Per year, the intervention costs amount 186'747€ and running the project during 54 months amounts 840'363€. This option is in line with the best international practices where the SIB funding is linked to the reoffending outcomes; the costs of running the prison is borne directly by the public sector under its public policy responsibilities. This budget option is used in the study to calculate the profitability of the SIB. Such costs best represent the costs of the SIB and therefore represent the best basis for the feasibility study. However, for the project's profitability, it is important and interesting to present the other option as well.

Monthly intervention costs (staff APAC)	
Staff	€ 15 338.67
Fix. costs (bureaucracy, informatics and communication)	€ 78
Var. costs (activities and kitchen material)	€ 146
TOTAL per month	€ 15 562
- per year	€ 186 747
- for 54 months	€ 840 363

Table IV : Intervention costs (only APAC staff)

The second way to calculate the budget is to take into account all the staff costs, independently on their direct link to the APAC project, i.e., including the costs of running the prison. By taking all of them, the monthly budget doubles. The profitability

¹⁷ There are 8 employees specific to the project over a total of 15 employees in the centre, which equals to a ratio of 53%.

of the project it not directly touched unless the payment is savings-driven¹⁸. If the budget calculation includes costs of running the prison, then the project should become a mix of SIB funding and fee-for-service funding: payments referring to the rehabilitation service are linked to outcomes (reducing recidivism) and payments referring to running the prison are linked to service level agreements.

Monthly intervention costs (complete staff)	
Staff	€ 29'871
Fix. costs (bureaucracy, informatics and communication)	€ 146
Var. costs (activities and kitchen material per participant)	€ 146
TOTAL per month	€ 30'162
- per year	€ 361'946
- for 54 months	€ 1'628'758

Table V: Intervention costs (all staff costs)

The number of participants does not significantly influence any of the budgeting option, since the variable costs represent less than 1% of the total costs in both cases.

4.2.3 Payment Mechanism

4.2.3.1 Outcome Metrics.

Setting relevant outcome metrics is an essential step in the modelling of an SIB since these set the relevance of the whole project. If the outcome metrics are not established correctly, with the right timing or reach, they might bias the perceived social outcome and be fatal for the parties' intentions. Indeed, the service provider, for instance, may come short financially if the outcome metrics are not set in the right timeframe or not realistic, in other words, too strict. The service provider's project might actually be relevant for the community but he could not sustain it in the long run. On the contrary, if the outcome metrics are not ambitious enough or too permissive, they may hurt the project's *raison d'être* in the first place, since its impact would not be measured

¹⁸ The meaning of a savings-driven payment will be explained later on, in section 4.2.3.2.

correctly. The project would wrongly be considered good and relevant for society's sake although it might not be. The interests of the different parties accentuate this trade-off, driven by the internal rate of return (IRR), the project's social relevance and the importance of the payment's timing.

In APAC Portugal's case, three outcome metrics were established to measure the impact of the project. These outcome metrics were divided in two groups: the cohort and the individual outcome metrics.

The **cohort metric** is related to the recidivism rate. Since the last is unknown in Portugal, this metric is only taking into account the rate within each cohort of the project. Since the rates in other APAC inspired projects are quite promising, the goal is to set the metric high: the project aims to 80% of non-recidivism in the 12 months upon release from the APAC centre. The rate of 80% is realistic in comparison to the different benchmark project. As already mentioned, the recidivism rates vary between ca. 8% (Brazil and Italy) and 25% (Germany). The length of the measurement period is based on studies from the National Institute of Justice, stating: "*Of those prisoners who were rearrested, more than half (56.7 percent) were arrested by the end of the first year*"¹⁹. By controlling the first year, both efficiency and financial return's constraint of the SIB mechanism were met.

The **individual metrics** are related to employment and ensure that all the necessary effort is invested in motivating and helping ex-offenders find an employment upon release. As the APAC project does not only intend to lower the recidivism rate but also to prepare prisoners for their life upon release, it is consistent to introduce a reinsertion metric into the model. A good proxy to measure reinsertion is employment.

¹⁹ Retrieved from : <http://www.nij.gov/topics/corrections/recidivism/pages/welcome.aspx>

Indeed, employment allows financial stability, which subsequently helps social stability and belonging to the community. Therefore, two metrics were set: the individual entry into employment and the sustaining of the job for 6 months. The first metric is expected to occur during the 6 months following the participant's release from the APAC centre.

Obviously, the success rate of both individual metrics is dependent on the recidivism rate of the cohort since somebody that is back in prison will not be able to be professionally active. The best case would be to achieve the success rate of the Seehaus project. In this case, 99% of the participant non-reoffending found a sustainable professional condition (Wilson et al. 2015). However, since the conditions of the Portuguese job market are different from the German one, the base case will be cautious. Indeed, the German unemployment rate is around 5% while the Portuguese one is above 13% (OECD Database, 2015). For this reason, 80% of the participant that do not reoffend will be expected to enter the job market and 70% will be expected to sustain this employment for 6 months.

The underlying assumption is that, after 12 months of freedom, a working person is decently stable and has enough to lose to think twice before reoffending.

Type	Outcome metric	Success rate
Cohort	Non-recidivism	80%
Individual	Entry into employment	80% of those who not reoffend
Individual	Sustaining job during 6 months	70% of those who enter the job market

Table VI: Overview of the outcome metrics

4.2.3.2 Payments Structure.

If the previously explained metrics are achieved, the commissioner pays for success. This payment will be used to repay investors, after putting part of it aside, as a reserve to sustain operations. Setting the right amount and taking into consideration the needs of each party requires analysing the dependence between the different variables in the Excel model. The first step is to understand what are the savings, costs and outcome

efficiency related to the intervention. For this reason, two payment possibilities for the cohort metric will be built, one based on the state's savings, the other on the service provider's cost and efficiency. Then, the question of setting the right amount for the individual payment will be analysed, under the perspective of the public sector's savings.

Cohort payment. Traditionally, the payments' amount in a SIB contract represent the public sector's **savings** from the project. In the present case, the direct savings are the dropping recidivism rate. As previously mentioned, prisoner costs between 40€ to 53€ per day to the state in Portugal, depending on the sources. The more conservative daily cost of 40€ per offender will be taken into account. The APAC project's pilot is expected to have 125 participants. The proxy for the unknown recidivism rate was 60%, which means that 75 participants would, under the current system, be incarcerated again. The programme aims at a maximum of 20% of recidivism. At least 50 participants would therefore not reoffend by means of the intervention. The outcome metric specifies a period of 12 months upon release. Therefore, the savings (and the commissioner's payment) amounts 146'000€ per cohort.

Savings-based payment		
Savings (for 1 year and per cohort)	€292'000	A
Payment's proportion	50% ²⁰	B
Payment per cohort	€146'000	= A*B

Table VII: Savings-based payment calculation

The **service provider's costs and efficiency** were taken as second payment driver. Based on the APAC Portugal budget, the costs for 54 months²¹ of operations were

²⁰ By paying 50% of the savings for 80% of the inmates, the commissioner is actually paying for 40% increased efficiency (from 60% to 20% recidivism)

calculated. The programme aims at 80% efficiency; therefore the payments includes a 20% upside to compensate the expected inefficiency. However, if the programme does not achieve the baseline of 80% of efficiency, the compensation should remain the same. For every cohort, the payment would therefore obey to the following formula:

$$\frac{\text{Cost per capita} * \# \text{ of participant in the cohort} * \text{efficiency of the cohort}}{\text{Baseline efficiency of 80\%}}$$

Formula 1: Cost-driven payment equation

In the baseline scenario, in which the service provider achieves the goal of 80%, the payment per cohort amounts 168'073 €. If the service provider exceeds expectations and pushes the non-recidivism rate above 80%, the payment could be higher than that, through computing a carry that can be explored in the negotiation of the SIB deal.

The cost-based payment fully covers the costs of the programme if the baseline of 80% is achieved. The employment metrics are therefore only a bonus for the service providers. This situation changes if the payment is savings-driven. Since the last is constant, independently of any outcome's achievement or cost, and lower than the cost-based payment, the employment metrics help to cover the costs of the programme. If the 80% baseline is met, only 87% of the programme's costs are covered with a savings-based payment. The service provider would therefore need to counterbalance this difference with the employment metric. A few option are depicted below:

²¹ Which represents the maximum period for the pilot. Each participant can be at most 18 months in the APAC Centre and 12 months in the community. Hence in total 30 months. The cohorts are closed maximum every 6 months. With 5 cohorts, 24 months have to be added to the first 30 months.

1. 80% of the non-reoffending 80% enters the job market but nobody sustains the job during 6 months. Cost covering: **96%**
2. 50% of the non-reoffending 80% enters the job market and 70% of them sustain the job for 6 months. Cost covering **99%**
3. Ideal case: 90% of the non-reoffending 80% enters the job market and 80% of them sustain the job for 6 months. Cost covering **106%**

The IRR is positive with the last option, at 1.94%. The individual payment used in the above is calculated as following:

Individual payment. The state's direct savings in the case of people being employed versus people being unemployed are the unemployment benefits. In Portugal, these represent 65% of the reference revenue but not smaller than the IAS (*Indexante dos Apoios Sociais*, literally Social Support Index) which amounted 419.22€ in 2015 (retrieved from economias.pt). The model states that the service provider will get a payment for each person entering the professional market and again for each person sustaining the employment for 6 months. The state's savings are therefore 6 months of IAS, representing 2'515€ per person. This amount was divided as follows:

- 1'000€ for every participant's entry into employment
- 1'515€, for each participant sustaining the employment during 6 months

Type	Outcome metric	Based on	Amount	Timing
Cohort	Non-recidivism	Savings	€146'000	12 months following the release of the APAC Centre
		Cost and Efficiency	€168'073	
Individual	Entry into employment	Unemployment benefits	€1'000	6 months following the release of the APAC Centre
	Sustaining job during 6 months		€1'515	6 months following the above

Table VIII: Overview of the payments

4.2.4 Investment Structure

The investment structure includes everything that was presented until now as well as the following components:

Timing and investor capital requirement. The investor capital requirement is the financial basis APAC Portugal needs in order to launch the project. This amount represents the operational funds needed to sustain the project until the first payment is made. This capital requirement will flow once at the beginning of the project and will be paid back to investor when the cash balance of the service provider is positive minus a certain cash buffer (for safety reasons).

Working capital contingency. In order to be prepared for unforeseen changes, delays or unexpected changes in operation or payments, a working capital contingency of 6 months of operations is integrated in the model. This amount will be repaid in complete to the investors at the end of the intervention.

Cash flow delay. The payments may not occur in the same month as the outcome is perceived. For this reason, a 3 months cash flow delay was incorporated in the mechanism.

Repayment. The total repayment to the investors amounts 676'129€. This has as an assumption that the payment is cost-based (the repayment would amount 587'838€ otherwise) and that the outcomes are achieved as expected. The project has an IRR of 5.64% (1.94% if savings-based).

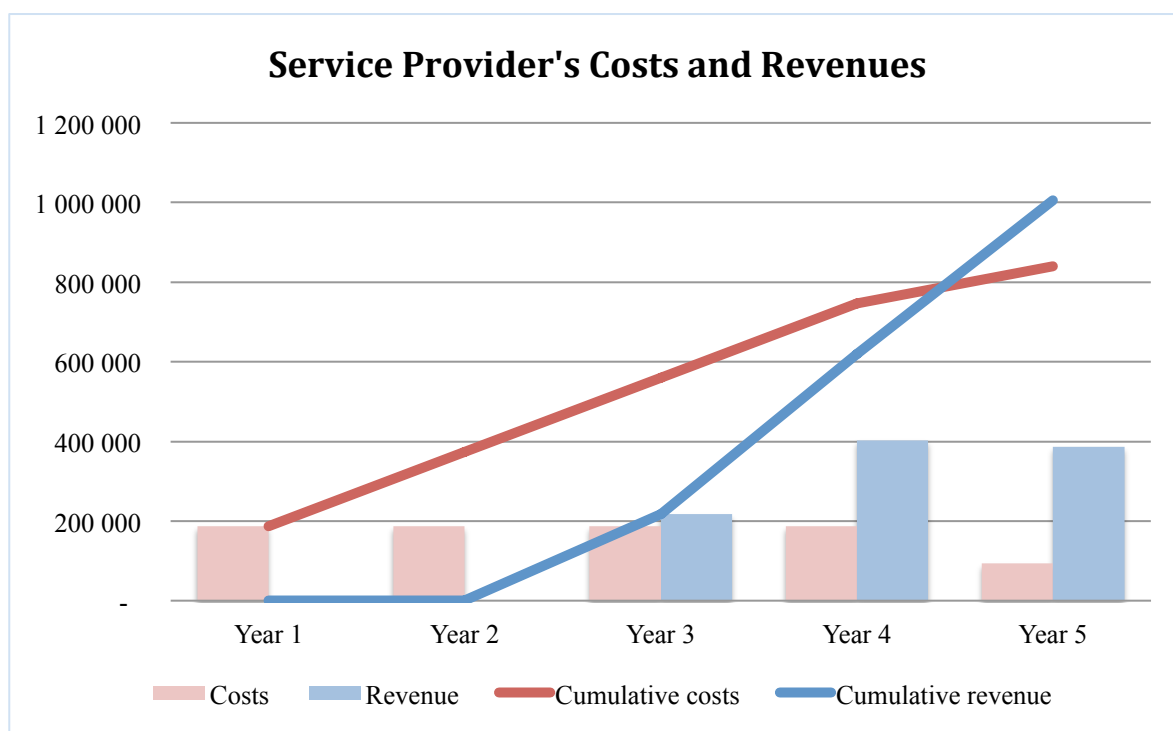


Figure VIII: Base case scenario's costs and revenues under the assumption of a cost-driven payment

4.2.5 Public Sector Value

The SIB structure enables the public sector to achieve value for money through cost savings at scale and sharing implementation risks with the investors (Miguel & Abughannam, 2014). In this case, the state is expected to pay for the implementation of the prison whereas the intervention's risk will be born by the investors. Moreover, through the intermediary managing the contract, the SIB offers rigorous governance by controlling the performance and linking the different parties enrolled in the contract (Miguel & Abughannam, 2014). And as a SIB is an outcome-based instrument, the service provider is motivated to innovate to achieve the predefined outcomes rather than be focused on complicated processes to follow. Only socially efficient project (in

respect to the outcomes) are fostered by the mechanism, inducing therefore a survival of the fittest.

In the case of reducing recidivism, there is no real quantitative value to establish. The direct value of this pilot is that, if 80% of the participant do not reoffend and reinsert into society upon release, 100 persons will have a better life with enhanced future prospects in Portugal. This being the direct effect, there would be further positive externalities as well. For instance, through the inclusion of volunteers in the process as well as the success stories, the stigmatisation of ex-offenders will be tempered. Moreover, having 100 additional citizens contributing positively to society and less crimes increases the quality of the life of community and public safety. These effects will flourish if the project is scaled to other places or if it is simply sustainable and durable.

5 Sensitivity Analysis

The base case aforementioned (Figure VIII) is dependent from a few assumptions. The following sensitivity will analyse the different “what if” scenarios, to understand the influence of changing variables on the project. Indeed, both the cohort and individual metrics might not be achieved and this could greatly modify the profitability of the project. Besides, the number of participant in each cohort also influences the results. Indeed, since the cohorts close with 25 participants or after 6 months, a possible irregularity in the cohorts’ dimension may trigger unlike results in relation to the outcome metrics. Further, the negotiations will show whether the payment will be savings or costs oriented. These two options are fairly different from one another and the variance has to be taken into account.

For each payment driver, the base case will be compared to a worse and best scenario. This denomination only concerns the recidivism rate, as the individual metrics are always savings-driven. The employment metrics are kept unchanged since they are automatically influenced by the changing recidivism rate. The worst case scenario will show the case of Germany, with 25% of recidivism, while the best case scenario will show the Brazilian rate.

Costs-based payment	Worst Case	Base Case	Best Case
Non-recidivism rate	75%	80%	92%
Maximum Contract Value	942'363	1'005'221	1'156'005
Project Costs	840'363	840'363	840'363
IRR	3.56%	5.64%	10.30%
Resulting rate of entry into employment	60%	64%	74%
Resulting rate of sustaining employment	42%	45%	52%

Table IX: Cost-drive payment scenarios

Savings-based payment	Worst Case	Base Case	Best Case
Non-recidivism rate	75%	80%	92%
Maximum Contract Value	884'554	894'858	919'587
Project Costs	840'363	840'363	840'363
IRR	1.57%	1.94%	2.81%
Resulting rate of entry into employment	60%	64%	74%
Resulting rate of sustaining employment	42%	45%	52%

Table X: Savings-driven payment scenarios

The success rate of the entry into employment²² has less influence on the overall profitability. Clearly, if the rate is zero (which therefore infers the second individual metric to be zero as well), the IRR of the cost driven payment is zero. What was spent is repaid through the payment without upside. If the payment is savings-driven, only 87% of the costs are covered.

All scenarios are under the base case of 80% of non-reoffending; the worst case scenario was a search for the last success rate before the IRR enters a negative

²² Since the second employment metric is dependent on the first one, and that unemployment infers mostly in the entry rather than the sustaining of an employment, the second metric was kept constant at a 70% rate.

value; the best case simply was the rate of the Seehaus project. On average, each 1% increase in the success rate results in a 0.068% increase in the IRR.

Cost-driven payment scenario	Worst Case	Base Case	Best Case
Entry intro employment success rate	0%	80%	99%
Maximum Contract Value	840'363	1'005'221	1'046'436
Project Costs	840'363	840'363	840'363
IRR	0.00%	5.64%	7.00%
Savings-driven payment scenario	Worst Case	Base Case	Best Case
Entry intro employment success rate	54%	80%	99%
Maximum Contract Value	841'279	894'858	936'072
Project Costs	840'363	840'363	840'363
IRR	0.03%	1.94%	3.38%

Table XI: Sensitivity of the IRR with a changing individual metric in the base case of 80% of non-reoffending

The variation of the number of cohort was much more difficult to assess. Indeed, many different scenarios can occur: the cohort size can be irregular, the size can also be lower than 25 participants or the rhythm to which the cohorts are closed can be quicker. Any change with respect to the number of participants per cohort changes the profitability of the project but it is impossible to make a relevant table out of it. However, as a general rule, the faster the rhythm, the better for the investors since cash flows faster in; similarly the more irregular, the worse for the profitability.

Eventual changes to a less conservative cost per offender per day would enhance the profitability of the model. Indeed, the cost of 40 € per offender per day used in the model are the lowest in the cost range. The changes can only be seen in the case of a savings-driven payment, because the cost-driven payment is only influenced by the costs of the projects, not by the daily cost per offender in a traditional prison. To compare the outcomes, their influence in the base scenario was analysed and is significantly large (Table XII). In the base case, the IRR amounts 9.56% versus 1.94% if the daily costs taken under consideration are 40€ per offender. As a note, the 53€ taken on as assumption are the other extreme, and thus, the results have to be taken with a grain of salt.

Savings-based payment, 53€/day/offender	Worst Case	Base Case	Best Case
Non-recidivism rate	75%	80%	92%
Maximum Contract Value	1'121'804	1'132'108	1'156'837
Project Costs	840'363	840'363	840'363
IRR	9.24%	9.56%	10.33%

Table XII: Daily cost of 53€ per offender sensitivity analysis

6 Limitations

The nastiest limitation was the lack of data about the penitentiary system in Portugal. For instance, the recidivism rate could not be found. Even though the country recidivism rate would not have been used in the modelling on the SIB since the project's population cannot fully be compared to Portugal's prison population, the information would have been crucial to understand the importance of such a new measure. Other information voids were however directly hindering for the robustness of the model. The fact that it was not possible to find the amount of eligible offenders to join the programme during these last months, made it difficult to assess whether the cohort size's structure is consistent with reality. As seen in the last section, this could have an effect on the viability of the SIB.

Moreover, the reality that this project will be a pilot in Portugal toughened the search in setting right baselines. The benchmark projects were chosen for their legal or cultural similarities to the Portuguese context. However, it is difficult to assess the accuracy of such criterion in reality. For instance, the recidivism rate outcome metric could be troubled by any other externality typical to the Portuguese context or culture that might not influence other projects in the same way.

7 Conclusion

This feasibility study proved the viability of APAC Portugal to be financed through a SIB mechanism and might be used for negotiations with the government. Even if the

SIB shifts some risks away from the government to the investors, the real risks linked to the public security and the costs associated to the opening of a new prison stay the same. The project has a strong prevention potential and could be scaled to other places if the pilot proves successful. This might be an opportunity for the Portuguese government to find a new way to overcome crime and reintegration issues as well as build a stronger country, while strengthening a new ecosystem of social impact financing.

The negotiation with the government, the legal due diligence, the candidacy to Portugal Inovação Social's fund and the implementation of the pilot will be the direct next steps to this study.

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9 Appendixes

i. Appendix 1: 12 elements of the APAC methodology

(retrieved from www.fbac.org.br/index.php/en/institucional/12-elements-of-the-apac-methodology)

- I. Community Participation
- II. Peers helping
- III. Work
- IV. Legal Assistance
- V. Spirituality
- VI. Health Assistance
- VII. Human Valorisation
- VIII. Family
- IX. The volunteer and the course of his formation
- X. Social Reintegration Centre
- XI. Merit
- XII. Liberation Journey with Christ

ii. Appendix 2: Intervention costs details

i. Staff Costs

Salaries APAC employees	Monthly base salary	Allowances	Total Monthly Salary
Director	€ 2 500	€ 100	€ 2 600
Deputy director	€ 1 800	€ 80	€ 1 880
Responsible for the housing and admissions	€ 1 500	€ 80	€ 1 580
Responsible for reinsertion and the gestion of processes	€ 1 500	€ 80	€ 1 580
Responsible for human formation and social impact	€ 1 500	€ 80	€ 1 580
Responsible for the academical and vocational training	€ 1 500	€ 80	€ 1 580
Responsible for the workshops maintenance and installations	€ 1 500	€ 80	€ 1 580
Responsible for the agricultural development	€ 1 800	€ 80	€ 1 880
Financial officer	€ 1 800	€ 80	€ 1 880
Spiritual assistant (50%)	50% € 450	€ 25	€ 475
Kitchen assistant	€ 900	€ 50	€ 950
Assistant to cleaning and laundry services	€ 900	€ 50	€ 950

Workshop assistant	€ 900	€ 50	€ 950
Secretary	€ 900	€ 50	€ 950
Doorman	€ 900	€ 50	€ 950
<i>SUB TOT p.m.</i>	€ 10 450	€ 515	€ 10 965
SUB TOT p.a. (incl. 13th and 14th salary)			€ 152 480
Additional employees related costs			
Accident insurance	1.00%		€ 1 316
Social contributions	21.20%		€ 27 895
Training for employees p.a.			€ 533
Others (for instance honorary tertiary persons)			€ 1 840
SUB TOT p.a.			€ 31 584
<i>SUB TOT p.m.</i>			€ 2 632.01

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Fixed costs	
Bureaucracy and informatics	€ 266.67
Communication	€ 667
SUB TOT fix. costs p.a.	€ 933
<i>SUB TOT fix. costs p.m.</i>	€ 78
TOTAL fixed costs p.a.	€ 184 997
TOTAL fixed costs p.m.	€ 15 416

iii. Variable Costs

Variable costs (per year/per inmate)	
Material for physical exercise, education and pedagogy	€ 5
Kitchen equipment and consumption material	€ 9
TOTAL var. costs for 125 inmates per year	€ 1 750.00

iv. Cost per inmate and total costs

COST PER INMATE	
<i>p.a.</i>	€ 1 493.98
<i>p.m.</i>	€ 124.50

Total costs of the APAC project per month	€ 15 562
Cost of running the project for 4.5 years	€ 840 363