

## **An Industrial Heritage Site – S. Pedro da Cova mining complex 1795-1973**

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## **Introduction**

As Joel Cleto and Suzana Faro (2000) states, the mines of S. Pedro da Cova had its origin with the discovery of the anthracite coal diggings in 1795, changing this place habits until 1970.

These mines don't produce over forty years, but the memories of the working time are still present in that village of the city of Gondomar. In this context, and according to the same authors, two privileged places appeared on the defence of the industrial and mining memories of this global heritage: "Cavalete" and "Casa da Malta" (nowadays transformed into "Museu Mineiro") (Cleto and Faro, 2000: 20).

Due to the rapid degradation of this mining complex and the lack of political and sustainable solutions, which could start by an understanding between institutions, this paper intends to promote an international discussion, in order to find paths to restore and value such important Industrial Heritage Place and considering the case study from the mining complexes of Lumere, Asturias, Spain.

## **THE MINES OF S. PEDRO DA COVA**

### ***The Parish***

According to the website from Gondomar City Hall, the first references to S. Pedro da Cova date from the foundation of Portugal. In 1138, the "Couto/ bishopric of S. Pedro da Cova" was donated by D. Afonso Henriques to the clerical D. Pedro Rebaldis, successor of D. Hugo, Bishop of Porto. In 1379, D. Afonso III confirmed this donation to the Bishopric of Porto on the Court of Gondomar. In the XIX century (1820) during the

Liberalism period and with the extinction of the medieval “coutos/bishopric”, the parish of S. Pedro da Cova obtained the designation of City. However this wouldn’t last very long because the Civil War (1832-1834) conducted to a new administrative division which will turn this new city into a village again, this time subordinated to the city of Gondomar (<http://www.portalgondomar.com/S.PedrodaCova/historia-de-s-pedro-da-cova.html>).

This “new” S. Pedro da Cova is now composed by places such as “Bela Vista”, “Belói”, “Bouça do Arco”, “Carvalhal”, “Cimo da Serra”, “Covilhã”, “Ervedosa”, “Gandra”, “Mó”, “Passal”, “Ramalho”, “Silveirinhos”, “Tardariz”, “Vale do Souto” and “Vila Verde”.

On the 1930 Demographic Census, S. Pedro da Cova had 4.298 habitants, which corresponded to 9% of the local population of Gondomar. According to the data from the National Statistic Institute 2001 Demographic Census, its population increased to 17324 habitants, correspondent to 1264 habitants by square kilometres, in an area of 13,7 square kilometres (<http://www.portalgondomar.com/S.PedrodaCova/historia-de-s-pedro-da-cova.html>).

This village is located over ten kilometres from Porto and four kilometres from S. Cosme. In summary, S. Pedro da Cova is surrounded North by Vila de Fânzeres (Gondomar) and Valongo City Hall, South by the parishes of Jovim and Foz do Sousa, West again Vila de Fânzeres and S. Cosme and East by the cities of Valongo and Paredes.

Originally, S. Pedro da Cova had an economy based on agriculture, being one the main suppliers of Porto. However, and with the discovery of the anthracite coal mine at the end of the XVIII century, it would become industrialized. The Portuguese Government was the first responsible for the mining and afterwards private capitals would intensify the extraction by investing in modern facilities and mining structures. All together, will also impulse the local economy by creating transports and communication systems between S. Pedro da Cova and Porto.

## ***Historical Background***

Has suggested before, the history of S. Pedro da Cova's mine started in 1795 when Manuel Alves de Brito found the anthracite coal diggings in Ervedosa. In fact it was Alves de Brito who firstly discovered the mining potencial of this place and who has got the local authorities licences to start exploring the biggest coal mine of the country (it distanced from Gondomar to Pejão).

According to Carlos Ribeiro and his 1858 writtings "Memórias sobre as Minas de Carvão dos Distritos do Porto e Coimbra", Lisbon, Manuel Alves de Brito discovered in a priest property (Manuel Dias) two coal deposits in Ervedosa and it began to work under a Government licence (Ribeiro, 1858: 189). The Portuguese Government was informed about the local economic potential concerning its coal profusion and forecasting the profits that he could gain, he terminated the licence from Manuel Alves de Brito and delivered the management of this place to an unknown priest and to José Jacinto, who was the administrative treasurer.

In 1804, the Government appointed as director José Bonifácio de Andrade e Silva, a proeminent Brazilian metallurgist. At this time, the extracted coal was sold directly to the merchants, called "carreiros" and it was transported to Porto. This process was irregular and unstable in matter of the prices. Back then, Andrade da Silva has ordered new studies in the carboniferous area and has expanded the exploration from Ervedosa to S. Pedro church, which resulted in two new diggings. He has also hired two German mining masters, Johann Heinrich Reese and Wilhelm Feldner (officer from the Portuguese Army for Royal Engineers Corps and that had emigrated to Brasil in 1808 due to the French Invasions). After the Peninsular War, Reese expanded the digging to Devezza, Alto and Lameira (Ribeiro, 1858: 190).

The Portuguese Government has firstly thought in these mines to be used as military assets, bearing in mind the purpose of renew the national military industries. Its project, according to the royal charter, would be the establishment of a weapon factory in S. Pedro da Cova (Júnior, 1959: 18), using river resources like the river Sousa

and the coal mines, and to improve it to a vapour mechanization foundry. This factory was financed by the royal treasury and by the “Real Companhia das Vinhas do Alto Douro”. However, it was never built due to the first two French Invasions in Porto and afterwards due to the Portuguese involvement in the Peninsular War (Coelho, 2009).

In 18<sup>th</sup> of April 1807, the Prince sent a letter to the “Junta de Administração da Companhia Geral da Agricultura das Vinhas do Alto Douro”, that included the “Apontamentos para o estabelecimento da Fábrica de Espingardas”. Below, it is a citation made by Bernardo Gabriel Cardoso Júnior as result of the analysis of some documents from the Director of “Companhia Geral da Agricultura das Vinhas do Alto Douro”, Pedro Inácio Alves Ribeiro (Júnior, 1959: 20).

*O Sítio, que se deve escolher, deverá ser saudável, e que tenha agoa bastante, para fazer mover em todas as Estaçoens do anno as Machinas de brocar e as de forjar as laminas para os canos de espingarda; reunindo também as condições de ser junto de algum porto, ou rio navegável, para se diminuir a despeza dos transportes; e alem disso deverá preferirse aquelle aonde o carvão de madeira for mais barato, e em que não puder com facilidade extinguir a madeira de que elle deve ser feito, para o que deverão tomar medidas a respeito dos cortes.*

*Da combinação de todas estas circunstâncias com as de ter carvão de pedra, e ferro por meio de transporte de agoa resultará a boa escolha da fábrica.*

*Os fabricantes deverão estar reunidos em huma povoação junto das machinas de furar os canos, e forjar as laminas, e para cada um delles se deve construir uma casa, em que trabalhem e vivão: esta casa deverá ser térrea, na primeira de fora se fará uma forja, e em duas de dentro terão a sua família com uma pequena agoa furtada em que durmão. Para o estabelecimento das machinas de furar os canos, e para as de forjar as laminas se estabelecerão barracoens.*

*Devendo entender-se que se deverá fugir o quanto possível da construção edificios dispendiosos, e que tanto para as cazas como para os outros estabelecimentos bastará*

*fazer uso de madeiras ou tabiques, e enfim procurar que o estabelecimento não seja dispendioso em pedra e cal.*

*A reunião dos fabricantes em huma só povoação, e pequena, convem muito, para que entre elles possa haver imolação para a facilidade dos seus trabalhos, e para poderem ser melhor vigiados.*

*Como o preço de mão de obra depende muito do proço dos comestíveis, deverá a Companhia fazer os arranjos convenientes para que os fabricantes os tenham sempre a preços constantes, o que he fácil fazendo as compras por junto no tempo das novidades, e vendendo-os todo o anno pello mesmo preço aos empregados da fábrica, e mandando vir também por junto aquelles géneros, que não são nacionaes.*

*Ainda que pareça, esta disposição obriga a Companhia a algum empate, os lucros, que elle tirará da venda das espingardas havidas a um preço constante, servirá para a indemnizar e a fábrica prosperará concerteza, que os Artífices terão um ganho constante.*

*A Companhia deverá comprar todo o ferro e carvão de pedra, e de madeira, latão, aço, utensílios, etc, e os venderá sem lucro aos fabricantes, descontando-lhes depois o preço no valor das obras, que elles fizeram, e que deverão ser por empreitada unicamente.*

*O preço das empreitadas deverá regular se pello preço dos géneros primos e pellos dos víveres, para o que deve ter presente os preços que se pagão em outras fábricas da Europa, e dos géneros primos nellas, e os dos víveres, de que se darão notas à Companhia, que depois os proporá aos Mestres, para fazerem as modificações que forem necessárias, fugindo o quanto possível de falar sobre este artigo com os mestres portuguezes, que não tem alguma do modo de trabalhar com as machinas, e por isso os preços que proporão, serão dois terços maiores do que convem.*

*A Companhia deverá empregar géneros de primeira qualidade, por exemplo o ferro deverá caldear bem, nem ser rijo, nem podre, o latão deve ser o que na Alemanha se chama em Arco, o aço deve ser de diferentes qualidades conforme as obras.*

*Sobre estes artigos se darão instrucções.*

*As armas fabricadas para ouzo do Exército deverão ser conforme os modellos que se devem dar do Arsenal, Calcular se há o preço, porque Sua Alteza as deve pagar, o qual será resultado da combinação dos géneros primos fornecidos pella Companhia dos Artistas, e do ganho destes pella sua mão de obra, a que se deve accrescentar o lucro sufficiente pello empate do dinheiro empregado nos géneros e obras e na admnistração.*

*Será livre à Companhia fabricar Armas de Caça, ou para negocio, depois de completar o número, que em cada anno deve fornecer ao Arsenal, o qual deve ser deverá ser arbitrado depois do primeiro anno, que a Fabrica trabalhar.*

*Na direcção da Fábrica deve haver hum inspector, e hum Subinspector e hum guarda armazéns, que será também guardalivros, todos à escolha da Companhia que os deve pagar. Haverá também dois approvadores das obras por conta da Companhia e dois officiaes de artilharia por conta do Estado, que todos farão a prova dos canos na forma, que se uza em outras partes, e os officiaes de artilharia assistirão sempre a ellas, e aprovarão ou regeitarão os que devem servir para o Exercito, assim como as Espingardas, que devem entrar no Arsenal.*

*Todas as outras peças devem igualmente ser aprovadas pelos approvadores e só pagas as que merecem approvação.*

*Os officiaes de Artilharia Approvadores serão nomeados pelo Estado.*

*Haverá na Fábrica huma Companhia de Veteranos, para conservar a boa ordem, e será paga pello Estado.*

*As Machinas, que agora forem precisas far se hão Arsenal.*

*O Estado assegurará a consignação para o pagamento das Armas, que receber.*

*Em 18 de Abril de 1807*

With the 1<sup>st</sup> French Invasion and its national consequences, this project was abandoned definitively and the site was only used as a mining complex (Coelho, 2010).

After the Peninsular War and in the beginning of the Liberalism period, the Government, by the Charter of the 4<sup>th</sup> of July 1825, rent the mines of S. Pedro da Cova initially to a company from Lisbon, for 20 years, by 10000\$000 reis, each year, and afterwards to others investors (Ribeiro, 1858: 191).

The “Gazeta de Lisboa” described the content of this charter, which consisted in eleven articles concerning the concession of the mine to four partners: João António de Almeida, business man in Lisbon, Luís António Rebelo da Silva, also from Lisbon, António Joaquim Freira Marreco and Henrique José da Silva, business man from London. From all these articles, it should be emphasised the number five which obliged the Portuguese government to introduce new mining processes, machinery and instruments, already in use in France and England. Also it had freedom to hire directors, engineers, and foreign masters to manage the mines and also to instruct the workers and miners in the new mining systems already used in Europe. With this system, it was supposed that machines and all mining equipments should belong to the Crown for 20 years (Anonymous.1825: 714).

Scientific papers published later on (“Museu Portuense”, 1839) proved that these strategies didn’t introduce any innovation on the mining management and justified it with the politics, social and military disturbances which will end on the Peninsular War and Civil War of 1832-1834. This is visible in its descriptions about the mining work being done by using the human and animal force instead of using modern machinery and mining exploration techniques, both the law (article nº 5 of the Charter from the 4<sup>th</sup> of July 1825) wasn’t respected.

A company from Lisbon continued the mine exploration and delivered its direction to a mining master, Ferreira. Between 1826 and 1827, this British engineer intended to expand the diggings exploration, but for unknown reasons and due to his licence request to stay in London, he never arrived to S. Pedro da Cova. Therefore, its substitute was a Portuguese mining master, António dos Santos.

In 1830, the “Rebelo” digging was opened and it kept extracting coal till 1835. In the same year, another digging opened, “Silva” (140 metres of depth) and in 1837 opened the “Lodi” (30 metres) and the “Bombarra” (150 metres) (Ribeiro, 1858: 193).



In 1845, opened the “Farrobo” digging (the Count Farrobo was a notable entrepreneur from Lisbon and in 1861 become the principle partner of the mines of S. Pedro da Cova), which was directed by the engineer José Pezarat. The same engineer opened other diggings such as the “Taibner”, the “Condessa”, the “Debaixo das Casas”, the “Campo”, the “Costa” and the “Tulha”. According to Carlos Ribeiro and to the “Museu Portuense” 1839, the coal explorations in these mines were improperly managed by several mining masters and engineers, which resulted in several diggings to be closed. It also refers the negligence to build effective support mining structures, such as triage sewers connected with the river Murta, an affluent of the river Ferreira (Ribeiro, 1858: 194).

In 1847, the “Companhia de Lisboa” hired a French engineer, Casimir Pierre, to manage the extraction of several diggings and to try to stabilize its production. However, in the same year, one of the competitors, Jerónimo Ferreira Pinto Basto, moved a judicial action against the “Companhia de Lisboa”, which lead to the end of all extraction work. Thus, it was necessary to return to the old diggings in Ervedosa.

Afterwards, and in the end of this judicial process, another french engineer, Eugéne Schmitz, was hired and he has boosted the coal exploration from 1850, a time of political peace in Portugal. However, Carlos Ribeiro wrote in 1858 that until that time the mines were poorly managed and a target for the ignorance and eagerness of others parties (Ribeiro, 1858: 199).

According to Joel Cleto and Suzana Faro (Cleto and Faro, 2000: 20), during the Government administration, 68000 tones of coal would be extracted from the mines. Between 1825 and 1849, and despite the civil wars, the production increased to 115000 tones and in 1880 it achieved 147000 tones. This increase was due to the industrial and technological investment made by the minister Fontes Pereira de Melo. In 1887, the diggings and galleries achieved 140 metres in depth and 320 metres large.

In Portugal, during the XIX century, the coal was used mainly in domestic work. Due to the national industrial delay, the carboniferous extraction would only be used in emergent factories. Only in the second half of the XX century, Portuguese factories began to use coal as fuel to their machines. The mines were so productive that they provided fourteen anthracite diggings, which represented three quarters of the national coal production (Cleto and Faria, 2000: 21). The studies from these authors are an example of this production expansion in the mines of S. Pedro da Cova. For instance, in 1900, the annual production was settled in 7500 tones and in 1920 the number of tones increased to 100000. (Cleto and Faria, 2000: 21).

In the beginning of the World War One (1914), a cable car was built to transport the coal in small suspended wagons. This equipment had nine kilometres of extension, from S. Pedro da Cova to Rio Tinto and to Monte Aventino, Antas (the highest area of the city of Porto). The “zorras” were also used to transport coal. They were like electrical cars, running over tracks designed to transport goods, and they had a open central box between the driver front and back booth.

After the war (1921), the digging from S. Vicente was expanded, achieving 157 metres of depth and it was built a tower/“cavelete” (Clero e Faro, 2000: 21). This structure, with 13 floors of high (approximately 38 metres) was built in concrete, between 1934 and 1935, in a modernist style, with German influence demonstrated in the rationality and in its longevity.

The “cavelete” is based on four enormous pillars, in a trapezium shape, and on four porticos articulated between the several floors and access stairs. In the top, there were sheaves, known as “andorinhas”, which sustained the steel cables used by the extraction machinery. This tower became one of the most important symbol from the mines of S. Pedro da Cova and it was recently classified as historical monument, as stated below:

*A classificação do cavelete de extracção de carvão e instalações do poço de São Vicente da Mina de São Pedro da Cova justifica-se pelo valor histórico, técnico-construtivo e*

*social. O cavalete e toda a paisagem do antigo couto constituem hoje o principal suporte de memória da importante actividade mineira que se desenvolveu desde o início do século XIX em São Pedro da Cova. As instalações do antigo couto mineiro evocam o mundo duro do trabalho nas minas e são por isso um verdadeiro monumento ao trabalho. Releva-se o impacte cenográfico, a raridade e a exemplaridade do cavalete em betão armado, construído em 1934 com 38 m de altura, exemplar notável de construção industrial que atesta a elevada qualidade e capacidade de concretização da engenharia nacional. (Diário da República, 2ª série, nº55, 19 de Março de 2010 – portaria nº221/2010)*

It is worth mentioning that during the II World War, these mines would achieved a production of 330000 tones, which reflected the strong search for fuel in a period in which Portugal was trying to be neutral. Although Portugal was a peripheral country and it had a limited technological area, he was forced to develop his industry and thus the energy demands.

From 1950, the Portuguese Government implemented a new plan to increase the industrial investment, namely in petroleum and in hydroelectric energy production (achieved by building dams). This new energetic tendencies made the coal use obsolete and like this the production downsized first in 1960 to 216 thousand of tones and ten years later to 0 tones and the mine was finally closed.

### ***Mining memories and livings***

The human aspects concerning the working and leaving traditions translated the hard conditions in which the workers had to deal daily.

In fact the risk at work, the precocious mortality, the hungry and misery, the political system, made the mining livings something else then human.

According to Joel Cleto and Suzana Faro (2000: 22) studies these mines employed, in 1932, 1029 miners, 138 auxiliary boys, 218 women (who were responsible for the selection, the cleaning and the transport to the distribution points of the coal) and 77 girls (this just helped on the treatment of the coal), besides 182 technicians and engineers. The work was done with the help of animals (2 bulls) and 2 moos besides the motor park.

The hygienic and security conditions were reduced and nobody could protest against them. The dead by accident were frequent, as the wounds were so dangerous that the miner could not work anymore dying for not having a social help for him and his family.

In summary this was the risky and difficult conditions that men and women had to face daily. Besides this there was the constant surveillance of the public security police (Polícia de Segurança Pública), the National Guard (Guarda Nacional Republicana) and the government political police (Polícia Internacional de Defesa do Estado - PIDE), to avoid and repress any kind of struggle or strikes. This happened in 1923 when there was a strike against the 16 hours working days and again in 1946 in a direct challenge to the dictatorial system (Cleto e Faro, 2000: 21). These struggles show the capacity to mobilize the mining community and the first steps of the Portuguese Communist Party closed to the working classes of the society.

The heritage and the memories of the fighting time are partially conserved in the Mining Museum of S. Pedro da Cova, which is located on the *Casa da Malta*, the 1940's modernist style architecture building where the outside miners lived and recently was a day-care centre for ageing people.

In this museum it is possible to find assets such as: the sleeping room of the miners, photos, documents, geological materials and machinery used on the mining work. Outside the house it's possible to find the *zorra*, the electrical car used on the transport of the coal from S. Pedro da Cova to Porto and the *andorinhas*, the cables that were located on the Poço de S. Vicente to transport the coal from the mine.

## METHODOLOGIES AND PROPOSALS FOR THE MINING MEMORY REVALUE

### *Peer review Methodologies*

Considering the prolificness of the abandoned and degraded mining areas, the interest to rehabilitate this heritage has increased towards the touristic opportunity to promote the local development.

These initiatives, which intend to recreate this industrial heritage, look for the social and economic revitalization of those areas that were so important in the past and that are so depressed in the present.

According to Alvarez et al. (2010: 172), “the possibility of giving a continuing value to an abandoned historic mine is not only of academic interest but can be a crucial economic and heritage issue for regions with long mining traditions but which are now severely affected by mine closures”.

The same authors defend that “a closed mine is not a dead entity”. In other words, it is a “simply transition to another useful state”.

In this peer-review paper, these authors (Alvarez et al. (2010:172-179) provide clues for a correct study methodology, preservation and development of this kind of heritage, searching for new realities lived in the underground. They emphasize also the differences between the underground and the above ground living.

In this context, the recreation of degraded and abandoned mining areas represents the best solution and tourism can be considered as one activity to achieve new socio-economic dynamics. A contribution to recover this heritage could be also the tourist

use of mining facilities and equipments and the mobilization of the collective memories and the local entity.

Considering the above mentioned, this paper intends to propose several solutions to the revaluation of the mining complex of S. Pedro da Cova. In other words, and bearing in mind the empirical evidence gathered through interviews made to local habitants and teachers and also through suggestions made by old habitants and the City Hall, it is intended to alert to this situation and to analyse future perspectives to improve this kind of heritage, such as touristic activities and cultural tourism. This analysis reveals to be much more relevant if considering, at first place, the disarticulation between the actual measures to re-establish the mining life and, on the second place, the scientific measures studied to be the best to recover the industrial mining heritage.

According to Valente et Figueiredo (2008: 4), “the opportunities to develop a touristic product associated to mining activities will be better if the impact of a mining closure in local populations is integrated in the management and exploration process, by preparing a transition economic plan”.

Gómez et Martínez (2006) refer that the remnant heritage, which includes geological, mining and cultural aspects, should be maintained and valued, together with the local development, especially in reference to material and immaterial heritage.

This evidence on cultural tourism opportunities does not make any sense if on the local population side does not exist the recognition of the value of the mining “heritage” as part of its identity and collective heritage. In effect, this is a determinant factor for the success of such touristic strategies and initiatives.

In this way, the identity and the community are crucial factors in the process of mining tourism development and its comprehension. If by one side, the scientific community speaks about the mining heritage as a strategic factor and symbol when building the

community sense, also the projects and proposals of touristic revitalization projects should reproduce a local consuming relationship with the mining heritage.

Moreover, it is expected that the success of those initiatives should be articulated withal local and regional resources, such as landscape, traditional activities (for instance, agriculture, handicraft), among others.

The Portuguese Government assumed the responsibility to define and implement a programme oriented to the environment rehabilitation concerning the degraded mining areas. This project is entitled “Projecto de Avaliação de Riscos Ambientais para Reabilitação de Minas Abandonadas” and was carried by the “Instituto Geológico e Mineiro” (IGM) and it corresponded to a study to characterize the current mining environment situation (Oliveira et al., 2002).

From this study, it is possible to evidence the following national mining complexes:

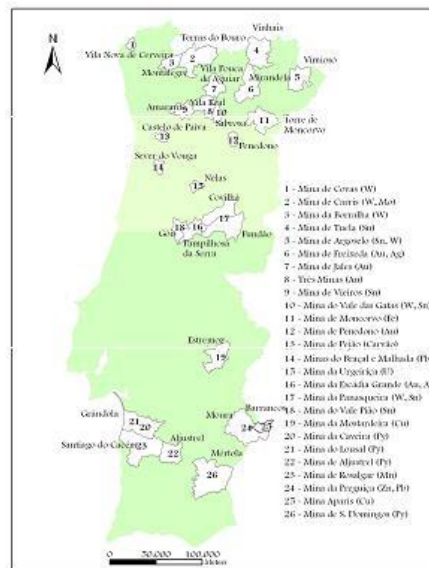


Figure 1 – Portuguese Mines with important locations of geological and mining heritage.

Source: Matos *et al.*, 2002

To better understand this aspect and according to Alvarez et al. (2010: 172), currently it is given more importance to life outside the mines, since inside there are hazardous materials that can harm the public health. However, this type of heritage identified in the underground, “when integrated with that part of the patrimony already known, constitutes a much better interpretable unit, with increased added value and, much more likely to attract political and administrative interest” (Alvarez e al., 2010: 173).

The connection between these two realities allows, therefore, “to fill the spatial and conceptual gap existing between the different elements and buildings present above ground, by integrating them through underground discoveries” (Alvarez e al., 2010: 177). Such phenomenon adds great value to the heritage interpretation of the mining complex, compared to the value due to the spatially isolated buildings.

The same authors prove their statement by comparing common thoughts defended by the scientific community concerning the mines as industrial heritage. At the same time, they reported to local politic and cultural authorities their discoveries.

Such ideas result from the observation made in the differences between the underground and the above ground works. The phenomenon makes them verify the simultaneous existence of a surface and an underground heritage, with different characteristics, which will lead them to state the existence of a “wide heritage entity” instead of two sub typologies of the same patrimony.

Regarding this, these authors propose the “Geographical Information System (GIS)” model as the best solution to improve the management and edition of the gathered information, using the analysis and document classification to research and rebuild the mines life memories. In the Portuguese reality, the same system has been approved by the Government, known as *Sistema de Informação Geográfica (SIG)*.

Alvarez et al. (2010) also suggest examples to reorganize these degraded heritage industrial sites, giving as model what has been done in the Spanish prehistoric caves.



They even improve and try not to distress the scientific community with their polemic ideas, which include the subsidence of some spaces of the mining complex and the groundwater modification, always emphasizing that these should be done in the name of the heritage conservation and protection.

They even proved their ideas using the mines of Lluernes as case study and the discoveries made there, namely they found a secondary gallery where was a double direction railway, for the transport of the coal wagons.

In other words, after the transition step in the mining complex, should be rebuild another organization with “a new look and vital signs different from the initials”. This new organism should, however, kept present the high value of this patrimony and should safeguard that this new strategy initially planned (and afterwards implemented) has as final aim the preservation, and at the same time, the enrichment of the local cultural level.

### ***Revaluation Proposal***

As the above mentioned authors, is our perception that the industrial heritage study, on its degraded mining variable, can, in summary, constitute a source of educative service. Moreover, it is defended that the same must instigate the locals’ involvement or those that directly or indirectly, had participated or inherited those memories.

Among the cultural elements offered by the mine, which should state at the educative services, it should be underlined the “aesthetics and informative contents”, such as “the machinery, the means of transport and timbering (support) methods, the mining geometry, the economic extraction of mineral, the local geology and the geological epistemology and a documentary record about the technological development in mining extraction techniques (Alvarez e al. (2010:174).

The implementation of these educative services involves a previous research work, the existence of resources and available time to, in one side, map the underground structures, and on the other side, to proceed with geophysical and topographic researches for better understand the presence and the interpretation of the underground characteristics.

Explained the hypothesis, listen the interested parts and confronted the most recent peer reviews, this paper suggests the following cultural tourism products and services as proposals to the S. Pedro da Cova mining complex safeguard:

First of all, it could be done something like Valente (Valente, 2008: 122) wrote for the Panasqueira mines. In other words, it could be developed a partial path on the revival underground galleries both it could be organized visits to the current surface facilities or, in alternative, could be organized a multimedia virtual path, connected with to the above ground structures.

Secondly, it could be promoted the participation in European projects measures specialized in recovering old mines, such as “Europamines” or “Euromines (European Association of Mining Industries). This kind of projects involve specialists on mining heritage and have been implemented in countries such as England, France, Spain, Portugal or Poland for touristic purpose, either as thematic parks or through other didactic and interpretative structures. Besides the use of all the knowledge and experience achieved, the team network of “Europamines” gives good perspectives to achieve more Europeans funds, since it integrates different countries in cooperation.

Thirdly, and attending that the parish of S. Pedro da Cova gave the first step and created what they call the Mining Museum (“Museu Mineiro”), a further step towards the creation of a complementary structure to preserve the reminiscent of the main facilities and equipments of the mine was done. However, its characteristics makes us classify it more as a museum nucleus, since it only integrates a collection of documents and objects used on the mining work. Like this, it is now necessary to go further and restructure this nucleus into a real museum, both to integrated the “Cavalete de S. Vicente”

As follows, the local autarchy power, headed by the “Centro Democrático Unitário (CDU)”, has already a proposal of bill to create a modern and dynamic museum as indicated on its 3<sup>rd</sup> and 9<sup>th</sup> articles.

*a) Promover a recolha de máquinas, equipamentos, instrumentos, ferramentas, bem como todos os materiais, incluindo os documentais, relacionados com a indústria mineira em São Pedro da Cova.*

*b) Proteger, estudar e divulgar as características do ambiente físico e social onde os operários e as suas famílias trabalhavam e viviam.*

*c) Promover a recolha audiovisual, arquivística e museológica de testemunhos materiais e outros das reminiscências culturais ainda sobreviventes, dos processos, motivações, formas de mentalidade e comportamentos traduzidos em usos, costumes e tradições da comunidade mineira.*

*d) Proteger, estudar e divulgar todo o acervo recolhido.*

*e) Contribuir para implementar o interesse do público pelos aspectos históricos que representam a herança cultural da indústria mineira em São Pedro da Cova.*

*f) Promover, designadamente através de exposições, colóquios, seminários, publicações, visitas guiadas e conferências o conhecimento acerca das formas culturais promovidas pela industrialização e o desenvolvimento tecnológico, bem como do carácter social das épocas a que as mesmas estão vinculadas.*

*g) Prosseguir todas as atribuições nas áreas da museografia, da investigação e da acção cultural nos termos da legislação em vigor.*

Artigo 9º, nº1,

*1 - Constituem património do Museu:*

*a) Os edifícios, construções, maquinaria, ferramentas, outros objectos e documentos que sejam adquiridos pelo Estado com essa afectação ou que sejam adquiridos pelo Museu através de verbas próprias.*

*b) Os materiais de qualquer tipo que resultem da sua actividade.*

*c) Os materiais de qualquer tipo que adquira por herança ou doação.*

*2 - O Museu poderá aceitar em depósito materiais e colecções que caibam dentro das suas atribuições.*

([http://www.pcp.pt/joomla/index.php?option=com\\_content&task=view&id=34280&Itemid=552](http://www.pcp.pt/joomla/index.php?option=com_content&task=view&id=34280&Itemid=552), consulted 5.12.10)

## **CONCLUSIONS**

The mining industrial heritage is something that is on the agenda of several European countries with a huge tradition during the XX century. In the last years, several papers and peer reviews have been written about those subjects.

This paper intended to collect that information, to alert for the unknown situation of the S. Pedro da Cova mines and to discuss with the interested partners ideas in order not to loose this heritage, so important for the locals who are still alive and also wish to share their experience with young and future generations.

Recently, a group of citizens from S. Pedro da Cova, mainly teachers, have been pressuring the city hall, through a civic protest, to preserve and reevaluate the “Caveleto de S. Vicente”. An example of this civic awareness is the existence of a link in the City Hall website, where locals can leave their testimony and proposals towards the preservation of this industrial heritage.

In summary, the study developed on the previous chapters consisted on an intention to propose the discussion of the problem. As conclusion, it is now suggested some alternatives, concerning cultural tourism activities, to keep this heritage alive.

The first alternative is the creation of an intercity mining network, between Valongo and Gondomar, where the Heritage and History of the mines would be valued, through the planning and implementation of touristic and educative itineraries, connected with interpretation centres, museums, industrial structures and environment places. For this, it is now proposed three different itineraries:

### **Itinerary 1 – Industrial and Mining Heritage**

In this itinerary, it could be developed guided tours, both pedestrians, with bicycle or motor vehicles in the path between the Roman mines of Valongo (“Fojo das Pombas”), the mining complex of “S. Pedro da Cova”, the foundry in “Crestuma” and the dam in “Lever”.

### **Itinerary 2 – Geology and Environment**

Although there’s no direct connection with the mining realities, this itinerary would undertake the questions concerning geological aspects, such as the roman period coal and old gold lodes. And it could include both pedestrian and/or motor vehicles in the path between the Paleozoic Park in Valongo, the carboniferous areas of Valongo, Gondomar and the “Vale do Couce” (a geologic and natural heritage site).

### **Itinerary 3 – Guided tours / Educative services**

In this alternative, it could be created two interpretative centres: one in the “Casa da Malta – Vivências Mineiras”, and other one gathering the “Cavalete de S. Vicente”, the machinery building, the “Lavaria” building, the administrative office and the locker-room and bath house. These interpretative centres would make an approach to mining life memories and extraction experiences. Also could be a prospective alternative to the existing mining museum of “Casa da Malta”.

Cumulatively, and attending that this industrial heritage is strongly bonded to natural heritage, it could be developed some guided tours both touristic and educative. Likewise, it could be organized, with experts, several international and national congresses, conferences and thematic seminars.

Another hypothesis could be also to promote scientific papers and journal publications, like the present one for instance.

Finally, and attending the existence of several old buildings, namely the mines' administrative offices, these could be restored and transformed with the purpose to use these buildings as thematic habitation tourism.

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## Images



**S. Pedro da Cova coal miner**

Image: Clarinda Santos



**S. Pedro da Cova colliery tower**

Image: Clarinda Santos



**S. Pedro da Cova colliery tower (nowadays)**

Image: Clarinda Santos



**S. Pedro da Cova washplant (nowadays)**

Image: Clarinda Santos