Resource Efficient Use of Mixed Wastes

Case study: The development of a recovery system of C&D inert waste in Buzău County, Romania

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The installation of a mechanical treatment plant for C&D inert waste, Vernești, Buzău

Context
The lack of infrastructure to store, treat and recycle C&D waste remains one of the biggest obstacles to sustainable C&D waste management in Romania. There are currently countless practices of improper C&D waste management, the majority consisting of uncontrolled landfilling in and outside the cities. The improper waste management, the lack of infrastructure coupled with an abundance of natural mineral aggregates lead to very poor conditions for recycled materials.

Only two recovery systems of C&D waste were identified in Romania. The most recent one is the installation of a mechanical treatment plant for C&D inert waste developed in the framework of the European project LIFE10ENV/RO/000727 “Recovery of Construction and Demolition Waste in Buzău County” (VAL-C&DW project) which ran between September 2011 and June 2014.

The project was implemented by the Buzău County Council in partnership with SC Natura Management SRL.

Objectives
- Contribute to the proper management of C&D waste;
- Contribute to the EU recovery target of 70% of all C&D waste by 2020;
- Create new green jobs;
- Reduce and ultimately eliminate illegal dumping of C&D waste within the administrative territory of Buzău county.

Key results
- A recovery system for inert C&D waste at the level of Buzău County was developed via the installation of a mechanical treatment plant for inert C&D waste, namely concrete, bricks, tiles and ceramics;
- The quantity of illegally dumped C&D waste in Buzău County has decreased thanks to a dedicated one year collection campaign (1997 tonnes collected on an average area of 35km²)
- 1700 tonnes of C&D waste were recovered between May 2015 and April 2016;
- Net environmental benefits of using recycled aggregates versus the use of natural aggregates were assessed through a Life Cycle Assessment study;
- The recycled aggregates market was developed;
- Four new jobs were created since May 2015.
### Description

- One of the key targets pursued in the LIFE project was to create the necessary conditions, momentum and awareness in order to achieve by 2020 the target of 70% recovery of C&D waste.
- The development of a mechanical treatment plant for inert C&D waste was one of the objectives of the LIFE project. This included also the development of a market for the materials resulting from treatment, as well as of a comparative study – Life Cycle Assessment - focussed on the use of recycled aggregates versus natural aggregates.
- A team of experts with broad specialisation in waste management, waste processing and recycling, construction, IT and communication from both Buzău County Council and Natura Management SRL was allocated to the project.
- The total cost of the investment was evaluated at €413 704. These costs only cover the necessary equipment and infrastructure for the setup of a C&D mechanical treatment plant site. The resources came from public, private and EU funds.

### Key factors of success and potential for replicability

- Successful collaboration between the involved parties: Buzău County Council, Natura Management and Domenii Prest Serv;
- Sufficient financing (public, private and EU funds);
- Good project management and administrative capacity, including qualified technical expertise;
- Good cooperation with institutions that influence, directly or indirectly, the waste sector (i.e. Ministry of Environment, Local Environmental Agency, National Environmental Guard, Local Public Authorities etc.);
- Competitive price of the recycled aggregate.

### Conclusion

The initiative has been and still is very successful with improving C&D waste management in Buzău and with developing recovery infrastructure in Romania. It can be argued that this was a key initiative that creates the premises for achieving by 2020 the target of 70% recovery of C&D waste.

The findings of the Life Cycle Assessment of the use of recycled aggregates versus natural aggregates, as well as those from the diagnosis phase, are relevant for all counties in Romania and can contribute effectively to designing the necessary network of C&D inert waste processing infrastructure.

There is huge potential to use this initiative as best practice example in order to encourage other counties in Romania to replicate the use of C&D waste recovery technology.

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### Useful link

1. Introduction

The present case study analyses the development of a recovery system for C&D waste at the level of Buzău county via the installation of a mechanical treatment plant for inert C&D waste (respectively class 17 01 of waste as defined in European List of Waste\(^1\), namely concrete, bricks, tiles and ceramics) through which local crushing and sorting of inert C&D waste is carried out, followed by its recovery. The mechanical treatment plant was materialized through the European project LIFE10ENV/RO/000727 “Recovery of Construction and Demolition Waste in Buzău County”, which ran between September 2011 and June 2014. The project was financed by LIFE+ Programme of the European Commission and implemented by the Buzău County Council in partnership with SC Natura Management SRL. This is only the 2nd mechanical treatment plant for C&D waste installed in Romania. The first one was purchased in Medias in 2011 in the framework of the “Partnership for a clean environment, waste reduction and sustainable development in Central Region 7” project financed by Innovation Norway\(^2\).

1.1. Context of the initiative

1.1.1. The geographical scope of the case study

The geographical scope of the case study covers the administrative area of Buzău County.

![Figure 1: The map of Buzău County](http://hartiromania.celendo.ro/)

No table of figures entries found. Figure 1: The map of Buzău County


The Buzău County is situated in the South-East of Romania, between the Buzău river valley that forms its northern bounds, the foothills of the Carpathian Mountains’ curvature and the Danube Plain, being one of the oldest administrative territory in the country. It covers a total area of 6102.6 km\(^2\) with a population of 432 054 in 2011. From an administrative perspective, the Buzău County is composed of 87 units out of which 82 are located in the rural area. The city of Buzău is the administrative capital of the County.

Geographically, the Buzău County has a very rich hydrologic network, the Buzău River being its main source. The county is thus rich in mineral aggregates such as sand, stones, with numerous exploitation sites. Buzău is also rich in petrol, natural gas and limestones.

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\(^1\) [http://ec.europa.eu/environment/waste/framework/list.htm](http://ec.europa.eu/environment/waste/framework/list.htm)

\(^2\) [http://www.gestiunedeseuri.ro/](http://www.gestiunedeseuri.ro/)
The main economic activity in the county is represented by industry, followed by agriculture, trade and services. Most of the economic activities established since 1990’s are still undergoing. Moreover, new sectors have been developing in the area, including the waste recycling sector.

The mechanical treatment plant of C&D inert waste was built in the Vernești commune, 10 km north-west of Buzău.

1.1.2. C&D waste management in Buzău

Currently, in Romania, potential resources arising from construction and demolition waste which could be processed in specific recycling facilities are sent to landfill or most often are illegally dumped. As a member state of the European Union, Romania must achieve the stated objectives of waste management policies, including those from construction and demolition. In particular, Directive 2008/98/CE on waste urges Member States to move towards a European society based on recycling, using resources efficiently. According to the Directive, at least 70% of non-hazardous waste arising from C&D waste (excluding earth and stones) will have to be prepared for reuse, recycling or other material recovery operations, by 2020.

Within the framework of the LIFE10ENV/RO/000727 project, a diagnosis regarding C&D waste management was made at the Buzău county level\(^2\). The preliminary findings were based on discussions and interviews with all local authorities in the county, waste operators, companies generating C&D waste in the county and local and regional environmental authorities. The analysis focused on C&D waste and especially on its mineral fraction, that has the highest potential to be harnessed and thus to achieve by 2020 a degree of preparation for reuse, recycling and other recovery operations of 70%. The analysis was limited by the lack of accurate information, especially regarding the quantitative data on C&D waste (i.e. generated, collected and recovered quantities). No unitary methodology was used to estimate quantities of waste resulting from construction and demolition sites.

The diagnosis at county level identified in 2012 only one economic operator\(^4\) providing treatment and recovery services for C&D inert waste. However, despite the high generated quantities of C&D waste at the county level, the treatment plant was not used at its fullest capacity. The main reason is that the plant introduced a processing fee which made it more expensive for C&D waste owners to send the waste to the treatment plant than to make use of other available elimination or recovery options. The Buzău County has only one authorised landfilling\(^5\) site for non-hazardous C&D waste in the rural area of Galbinasi.

The overall conclusions regarding C&D waste generation in Buzău County indicates a higher generated quantity than reported in the official statistics:

- In rural areas, almost the entire quantity of the C&D waste generated by households is recovered locally (e.g. the wood is used for heating, the aggregates for building infrastructure). The C&D waste generated by economic operators is very often used for backfilling or levelling, or is dumped illegally. The current practices indicate the massive use of the C&D waste in backfilling operations, that are generally carried out without authorisation or accounting.

- In urban areas, the household C&D waste ends up in the solid waste bins collected by the local waste management services. The C&D waste generated by economic operators is usually stored on private lands and used for backfilling/levelling activities or, in the absence of a solution, dumped. Cases of illegal storage on private lands at the outskirts of cities were identified. Wood, plastics and metals are very often recovered by informal recyclers.

- The local environmental agencies (APM\(^6\)) send a survey every year in order to collect waste management data. The data is centralised by the National Environmental Agency (ANPM\(^7\)), the only institution involved in data collection. Since the local public authorities (i.e. Town and City halls) are responsible for issuing permits for construction and demolition activities, it would be beneficial to involve them as well in the process of waste data collection. However, since the construction and installation or fitting activities were classified as activities without significant environmental impact, the economic operators in these fields are not subjected to the environmental permitting authorisation or to a tighter control from an environmental point of view, leading to distorted results when waste data

\(^2\) Vasile Musuroaea, Mihai-Lucian Toniuc, Cristian Agapie (2012), Diagnoza la nivel judetean privind gestionarea deseurilor din constructii si demolari, LIFE ENV/RO/000727 available at: http://life-dcd.ro/documente/?did=1

\(^4\) S.C RECICLING CD 2007 S.R.L.

\(^5\) S.C RECICLING CD 2007 S.R.L.

\(^6\) Agentia de Protectie a Mediului

\(^7\) Agentia Nationala de Protectie a Mediului

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are collected. The National authorities were warned about these barriers but no action has been taken so far.

The estimated quantity of C&D waste generated at county level in 2008 is of 266 kg/inhabitant/year in the urban area and of 27 kg/inhabitant/year in the rural area. The total estimated quantity of C&D waste generated in Buzău in 2008 is 136 073 t/year.

These quantities were reported by the regional environmental agency (APM), by municipalities, sanitation operators and economic operators included in the survey sample.

The diagnosis also identified quantities of C&D waste dumped illegally - the field exercise identified 1.977,5 tonnes of C&D waste that could be collected immediately; this quantity was collected at a later stage and sent to the treatment plant in order to be recovered. However, the estimated quantities of C&D waste that would be generated by the decommissioning/dismantling of degraded buildings, but that have an uncertain legal status that would require permitting of the intervention, were estimated to be much higher, respectively 73.706 tonnes.

It is important to point out that in most of the cases waste owners are not specialised in waste management and are very reluctant to pay for its collection and transport. The collection and transport fees imposed by the public waste management operators are non-negotiable, creating thus a monopoly. There is an urgent need to propose legislation clarifying roles of all actors involved in C&D waste management and to raise awareness on the necessity of recovering such waste. New infrastructure is also needed in order to minimise transport distances and thus to ensure lower costs associated with proper management of C&D waste as well as net positive environmental benefits (the transport component in the treatment chain for inert C&D waste was demonstrated in a Life Cycle Assessment study\(^8\) to have a huge environmental share from the total effort of recycling inert C&D waste).

### 1.2 Objectives

The overall objective of the LIFE10ENV/RO/000727 project was to develop a functional and effective C&D management system through:

- Detailed knowledge of the current situation regarding the generation, collection, recovery and disposal of C&D waste in Buzău county;
- Development of a coherent decision making system by clarifying the responsibilities of all actors involved in the C&D waste management in Buzău county;
- Development of a procedure for ceasing the waste status of the materials resulting from the treatment of inert C&D waste;
- Promotion of C&D waste recovery;
- Fulfilment of legal objectives regarding the recovery of C&D waste in Buzău County, including the recovery of this type of waste that is disposed illegally via the development of a treatment plant.

The objectives of the development of a recovery system for C&D inert waste in Buzău were to:

- Contribute to the proper management of certain types of C&D waste;
- Contribute to the EU recovery target of 70% of all C&D waste by 2020;
- Produce high value recycled aggregates;
- Create new jobs;
- Reduce and ultimately eliminate illegal dumping of C&D waste within the administrative territory of Buzău county.

\(^8\) Mihai-Lucian Toniuc, Vasile Musuroahea, Cristian Agapie, Ghiță Constantin, Analiza comparativa a ciclurilor de viață în cazul utilizării materiilor prime și a deseurilor C&D reciclate, LIFE ENV/RO/00727 available at: http://life-dcd.ro/documente/?did=11
1.3. Results

The LIFE10ENV/RO/000727 project obtained the following main results:

- Clear diagnostic and analysis regarding the management of construction and demolition waste at the county level (in Buzau) and at the national level;
- Life Cycle Assessment Study outlining the net environmental benefits of using recycled aggregates versus the use of natural aggregates;
- Methodology to clarify the End of Waste status of C&D waste;
- Elaboration of a best practice code for separate collection at source of construction and demolition waste.

The results of the development of the recovery plant were:

- A recovery system for inert C&D waste at the level of Buzău County was developed via the installation of a mechanical treatment plant for inert C&D waste, namely concrete, bricks, tiles and ceramics;
- Awareness raising around the benefits of C&D recycling increased thanks to dedicated workshops organised by the Buzau County Council in the framework of the LIFE project;
- The quantity of illegally dumped C&D waste in Buzău County has decreased thanks to a dedicated one year collection campaign (1997 tonnes collected on an average area of 35km²)\(^9\)
- The Vernesti treatment plant recovered and treated 800 tonnes of C&D waste between May-December 2015. Its total capacity of 200 tonnes per month was not fully used. In 2016, the Buzau Municipality signed an agreement with a local waste management company to recover all the collected C&D waste. 900 tonnes have already been treated by the plant between January and April.
- The recycled aggregates market was developed and four jobs were created as of May 2015.

\[^10\] LIFE10ENV/RO/000727 Final technical report available here: http://life-dcd.ro/raport-final/
2. Implementation of the initiative

In this section a practical approach on the implementation of the initiative is presented, showing the required resources and the exact planning implementation steps of the initiative as it evolved through time.

2.1. Planning of the initiative and actors involved

The installation of the mechanical treatment plant for C&D inert waste was one of the objectives of the LIFE project and was planned since its kick-off in 2011. Even though the expected outcome was to put the plant into operation by 30 June 2014, the plant was only inaugurated in January 2015 due to lengthy administrative procedures and unexpected barriers.

The C&D waste treatment plant pilot project was led by the representatives of the Buzău County Council together with experts from Natura Management SRL. The project management was assured by a Project Implementation Unit (PIU) consisting of 9 members (1 project manager, 1 project assistant, 1 technical expert, 1 communication, 2 accountants and 1 procurement expert from County Council and 1 technical expert and 1 communication expert from Natura Management SRL) and a Steering Committee (representatives of the management board from the both beneficiaries). External assistance was acquired for feasibility and opportunity studies, plant building and laboratory analyses.

The project team followed a three steps approach in order to develop the recovery system of C&D waste at the level of Buzău County:

These steps will be further developed in the following section (2.2).

2.2. Implementation of the initiative

2.2.1. Preparation phase

- Initial feasibility and opportunity studies

These studies allowed to:
- Give a quantitative dimension (i.e. quantities of waste to be processed);
- Decide between fix vs. mobile treatment plant;
- Choose of the best technical solution (type of crusher and sorting equipment; electric vs. diesel, etc.) based on various criteria (input and output material, technical and environmental criteria, etc.)
• Choosing a site location

Prior to the preparation phase, the experts from Natura Management SRL performed a comparative life cycle analysis (LCA) focussed on the use of recycled aggregates versus natural aggregates. The LCA results together with feasibility and opportunity studies indicated that a land situated in Vernești, a small commune located at the North-West outskirts of the Buzău city, would be the perfect location to install a C&D waste treatment plant. The chosen perimeter is owned by the Buzău County Council and was often used for illegal dumping of C&D waste. 30 km from the generation site to the processing plant is the optimal average transport distance for inert C&D waste, from an environmental point of view, as it was revealed by the Life Cycle Assessment study.

However what seemed to be the optimal choice of location from a geographical and administrative point of view (considering transport distances and proximity to Buzău City, the highest C&D waste generator; available land in property of Buzău County Council) proved to be challenging from another. The location of the plant was a very strategic and challenging stage as many of the areas in the Buzău County are protected sites. The perimeter where the treatment plant was installed in Vernești proved to be a Natura 2000 protected site, requiring thus extra environmental permits from national authorities.

• Designing the site and obtaining construction authorisations

The site of the treatment plant was designed by an architect together with the project team as illustrated in the annex. The design stage went in parallel with the procedures to obtain several construction permits such as gas, energy and water authorisations, environmental and urban planning permits. The two stages started beginning of 2012 and ended in February 2013.

2.2.2. Implementation phase

• Purchasing the equipment

The Buzău County Council project team organised an open call for tenders in order to purchase the necessary equipment and infrastructure for the setup of a C&D inert waste mechanical treatment plant site:

- Equipment needed for the construction of the site: fence, water basins, water and electricity infrastructure etc.
- Equipment needed for the treatment plant: storage containers, scales, etc.
- Mobile equipment: C&D inert waste crushe, sorting plant, excavator etc.
- Other equipment: toilets, office, IT programs etc.

The total cost of the investment was evaluated at €413 704. The Buzău County Council covered most of the costs (with a small contribution from Natura Management SRL) as under LIFE projects only the depreciation is an eligible equipment cost and the EU co-financing is calculated on the basis of this amount. The EU funds mainly covered the expert’s personal costs, the feasibility study and the clearing of the illegal C&D waste located on the site. It is to be noted that although in the art. 13 of the Law of Environmental Found (EGO 196/2005 approved by Law 105/2006 and last completed and modified in 2013) it is stipulated that though this fund will be assured for the Romanian beneficiaries the co-financing for the environmental projects, no financial support was offered throughout the pilot project. The motivation of the Ministry of Environment was the lack of the methodology requested to apply the legal provisions.

• Selecting a concessionaire

Based on the results of a feasibility study and an opportunity study, the Buzău County Council decided to delegate the operational responsibility of the C&D treatment plant to a private economic operator selected via a call for tenders. The selected operator, DOMENII PREST SERV SRL, pays a fixed sum or a percentage of its revenue to the Buzău County Council.

DOMENII PREST SERV SRL hired 4 people full-time to run the C&D waste mechanical treatment plant: one site manager in charge of monitoring the site activity and three field workers who run the plant and the other machines.

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2.2.3. Operational phase

Once the equipment was tested and the staff trained, the pilot mechanical plant was ready to run. The functioning of the plant is detailed below.

The inert C&D waste is delivered to the site either by private C&D waste owners or by the public operators. The recovery is done as close as possible to the generation site in order to minimize the consumption of resources. The site manager weighs the quantity of C&D waste on the scale illustrated in the picture and then ensures that the data is transmitted to a dedicated IT programme which registers the quantities entering and leaving the site. A visual inspection is performed in order to ensure that only targeted C&D waste is accepted on the site, respectively inert C&D waste (class 17 01).

The C&D inert waste is stored temporarily on the site. Before going into the crushing and sorting area, other waste that is not inert C&D waste is manually separated (e.g. plastic, wood, cardboard etc.) and thrown in dedicated bins.

The pre-selected C&D inert waste (mainly concrete, bricks and tiles) is transported with the excavator into the treatment plant which crushes it. The resulting secondary raw material is separated into piles of different calibres as shown in the image. The recycled aggregate is then weighted again before it leaves the site. Clients use it mainly for road filling and levelling. They have to ensure the transport from the site.

2.3. Factors of success

Providing an enabling framework via the LIFE10ENV/RO/000727 project

The installation of the pilot plant for mechanical treatment of C&D inert waste in Buzău has had very positive results. According to the project managers the quantity of C&D waste illegally dumped has considerably decreased in the area covered by the plant since January 2015 (although no data is available). The plant has generated 4 full-time jobs since May 2015 and contributes to the proper management of C&D waste on the territory.

A mix of factors contributed to the success of the initiative. Firstly, the pilot project was implemented in the framework of the LIFE10ENV/RO/000727 “Recovery of Construction and Demolition Waste in Buzău County” project, offering thus a solid structure and financing opportunities (although most of the costs were covered by the Buzău County Council). Secondly, the good project management ensured a smooth development and implementation. The collaboration between the Buzău County Council project team and the Natura Management SRL experts was very successful thanks to their expertise and management skills. This success was coupled with the great support offered by the Buzău County Council throughout the project.

Another factor which contributed to the success of the treatment plant is the price of the recycled aggregate which is equal to that of the natural aggregate. As mentioned previously, the Buzău area is very rich in mineral
aggregates such as sand, stones, with numerous exploitation sites. In order to develop a market for the secondary raw materials, the Buzău County Council sells the treated C&D waste at the same price as the natural aggregates.

**Overcoming barriers through collaboration and efficient project management**

Nevertheless the project also encountered several barriers throughout its three implementation phases developed above. The preparation phase, namely the site design and the construction permits lasted longer than expected (over a year). This was mainly due to a heavy administration and strict requirements from the energy operators. The environmental permits (Natura 2000) were also long to obtain as the location of treatment plant is situated inside of ROSCI0103 Lunca Buzăului, at the Western limit and an Appropriate Assessment Study was requested in order to be sure that the project will not affect the targeted species and natural habitats of community interest.

Obtaining financial support was also more difficult than the project team had foreseen as no EU support was given in order to purchase the equipment. The lack of interest of the Ministry of Environment and the Administration of Environmental Fund to support the environmental projects also contributed to this matter. Finally, other unexpected factors contributed to the delay of the project such as floods just before the final performance test.

**Ensuring long-term sustainability of the pilot**

Although the overall implementation of the pilot plant and its performance has been largely described as a success by the project team, the future of the plant depends mainly on whether the market for recycled aggregates will further develop in the area and whether the Buzău County Council will be able to compete with the prices of natural aggregates. Some other barriers, that are beyond the control of the Buzău County Council, are the low prices of landfilling of such waste and even the policy of allowing C&D waste for landfilling in cases where it would be very feasible and environmentally friendly to recycle the C&D waste in question.

Finally, the national and regional diagnosis show that using recycled C&D waste for new constructions is not very well perceived in Romania. According to the interviewed stakeholders, the lack of EoW criteria for recycled aggregate also hinders the secondary raw materials market. The future will also depend on whether the mentalities will change and on whether the EoW criteria will be adopted at either the national level or, even better, at EU level.

In the long term, the sustainability of the treatment plant could be ensured if:

- The market for recycled materials in the area is further developed with support from the Buzău County Council (who sets the prices of natural and recycled aggregates);
- New partnerships are developed with local waste management companies in order to increase the recycled quantities and use the treatment plant at its full capacity (200 tonnes per month);
- Methodology regarding the End of Waste status of C&D waste is adopted at the national or EU level.

The continuity of the treatment plant in Vernești and the development of recovery systems for C&D waste in other regions in Romania will not only help to fulfil regulatory responsibilities, notably contribute to the EU recycling target of 70% of all C&D waste by 2020.
3. Lessons learned

As shown in the country report, Romania is very short on infrastructure for C&D waste recovery. Currently, at national level, there is a great need for investments (public or private) in facilities for C&D waste treatment. However, the main drawbacks are related to the abundance and low price of natural aggregates, corroborated with low taxes for landflling C&D waste.

3.1. Preconditions for application of the initiative - replicability

The purchase and installation of a C&D waste treatment plant in other counties in Romania is possible if the following preconditions exist:

- There should be a high potential for C&D waste recovery in the county. A feasibility study should establish whether the purchase of a treatment plant is profitable given the perimeter covered and should perform cost/benefits analysis. The selling price of recycled aggregates and the location of the plant can be crucial in deciding whether such technology is profitable.
- It should be clarified from start which parties are interested to invest in the initiative and what is their contribution. EU or national funding could contribute to the financial stability of the project but their contribution is not vital. In the case of the Buzău pilot project, the County Council covered almost all expenses.
- The initiative would be most successful if there is a high degree of collaboration, commitment and understanding between the regional public authorities and the other stakeholders involved in the project.
- The regional public authority should delegate the operational activities of the plant to a private concessionaire selected via a call for tenders. The public-private management of the plant has been very smooth and successful in Buzău.
- Finally, the project management team should anticipate administrative barriers and delays. For example, the pre-construction phase could be shorter than 1 year if the team plans it in advance.

It is recommended to contact the Buzău County Council and/or the Natura Management SRL before planning the purchase and installation of a C&D waste treatment plant in another county in order to share barriers, best practices and lessons learned.

3.2. Innovation potential

If C&D waste recovery is the norm in some countries like the UK or Germany, it is particularly challenging to inspire and encourage more Romanian businesses to reclaim and reuse materials. It is not yet very common in Romania to purchase such technology either because of financial barriers or because of an immature market for recycled aggregates.

The pilot plant for C&D mechanical treatment in Vernești, Buzău might not be an innovation at the EU level but it is definitely an innovation in Romania and other Eastern European countries. Interviewed stakeholders pointed out that there is a clear lack of knowledge of the benefits that recovered materials can bring to businesses in the long term.

Finally, there is huge potential to use this initiative as best practice example in order to encourage other counties in Romania to replicate the use of C&D waste recovery technology. For example, the findings of the Life Cycle Assessment of the use of recycled aggregates versus natural aggregates, as well as those from the diagnosis phase, are relevant for all counties and can contribute effectively to design the necessary network of C&D inert waste processing infrastructure.
Annex: The plan of the treatment plant site
4. References

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Sources of documentation

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