

## Sustainability and Public works

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*Abstract:* - In each civilisation public works express the ability of rulers to promote and realise their major goals in the field of both development policy and economic and social progress. Nowadays public works could be defined as infrastructure works covering basic social needs and contributing to GDP growth, national security and the improvement of the quality of life. In European level, in particular, they promote national and regional territorial cohesion, economic and social cohesion and competitiveness across EU regions.

The paper focuses on the direct relation between public works and sustainability as the former could become an effective tool to implement the latter. This could be achieved mainly by the incorporation and establishment of environmental policy principles and rules in public works legislation. In this context, the paper presents the relevant institutional framework in Greece, taking into consideration legislative provisions and general principles introduced mainly by jurisprudence.

Next, it proposes and analyses the concept of ecological public work as a principle combining sustainability, public works and the protection of the environment. The main idea of the aforementioned concept consists in apprehending public works as the key factor which shapes, protects and shows off the surrounding environment. Thus ecological technical features should be incorporated in technical specifications as defined in the contract documentation such as contract notices, contract documents, drawings or additional documents.

Finally, the paper aims at promoting the principle of ecological public works principally in European doctrine in order to influence both the legislator and case law in relating sustainability to public works.

*Key-Words:* - Public works, Sustainability, Territorial cohesion, Protection of the environment, Ecological public work.

### 1 Introduction

In each civilisation public works express the ability of rulers to promote and realise their major goals in the field of both development policy and economic and social progress. In the Hellenistic and Roman eras public works were a symbol of the power of the Empire, while ensuring the effectiveness of governance.

Nowadays, according to the Greek legislator, public works could be defined as infrastructure works covering basic social needs and contributing to GDP growth, national security and the improvement of the quality of life [1]. They constitute an expression of human intervention in urban, per urban and agrarian landscape shaping decisively the natural, built and even cultural environment.

In European level, in particular, they promote national and regional *territorial cohesion*, helping to achieve a more balanced development by reducing

existing disparities, avoiding territorial imbalances and by converging both sectoral policies with a spatial impact and regional policy. Consequently, *economic and social cohesion* are reinforced, for public works, especially transport infrastructure, play an essential role both in converging employment rates and productivity and stimulating growth and *competitiveness* across EU regions [2]. Therefore, the transport network throughout Europe (roads, railway lines, short sea shipping and inland waterways) has become the driving force of regional development, while the expansion and improvement of the aforementioned network figure among the strategic orientations of cohesion policy for the period 2007-2013 [3]. Furthermore, thirty transport infrastructure projects of a cost of 225 billion euros, due to be completed by 2020, were identified by the European Parliament and the Council in April 2004 [4].

In the above context, public works should evolve into an essential means of implementing

sustainability not merely through their effect but also through the incorporation and establishment of environmental policy principles and rules. The importance of the implementation of this goal is proportionate to the necessity of handling effectively territorial imbalances and environmental degradation.

## 2 Territorial imbalances and environmental degradation

The expanded EU is suffering from three types of imbalances affecting development potentiality.

First there are *territorial imbalances* in the *distribution of town and cities*. Growth is occurring mainly: **a.** in an arc stretching from London to Milan and passing through the conurbations consisting of cities along the Rhine (Essen and Cologne). This core has recently extended towards the east including cities such as Berlin, Munich and Vienna; **b.** in the capitals of the Baltic States and in those of some other new Member States such as Budapest, Prague and Ljubljana except for Poland, where there are five large metropolitan areas to rival Warsaw; **c.** in capital cities in Scandinavia, Stockholm and Helsinki, in particular; **d.** in some urban areas in peripheral parts of Europe such as Dublin, Athens and Lisbon.

Second there are *intra-regional imbalances*. Thus three types of rural areas could be distinguished: **a.** areas in general close to an urban centre. These areas have integrated into the global economy and are experiencing economic growth and population increase; **b.** intermediate rural areas relatively far from urban centres but with good transport links and fairly well developed infrastructure. These areas seem to have stable population and to be in the process of diversifying economically; **c.** isolated rural areas, sparsely populated and often situated in peripheral areas, far from urban centres and main transport networks.

Finally, there are *regions with geographical handicaps* constraining their development. This category includes the most remote regions, islands, mountain regions and sparsely populated areas in the far north of the continent. These areas face special problems of accessibility and integration with the rest of the EU [5].

Furthermore, the above disparities could be aggravated by *environmental degradation*, for the latter influences economic, social and territorial cohesion. Regions and cities with a clean and healthy environment provide improved quality of life and are more attractive to investors. The main

environmental problems could be resumed in: **a.** climate change caused by man-made *greenhouse gases*, in particular, by emissions of carbon dioxide from the combustion of fossil fuels; **b.** access to clean *water* and the preservation of fresh water supplies; **c.** *waste* production and disposal thereof; **d.** *biodiversity* threatened by urban sprawl and the abandonment of land in both peripheral areas and many new Member States. This is the result of economic restructuring, the reinforcement of services to the detriment of agricultural economy and emigration to more prosperous regions.

Besides, the scale of these problems differs among Member States and regions along with their capacity to combat them [6].

## 3 Public works: a means of achieving sustainability

### 3.1 The Greek case

In Greek legal order the institutional framework on public works has undergone numerous amendments the last twenty years with a view to ensuring effectiveness, transparency, the protection of the environment and adjustment to European rules in the field.

#### 3.1.1 Legislative provisions

Public works have been divided in three categories according to their environmental impact.

*Category A* includes works and activities likely to have a major environmental impact. In this context, the approval of environmental terms should be preceded by the submission of an environmental impact study.

*Category B* concerns works and activities with no significant environmental impact. However, the approval of environmental terms requires either the submission of an environmental report justifying the respect of provisions guaranteeing the protection of the environment or a preliminary environmental impact assessment and evaluation. The latter constitutes an opinion of the Administration on various features of the work or the activity in question such as its location, size, type, applied technology, general technical features, the use of natural resources, waste production and accident risk. Next, the interested party hands in

an application with an attached environmental report. Finally, the competent authority either renders a positive opinion calling for the submission of an environmental impact study, the acceptance of which leads to the approval of the environmental terms, or rejects the project.

*Category C* comprises works and activities with minor environmental impact. Therefore, the only prerequisite for the approval of environmental terms is the submission of supporting documentation justifying the compliance of the project with the provisions guaranteeing the protection of the environment.

Moreover, special measures (penalty, civil liability, fine) shall apply to the detriment of the contractor in case of offences against the environment or non restoration thereof [7].

### 3.1.2 Jurisprudential principles

Apart from the aforementioned legislative provisions sustainability in public works is being ensured by principles introduced mainly by case law taking into account major European and international principles in the field.

Thus relevant Greek jurisprudence has focused on the implementation of *sustainable development* in a wide range of works and activities with an effect on the environment (natural, built or cultural). As a result, this concept has become an essential general principle ruling nearly every aspect of the above works or activities. Furthermore, court decisions have recently established the following concepts in an attempt to relate directly sustainability to public works: **a.** *sustainable public work* is considered the work which shall not provoke any environmental damage regardless of its development goal (See, Council of State 2731/1997); **b.** *sustainable activity* is defined as the activity which shall not cause any permanent environmental damage. In particular, sustainable extraction of minerals should comprise “sparing extraction”, for minerals constitute a non renewable resource (See, Council of State 772/1998); **c.** *sustainable road network* should incorporate the protection of the natural environment among planning and management criteria (See, Council of State 199/2006) [8].

In addition, Greek jurisprudence has imposed a series of principles concerning the protection of the environment and land planning, which also affect public works: **a.** *carrying capacity* imposes a development limit, taking into consideration the natural, built and cultural potentiality of a site (See, Council of State 2805/1997); **b.** *the prevention*

*principle*, according to which the Administration should implement all necessary measures in order to anticipate possible risks to public health, safety and the environment [9]; **c.** *the precautionary principle*, which states that if an action or policy might cause severe or irreversible harm to the public, in the absence of any scientific consensus that harm would not ensue, the burden of proof falls on those who would advocate taking the action. This principle applies in works or activities which may lead to practices such as the release of radiation or toxins, massive deforestation or overpopulation [10]; **d.** *the land planning principle*, which seeks an equilibrium between the protection of the environment and economic development, since land planning represents the depiction of economic planning into space [11].

### 3.2 The concept of ecological public work

The main idea of the proposed concept of ecological public work consists in apprehending the work in question as the key factor which shapes, protects and shows off the surrounding environment. This idea lies in compliance with the use of traditional architecture, taking into consideration natural elements such as the sun, air, water and earth.

Moreover, ecological technical features should be incorporated in technical specifications as defined in the contract documentation, such as contract notices, contract documents, drawings or additional documents. These features should aim at the protection of the natural, built and cultural environment in conformity with the guidelines of sustainability and the aforementioned general principles. Thus technical specifications should impose: **a.** environmentally friendly constructions following bioclimatic rules and using renewable energy sources and recyclable materials, avoiding derivatives of oil; **b.** ecological disposal of waste during both construction and operation; **c.** respect of the physiognomy of the site mainly through the drawing plan.

## 4 Conclusions

The above-mentioned analysis has attempted to stress the direct *relation between sustainability and public works*. In particular, in the EU the need to overcome territorial imbalances and environmental degradation has revealed that implementing sustainability has become an imperative. Thus the goals of economic, social cohesion and competitiveness could be achieved as well as the

protection of the natural, built and cultural environment. In this context, public works play a key role, since they constitute both a means of facing disparities among regions and a radical intervention in the landscape, affecting directly all components of the environment.

Promoting *the connection of sustainability and public works* could therefore constitute a *challenge for the executive, legislature and judiciary*. In Greece legislation on public works has been recently revised in order to promote effectiveness, while ensuring the protection of the environment according to European rules. Moreover, case law has established a series of principles or concepts specifying sustainability such as “sustainable public work”, “sustainable activity”, “sustainable extraction of minerals” and “sustainable road network”. In addition, more principles have been introduced mainly by court decisions related both to sustainable development and public works such as carrying capacity, the land planning principle, the prevention principle, the precautionary principle and the the polluter pays principle.

Finally, we propose *the concept of ecological public work*, according to which a public work should be the decisive factor in terms of environmental protection, for it should promote sustainability, shape the surrounded landscape, show off and protect the environment. This goal, which should rule the construction, operation and even disintegration of public works, could be technically achieved mainly by the incorporation of environmentally-friendly standards and prerequisites in the contract documentation.

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